

Instructions

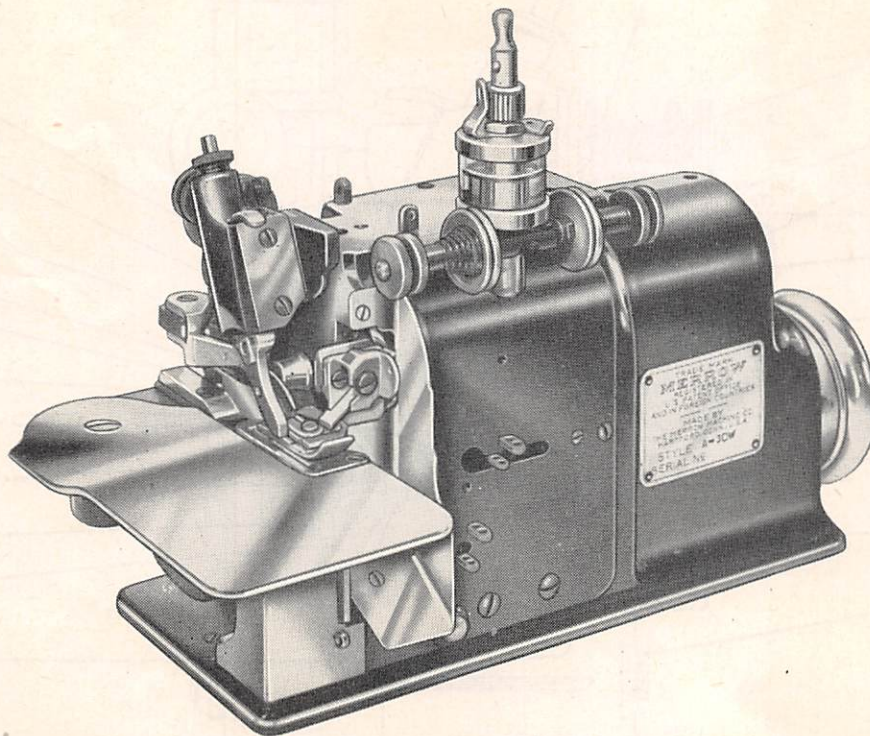
FOR SETTING UP AND OPERATING



High Speed

**TRIMMING AND OVERSEAMING
MACHINE**

Class A



**THE MERROW MACHINE COMPANY
HARTFORD 6, CONNECTICUT, U.S.A.**

THE MERROW MACHINE COMPANY

INTRODUCTION

This book contains instructions for setting up and operating Merrow Class A Overseaming, Overedging, and Hemming Machines together with diagrams showing the location of various parts.

The Class A Machines include machines for overseaming and trimming simultaneously forming a one-thread overseam, a two-thread overseam or finish, a three-thread overseam or finish, or a three-thread tight needle thread seam.

We also make other classes of machines including Class 60 Overseaming, Overedging, Butted Seaming and Hemming Machines, Plain Crochet Machines, Blanket Hemming Machines, and Shell Stitch Crochet Machines which have been long and favorably known and used by manufacturers throughout the world.

Write for book containing a descriptive list of many parts in common use on Merrow Class A Overseaming Machines.

HOW TO ORDER

We keep a record of each part model contained in the various machines as they leave our factory, and can supply duplicates if given the NAME of the part with STYLE and SERIAL number of Machine.

