

INSTRUCTIONS FOR USING

# Flat-Bed Enclosed Type Machines

CLASS 30100

With

Illustrations *and* Price List of  
Parts for Repairs  
Only

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Catalog No. 35

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UNION SPECIAL MACHINE CO.  
CHICAGO, ILLINOIS

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## **IMPORTANT NOTICE TO CUSTOMERS**

The parts listed in this catalog are furnished at list prices for repairs only.

Attention is hereby called to the fact that many of said parts are subjects of patents, or enter into patented combinations, and that in furnishing these parts at list prices we only license their use for repairing machines of our own make, in their original condition.

Notice is hereby given that the sale of such parts by the purchaser, or the use thereof for changing over machines from one style to another, or for any other than *bona fide* repair purposes, is an infringement, for which the seller or user will be liable to prosecution.

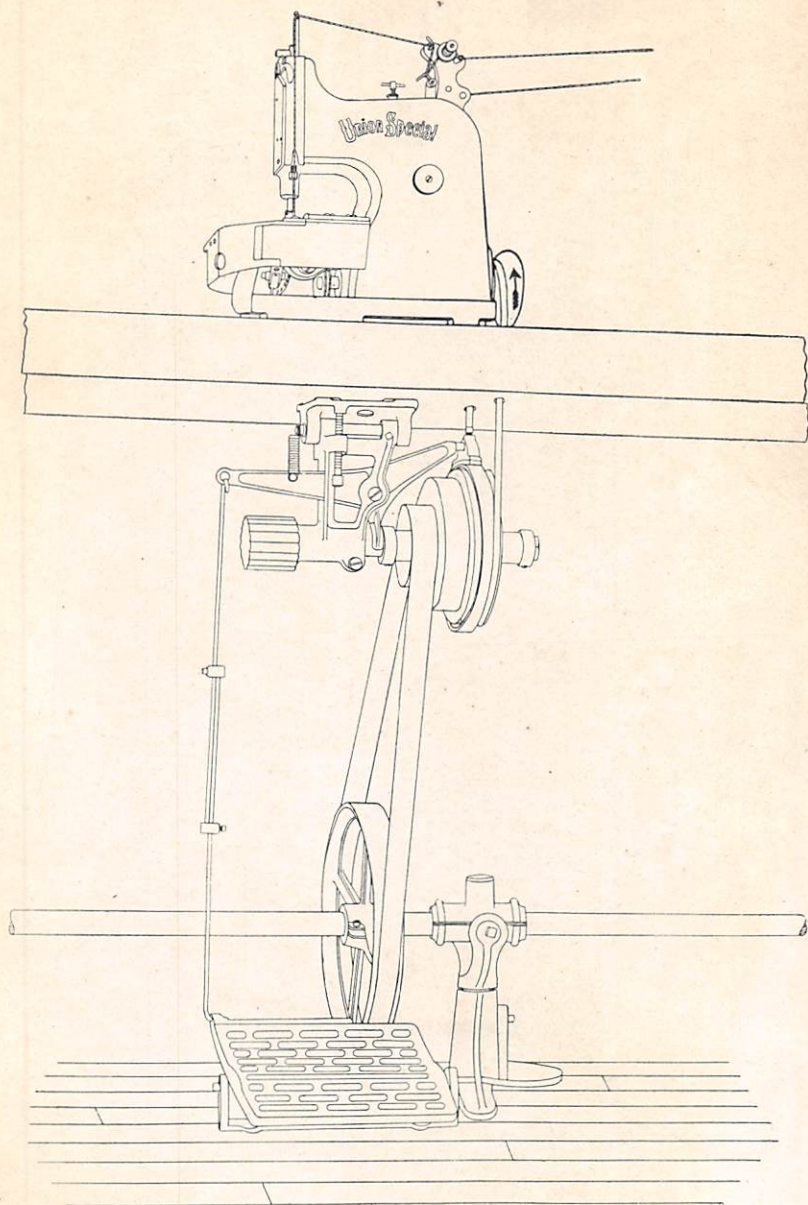


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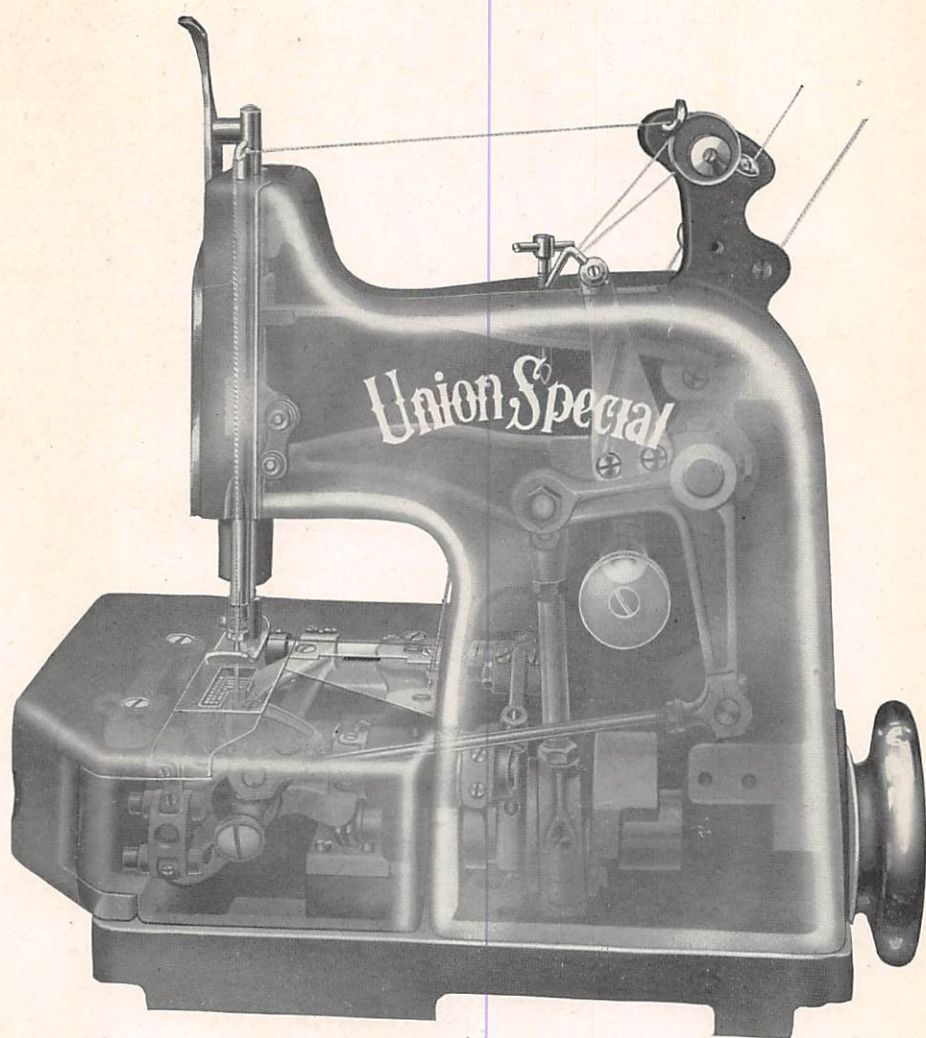
The matter of this catalog relates only to machines in Class 30100 and cannot be applied to machines in other classes. The class number can be ascertained by reference to the name plate on the machine. Power transmitter parts are listed in a separate catalog, known as catalog No. 29, copies of which will be supplied on request.

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READY TO OPERATE



Phantom View of Class 30100 Machine



## DESCRIPTION OF MACHINES

The **Class Number** is stamped on the name plate and represents a type of machine subdivided into several styles.

The **Style Number** consists of the class number and a letter and is given only in the catalog. It represents a machine as fitted for a designated kind of work.

### Class 30100

#### Flat Bed Enclosed Type Machines

##### Style

- 30100 A—For seaming bags; single needle, double thread stitch, maximum length of stitch  $\frac{3}{8}$  inch.
- 30100 B—For seaming bags; single needle single thread stitch, maximum length of stitch  $\frac{3}{8}$  inch.
- 30100 C—For seaming bags; double needle, one under thread, maximum length of stitch  $\frac{3}{8}$  inch.
- 30100 D—For seaming small cotton bags; single needle, double thread stitch, maximum length of stitch  $\frac{1}{4}$  inch.
- 30100 E—For seaming small cotton bags; single needle, single thread stitch, maximum length of stitch  $\frac{1}{4}$  inch.
- 30100 F—For hemming bags; single needle, double thread stitch, maximum length of stitch  $\frac{3}{4}$  inch.
- 30100 G—For hemming bags; single needle, single thread stitch, maximum length of stitch  $\frac{3}{4}$  inch.

## INSTALLATION

### ***Sewing Machine***

Being thoroughly tested and accurately adjusted before leaving our factory, Union Special Machines are shipped in perfect working order. The illustration, page 5, gives a good idea of the sewing machine, power transmitter, and foot treadle, set up for operation.

### ***Tables***

Any sewing machine table of ordinary construction may be used. Where an oblong hole has been cut in the table to accommodate another machine, it should be filled with a piece of thoroughly seasoned lumber of corresponding thickness. A tight fit should be made, re-enforced with nails or screws. The top of the table should be free from any unevenness. If a new table is to be made, a height of twenty-nine inches to the top of the table will be found best suited for operators of average size.

A hole should be cut through the table to correspond with the opening in the base of the machine under the cloth plate. This is done to allow the lint and dirt which are separated from the goods while sewing to fall through the machine and the opening in the bench into a pan or drawer which should be placed on the under side of the bench to receive it.

### ***Speed***

Ordinarily the speed recommended is 2600 revolutions per minute. This can be secured by running the line shaft 310 revolutions per minute and using a twelve-inch line shaft pulley.

### ***Pulleys***

Line shaft pulleys should be ordered large enough to allow for the loss of speed from slipping of belts, which amounts to about six per cent. They are made with  $1\frac{3}{16}$  inch bore and  $1\frac{1}{2}$  inch face; the diameters range in inch sizes, from eight to fifteen inches, inclusive.

The transmitter has two pulleys. A loose pulley having two steps,  $3\frac{3}{4}$  and  $5\frac{3}{4}$  inches in diameter, and a brake pulley with one step seven inches in diameter. An extra large transmitter brake pulley, ten inches in diameter, No. 28518, can be furnished, to be used where it is impossible to swing a sufficiently large line shaft pulley.

A flange, No. 28531, and two screws, No. 96, can also be furnished for the smaller cone of the loose pulley to keep the belt in position.



## INSTALLATION

**Belts** A one-inch flat belt carries power from the line shaft to the transmitter, and a  $\frac{9}{32}$ -inch round belt transmits power from the transmitter to the sewing machine. The belts must be arranged so as to turn the sewing machine pulley in the direction indicated by the arrow in the diagram on page 5. If necessary to cross a belt, the round belt should be crossed.

**Fastening Machine to Table** The space apportioned for each machine is measured from needle to needle; and, in order to prevent the bags from becoming entangled with the belt of the adjoining machine, this space should be approximately twelve inches greater than the length of the largest bag to be sewed. If the intention is to make small bags exclusively, the space from needle to needle can, if necessary, be reduced to forty-eight inches, which is about as close as can be safely recommended.

Place the machine in position so that the front edge of the base is about two inches back from the front edge of the table. Draw two lines on the table even with the base, one at the front and the other at the right-hand end. Remove the machine and draw a line parallel with and  $2\frac{1}{4}$  inches back of the line at the front of the machine. Draw a line parallel with and five inches to the left of the line at the right-hand end of the machine. Bore a  $\frac{7}{16}$ -inch hole where the last two lines intersect.

Pass the thumb-screw through the  $\frac{7}{16}$ -inch hole, and into the threaded hole in the base. Then swing the machine so that its base is parallel with the front of the table and drive a metal pin or nail at the rear right-hand corner.

**Transmitter** Use  $1\frac{1}{4}$ -inch screws to secure the transmitter to the table, unless it is made of exceptionally hard wood. The transmitter should be placed far enough back under the table to be out of the way of the operator's clothing, that is, the front edge should be about three inches back of the machine thumb-screw. Special care must be observed to make sure that the groove of the transmitter brake pulley is directly under the groove of the machine pulley.

The transmitter must also be in proper alignment with the line shaft. A very good method is as follows: Place the pulley on the line shaft, but do not tighten it. Put in only the front right-hand screw to hold the transmitter temporarily. Swing the transmitter so that its shaft is in alignment with the line shaft. The correct position can be easily determined by sighting across the two pulleys. Insert a second



## INSTALLATION

screw diagonally opposite the one already in. Measure the length of flat belt required to go around the line shaft pulley and the transmitter pulley. Join the two ends of the flat belt by one of the malleable iron belt lacings provided for that purpose. Drive the lacing into one end; place the belt over the two pulleys so that the ends meet on the transmitter pulley, and drive the lacing into the opposite end. See that the lacing conforms to the curvature of the pulley and that the teeth are well clinched. Turn the pulleys by hand to note whether the belt runs true; this is the best proof of proper alignment.

