

SINGER
146-31

USE ONLY
SINGER

“OIL FOR HIGH SPEED SEWING MACHINES
(Cloth and Leather)”

for general use

or

“STAINLESS OIL
FOR HIGH SPEED SEWING MACHINES”

where a stainless oil is desired.

These specially prepared oils are the result of extensive research. They insure freedom from lubricating trouble and give longer life to sewing machines.

**THE IMPORTANCE OF USING
SINGER NEEDLES FOR
SEWING MACHINES**

The best stitching results will be obtained by using the needles furnished by the Singer Sewing Machine Company.

Singer Needles can be purchased from any Singer Shop for the Manufacturing Trade.

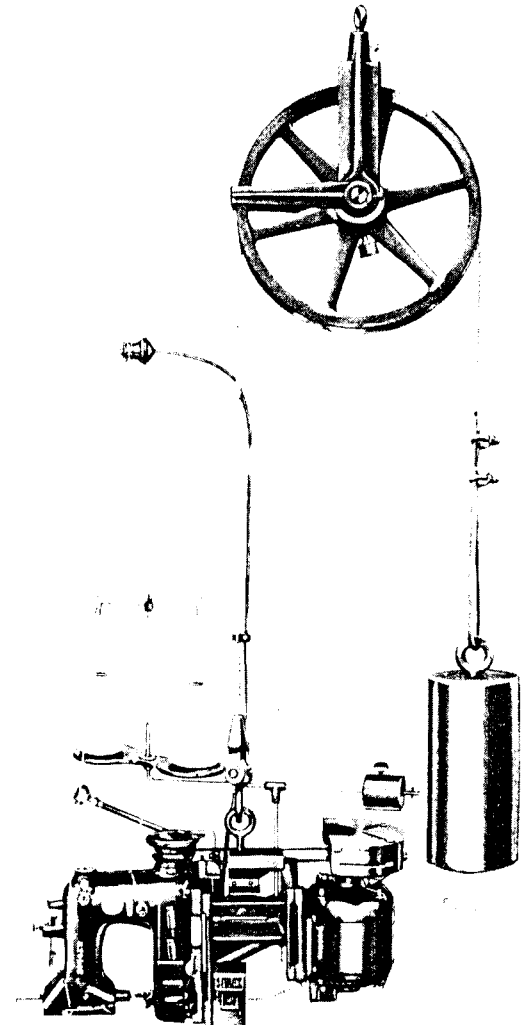
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in Singer Machines.
These Needles and their Containers
are marked with the
Company's Trade Mark "SIMANCO." 1

Needles in Containers marked
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**INSTRUCTIONS
FOR USING AND ADJUSTING
SINGER MACHINE 146-31**



THE SINGER MANUFACTURING CO.

To all whom it may concern:

The placing or renewal of the name "Singer" (Reg. U. S. Pat. Off.) or any of the trade marks of The Singer Manufacturing Company on any machine that has been repaired, rebuilt, reconditioned or altered in any way whatsoever outside a Singer factory or an authorized Singer agency is forbidden.