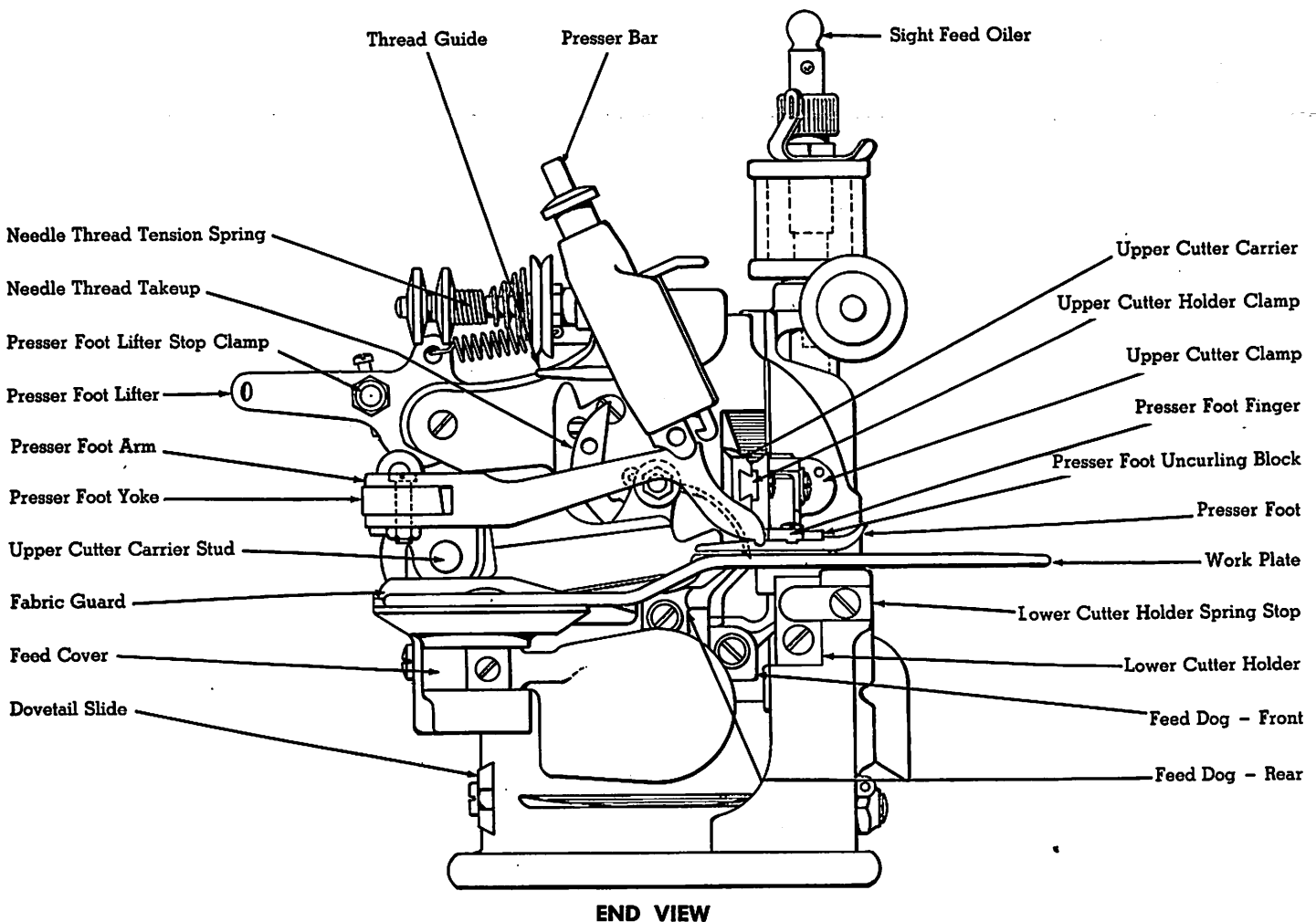
If difficulty is experienced in selecting which of the many parts is the one needed, give the NAME of the part, (See diagrams on pages 2 and 3.) with the STYLE and SERIAL number of Machine for which such part is desired, and we expect to be able to make proper selection.

When ordering Needle Plates, specify the width of finish desired, whether long or short finger, and size of Needle used. The part number of all Needle Plates is stamped on the underside of the plate.

When ordering Loopers, state whether upper or lower, and whether for two or three-thread stitch. Give the STYLE and SERIAL number of Machine. The part number is stamped on the shank near the butt end of all loopers.

When ordering parts of feeding mechanism for machines having DIFFERENTIAL FEED, it should be specified whether parts are for the FRONT or REAR FEED.