Should the belt fail to run so that it centers on the crowns of the pulleys, the error may be rectified by removing the rear left-hand screw and turning the transmitter as required. In some instances, owing to the line shaft not being in proper alignment with the underside of the table, it will be necessary to insert a shim between either the right or left end of the transmitter frame and the table. Being now placed in proper relation with both the line shaft and the sewing machine, the transmitter should be permanently secured to the table by placing screws in the remaining holes. If a screw has been removed for the purpose of correcting the position of the transmitter, it should not be replaced till last, otherwise it would have a tendency to draw the transmitter back out of alignment. Tighten the line shaft pulley securely to the shaft.

To locate the holes for the round belt it will be found of great assistance to use a pointed  $\frac{1}{4}$ -inch rod. By placing it in the groove of the machine pulley, it can be made to take the slant which the round belt requires, and a carpenter's bevel-square might be advantageously used to take the required angle and serve as a guide for the auger. The diameter of the holes should not exceed  $\frac{7}{8}$  inch. If the holes are slightly elongated, a wider range of adjustment on the pivoted frame can be secured.

A guard is provided, to be fastened to the table in front of the transmitter pulley, to protect the operator's clothing. It is used where conditions will not permit the transmitter to be set sufficiently far back under the table. The transmitter treadle should be set so that the center is directly under the needle and the front edge about an inch back from the front edge of the table.

The incline of the treadle may be adjusted to suit the operator's requirements by means of the pitman.

The pitman rod need not necessarily hang in a vertical position.



## OPERATING

**Simplicity** In isolated factories where operators have but scant opportunity to observe the working of any kind of machinery, they readily adapt themselves to Union Specials. Obviously, practice will increase the proficiency of the operator in threading and oiling the machine, and in handling the work.

**Bleached Bags** Though the adjustment of the feed dog be perfect for other fabrics, some difficulty may be experienced in properly feeding bleached cotton fabric, due to the filler which it contains, as it tends to make the goods adhere to the under side of the presser foot. This difficulty can easily be remedied by the use of some solid lubricant, such as a mixture of equal parts of beeswax and tallow, placed on the upper surface of the presser foot in the form of a cone so as to cover the needle hole. In passing through this cone, the thread will carry sufficient lubricant to permit the fabric to pass freely under the presser foot. Whenever the machine begins to feed poorly, the cone of lubricant should be pinched together. The same result might be effected by dropping a small quantity of oil upon the upper surface of the presser foot, or between the feed dog and the presser foot; but this might be objectionable because of the tendency to soil the work.

**To Set the Needle** The needles have two grooves: A short groove extending from the shank to a spot milled out just above the eye, and a long groove extending from the shank to the eye.

Place the needle as far up into the needle bar as it will go, with the long groove in front, so that the eye of the needle will be in line with the direction of the stitching. Then tighten the needle clamp nut with the wrench, No. 116, furnished for that purpose.

**Threading** The method of threading should be carefully noted when the machine is taken from the shipping box. The threads should neither be twisted nor cross each other. Each thread must be passed through the tension disc so that it is drawn against the tension post, but under no circumstances should it be wrapped completely around the post.

**Oiling** Sewing machines require careful oiling with a good quality of oil that will not gum by friction-heat or air-exposure. The so called "stainless" oils are not recommended for our high

## OPERATING

speed machines, as they do not have sufficient viscosity to serve the purpose. The diagram, page 13, shows the oiling places on the machine. It is very plain that some lubricant should be used wherever one working part rubs against another. The left end of the needle lever is fitted with hollow link pins having ball valves. These are oiled by pressing the ball with the oil-can spout.

In the base of the machine directly under the counterweight a recess is formed which serves as a reservoir for oil and the counterweight in its rotation lifts the oil out of this reservoir, as is common in the well known "splash system" of oiling, and distributes it over the main bearings to the pocket at the right, then over the shaft bearing and returns it again by means of the channel to the reservoir. This oiling system insures all the bearings in the immediate vicinity thorough oiling, therefore heating is reduced to the minimum.

When systematically performed, oiling can be done without possibility of missing any place, and in a surprisingly short time. Frequent oiling is necessary, as lint quickly absorbs the oil. It is recommended that the sewing machine head be given a thorough oiling four times a day. The power transmitter is lubricated with solid oil through the hollow main shaft from a single compression cup which should be screwed up about once a week. If the bearings run hot, the compression cup should be screwed up immediately. Refilling will not be required oftener than once in several months.

***Cleaning*** Every time an operator oils a machine the overflowed oil and the accumulated lint should be carefully wiped up. The constant accumulation of lint and dirt makes it necessary for the operator to keep the machine as clean as possible, in order to prevent wear.

Twice a week the cloth plate should be removed and the machine given a thorough cleaning. Lint and dirt should be removed from the oil holes, feed dog slots and looper grooves with a pin or needle.

***To Remove the Cloth Plate*** Remove the needles to avoid blunting their points. Turn the pulley in the direction the machine runs till the needle bar is at its lowest position. Remove the screws which hold the cloth plate to the base.



# OILING DIAGRAM

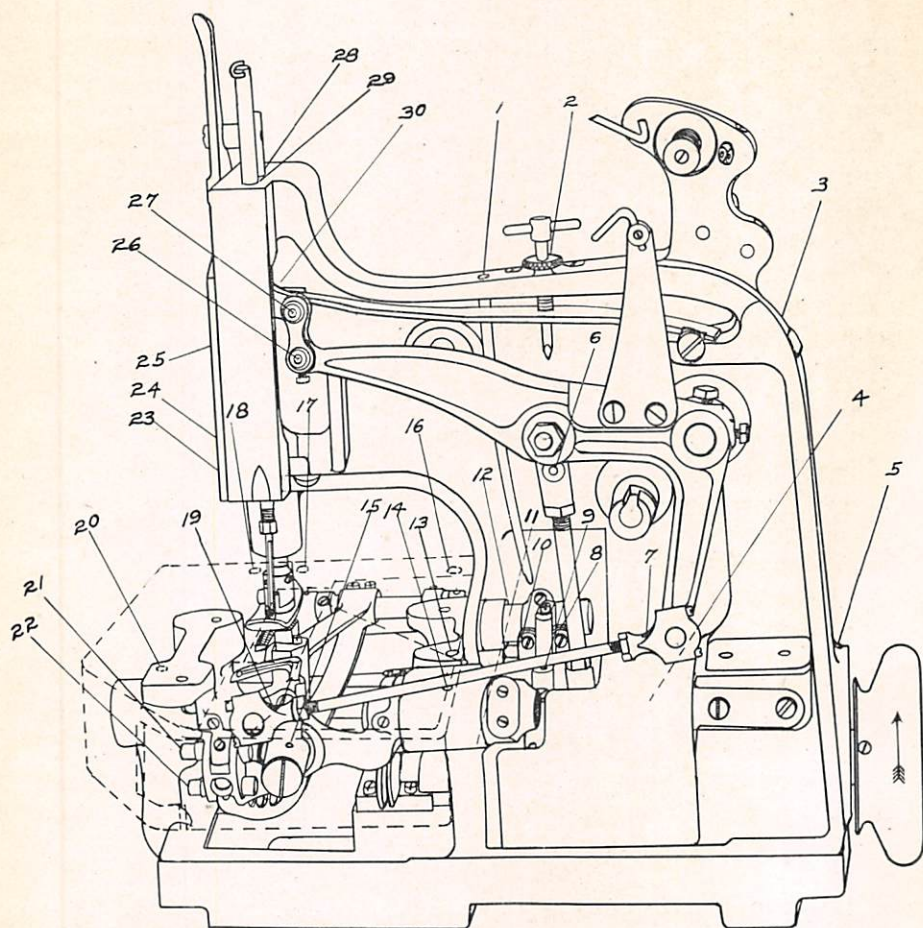


DIAGRAM A—OILING PLACES FOR STYLE 30100 A

## THREADING DIAGRAM

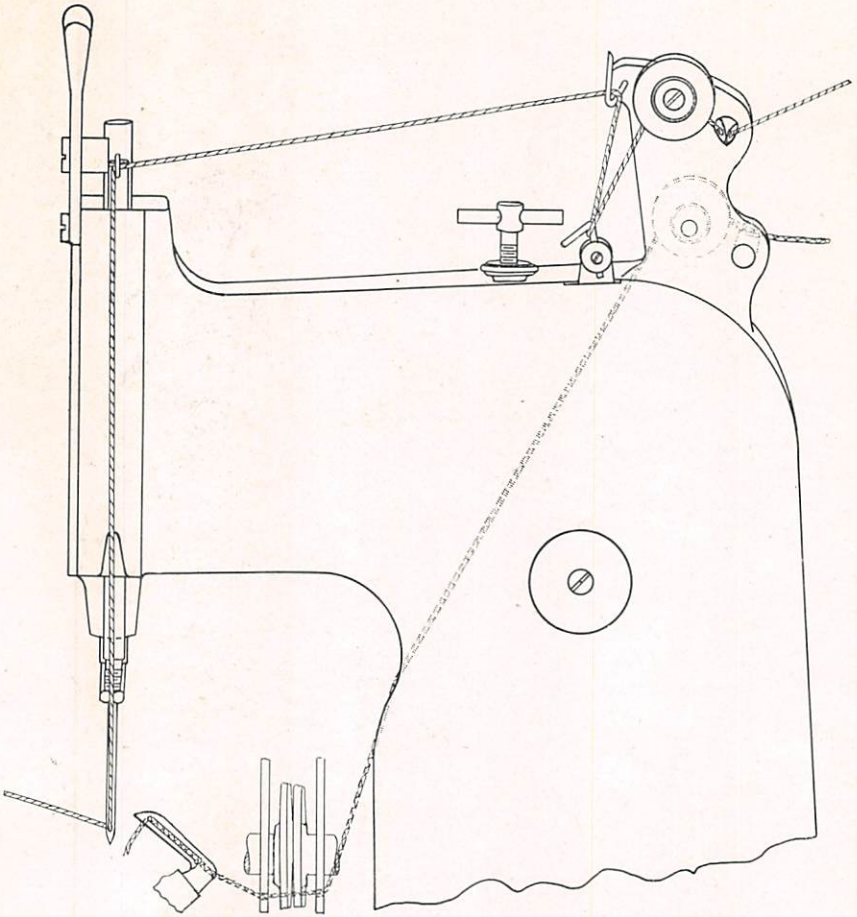


DIAGRAM B—THREADING

Sectional Diagram B shows the method of threading Styles 30100 A and 30100 D. The method of threading Styles 30100 B, 30100 C and 30100 E is approximately the same.



## THREADING DIAGRAM

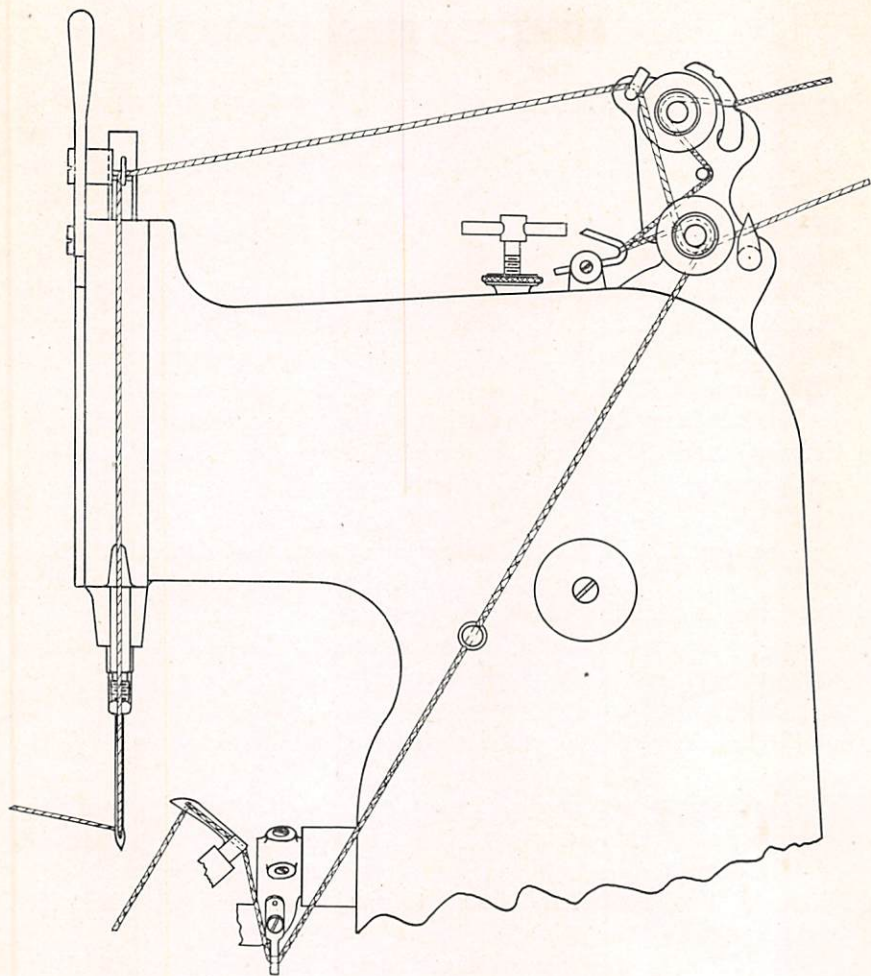


DIAGRAM C—THREADING

Sectional Diagram C shows the method of threading Style 30100 F. The same threading of the needle thread should be followed on Style 30100 G.