INSTRUCTIONS FOR ASSEMBLING AND INSTALLING SINGER MACHINE 146-31

Description

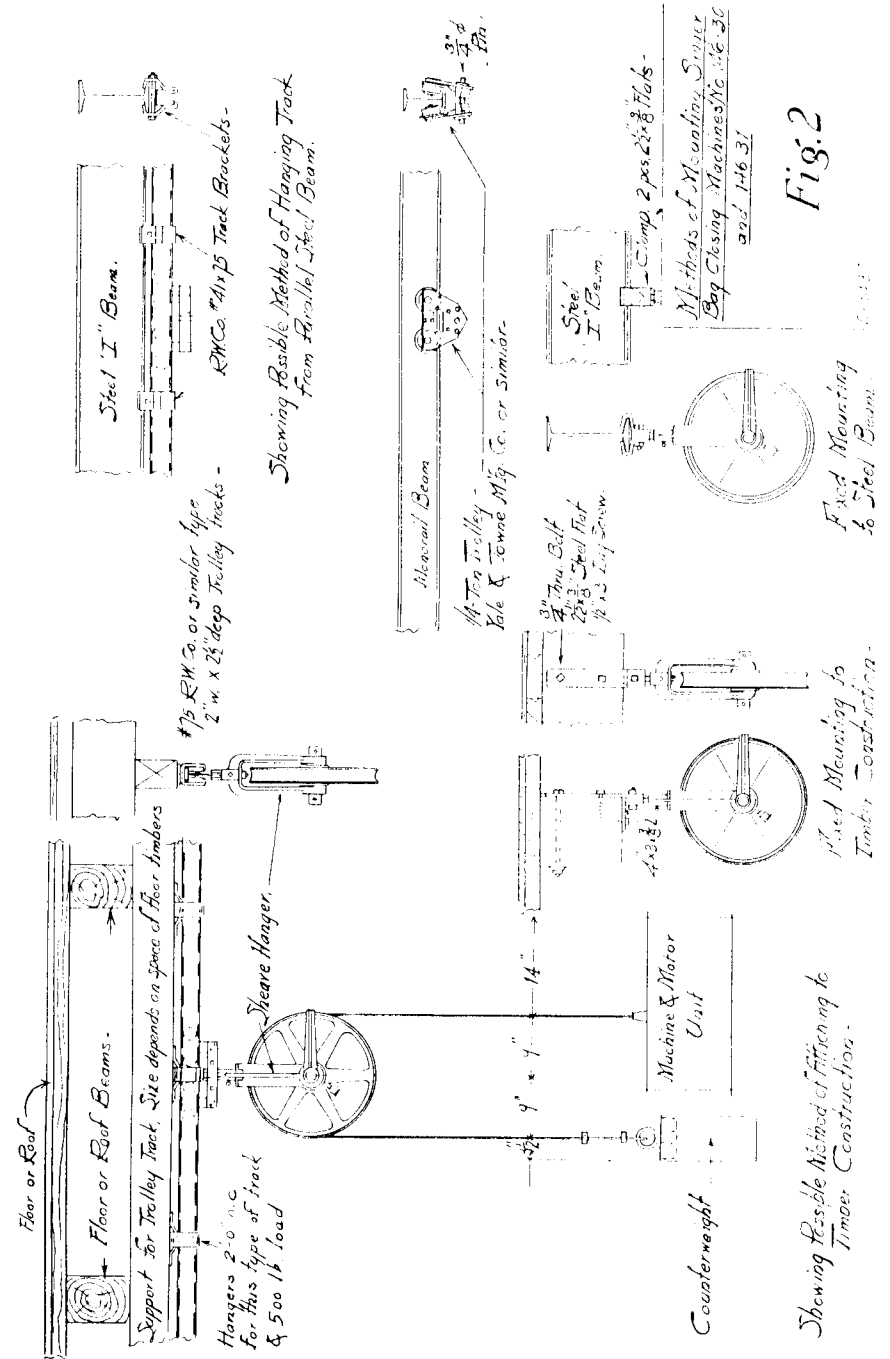
The 146-31 outfit includes a 146-71 machine head with electric transmitter motor and is designed for overhead suspension. It is used for closing bags of medium and heavy weight material, and the flexibility of the unit permits its use under special conditions where other equipment would be unsuitable.

Location of the Machine

The location of the machine should be carefully selected, keeping in mind that convenience in handling the bags before and after sewing is important if maximum efficiency is to be obtained. It is also important that the machine be located so as to obtain a firm overhead support such as an "I" beam or floor stringer capable of supporting a live load of at least 500 pounds (225kg.).

A means must be provided for fastening the sheave hanger firmly so that it cannot turn on its support. Any movement of the sheave hanger will cause the machine to sway, making it difficult to handle. The sketches in Fig.2 illustrate some methods of supporting the outfit. Where ceilings are high, a drop hanger may be used, such as a length of pipe with a "U" shaped fitting at the bottom. The eyebolt of the sheave hanger is bolted tightly between the two sides of the "U" fitting. The sheave hanger should never be supported by rope or cable, as the constant motion causes wear and finally breakage.

It is suggested that a careful study be made of each installation to insure the best results. In many cases the machine may be operated in conjunction with a conveyor system or on an overhead track, thus eliminating extra handling.