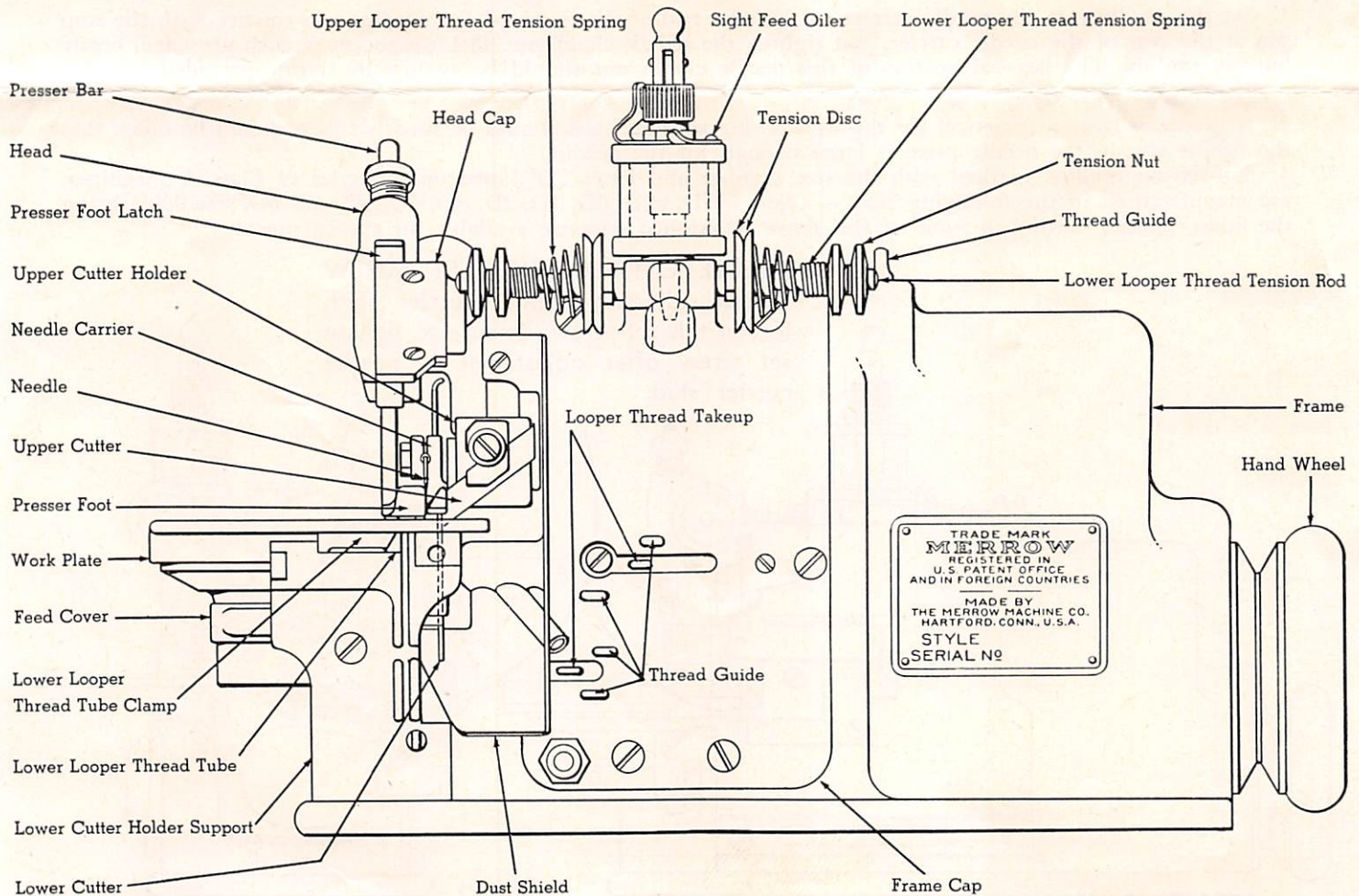
Letters or numbers are stamped on most of the parts and when ordering duplicates, give the NAME of part and the LETTERS or NUMBERS stamped thereon. The stamping on a particular part is insufficient information without giving the NAME of the part.



*INSTRUCTIONS FOR SETTING UP AND OPERATING MERROW
HIGH SPEED TRIMMING AND OVERSEAMING
SEWING MACHINES, CLASS A*

SETTING UP THE MACHINE

1. Upon removing the machine from its box observe its threading carefully and compare it with the threading diagram supplied with the machine. Keep this threading diagram for further reference. The matter of threading is very important and if difficulty arises, the threading of the machine should be compared with the individual threading diagram supplied. Threading is simple but must be accurate.
2. Secure the machine to the table, resting the machine upon the felt pad supplied, using the screws provided, the hand wheel of the machine being set to the right of the operator and the front edge of the base of the machine parallel with the center line of the transmitter and located four to five inches back from the front of the table.
3. A hand wheel utilizing round leather belt 1/4" diameter, heavy, or 5/16" diameter will be furnished unless a V belt hand wheel is specified at the time of the order. Set the transmitter back under the table far enough so that the belt from the transmitter to the Merrow Machine will be at an angle of approximately 30°.
4. The top of the hand wheel of the Merrow Machine must turn away from the operator.
5. Assemble thread stand and screw its base to the table in back of the machine.
6. The thread guides at the top of the thread stand should be directly over the center of the cones of thread.
7. The thread, yarn, silk or rayon should be wound on cones, which should stand vertically. The thread from these cones should lead to the top of the thread stand and thence diagonally downward to the machine, care being taken that the threads are far enough apart so they will not whip together when the machine is running at speed.
8. Be sure the thread will come off the cones readily, with uniform tension and that it cannot catch under the cone or be otherwise retarded.
9. An oil drain is provided with each machine. To set it up remove the taper plug from the bottom of the Merrow Machine frame and insert oil drain pipe provided with the machine. A 3/4" hole should be drilled in the top of the table, through which this oil drain pipe will extend. The oil collecting jar with its support should be secured to the under side of the table, beneath the oil drain pipe.