## ADJUSTMENT, INTRODUCTORY

### ***Grouping of Machines***

To simplify these instructions and to enable the machine fixer to apply them to the best advantage, the machines are divided into two groups according to their construction. Having located the group to which a machine belongs, complete instructions for adjusting will be found under that heading.

Machines in Group 1 are for seaming bags, and comprise Styles 30100A, 30100 B, 30100 C, 30100 D and 30100 E.

Machines in Group 2 are for hemming bags, and comprise Styles 30100 F and 30100 G.

While it is not impossible for a machine to be operated when variations are made from these rules for adjusting the machines, the best results can be secured only by following them.

### ***Useful Hints***

When a machine fails to work satisfactorily, though apparently in good repair, delay might be avoided by bearing in mind the following suggestions:

(1) Note carefully whether the machine is threaded as directed in every respect, especially at the tensions, and remove any lint which may have accumulated.

(2) See that the required amount of tension is on each of the threads.

(3) Examine the needle to see whether it is set straight with the long groove in front and inserted in the needle bar as far up as possible.

(4) Remove the needle and see whether it has become bent or blunted. The best possible test is to roll it on a perfectly flat surface and note whether the point rolls true.

(5) Clean and oil the machine thoroughly. Try a new needle.

(6) The throat plate needle holes may have become roughened so as to cause breaking of the threads. This may be remedied by smoothing out the holes with a narrow strip of emery cloth.

(7) If the foregoing measures fail to relieve the difficulty it may be assumed that the machine needs a general re-adjustment.

### ***Caution***

Before operating by power, after any change has been made in the working parts, always turn the machine by hand, in order to be sure that it runs freely and that the working parts do not interfere with the frame or with each other.



## ADJUSTMENT, GROUP 1

The machines in this group are for seaming bags and comprise the following styles: 30100 A, 30100 B, 30100 C, 30100 D and 30100 E.

**Formation of the Double Thread Stitch** In the formation of this stitch, the needle carries its thread down through the fabric and, as it ascends, throws out a loop at the rear, which the looper enters with its thread

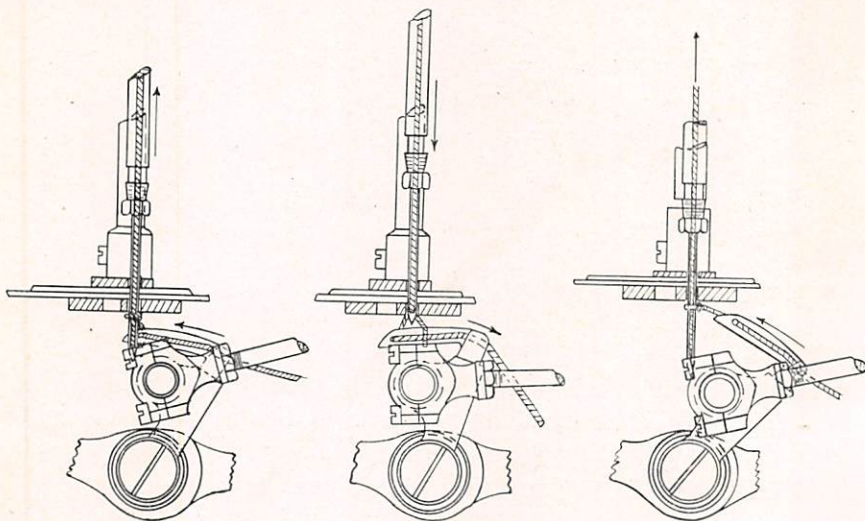


FIGURE 1

FIGURE 2

FIGURE 3

from the right as shown in Figure 1. While the needle is above the throat plate, the feed dog moves the fabric forward, the looper rocks across the path of the needle and returns toward the right, forming a triangular space—between the back of the looper, the looper thread on the left, and the needle thread on the right—into which the needle descends with its thread, as shown in Figure 2. The looper, continuing to return toward the right, leaves the stitch on the needle, as shown in Figure 3. The needle, again ascending, recedes from the stitch, which is tightened in the fabric by the looper action forming the next stitch.

**Formation of the Single Thread Stitch** In the formation of this stitch, the needle carries its thread down through the fabric and, as it ascends,

## ADJUSTMENT

throws out a loop at the rear, which the looper enters from the right, as shown in Figure 4. The needle again descending, carries its thread through this loop, as shown in Figure 5. The looper, continuing to

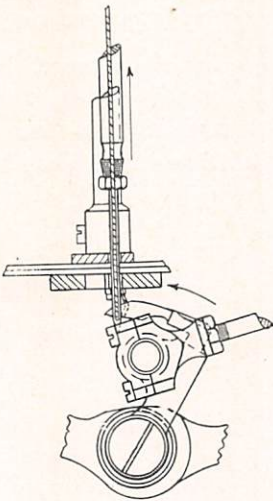


FIGURE 4

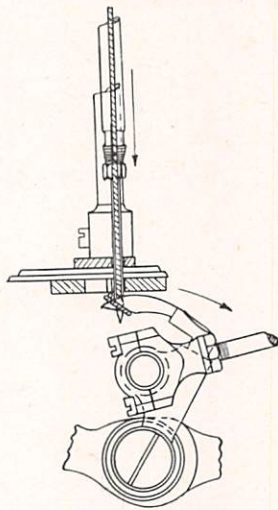


FIGURE 5

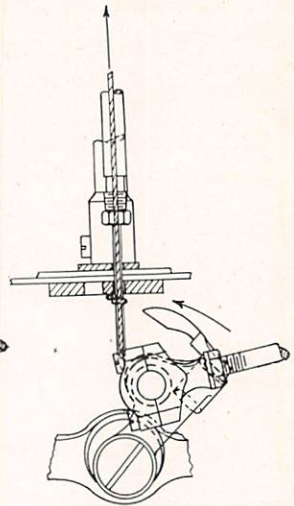


FIGURE 6

return to the right, leaves the stitch on the needle, as shown in Figure 6. The needle, again ascending, recedes from the stitch, which is tightened in the fabric by the action of the looper forming the next stitch.

**NOTE**—In adjusting machines, always use a new needle.

**Looper** While only one style is used on each machine, two styles are made for Group No. 1; one for the double thread stitch machines and one for the single thread stitch machines.

The looper for the first style is Catalog No. 30008. The looper for the second style is Catalog No. 30108 B.

### **Looper, Double Thread Stitch Machines**

Begin adjusting the machine with the looper. It is important that the point of the looper should be exactly  $\frac{1}{4}$  inch to the right of the center of the needle when the needle bar is at its lowest point. A very convenient manner of securing an accurate adjustment will be found by using a gauge, No. 21225- $\frac{1}{4}$ , having a "V" slot, the center of which is  $\frac{1}{4}$  inch from the edge of the widest side. This determines the distance between the center of the needle and the point of the looper. On double needle machines the left-hand



## ADJUSTMENT

needle should be removed as only the needle in the center of the needle bar should be used in applying the looper gauge. In using this gauge, hold it with the "V" slot enclosing the front of the needle, and the widest side of the gauge to the right. Then, the needle bar being at its lowest position, the looper point should be made to come even with the right edge of the gauge by turning the looper connection rod, No. 12841, which is provided with right and left threads. The nuts of the looper connection rod should then be tightened. Tighten the nut on the right first. After both nuts are tightened, make sure that the adjustment has not been altered, by again applying the looper gauge.

When the looper moves to the left to take the needle loop, it should have free space as it passes the back of the needle. Should it strike the needle, the result might be a broken needle, and often, a broken looper. If it be set as far away as  $\frac{1}{32}$  inch from the needle, skipped stitches would result. The best adjustment for average work is a scant  $\frac{1}{100}$ -inch space between the looper point and the back of the needle. A spot is milled out of the groove just above the eye of the needle to permit the looper to pass quite closely without danger of striking. The position of the looper with respect to the back of the needle can be adjusted by means of screws in the looper rocker frame arm, No. 30165 A. To move the looper from the needle, loosen the lower screw and tighten the upper screw, to move the looper toward the needle, loosen the upper screw and tighten the lower screw. Be sure these screws are firmly set so they will not jar loose.

To adjust the amount of needle avoiding movement for various sizes of needles; first, loosen hexagonal head screw in combined needle lever and looper eccentric, then loosen the two set screws in combined feed and looper eccentric, and move this eccentric from the operator to increase the travel, for large needles, and towards the operator to decrease the travel, for small needles. In tightening the eccentric the hexagonal head screw should be fastened first, then the set screws.

### ***Looper and Loop Retainer, Single Thread Stitch Machines***

Two important factors in making the single thread stitch are (1) a notch cut in the under side of the looper, and (2) a small loop retainer attached to the under side of the throat plate.

The notch of the looper carries the bottom of the loop to the right while the loop retainer holds the upper part of the loop. Thus, the two, acting together, incline the needle loop into a nearly horizontal position so that the needle can readily descend into it.



## ADJUSTMENT

No looper gauge can be specified for this machine, owing to the formation of the stitch. But, for convenience, the point of the looper can first be set  $\frac{1}{4}$  inch to the right of the center of the needle when the needle bar is at its lowest point. However, it will be plain that the looper must move just far enough past the needle to allow the notch to carry the front portion of the needle loop beyond the prong of the loop retainer. Should it pass too far, an excess of thread would be drawn through the tension and the loop would not be held sufficiently tight around the looper to enable the looper properly to incline the loop. If the looper did not move far enough to the left to carry the needle loop beyond the prong, the loop retainer would fail to perform its part of the work. Either of the above mentioned errors in adjustment would result in skipped stitches. If the looper fails properly to incline the loop when it has moved the required distance to the left, the angle of the notch should be increased. This can easily be done with emery cloth.

To raise the looper so that the upper edge will pass sufficiently close to the prong of the loop retainer, it is customary to place a small collar, No. 21210, on the looper shank.

The prong of the loop retainer should be set so as to allow the upper edge of the looper to return as closely as possible under it without touching and about as far forward as the screw will permit. However, when the looper moves to the left and the end of its notch is opposite the prong of the loop retainer, there should be sufficient space between the two to permit the heaviest thread to pass. Also, there must be sufficient space to permit the heaviest thread to pass between the prong of the loop retainer and the feed dog, otherwise the feed dog would be liable to pinch off the thread.

### ***Needle Bar, Single Needle Machines***

Turn the pulley in the direction the machine runs till the looper starts to the left, and its point is even with the left side of the needle. Then, the needle bar should be set so that the entire eye of the needle appears  $\frac{1}{64}$  inch below the under side of the looper. Some of the more elastic twines may require the needle bar to be set a little lower. However, it is not advisable to set it lower than  $\frac{1}{32}$  inch below the adjustment just described, as the needle would then throw out a large loop which would be too unsteady for the looper to enter; thus, skipped stitches would result.

### ***Needle Bar, Double Needle Machines***

In placing the needle bar in double needle machines, one of the needle set screws must be turned to the rear and the



## ADJUSTMENT

other to the right to prevent them from interfering with the threads. The needle bar should be set so that the needles are in a line parallel with the front side of the looper when its point is even with the left side of the needle. This position is necessary in order to maintain the same space between the looper and each of the needles, as the looper moves forward to take the needle loops.

The vertical adjustment of the needle bar is determined by turning the pulley in the direction the machine runs till the looper starts to the left and the looper point is even with the left side of the left needle. Then, the needle bar should be set so that the entire eye of the left needle appears  $\frac{1}{64}$  inch below the under side of the looper.

To enable the looper to take each loop of needle thread at relatively the same height, the needle seats are arranged so that the left needle is set lower than the right needle.

### ***Take-up and Cast-off Wire***

On the left end of the main shaft is placed a device for controlling the looper thread. Its action can readily be observed by threading the take-up thread eyelet and the looper in the regular manner, and holding the thread taut by the end, while the pulley is turned in the direction the machine runs. It will be seen that the take-up serves a three-fold purpose: (1) It takes up the slack in the looper thread while the looper is returning to the right; (2) it draws enough thread through the tension to allow it to complete its revolution; and (3) it holds the looper thread taut from the time it begins to take up the slack till the needle point descends below the looper thread, where it passes from the eye of the looper to the throat plate needle hole. Then, the lower arm of the cast-off wire should force the thread from the cut-away portion of the disc over the corner to the circular portion. The upper arm of the cast-off wire should retain the thread on the circular portion till the looper again moves to the left and requires more thread. Then, the thread should be entirely freed from the take-up.

When the lower arm forces the thread from the cut-away portion of the disc, the needle point should be just below the middle of the looper. If the cut-away portion of the take-up fails to hold the thread taut until the point of the needle has descended below the looper thread, the looseness of the thread will allow the machine to skip stitches. If the cut-away portion retains the thread until the needle point passes any considerable distance below the before-mentioned adjustment, the looper thread will break under the increased strain. If the cut-away portion fails to hold the thread long enough, force the lower arm of the cast-off



## ADJUSTMENT

wire downward. If it holds the thread too long, raise the lower arm of the cast-off wire or move the support toward the front of the machine.

When the looper is at its farthest position to the right, there should be the smallest noticeable slack in its thread. If there is considerable slack, the looseness of the thread will allow the machine to skip stitches. If there is no slack, the strain will cause frequent breaking of the looper thread, and will prevent the stitch around the needle from being drawn up to the under surface of the fabric. If the thread is too loose, slightly lower the upper arm of the cast-off wire and move the support toward the rear of the machine, or bend the left prong of the take-up thread eyelet to the left. If the thread is too tight, slightly raise the upper arm of the cast-off wire and move the support toward the front of the machine, or bend the left prong of the take-up thread eyelet to the right. To avoid breaking the eyelet, it should be clamped into a vise and bent with a pair of pliers.

### ***Feed Dog***

In order to enable the machine to make a chain of stitches between the bags, or, as it is commonly called, "to chain out," it is important to have the feed dog set at just the proper height above the throat plate. The two rear teeth of the feed dog, viewed from the left, should rise high enough above the surface of the throat plate to show about one-half of each tooth. To raise it higher, generally causes the teeth to hold the chain after the motion of the feed dog has been reversed and the chain fails to be properly fed out. The proper height is maintained by the supporting screw placed under the feed dog. The teeth should be sufficiently sharp to hold the chain firmly, but not so undesirably sharp as to cut the stitches. A small triangular piece of oilstone will serve to remove the over-sharp edges from the teeth which come in contact with the chain. It should be applied to each of the rear teeth separately.

### ***To Regulate Length of Stitch***

At the back of the machine will be found the feed rocker pitman. It is by changing the position of the front end of this that the length of stitch can be altered. First, loosen the lock nut by turning it toward the back. For this purpose there is provided a wrench, No. 21388 E. On the feed and looper eccentric connection, No. 30155 A, a cap will be found secured by two small screws with a larger screw between. Turning this larger screw to the right raises the pitman, thereby lengthening the stitch, turning to the left lowers the pitman, thereby shortening the stitch. Do not fail to tighten the lock nut after any change has been made.



## ADJUSTMENT

The feed travel in the throat plate can be centralized by adjusting the feed rocker stud.

**Presser Foot** The presser foot is fitted with a hexagonal head screw and check nut to allow the bottom of the foot to be tilted. In sewing clay filled material the front end of the presser foot and feed dog should not come into contact with each other, but the rear or back end of these parts should do all the feeding, the feed dog itself coming in contact with the seam or chain formed by the stitch, instead of engaging the surface of the fabric itself. This prevents the puckering and at the same time, avoids any liability of the feed dog scraping the filling material from the surface of the fabric. This adjustment also makes it much easier for the operator to turn the small or sharp corner.

**Pressure** To regulate the pressure of the presser foot upon the fabric, a thumb screw will be found on top of the machine near the center. A good heavy pressure is required to enable the machine to feed properly.

**Tensions** The importance of properly adjusted tensions on the thread can scarcely be over-estimated. The needle thread should be under a tension about as tight as is consistent with the strength of the thread and the nature of the fabric to be sewed.

The looper thread should be under a tension, a trifle less than that of the needle thread.

**Tight Tension** On the needle thread, this would cause the machine to break the needle thread, and to pucker the fabric. On the looper thread, it would cause breaking of the looper thread, and would prevent the machine from properly chaining out between the bags.

**Loose Tension** On the needle thread, this would cause loose and irregular stitches on the under side of the fabric; it would cause the machine to break the needle thread, to skip stitches, and it would prevent the machine from properly chaining out between the bags.

On the looper thread, loose tension would cause loose and irregular stitches on the under side of the fabric, skipped stitches, and the machine would fail properly to chain out between the bags.

**Needle Thread Pull-off Wire** Attached to the needle lever is an arm which carries the needle thread pull-off wire. This part engages the thread as the needle descends so that the required amount of thread is drawn through the tension.

## ADJUSTMENT, GROUP 2

The machines in this group are for hemming bags and comprise styles 30100 F and 30100 G.

**Looper** Like machines in Group No. 1, two styles are also made for Group No. 2. The double thread stitch machine using Catalog No. 30108 F and the single thread stitch machine using Catalog No. 30108 B.

The adjustment of looper and loop retainer is practically the same as that for Group No. 1. (See page 19.)

**Needle Bar and Feed Dog** The adjustment of the needle bar and of the feed dog, is practically the same as for Group No. 1. Also the formation of the stitch of machines in this group is the same as in those of Group No. 1.

**To Regulate Length of Stitch** At the back of the machine will be found the feed rocker pitman. It is by changing the position of the front of this that the length of stitch can be altered. First, loosen the lock nut by turning it to the back. For this purpose use wrench No. 21388 E. Raising the pitman lengthens the stitch, lowering the pitman shortens the stitch. Do not fail to tighten the lock nut after any change has been made.

**Pressure and Tensions** To regulate the pressure of the presser foot upon the fabric a thumb screw will be found on top of the machine near the center. Two presser springs are employed, one acting upon the presser bar, and one upon the presser guide bar. A good heavy pressure is required to enable the machine to feed properly.

The adjustment of the tensions is practically the same as that for Group No. 1. (See Page 23.)

**Needle Lever Pull-off Wire** Attached to the needle lever is an arm which carries the pull-off wire for the looper thread. This part engages the thread as the needle descends so that the required amount of thread is drawn through the tension.



## POWER TRANSMITTER

**Description** Improvements have been adopted from time to time. The latest model is fitted with a pivoted frame for regulating the tension on the lower belts, and is driven with a one-inch flat belt. It is also fitted with ball-bearing thrust collars at the pulley hubs to reduce friction and to prevent excessive consumption of power.

**Lubrication** This is accomplished with solid oil, forced through the hollow main shaft from a single compression cup, which should be screwed up about once a week. If the bearings run hot, the compression cup should be screwed up immediately. Refilling will not be required oftener than once a month.

Use only a high-grade solid oil having the proper consistency and liquefying at about 150 degrees Fahrenheit. This is of great importance, as the oil should remain solid until it leaves the interior of the shaft. A softer grade is liable to feed too fast and to drip from the bearings. A harder grade is liable to clog the feed holes in the shaft.

The use of the cheaper grades of solid oil can only result in injury to the bearings. "No. 3 Arctic Cup Grease" will be found suitable. This can be secured from the leading oil dealers, or will be promptly furnished by us in convenient five-pound pails.

The shaft is provided with feed holes for the proper distribution of the oil. Grooves are cut in the ball-retaining rings, for the purpose of allowing oil to flow into the ball races.

**Regulating Belt Tension** The adjustment for regulating the tension on the belt is exceedingly simple. It is only necessary to loosen one screw and tighten the other. Always see that both screws are tightened after any change has been made. A tension barely sufficient to drive the machine at full speed is all that is required. Additional tension would cause unnecessary wear on the belt, and the bearings would run hot. When the lower belt is shortened, it is advisable to swing the transmitter as close to the line shaft as the holes for the upper belt will permit.

**Cleaning** The transmitter shaft can be cleaned out from end to end by unscrewing the cup and plug which close the two ends. Should the transmitter be taken apart for any reason, it would be advisable to remove the balls from the ball races, and to wash thoroughly all the pieces; if an imperfect ball be found, it should be replaced with a new one. The ball races should then be refilled with the transmitter lubricant.

## POWER TRANSMITTER

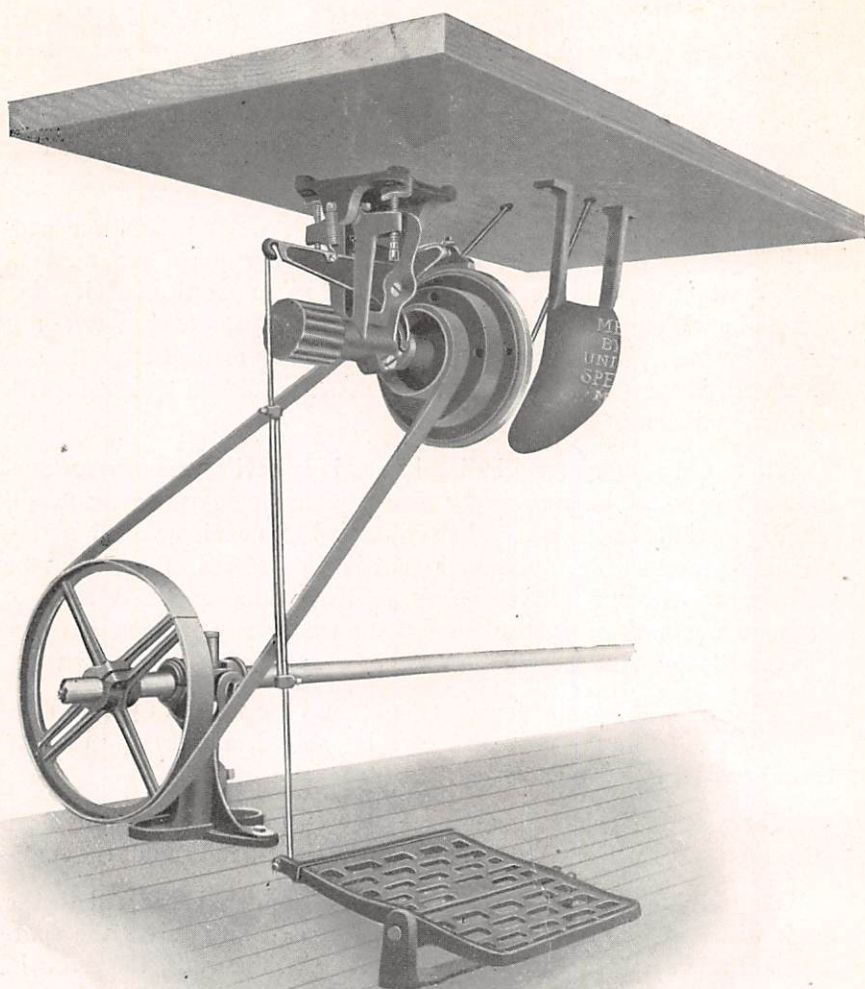
**Assembling** A spiral spring encircles the inside pulley hubs to force the pulleys apart when the pressure on the treadle is released. To avoid unnecessary wear, two wood fiber washers are placed at each end of the spring.

Care should be taken to see that the shaft is turned so that the oil holes are toward the line shaft pulley. In line with the oil holes, a notch is ground in the shaft plug so that the holes can be readily located after the transmitter has been assembled.

The lateral movement of the loose pulley on the shaft, as it engages and releases the brake pulley, should be reduced as much as possible. Only sufficient movement is required to stop the machine when the pressure on the treadle is released. Any additional movement will necessitate an increased treadle motion and cause the flat belt to run off the pulley. The adjustment is made by sliding the shaft in the bracket.



POWER TRANSMITTER



BELT ADJUSTING POWER TRANSMITTER

## MAKING REPAIRS

### ***Tension Posts***

These are slotted to regulate the tightness of the tension nut. Should a nut turn so freely that the tension becomes altered, turn the nut on to the post as far as it will go and slightly spread the post by forcing a wedge into the slot.

The tension posts have hardened steel ferrules. By unscrewing the tension post, the ferrule can be turned so that it will present a new surface to the thread.

### ***Grinding-In Bearings***

The bearings of the needle lever connection and similar parts are made a trifle smaller than the eccentric or the ball stud, to permit of their being ground-in with powdered oilstone. When a new shaft, stud or bar is placed in a machine, the bearings should only be reamed large enough to permit the part to move. Then, the part should be ground-in with powdered oilstone.

Do not use emery for grinding-in bearings having one or more surfaces of soft metal, because emery cannot be thoroughly washed out, and what is retained in the pores of the metal will indefinitely continue the grinding process. Though slow in cutting, powdered oilstone can be entirely washed out and therefore safely recommended. Where all surfaces are hard, as in the case of the looper rocker, looper rocker cone and looper rocker stud, flour emery can be advantageously used.

### ***Assembling***

To maintain the take-up and eccentrics in proper relation, the main shaft is spotted, and the position of these parts must not be changed.

The machine pulley is secured to the shaft with two pointed set screws, one of which enters the spline at the right-hand end of the shaft.

The combined needle lever and looper eccentric is secured to the shaft with two screws, one of which is pointed and enters the spot. Turning this eccentric in the direction the machine runs, the screw in the first hole coming into view must enter the spot. After tightening the eccentric on the shaft, force the shaft as far to the right as the face of the eccentric will permit, then move the machine pulley against the right end of frame in order to prevent end play of the shaft.

The take-up should be placed on the shaft so that, when turned in the direction the machine runs, the edges will rotate in the following order: (1) Large cut-away, (2) circular, and (3) small cut-away.

The needle bar should be fitted in its bearings freely enough to barely fall of its own weight.