FRONT VIEW

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Speed

1. The Merrow Class A Machine is designed to run at high speed and many are being run at 4000 to 5000 stitches per minute according to conditions. Some work is efficiently handled at 5000 stitches per minute but it has been found that maximum efficiency in many operations is attained at a speed of 4500 stitches per minute.
2. While the machines may be run well with little care, they will give better results with suitable attention. The machines should be carefully oiled and lint cleaned from around needle carrier, feed dogs, looper mechanism, and the oil drain tube, which latter may be cleaned through the opening provided at the rear of the machine.

Transmitter

To obtain full efficiency the transmission equipment must be kept in good operating condition in order to start and stop the machine with minimum delay. When laying out the transmission equipment, attempt should be made to avoid driving from a large pulley to a relatively smaller pulley, the centers of which are close together, as such an arrangement will allow excessive slippage of the belts, materially reducing the speed of the start and stop of the Merrow Machine.

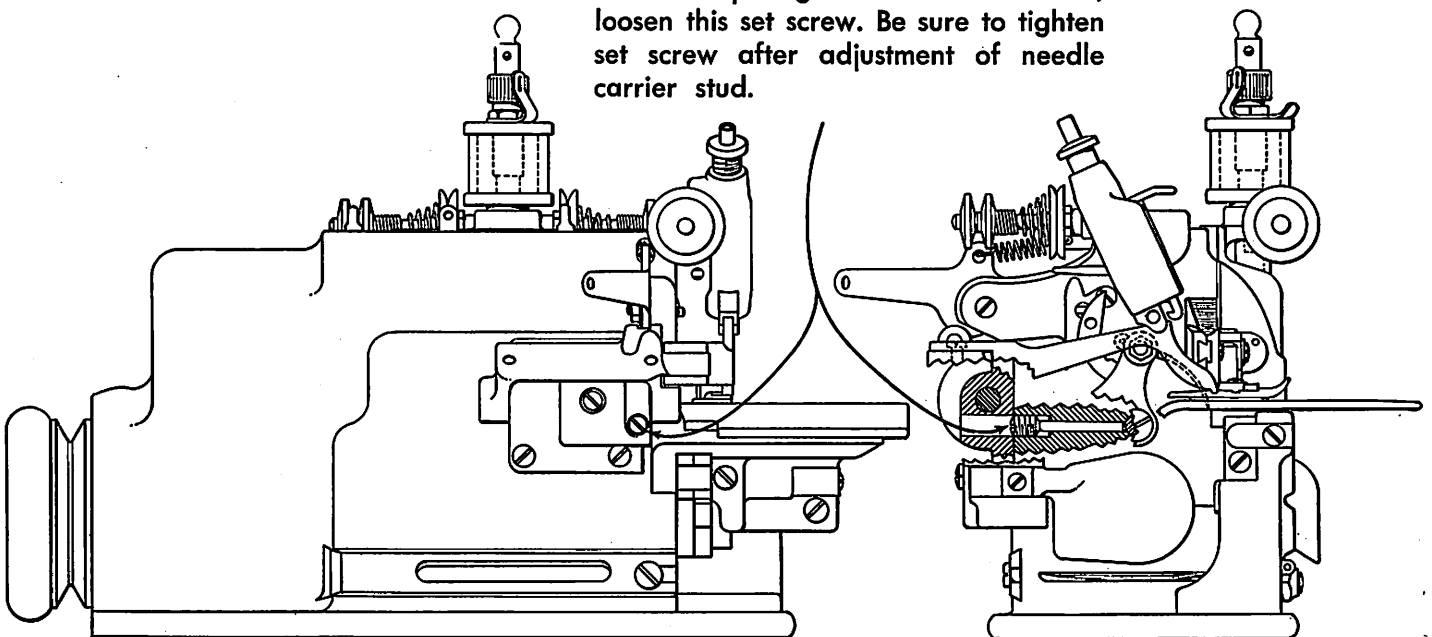
Lubrication

1. The bearings of Merrow Class A Machines are fitted closely to attain high speed and durability and they should be properly oiled, especially when new. Use a good grade spindle oil of approximately 200 Sayboldt viscosity at 100 degrees Fahrenheit. After the machine is well run in, a slightly heavier oil may be used and our customers report good results attained by using a good grade SAE 20 viscosity automotive oil. We do not recommend so-called "stainless" oil for the purpose.
2. The sight feed oiler, located on and immediately above the frame cap of the machine, supplies oil to the rapidly moving interior parts on this assembly, and *not* to other parts of the machine. The needle valve in this oiler should be set so that a full supply of oil will last three to four hours. All the other oil holes provided on the machine should also be oiled about every three hours, depending upon conditions. These oil holes will supply oil to both ends of the upper and lower shafts, needle carrier, presser foot, feed mechanism and feed eccentric.