## MAKING REPAIRS

The needle lever should be adjusted on its shaft so that after connecting it with the needle bar it will barely fall of its own weight.

The tube of the needle lever connection, should be turned so that the distance between centers is exactly  $5\frac{3}{8}$  inches. This will provide the necessary clearance for the needle bar connection.

A washer is placed at the back of the needle lever to act as a buffer between it and the needle lever connection. There should be a small space between it and the washer.

## NEEDLES

**Ordering** To have orders promptly and accurately filled, the empty package, a sample needle, or the full description should be given. See marks on packages. An intelligible order would read as follows:

100 needles, No. 8, round shank, No. 2 bag, round point.  
100 needles, No. 14, round shank, Class S, square point.

Success in the operation of these machines can be assured only by the use of genuine Union Special Needles, furnished by the Union Special Machine Company. Obviously, it is to our interest to maintain the reputation of the machines by furnishing the very best needles obtainable.

**Terms** Prices on needles are strictly net. Leaving the factory in perfect condition, packed with skillful care, they are forwarded at the buyer's risk, f. o. b., Chicago. Regular postage rates will be charged on all needles sent by mail.

**Illustrations** Each needle illustration shows: (1) A full size needle, (2) a magnified view of its point, and (3) its incision relative to the line of stitching, which is indicated by the dotted lines.

**Size of Needles** The No. 2 bag needles increase in size as follows: Nos. 6, 8, 9, and 10. The Class S needles are made in size No. 14 only.

**Length of Needles** The machines listed in this catalog use two different kinds of needles, namely: No. 2 bag and Class S. The measurements from the top of the shank to the top of the eye are, namely: No. 2 bag  $1\frac{21}{32}$  inches, Class S  $1\frac{3}{16}$  inches.



Round shank, No. 2 bag, round point, Nos. 6 and 8,	:	
per M	:	15 00
Round shank, No 2 bag, round point, Nos. 9 and 10,	:	
per M	:	20 00



Round shank, Class S, square point, No. 14,	:	
per M	:	55 00



## ILLUSTRATIONS AND PRICE LIST OF PARTS FOR REPAIRS ONLY

**Plates** Grouped according to scale will be found illustrations of parts similar in appearance and, to some extent, component parts that go together in the same subdivisions of the mechanism.

**Price List of Parts** Turning from the plates to the price list, the description of each part and its principal uses will be found to give all necessary information. Where a part is used on all machines, no specific use is mentioned in the description. The screw or screws belonging to each part are repeated after its description. If two or more parts in a group have the same general description and use the same screws; the screws are only specified after the last part in the group.

(—) A dash in the "Plate number" column of the price list indicates the absence of an illustration.

(‡) A double dagger in the "Number to order by" column indicates that the component parts cannot be furnished separately.

(\*) A star in the "Number to order by" column indicates that the part can only be furnished upon the return of the broken or worn out part. This rule we are forced to adopt because of the difficulty of protecting our customers and ourselves against improper use of these particular parts, which, like others, are furnished at list prices for repairs only.

**Ordering Goods** A large number of parts have their full numbers stamped upon them. Other parts, difficult to distinguish, are marked instead with identification letters.

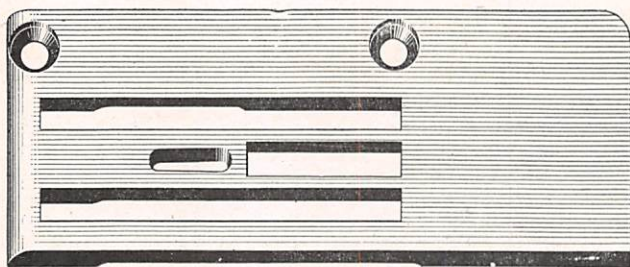
If customers furnish the number stamped on a piece, errors will be avoided and we shall be enabled promptly to duplicate the desired part. If only an identification letter is furnished, it should be accompanied with a general description of the part.

All part numbers represent the same part regardless of the catalog in which they appear.

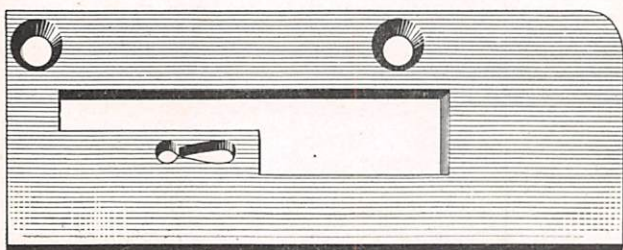
All supplies, including oil, belting, belt hooks, malleable iron belt lacings, taps, reamers, screw drivers and powdered oilstone, will be promptly furnished.

**Terms** Attention is directed to our established practice. Prices on all parts and supplies are strictly net. Being shipped in perfect condition, packed with skillful care, they are forwarded at the buyer's risk, f. o. b., Chicago. Regular postage rates will be charged on all goods sent by mail.

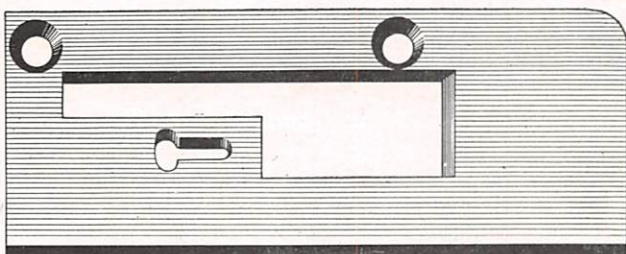
PLATE NO. 1—Full Size.



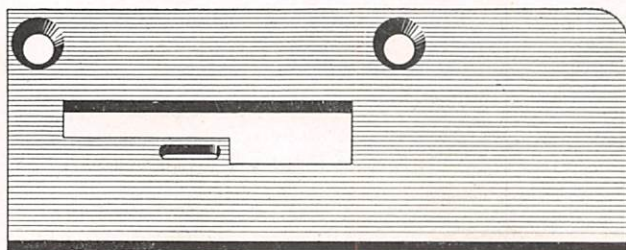
30124



30124 A



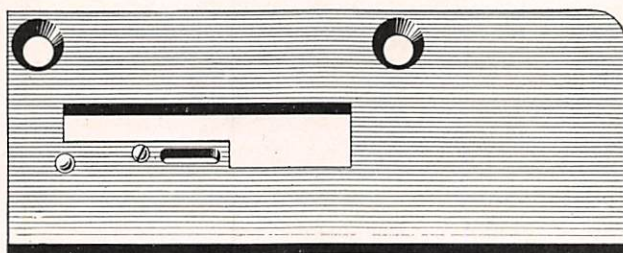
30124 C



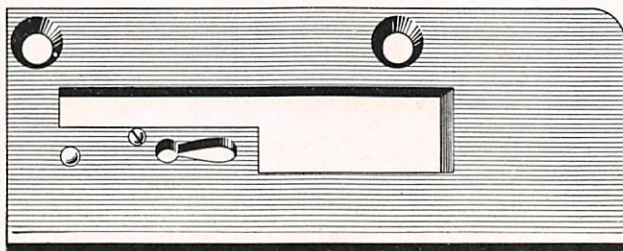
30124 D



PLATE No. 2—Full Size.



30124 E



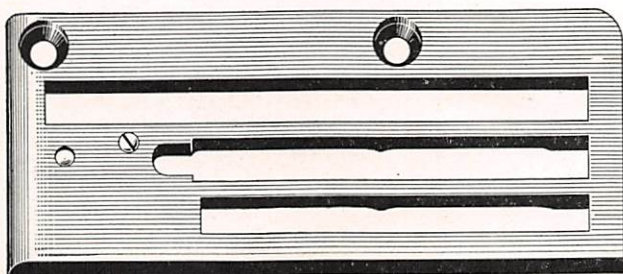
30124 B



30111 G



27 X



30124 G

PLATE NO. 3—Full Size.

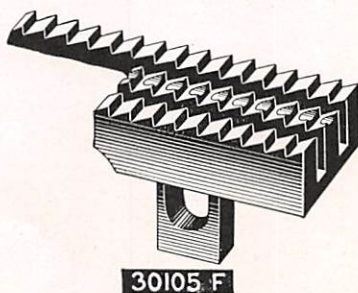
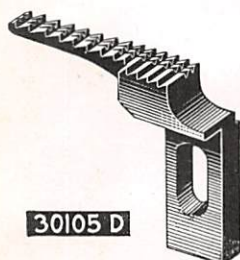
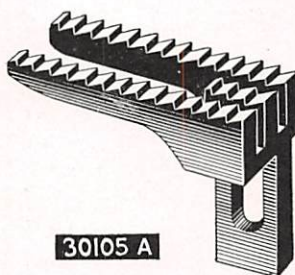
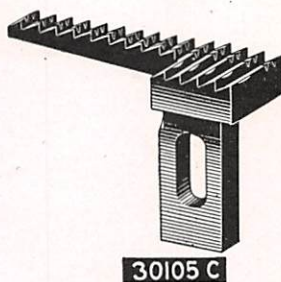
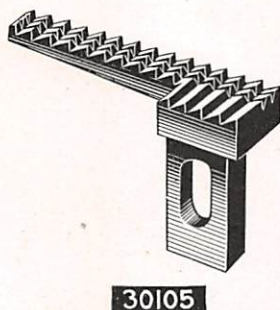
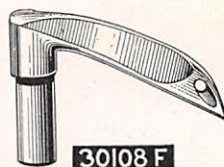
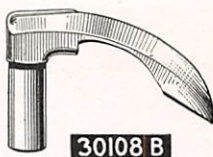
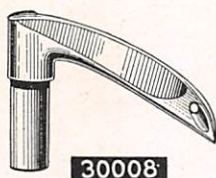
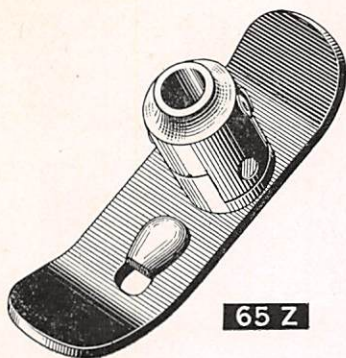
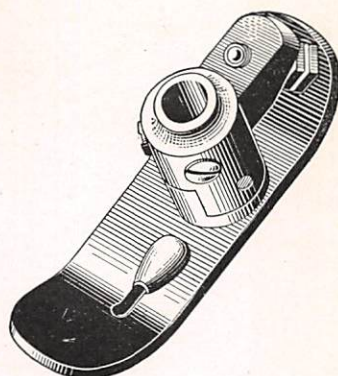




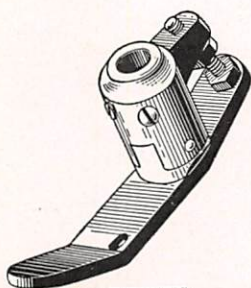
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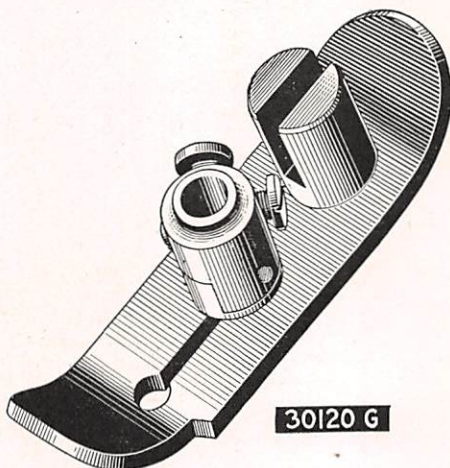
65 Z



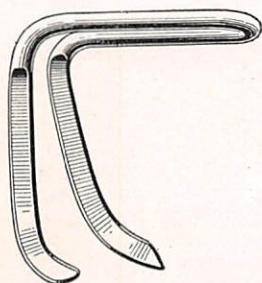
30120



30120 D



30120 G



360 A



21225 - 1/4



30125 F

PLATE No. 5—Full Size.





PLATE No. 6—Full Size.



240



9675



22715



525



42A



334



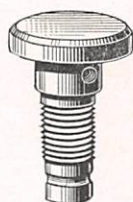
22587



22587 B



22598 A



22720



30152 A



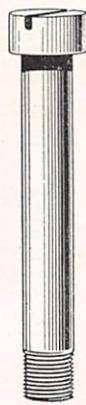
82



12993 A



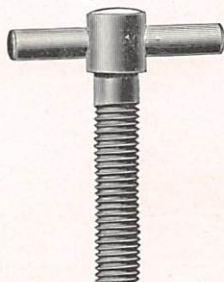
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30036



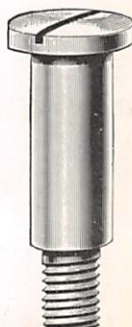
22718



64X



30160



420

PLATE NO. 7—Full Size.



1230 B



1286 B



12964 B



1349



12964 C



1230 D



30141 F



30191



426



30156 A



11261 B



12454 B



15432



11261 A



12454 A



333



PLATE NO. 8—Full Size.



1/8



37.L



37.R



258



907



64.B



1280



15430 C



15430 D



15433



30132



30150



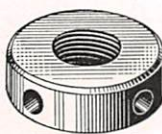
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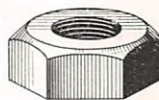
12957 E



108



30077



30078



30169 H



109



12873



30042

PLATE No. 9—One-half Size.