Needle

1. Set the needle into the needle carrier so that the end of the shank of the needle is in contact with the stop pin at the rear of the needle carrier, and tighten the needle clamp nut with the socket wrench provided, firmly but not unduly. The beveled portion of this needle clamp nut should be against the recess provided therefor in the needle clamp collar.
2. A needle as large as practical for the work being accomplished should be used but care should be taken that the needle slot in the needle plate is large enough for the needle.
3. Self-setting needles, marked with the size number and letter "D", used on all styles of Class A Machines, are manufactured in the following sizes — Nos. 000D, 00D, 0D, 1D, 2D, 3D, 4D, 5D, and 8D, size 000D being the finest. Special needles in some of the above mentioned sizes are available for special uses.

NEEDLE CARRIER STUD SET SCREW
Before adjusting needle carrier stud, loosen this set screw. Be sure to tighten set screw after adjustment of needle carrier stud.



Needle Carrier

The needle carrier must be perfectly free to swing upon its stud but must not have any lateral movement. This adjustment is accomplished by first loosening the needle carrier stud *set screw*, which set screw is located in the frame of the machine, directly back of the center of the needle carrier stud and accessible from the outside at the rear of the machine. (See Page 4) If loosening this screw is neglected in a single instance the threaded hole in the frame of the machine will be injured. To adjust after the set screw has been loosened, screw the needle carrier stud in or out very slightly until the proper adjustment is attained and then tighten the needle carrier stud set screw.

Needle Plate

1. A three-thread finish or seam usually requires a needle plate with a chaining finger of the width of the stitch desired and sufficiently long to permit two or three stitches to be retained on the fingers as the goods are fed through the machine.
2. A two-thread edge finish or seam usually requires a needle plate with a very short or "stub" finger. When such needle plate is used, the chaining finger is secured to the presser foot and a part of the presser foot finger.
3. The needle slot in needle plate must always be large enough to permit the blade of the needle to pass freely without contact with the needle plate. The edges of this slot should be quite square but smooth and only slightly rounded. Be sure there are no burrs or rough places on the chaining finger or working surface of the needle plate.
4. The working surface of the needle plate for use on thin "tender" fabrics, requiring little differential feed action, should not be corrugated.

Lower Looter .

1. The lower looper is made nearly self-setting but may need slight bending to properly cooperate with the needle. The lower looper is best set and adjusted before the upper looper is placed in the machine and after the needle has been properly set as hereinbefore described. Preparatory to setting the looper, swing the presser foot out of position and remove needle plate, thread tube, feed dog and dust shield for accessibility. To set the lower looper, loosen the set screw in the lower looper carrier and turn the hand wheel of the machine until the upper portion of the looper carrier is near its farthest right-hand position; insert the shank of the lower looper into the carrier, pushing it down as far as it will go, then tighten the set screw against the flat of the lower looper. Slowly turn the hand wheel of the machine by hand to observe the relation between the lower looper and the needle. The needle on its downward path should gently but not unduly contact the shank of the lower looper near the right angle bend. After checking and making this adjustment, continue to turn the machine by hand until the point of the lower looper passes the needle as the needle starts on its upward stroke.