30149



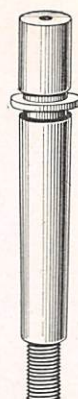
12841



30163



30146



30076



30164



8



30169



30169 E



30168



30168 F



PLATE No. 10—One-half Size.



1286



1286 A



30144



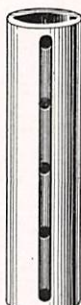
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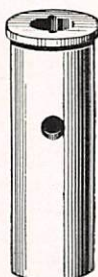
30145 A



30090 A



30186



30090 B



30187



30185



30117



30117 C



30117 F



30122

PLATE NO. 11—One-half Size.

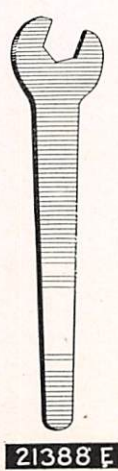
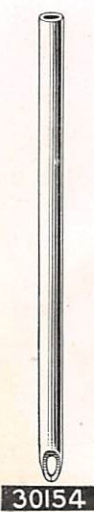
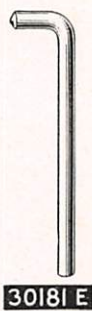
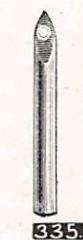
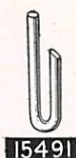




PLATE No. 12—One-half Size.



56



56 Z



460



9271



14649



107



30171



30153



104



15431



30073



30155 C



54



30143



21350



30134



523



524



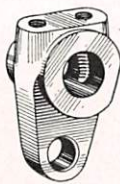
36 L



36 R



30041



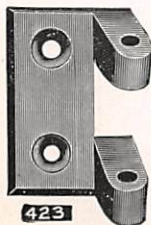
30165 A



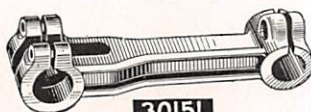
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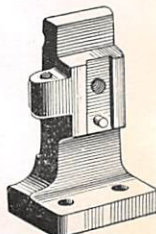
30167 F



423

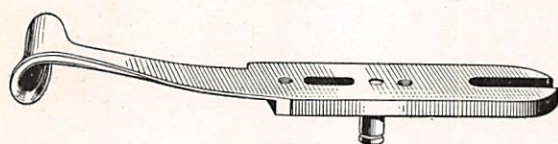


30151



30175

PLATE No. 13—One-half Size.



30103 E



30193



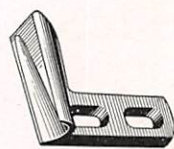
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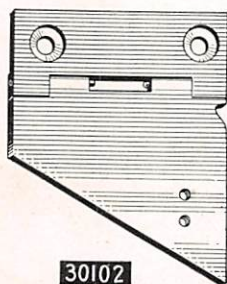
30137 F



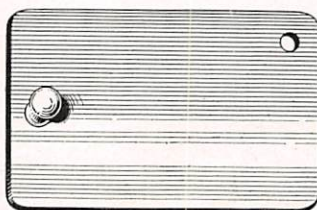
24 X



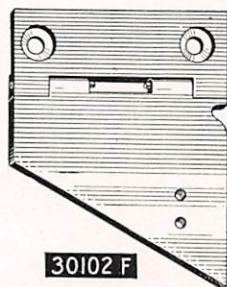
30103 G



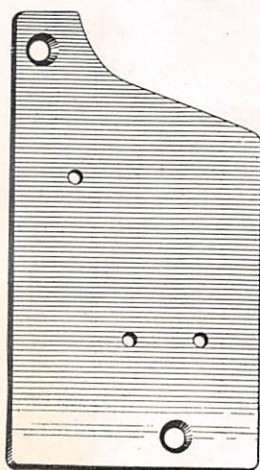
30102



30190



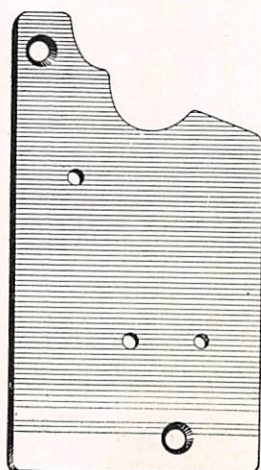
30102 F



30180



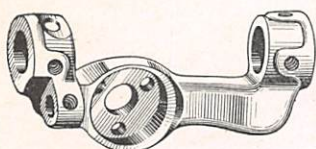
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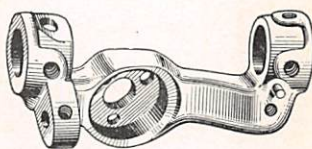
30180 F



PLATE No. 14—One-half Size.



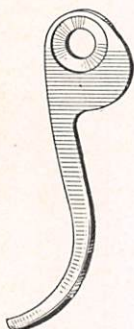
30162



30162 F



30161



30170



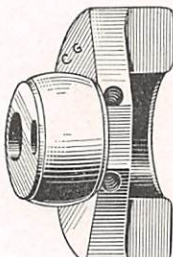
30113



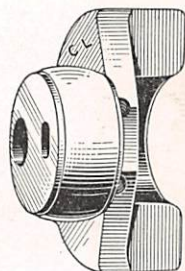
30170 F



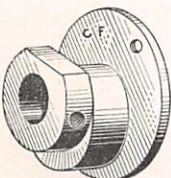
101



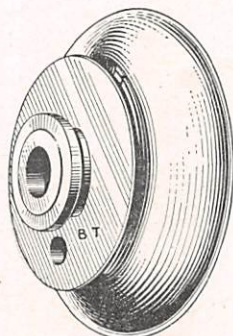
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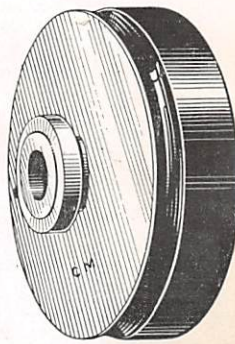
30131 F



30106



30021



30121 F

PLATE No. 15—One-fourth Size.



1230



1230 A



15430 L



30116



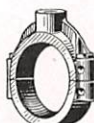
30116 F



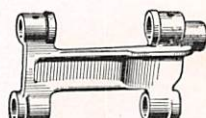
30130



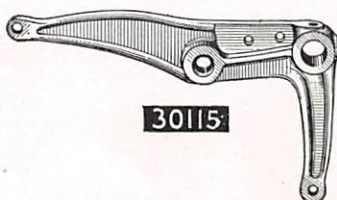
15430



30131 G



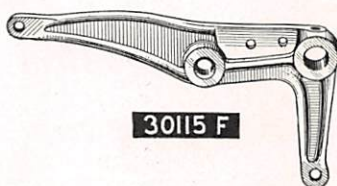
30148



30115



30155 A



30115 F



30155 F



PLATE No. 16—One-fourth Size



30069



30169 G



21252 C



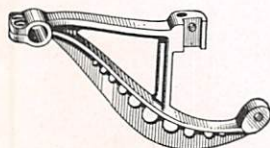
419 A



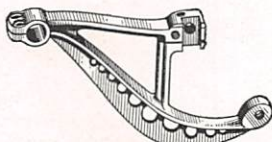
21251 C



30189



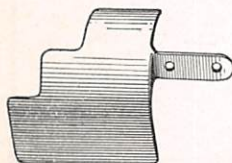
30142



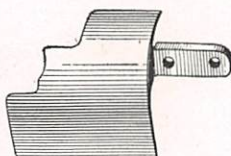
30142 F



421



30157

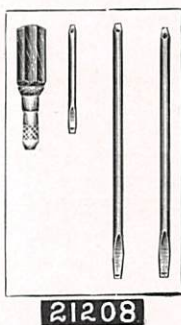


30157 F



422

PLATE No. 17—One-eighth Size.





## PRICE LIST OF PARTS

[8-88 A]

THESE PARTS ARE FURNISHED AT LIST PRICES FOR REPAIRS ONLY.  
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TERMS ON PARTS, NET CASH			
8	9	Feed Rocker Shaft ( $5\frac{3}{16}$ inches long, hardened and ground) sizes .407, .408, .410, .413 and .416.....	\$0 45
18	8	Looper Connection Rod Ball Joint Nut.....	10
24 X	13	Cloth Plate Gauge.....	20
		“ “ “ Screws No. 22514.....	08
25 CC	5	Screw, for cloth plate hinged covers, also for No. 30134..	04
27 X	2	Loop Retainer, for Styles 30100 B and 30100 E.....	06
28	5	“ “ “ Screw.....	04
28 C	5	Screw, for adjusting loop retainer No. 30111 G.....	03
‡ 36 L	12	Looper Connection Rod Ball Joint, left, complete.....	1 25
‡ 36 R	12	“ “ “ Rod Ball Joint, right, complete.....	1 25
		“ “ “ Rod Ball Joint Screws No. 97 A.....	04
37 L	8	“ “ “ Rod Nut, left thread.....	10
37 R	8	“ “ “ Rod Nut, right thread.....	10
42 A	6	Foot Lift Lever Screw Pin (hardened) also for No. 30193	10
54	12	Needle Bar Link (hardened).....	75
56	12	Needle Clamp Nut (hardened) for single needle machines	20
56 Z	12	“ “ “ Collar, for double needle machines.....	40
64 B	8	Presser Spring Screw Regulator Check Nut.....	10
64 X	6	“ “ “ Screw Regulator.....	20
65 Z	4	“ “ “ Foot, for Style 30100 C.....	70
		“ “ “ Screws No. 88.....	03
73	5	Set Screw, for loopers, also stop screw for hemming guide lever.....	05
77	5	Screw, lower, for needle bar link pins, also for No. 30155 C	03
77 A	5	Needle Set Screw, for double needle machines.....	03
78	5	Screw, upper, for needle bar link pins, also for Nos. 30144 and 30145.....	03
79	5	Clamp Screw, for feed bars.....	04
80	5	Screw, for face plates.....	05
81	5	Spot Screw, right, for looper rocker frames, also for Nos. 30131 and 30131 F.....	03
82	6	Hemming Guide Stop Screw.....	08
86 X	5	Hinge Screw, for presser feet.....	08
87	5	Screw, for throat plates, also for No. 360 A.....	04
87 U	5	“ “ “ for cloth plate hinged cover springs, also for Nos. 30111 G and 30192.....	04
88	5	“ “ “ headless, for presser feet, also for Nos. 460, 15491 B. 30042, 30133, 30148 and 30181 E.....	03
88 A	5	Set Screw, for needle bars.....	04

‡ See Page No. 31.

## PRICE LIST OF PARTS

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TERMS ON PARTS, NET CASH			
89	5	Screw, for take-up, also for No. 30042.....	\$0 03
90	5	" for looper rocker frame thread eyelet.....	04
91	5	" for looper rocker cone.....	04
93	5	" ( $\frac{7}{16}$ inch long) for feed dogs, also for No. 30125 F.....	04
93 A	5	" for foot lift lever extension, also for No. 30157... ..	04
94	5	" for take-up thread eyelet spring, also for No. 30135.....	04
95	5	Set Screw, for looper rocker frames, also for Nos. 335, 336, 337, 30106, 30131, 30131 F, 30181 D and 30181 F.....	03
96	5	Spot Screw, left, for looper rocker frames, also for Nos. 30167 and 30167 F.....	03
97	5	Screw, for supporting feed dogs. also for Nos. 103 and 30167.....	04
97 A	5	" for looper connection rod ball joints.....	04
98	5	" for front cover bolt collar, also for No. 424.....	03
101	14	Take-up.....	75
		" Screw No. 89.....	03
103	11	" Thread Eyelet.....	20
		" " " Support Screw No. 97.....	04
104	12	" " " Spring.....	05
		" " " Spring Screw No. 94.....	04
105	17	Machine Thumb Screw, $1\frac{1}{2}$ , $2\frac{1}{2}$ , 3, $3\frac{1}{2}$ , 4, $4\frac{1}{2}$ , 5, $5\frac{1}{2}$ and 6 inches.....	15
107	12	Tension Spring Ferrule.....	06
108	8	" Nut.....	05
109	8	" Disc (hardened).....	05
116	11	Wrench (hardened) for needle clamp nut, also for Nos. 906 and 907.....	10
118 B	11	Thread Tweezers.....	20
135	5	Screw, for edge guide.....	06
170	17	" Driver, round steel (diameter $\frac{7}{32}$ inch, length over all nine inches).....	30
240	6	" for back cover.....	10
258	8	Looper Rocker Stud Nut, also for No. 22720.....	10
333	7	Tension Post, solid (length over all $2\frac{13}{16}$ inches).....	30
335	11	" Thread Eyelet, with one eye (length over all $2\frac{1}{8}$ inches).....	08
336	11	" " " with two eyes.....	12
337	11	" " " with one eye (length over all $1\frac{7}{16}$ inches).....	07
		" " " Screw No. 95.....	03
360 A	4	Cast-off Wire.....	30
		" " Screw No. 87.....	04
413	17	Oil Can.....	10



# PRICE LIST OF PARTS

[419 A-11261 A]

THESE PARTS ARE FURNISHED AT LIST PRICES FOR REPAIRS ONLY  
SEE NOTICE ON PAGE 3.