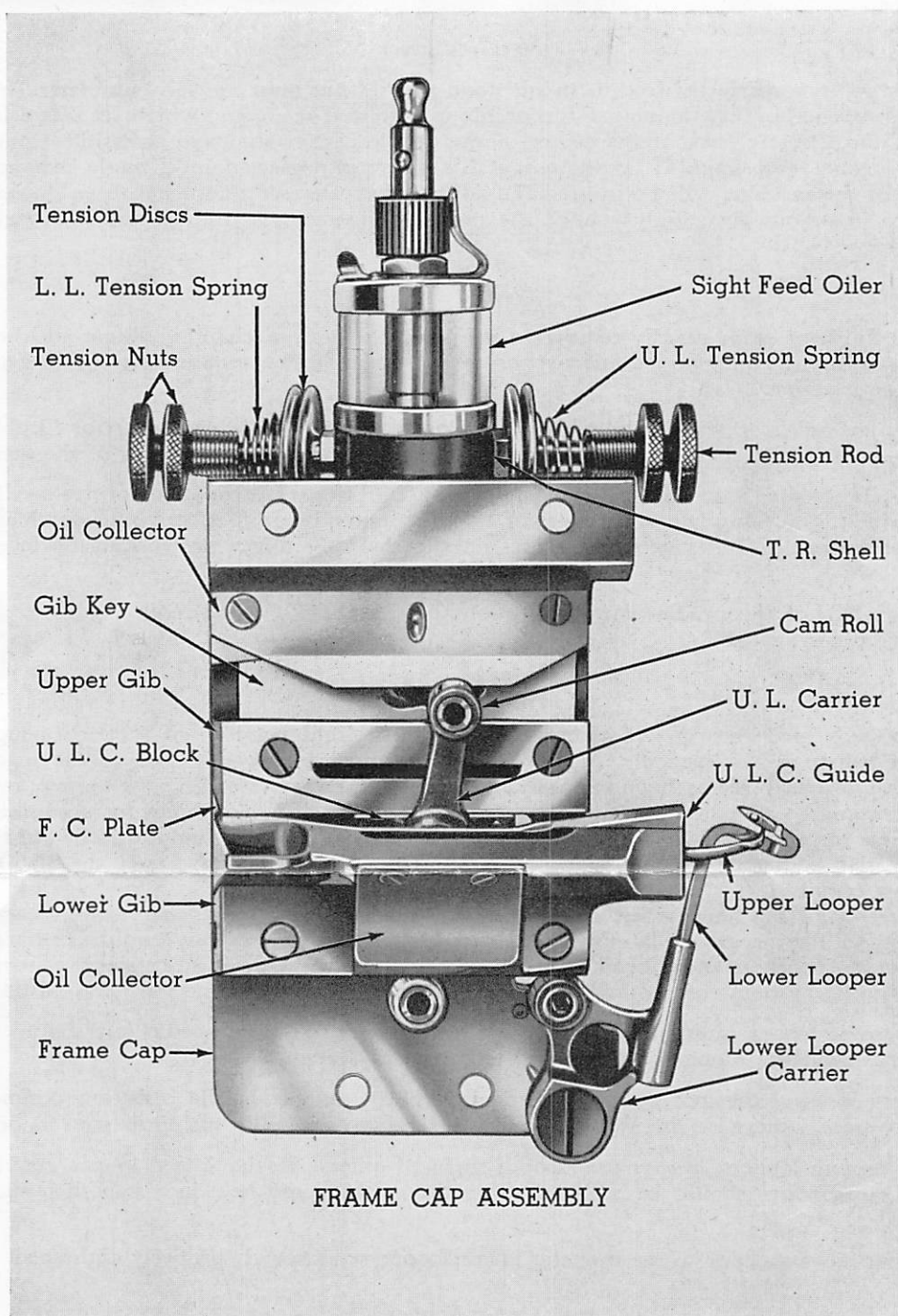
The point of the lower looper must make gentle but firm contact with the needle but should not deflect the needle. If necessary, bend the looper slightly to effect this adjustment.

2. If it is necessary to bend the looper, always bend it slightly too far in the direction desired and flex the looper back to position. Otherwise, in use, the looper is likely to gradually spring back to its original position.
3. In bending or flexing loopers, *always* use smooth surfaced pliers. If the lower looper requires more than minor adjustment, the looper should be removed from the machine and held in a smooth jawed vise and bent with smooth jawed pliers.
4. After adjustment, always check to see that the lower looper set screw is properly tightened.

Upper Looter

The upper looper is nearly self-setting but may need bending to properly cooperate with the lower looper and the needle above the needle plate. These loopers are made in two general forms, one for two-thread stitching and the other for three-thread stitching. General adjustment of the two kinds of loopers is similar. After the lower looper has been set, the upper looper may be inserted in the upper looper carrier and secured by a set screw accessible through the left-hand end of the opening in the front central portion of the frame cap. Tighten this set screw against the flat provided therefor on the upper looper after the upper looper has been pushed into its carrier as far as it will go. Turn the machine over slowly by hand. The point of the upper looper should pass in the recess in the lower looper immediately back of the eye in the lower looper but the point should not actually contact the bottom of this recess in the lower looper. The front side of the upper looper should clear the bulge around the eye of the lower looper to the right of the above mentioned recess. After effecting this adjustment, slowly turn the machine to observe the adjustment of the upper looper with the needle. The upper looper should not strike the needle but the point of the needle should pass close to the back side of the looper in the recess provided therefor immediately to the right of the eye or throat of the looper. To effect this adjustment, the looper should be sprung up or down as required. If the looper requires bending, handle as described in the previous section on the lower looper.

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FRAME CAP ASSEMBLY

Frame Cap

To remove the frame cap, remove the dust shield and the upper and lower loopers, turn the machine until the lower looper carrier is at its extreme right-hand position, remove the four screws securing the frame cap — two at the top and two at the bottom. The frame cap may then be readily pulled towards the operator and removed from the machine. To re-assemble, place the cam rolls in position on the upper and lower carriers and oil them. Turn the hand wheel and observe the left-hand groove in the lower cam, stopping the lower cam when the farthest right-hand portion of this groove is towards the operator. The frame cap may then be lifted into position as it was removed.

Lower Loper Carrier

The lower looper carrier is supported on a taper stud which is screwed into the lower left-hand corner of the frame cap and locked in place by a nut on the outside of the frame cap. The carrier must be *perfectly free* to swing upon its taper stud and yet have little side movement. Adjustment is accomplished by first loosening the nut locking the taper stud just enough so that the stud may be turned. Turn the stud very slightly in the direction required and re-tighten the locking nut. It is preferable to have the lower looper carrier slightly loose than too tight.