Number to order by	Plate No.	Postage will be charged on all parts sent by mail. Figures in second column refer only to plates illustrating parts, and are not to be used in ordering. Prices subject to change without notice.	Price per part
TERMS ON PARTS, NET CASH			
419 A	16	Foot Lift Lever Extension.....	\$0 25
420	6	" " " Extension Screws No. 93 A.....	04
421	16	" " " Stud.....	20
422	16	" " Chain (thirty-eight inches long).....	15
423	12	" " Treadle.....	20
424	12	" " Treadle Rest.....	15
424	11	" " Treadle Pin.....	05
426	7	" " Treadle Pin Screw No. 98.....	03
426A	11	" " Lever Spring.....	05
460	11	" " Lever Spring Pin.....	01
523	12	Feed Rocker Stud Collar.....	20
524	12	" " Stud Collar Screw No. 88.....	03
525	6	Cloth Plate Extension Bolt.....	15
906	5	" " " Bolt Spring.....	04
907	8	" " " Bolt Knob.....	10
1230	15	Screw (hexagon head) to tilt bottom of presser feet Nos. 30120 and 30120 D.....	08
‡ 1230 A	15	Check Nut, for No. 906.....	10
	15	Needle Lever Connection Bearing, upper, complete.....	1 00
		" " " Bearing, upper, without spring, pin, or screw.....	85
		" " " Bearing Screws No. 22587.....	05
1230 B	7	" " " Bearing Spring.....	05
1230 D	7	" " " Bearing Spring Pin.....	06
		" " " Bearing Spring Pin Screw No. 22586 A.....	05
1280	8	Feed Rocker Pitman Stud Nut.....	10
1286	10	Needle Bar Link Pin (hardened and ground) complete, internal oiling.....	30
		" " " " Screw, upper, No. 78.....	03
		" " " " Screw, lower, No. 77.....	03
1286 A	10	" " " " (hardened and ground) internal oiling, without spring, ball or screw.....	20
1286 B	7	" " " " Spring.....	04
		" " " " Spring Screw No. 22560.....	03
1349	7	Tension Spring (.036-inch diameter wire).....	04
3341	6	Screw, for hemming guide lever.....	12
9271	12	Collar, for front cover bolt.....	25
		" Screw No. 98.....	03
9675	6	Screw, for presser foot lifter No. 30170 F.....	15
11261 A	7	Tension Post (length over all $1\frac{7}{8}$ inches) for use with hardened steel ferrule No. 11261 B.....	25

‡ See Page No. 31.

[11261 B-21206]

## PRICE LIST OF PARTS

THESE PARTS ARE FURNISHED AT LIST PRICES FOR REPAIRS ONLY.  
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Number to order by	Plate No.	Postage will be charged on all parts sent by mail. Figures in second column refer only to plates illustrating parts, and are not to be used in ordering. Prices subject to change without notice.	Price per part
TERMS ON PARTS, NET CASH			
11261 B	7	Tension Post Ferrule (hardened, length over all $\frac{3\frac{1}{4}}{64}$ inch) for use with tension post No. 11261 A...	\$0 10
12454 A	7	" " (length over all $1\frac{3}{4}$ inches) for use with hardened steel ferrule No. 12454 B.....	30
12454 B	7	" " Ferrule (hardened, length over all $\frac{3\frac{7}{8}}{64}$ inch) for use with tension post No. 12454 A...	12
12841	9	Looper Connection Rod (length over all $5\frac{5}{8}$ inches).....	20
12873	8	Bushing (ground) for needle bar bearings.....	25
12957 E	8	Spring Washer, for back cover, also for No. 30170 F....	08
12964 B	7	Feed Bar Link Pin Spring.....	05
		" " " " Spring Screw No. 22560.....	03
12964 C	7	" " " " Spring Ball, also for No. 1286.....	02
12988 A	5	Set Screw (hexagon head) for needle levers.....	06
12993 A	6	Needle Avoiding Adjusting Screw.....	12
14649	12	Feed Bar Shaft Collar.....	30
		" " " " Screws No. 22558.....	04
† 15430	15	Needle Lever Connection Bearing, lower, for Styles 30100 A, 30100 B, 30100 C, 30100 D and 30100 E.....	75
		" " Connection Bearing Screws No. 22587.....	05
15430 C	8	" " Connection Tube Nut, upper, left thread..	10
15430 D	8	" " Connection Tube Nut, lower, right thread..	10
15430 L	15	" " Connection Tube Felt.....	02
15431	12	" " Washer (wood fibre).....	08
15432	7	" " Ball (hardened).....	50
15433	8	" " Ball Nut (hardened) also for No. 30156 A..	20
15491	11	Frame Looper Thread Guide Wire, for Style 30100 F....	05
15491 B	11	" Needle Thread Guide Wire, for Styles 30100 A, 30100 B, 30100 C, 30100 D, 30100 E and Needle Lever Pull-off Wire, for Style 30100 F.....	05
		" Needle Thread Guide Wire and Needle Lever Pull-off Wire Screw No. 88.....	03
21201	17	Screw Driver, round steel, diameter $\frac{5}{32}$ inch, length over all nine inches.....	30
21202	—	" " round steel, diameter $\frac{7}{32}$ inch, length over all $10\frac{3}{16}$ inches.....	40
21203	—	" " round steel (diameter $\frac{7}{32}$ inch, length over all fifteen inches).....	50
21204	—	" " round steel (diameter $\frac{1}{4}$ inch, length over all fifteen inches).....	60
21205	—	" " octagon steel (diameter $\frac{5}{16}$ inch, length over all fifteen inches).....	75
21206	17	" " Wrench, steel handle.....	15

†See Page No. 31.



# PRICE LIST OF PARTS

[21207-22715]

THESE PARTS ARE FURNISHED AT LIST PRICES FOR REPAIRS ONLY.

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Number to order by	Plate No.	Postage will be charged on all parts sent by mail. Figures in second column refer only to plates illustrating parts, and are not to be used in ordering. Prices subject to change without notice.	Price per part
TERMS ON PARTS, NET CASH			
21207	17	Screw Driver, round steel (diameter $\frac{5}{64}$ inch, length over all $3\frac{7}{8}$ inches) for loop retainer adjusting screw.....	\$ 0 10
21208	17	" " chuck handle, including three blades.....	1 25
21225- $\frac{1}{4}$	4	Looper Gauge, $\frac{1}{4}$ inch.....	20
21251 C	16	Foot Lift Lever, complete, for Styles 30100 F and 30100 G.....	80
21252 C	16	" " Lever.....	45
21350	12	Malleable Iron Belt Lacings, for one-inch flat belt, per dozen.....	15
21351	—	Wire Belt Hooks, for $\frac{9}{32}$ -inch round belt, per five hundred ( $\frac{1}{4}$ cent each in quantities less than five hundred)	50
21388 B	11	Wrench ( $\frac{1}{2}$ inch, $4\frac{3}{8}$ inches long hardened) for needle lever connection tube nuts, also for No. 15433.....	20
21388 E	11	" ( $\frac{3}{8}$ inch, $4\frac{3}{8}$ inches long, hardened) for Nos. 18, 1280, 12988 A, 12993 A and 30150.....	25
‡ 21400	—	Expansion Reamer, complete, size .257, for needle bar...	4 50
‡ 21408	—	" " " size .319, for presser bar and presser guide bar..	5 50
‡ 21420	—	" " " izes .407, .410 and .413, for feed rocker shaft and feed bar shaft.....	6 00
21442	—	Taper Reamer, complete, for needle bar link pins and feed bar link pins.....	1 50
22514	5	Screw, for cloth plate gauge.....	08
22517	5	" for foot lift lever bracket.....	05
22539	—	" for main shaft sponge hole.....	10
22558	5	Set Screw, for feed bar shaft collar.....	04
22560	5	Screw, for needle bar link pin spring, also for No. 12964 B.....	03
22570	5	" for presser feet Nos. 30120 F and 30120 G.....	05
22571 A	5	Overhanging Frame Plug Screw.....	05
22574	5	Screw, for cloth plates, also for No. 30042.....	06
22581	5	" for presser spring, also for No. 30169 H.....	06
22586 A	5	" for needle lever connection bearing spring.....	05
22587	6	" lower, for combined feed and looper eccentric connections, also for Nos. 1230, 1230 A, 15430 and 30131 G.....	05
22587 B	6	" upper, for combined feed and looper eccentric connections.....	04
22596	5	" for oil guard No. 30157 F, also for No. 30175....	04
22597	5	" for pulleys.....	03
22598 A	6	" for presser foot lifter roller.....	10
22714	5	" for looper rocker frame arm.....	04
22715	6	" for presser foot lifter No. 30170.....	10

‡ See Page No. 31.

[22718-30102]

## PRICE LIST OF PARTS

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TERMS ON PARTS, NET CASH			
22718	6	Screw, for regulating stitch on Styles 30100 A, 30100 B, 30100 C, 30100 D and 30100 E.....	\$0 10
22719	6	" for feed dog No. 30105 F.....	15
22720	6	Hemming Guide Aligning Screw.....	25
22729	5	Screw, for feed rocker pitman.....	05
29131 B	—	Nos. 1230 and 15432 assembled and lapped together....	1 75
29140 D	—	Nos. 30155 A, 30106 and 30156 A assembled and lapped together.....	6 15
29140 E	—	Nos. 30155 F, 30106 and 30156 A assembled and lapped together.....	6 15
29141	—	Nos. 30131 and 15430 assembled and lapped together....	2 75
29141 A	—	Nos. 30131 F and 30131 G assembled and lapped together	3 00
29402	—	Nos. 422, 98, 423 and 424, assembled.....	40
30008	3	Looper, for Styles 30100 A, 30100 C and 30100 D.....	1 00
		" Set Screw No. 73.....	05
30021	14	Pulley (marked B T, diameter of belt groove $2\frac{1}{16}$ inches)	1 75
		" Screws No. 22597.....	03
30036	6	Cloth Plate Extension Pivot Screw (hardened).....	20
30041	12	Front Cover Bolt, including lock pin.....	35
30042	8	" " " Knob.....	40
		" " " Knob Spot Screw No. 89.....	03
		" " " Knob Set Screw No. 88.....	03
		" " " Knob Adjusting Screw No. 22574....	06
30069	16	Presser Spring (marked 30069).....	35
30072	11	Needle Bar Thread Guide, without screw hole, for needle bars Nos. 30117 and 30117 C.....	05
30073	12	" " Connection.....	45
30075	11	Oil Tube (short).....	15
30076	9	Needle Lever Shaft (hardened and ground).....	1 00
30077	8	" " " Collar Nut (hardened).....	25
30078	8	" " " Check Nut (hardened).....	20
30090 A	10	Bushing (ground) for presser bar bearings.....	25
30090 B	10	" " for needle lever shaft.....	1 20
30101	—	Cloth Plate, complete with extension, for Styles 30100 A, 30100 B, 30100 C, 30100 D and 30100 E....	3 05
30101 A	17	" " for Styles 30100 A, 30100 B, 30100 C, 30100 D and 30100 E.....	2 00
30101 F	—	" " complete with extension, for Styles 30100 F and 30100 G.....	4 15
30101 G	17	" " for Styles 30100 F and 30100 G.....	2 00
		" " Screws No. 22574.....	06
30102	13	" " Hinged Cover, for Styles 30100 A, 30100 B, 30100 C, 30100 D and 30100 E.....	80



# PRICE LIST OF PARTS

[30102 F - 30120 G]

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TERMS ON PARTS, NET CASH			
30102 F	13	Cloth Plate Hinged Cover, for Styles 30100 F and 30100 G	\$1 00
		" " Hinged Cover Screws No. 25 CC.....	04
30103 E	13	Hemming Guide.....	3 00
30103 G	13	Edge Guide, for Styles 30100 F and 30100 G.....	60
		" " Screws No. 135.....	06
30105	3	Feed Dog, for Styles 30100 A and 30100 B.....	45
30105 A	3	" " for use with throat plate No. 30124 (maximum length of stitch $\frac{3}{8}$ inch).....	1 10
30105 C	3	" " for Style 30100 C.....	55
30105 D	3	" " for Styles 30100 D and 30100 E.....	55
		" " Screw No. 93.....	04
30105 F	3	" " for Styles 30100 F and 30100 G.....	1 00
		" " Screw No. 22719.....	15
30106	14	Combined Feed and Looper Eccentric (hardened and ground, marked C F).....	1 75
		" " and Looper Eccentric Screws No. 95....	03
30108 B	3	Looper, for Styles 30100 B, 30100 E and 30100 G.....	1 00
30108 F	3	" for Style 30100 F.....	1 00
		" Set Screw No. 73.....	05
30111 G	2	Loop Retainer (marked S) for Style 30100 G.....	20
		" " Screw No. 87 U.....	04
30113	14	Looper Rocker (hardened).....	1 20
30115	15	Needle Lever, for Styles 30100 A, 30100 B, 30100 C, 30100 D and 30100 E.....	1 75
30115 F	15	" " for Styles 30100 F and 30100 G.....	1 75
		" " Set Screws No. 12988 A.....	06
30116	15	" " Connection, complete, for Styles 30100 A, 30100 B, 30100 C, 30100 D and 30100 E.....	2 25
30116 F	15	" " Connection, complete, for Styles 30100 F and 30100 G.....	2 50
30117	10	Needle Bar (hardened and ground) size .257, for Styles 30100 A, 30100 B, 30100 D and 30100 E..	1 00
* 30117 C	10	" " (hardened and ground) size .257, for Style 30100 C.....	1 50
30117 F	10	" " (hardened and ground) size .257, for Styles 30100 F and 30100 G.....	1 00
		" " Set Screws No. 88 A.....	04
30120	4	Presser Foot, for Styles 30100 A and 30100 B.....	1 00
30120 D	4	" " for Styles 30100 D and 30100 E.....	1 20
		" " Screws No. 88.....	03
30120 G	4	" " for Styles 30100 F and 30100 G.....	1 80
		" " Screws No. 22570.....	05

\* See Page No. 31.

[30121 F - 30137]

## PRICE LIST OF PARTS

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TERMS ON PARTS, NET CASH			
30121 F	14	Pulley (marked C M, diameter of belt groove three inches) for Styles 30100 F and 30100 G.....	\$2 00
		“ Screws No. 22597.....	03
30122	10	Main Shaft (hardened and ground) size .530.....	1 50
30124	1	Throat Plate, for use with feed dog No. 30105 A (maximum length of stitch $\frac{3}{8}$ inch).....	1 15
30124 A	1	“ “ for Style 30100 A.....	70
30124 B	2	“ “ for Style 30100 B.....	90
30124 C	1	“ “ for Style 30100 C.....	1 00
30124 D	1	“ “ for Style 30100 D.....	70
30124 E	2	“ “ for Style 30100 E.....	90
30124 G	2	“ “ for Styles 30100 F and 30100 G.....	1 50
		“ “ Screws No. 87.....	04
30125 F	4	Feed Bar Needle Guard (hardened, marked C A) for Styles 30100 F and 30100 G.....	60
		“ “ “ “ Screw No. 93.....	04
30130	15	Needle Lever Connection Tube.....	30
30131	14	Combined Needle Lever and Looper Eccentric (marked CG) for Styles 30100A, 30100B, 30100 C, 30100 D and 30100 E.....	1 75
30131 F	14	“ “ “ and Looper Eccentric (marked C L) for Styles 30100 F and 30100 G.....	1 75
		“ “ “ and Looper Eccentric Spot Screw No. 81.....	03
		“ “ “ and Looper Eccentric Set Screw No. 95.....	03
‡ 30131 G	15	Needle Lever Connection Bearing, lower, for Styles 30100 F and 30100 G.....	1 00
		“ Lever Connection Bearing Screws No. 22587....	05
30132	8	“ Avoiding Adjusting Screw Washer.....	06
30133	11	“ Lever Pull-off Wire, for Styles 30100 A, 30100 B, 30100 C, 30100 D and 30100 E..	05
		“ “ “ Wire Screw No. 88.....	03
30134	12	“ “ “ Wire Holder.....	20
		“ “ “ Wire Holder Screw No. 25 CC....	04
30135	13	“ “ “ Wire Holder Arm.....	35
		“ “ “ Wire Holder Arm Screws No. 94 ..	04
30136	17	Cloth Plate Extension, for Styles 30100 A, 30100 B, 30100 C, 30100 D and 30100 E.....	85
30136 F	17	“ “ Extension, for Styles 30100 F and 30100 G..	1 65
30137	13	“ “ Hinged Cover Spring, for Styles 30100 A, 30100 B, 30100 C, 30100 D and 30100 E..	10

‡ See Page No. 31.



# PRICE LIST OF PARTS

[30137F-30156A]

THESE PARTS ARE FURNISHED AT LIST PRICES FOR REPAIRS ONLY.

SEE NOTICE ON PAGE 3.

Number to order by	Plate No.	Postage will be charged on all parts sent by mail. Figures in second column refer only to plates illustrating parts, and are not to be used in ordering. Prices subject to change without notice.	Price per part
TERMS ON PARTS, NET CASH			
30137 F	13	Cloth Plate Hinged Cover Spring, for Styles 30100 F and 30100 G.....	\$0 20
		“ “ Hinged Cover Spring Screws No. 87 U.....	04
30140	17	Front Cover, for Styles 30100 A, 30100 B, 30100 C, 30100 D and 30100 E.....	3 00
30140 F	17	“ “ for Styles 30100 F and 30100 G.....	3 50
30141 F	7	“ “ Looper Thread Eyelet, for Style 30100 F..	25
30142	16	Feed Bar, for Styles 30100 A, 30100 B, 30100 C, 30100 D and 30100 E.....	1 15
30142 F	16	“ “ for Styles 30100 F and 30100 G.....	1 25
		“ “ Clamp Screws No. 79.....	04
30143	12	“ “ Link (hardened).....	85
30144	10	“ “ Link Pin, complete, internal oiling (hardened and ground).....	45
30145	10	“ “ Link Pin, internal oiling, without spring, ball or screw (hardened and ground).....	35
		“ “ Link Pin Screws No. 78.....	03
30145 A	10	“ “ Link Pin, solid (hardened and ground).....	15
		“ “ Link Pin Screws No. 88.....	03
30146	9	“ “ Shaft (hardened and ground) size .407.....	60
30148	15	Feed Rocker.....	1 00
		“ “ Screws No. 88.....	03
30149	9	“ “ Stud, adjustable (hardened and ground)...	70
30150	8	“ “ Stud Nut (hardened).....	10
30151	12	“ “ Pitman.....	85
		“ “ Screws No. 22729.....	05
30152 A	6	“ “ Stud (hardened and ground).....	40
30153	12	“ “ Ferrule (hardened and ground)....	20
30154	11	Oil Tube (long).....	25
‡ 30155 A	15	Combined Feed and Looper Eccentric Connection, for Styles 30100 A, 30100 B, 30100 C, 30100 D and 30100 E.....	3 50
30155 C	12	Stitch Regulating Screw Cap.....	15
		“ “ Screw Cap Screws No. 77.....	03
‡ 30155 F	15	Combined Feed and Looper Eccentric Connection, for Styles 30100 F and 30100 G.....	3 50
		“ “ and Looper Eccentric Connection Screws, lower, No. 22587.....	05
		“ “ and Looper Eccentric Connection Screws, upper, No. 22587 B.....	04
30156 A	7	Looper Rocker Frame Arm Ball Stud (hardened).....	40

‡ See Page No. 31.

[30157-30169]

## PRICE LIST OF PARTS

THESE PARTS ARE FURNISHED AT LIST PRICES FOR REPAIRS ONLY.  
SEE NOTICE ON PAGE 3.

Number to order by	Plate No.	Postage will be charged on all parts sent by mail. Figures in second column refer only to plates illustrating parts, and are not to be used in ordering. Prices subject to change without notice.	Price per part
TERMS ON PARTS, NET CASH			
30157	16	Oil Guard, for Styles 30100 A, 30100 B, 30100 C, 30100 D and 30100 E.....	\$0 60
		“ “ Screws No. 93 A.....	04
30157 F	16	“ “ for Styles 30100 F and 30100 G.....	1 00
		“ “ Screws No. 22596.....	04
30158 F	8	Feed Dog Screw Nut.....	15
30160	6	Looper Rocker Stud (hardened).....	35
30161	14	“ “ Cone (hardened).....	60
		“ “ Cone Screws No. 91.....	04
30162	14	“ “ Frame, for Styles 30100 A, 30100 B, 30100 C, 30100 D and 30100 E.....	1 50
30162 F	14	“ “ Frame, for Styles 30100 F and 30100 G..	1 50
		“ “ “ Spot Screw, left, No. 96.....	03
		“ “ “ Set Screw, left, No. 95.....	03
		“ “ “ Spot Screw, right, No. 81.....	03
		“ “ “ Set Screw, right, No. 95.....	03
30163	9	“ “ “ Shaft, right (hardened and ground) size .500..	55
30164	9	“ “ “ Shaft, left (hardened and ground) size .500.....	40
30165 A	12	“ “ “ Arm.....	95
		“ “ “ Arm Screws No. 22714.....	04
30166 F	11	“ “ “ Thread Eyelet, for Style 30100 F	30
		“ “ “ Thread Eyelet Screw No. 90.....	04
30167	12	Presser Bar Connection and Presser Spring Rest.....	85
		“ “ “ and Presser Spring Rest Spot Screw No. 96 .....	03
		“ “ “ and Presser Spring Clamp Screw No. 97 .....	04
30167 F	12	“ Guide Bar Connection and Presser Spring Rest, for Styles 30100 F and 30100 G.....	85
		“ Guide Bar Connection and Presser Spring Rest Set Screw No. 96.....	03
30168	9	“ Bar (hardened and ground) size .319 for Styles 30100 A, 30100 B, 30100 C, 30100 D and 30100 E.....	75
30168 F	9	“ Bar (hardened and ground) size .319, for Styles 30100 F and 30100 G.....	80
30169	9	“ Guide Bar (hardened and ground) size .319, for Styles 30100 A, 30100 B, 30100 C, 30100 D and 30100 E.....	70

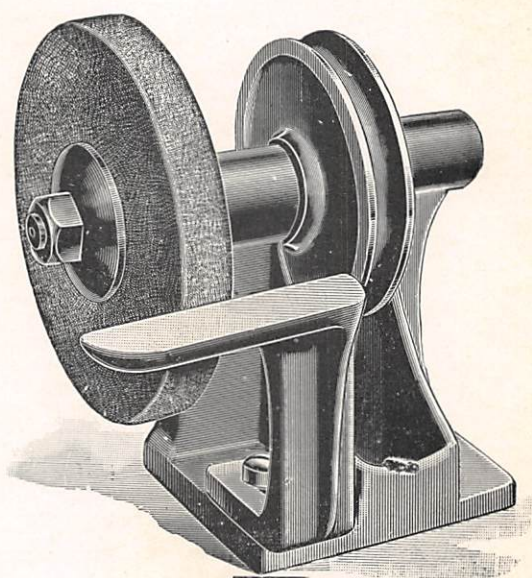


# PRICE LIST OF PARTS

[30169 E-30193]

THESE PARTS ARE FURNISHED AT LIST PRICES FOR REPAIRS ONLY.  
SEE NOTICE ON PAGE 3.

Number to order by	Plate No.	Postage will be charged on all parts sent by mail. Figures in second column refer only to plates illustrating parts, and are not to be used in ordering. Prices subject to change without notice.	Price per part
TERMS ON PARTS, NET CASH			
30169 E	9	Presser Guide Bar (hardened and ground) size .319, for Styles 30100 F and 30100 G.....	\$1 00
30169 G	16	" Spring (marked 30169 G).....	35
30169 H	8	" Spring Retainer, for Styles 30100 F and 30100 G.....	15
		" " " Screw No. 22581.....	06
30170	14	" Foot Lifter (hardened) for Styles 30100 A, 30100 B, 30100 C, 30100 D and 30100 E.....	65
		" " " Screw No. 22715.....	10
30170 F	14	" " " (hardened) for Styles 30100 F and 30100 G.....	1 30
		" " " Screw No. 9675.....	15
30171	12	" " " Roller (hardened and ground).....	25
		" " " Roller Screw No. 22598 A.....	10
30175	12	Take-up Frame.....	60
		" " Screws No. 22596.....	04
30180	13	Face Plate, for Styles 30100 A, 30100 B, 30100 C, 30100 D and 30100 E.....	75
30180 F	13	" " for Styles 30100 F and 30100 G.....	85
		" " Screws No. 80.....	05
30181 D	11	Needle Thread Tension Thread Eyelet, for Styles 30100 F and 30100 G.....	10
		" " Tension Thread Eyelet Screw No. 95.....	03
30181 E	11	" " Guide Wire, for Styles 30100 F and 30100 G.....	08
		" " Guide Wire Screw No. 88.....	03
30181 F	11	Looper Thread Tension Thread Eyelet, for Style 30100 F.....	35
		" " " Eyelet Screw No. 95.....	03
30185	10	Steel Bushing, short (hardened and ground) for main shaft bearing.....	85
30186	10	" " long (hardened and ground) for main shaft bearing.....	1 40
30187	10	" " (hardened and ground) for looper rocker frame shaft bearings.....	75
30189	16	Foot Lift Lever Bracket.....	70
		" " " Bracket Screws No. 22517.....	05
30190	13	Back Cover.....	60
		" " " Screw No. 240.....	10
30191	7	Spring, for hemming guide.....	05
30192	11	Needle Bar Thread Eyelet, with screw hole, for needle bar No. 30117 F.....	10
		" " " Eyelet Screw No. 87 U.....	04
30193	13	Hemming Guide Lever.....	35
		" " " Screw No. 3341.....	12



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SMALL UTILITY GRINDER