*Upper Looper Carrier, Upper Looper Carrier Block
and Upper Looper Carrier Guide*

1. The upper looper carrier is pivoted on the upper looper carrier block and the assembly must be perfectly free to travel its full stroke in either direction but must have little lost motion. The upper looper carrier block is beveled at its top and bottom edges, which are guided and run between the upper and lower gibs secured to the inside of the frame cap, the lower gib being stationary and the upper gib being adjustable by means of the upper gib key held to the frame cap by a screw in a slotted hole in the gib key. In effecting this adjustment, be sure not to pinch or bind the upper looper carrier block at any portion of its stroke. It is preferable to have this adjustment slightly loose rather than too tight. The upper looper carrier guide, both ends of which are firmly secured to the frame cap assembly inside the machine, serves to confine the upper looper carrier during its back and forth stroke and to limit its sidewise motion.
2. Shims are provided under the points of support of this upper looper carrier guide, one being a rectangular shim and the other a circular shim. Both of these shims are marked with a number which designates its thickness in thousandths of an inch. Shims of either type may be secured, which are a thousandth of an inch thicker or a thousandth of an inch thinner, as required. When adjusting the looper carrier guide, suitable shims should be provided under each end of it so that when the guide is securely fastened in place, there will be a uniform opening between this guide and the upper looper carrier of approximately two thousandths of an inch.
3. The above mentioned adjustment of the upper looper carrier block and the upper looper carrier guide is made at the factory and most machines run four or five years without re-adjustment unless there be an accident or a part spoiled due to lack of oil.
4. The studs at each end of the upper looper carrier carry a cam roll which travels in its cam groove. If there is excessive vertical looseness to the upper looper, these cam rolls may need replacing, which is simply accomplished by removal of the frame cap.

Presser Foot and Presser Foot Finger

Most machines are regularly provided with a center hinged presser foot, which is convenient for seaming or edging where seams or thick and thin places must be crossed. These presser feet are secured to a shank, which may be swung to one side, after lifting the presser foot latch, providing accessibility to the needle and loopers. Rigid and rear hinged presser feet are available for special purposes. The presser feet are provided with an adjustable presser foot finger which guards the right-hand side of the needle and should be so adjusted sidewise that its left-hand edge next to the needle just covers the right edge of the slot in the needle plate. If the machine is equipped with a needle plate with chaining finger, a "stub" or short presser foot finger is used. If the machine is equipped with a needle plate with a stub or short chaining finger, a long presser foot finger is used. Ordinarily, use as little pressure on the presser foot as practical, the degree of pressure being adjustable by the presser foot spring adjusting screw in the upper part of the head of the machine. This screw is held in adjustment by a small set screw at the right side of the upper part of the head.

Upper and Lower Cutter

1. The lower cutter is held in place in the lower cutter holder by the lower cutter clamp, the slotted clamp nut for which is accessible at the left of the lower cutter holder. The cutting edge of the cutter should be set slightly above the upper surface of the needle plate but should not be set so high as to come in contact with the under surface of the presser foot. The upper cutter is secured to the upper cutter holder by the upper cutter clamp and screw and is adjustable therein diagonally. It should be so set that when the upper cutter is in its lowest position, the cutting edge should be a little below the top edge of the lower cutter. Be sure both cutters are tightly secured and turn the machine over by hand. The downward projection at the rear of the upper cutter should be in contact with the lower cutter at all times.
2. When setting the cutters, they should be so set to the right or to the left that the fabric will be trimmed to about the same width as the width of that portion of the chaining finger about which the threads form. Most Class A Machines are provided with a lower cutter holder which carries a spring to maintain uniform pressure between the upper and lower cutter. This lower cutter holder is also provided with a clamping device, which is tightened by means of a readily accessible screw in the front portion of the lower cutter holder support. On certain heavy work, it may be desirable to tighten this lower cutter holder clamp screw. Care should be taken not to push the lower cutter too tightly against the upper cutter. If more pressure than that regularly obtained by the spring is required, it usually indicates that the cutters are dull and should be sharpened.

Tensions

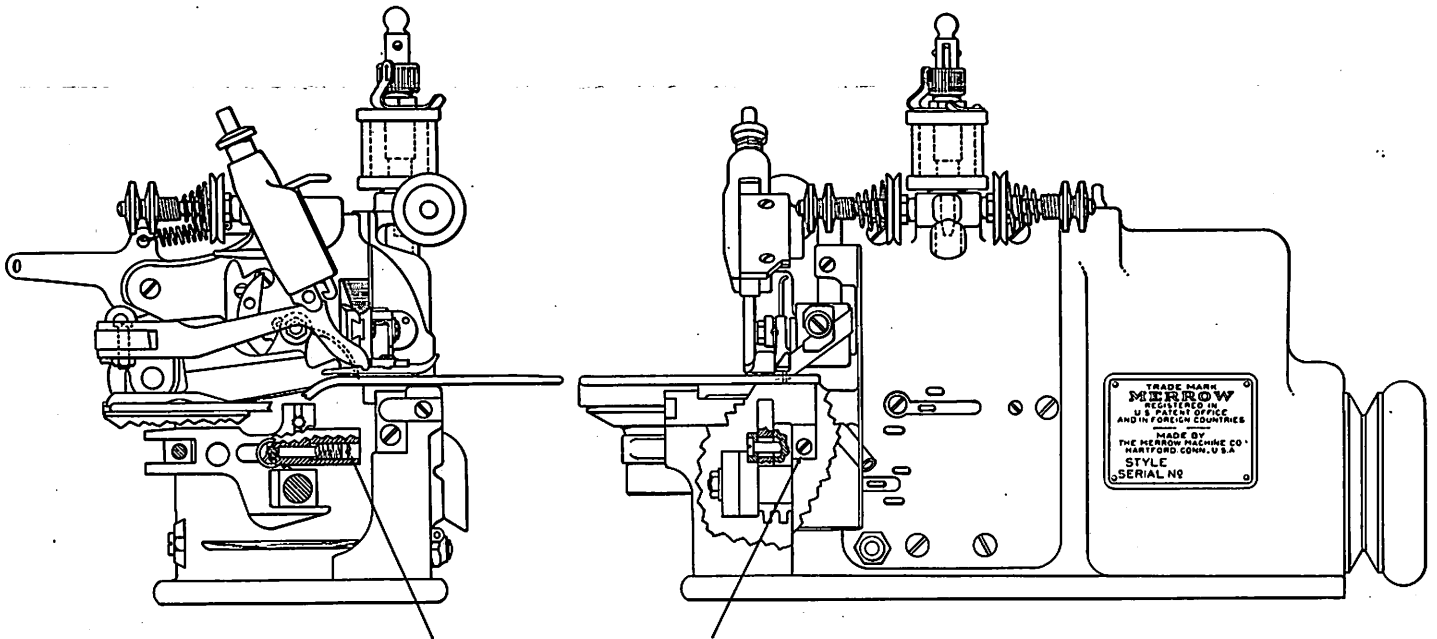
It is generally advisable to keep the tensions as light as possible and produce good results. To this end, see that the thread having the least tension has just sufficient tension to properly control it. Then adjust the tensions upon each of the other threads to properly balance and form stitches of suitable appearance and tightness. Before re-adjusting tensions, make sure that the threading of the machine is in accordance with the threading diagram for the stitch required.

Feed Dogs

1. Feed dogs are provided with either fine cut teeth or coarse cut teeth, single row or double row, dependent upon the work. Generally the feed dogs should be set as low as practical. The length of feed can be changed by removing the feed eccentric which is secured to the left end of the lower shaft and substituting another feed eccentric of different throw. Feed eccentrics are marked to indicate approximately the number of stitches per inch produced at the edge of the fabric.
2. The feed dog and needle plate must match each other and it may be necessary to change feed dogs to prevent interference with the needle plate when very few stitches per inch are used.
3. Machines designated by the letter "D" in the style marking contain a differential or gathering feed. The differential feed contains two separate feed dogs with their separate feed carriers and separate feed eccentrics. When it is desired to prevent the edge of the fabric from being stretched or lengthened while seaming or edge finishing, the forward feed dog is made to travel a greater distance than the rear feed dog by using a feed eccentric of greater throw for driving the forward feed dog than is used for driving the rear feed dog. In most cases, a slight difference is sufficient and the number of each feed eccentric and the difference between the two is dependent upon the number of stitches required per inch and the elasticity of the fabric itself. Some machines are equipped with a feed stabilizing device to prevent side motion of the feed dogs. The stabilizing screw should be adjusted so that the feed carriers are perfectly free in all positions of their movement. (See Page 8).

Threading Wire

1. When threading the looper thread, it will be found convenient to use a threading wire sent with the machine. A loop is provided in one end of the wire to receive the thread. The opposite end of the threading wire may then be put through the thread eye or tube, pulling the thread or yarn along with the wire.
2. When threading the upper looper thread of a three-thread machine, it is desirable to bend the threading wire in a relatively large arc before inserting it through the tube in the dust shield so that after inserting it through this tube, the forward end of the wire will come out above the needle plate and forward of the upper looper, where it may be readily grasped and the thread pulled along with the wire.



FEED CARRIER STABILIZER SCREW SET SCREW
Before adjusting stabilizer screw, loosen this set screw. Be sure to tighten set screw after adjustment of stabilizer screw.

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