Assembling the Machine

The equipment includes the machine head, machine and motor bracket, auxiliary motor bracket, motor with switch and connec-

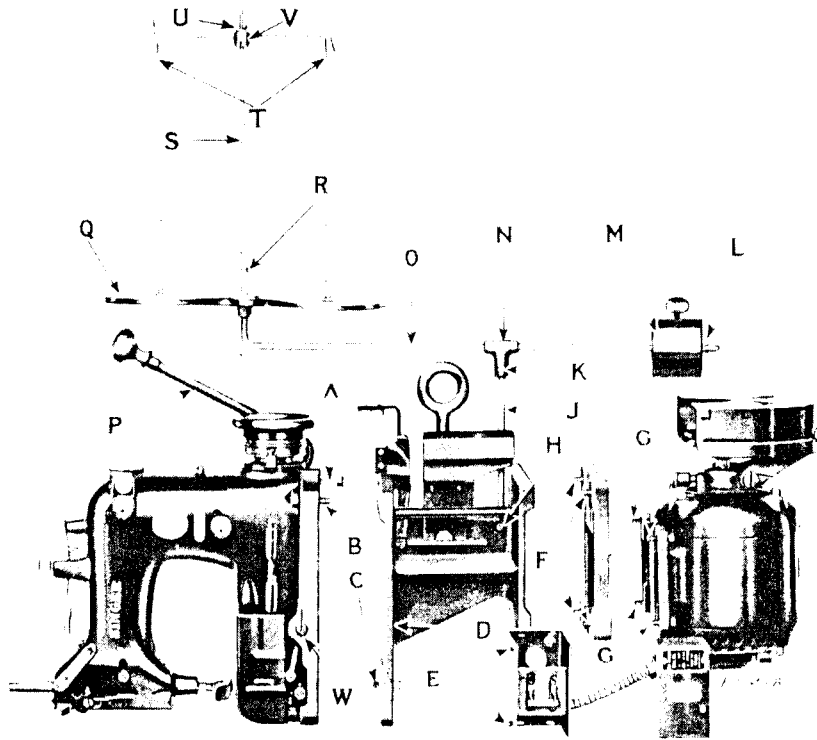


Fig.3. Showing relative position of parts before assembling

tions, thread unwinder, cable with eyelets and clamps, counterweight, ten pounds of buckshot, and cable sheave with hanger.

After the cable sheave and sheave hanger have been secured as previously instructed, the sewing unit is assembled as follows:

Insert the bolt (A) in the machine base as shown in Fig.3, and

have this bolt enter the slot in the bracket. Fasten the machine to the bracket by means of the three bolts (A, B and C).

When Series 38 motors are used, auxiliary motor bracket 69394 should be screwed to the motor bracket by means of the four screws (F). Then fasten the motor to the auxiliary bracket by means of the four bolts (G). After the motor is in position, connect the leather driving belt around the machine and motor pulleys. If the belt is too long, cut a little off one end before joining.

If a motor of Series 1800 or 2800 is used, the motor should be fastened directly to the motor bracket without using the auxiliary bracket.

Attach the switch box to the motor bracket at (D) by means of the two screws (E), then fasten the cover to the switch box.

To Assemble the Thread Unwinder

Insert the extension (J) in the bracket and secure it by tightening the set screw (H) against the flat on the extension. Fasten the coupling (N) to the top of the extension (J) by means of the screw (K). Insert the rod (O) through the coupling and fasten by means of the set screw in the top of the coupling. Slide the equalizer (M) on the rod and insert the cotter pin at (L). Place the spool rest (Q) over the rod (O) and fasten by tightening the set screw. The rod (S) is inserted in the rod (O) and fastened by the screw (R). The two thread guides (T) are placed over the collar at the top of the rod and are held in place by the position cup (V) and the wing nut (U). The cutting lever (P) is fastened to the rear of the machine by two screws.

NOTE: The oil tube, included in the package containing the accessories, should be screwed into the hole (W) of the machine and positioned the same as the other oil tubes.

Suspending Machine Head and Motor

Figure 4 shows the sewing unit supported and ready for operation. Place the machine and motor assembly on a box at about the average height of the bags to be sewn. Slip the cable hook into the large eyelet of the machine bracket as shown, and pass the cable over the sheave and through the eyelet (Y) in the counterweight (X). This weight should be slightly above the level of the machine when the machine is at the desired height. Bind the end of the cable with the two clamps (Z), securely tightening both the clamp nuts and the lock nuts. The clamp (A2) holds the motor lead from the switch to the outlet socket.

CAUTION: It is important that the set screw (D2, Fig. 4) in the sheave hanger should be tightened against one of the flats on the shank of the eye bolt so that the hanger cannot turn on the eye bolt.

Ten pounds of buckshot is furnished with the outfit for final balancing of the machine. Add buckshot to the counterweight until it just balances the sewing unit. The machine should now move freely up and down and if the hanger is properly fastened, the counterweight will not sway when the machine is moved from side to side. When new thread cones are placed on the machine, a little more buckshot should be added to the counterweight, and the equalizer (M) should be moved to the right. As the thread is used, the equalizer should be moved to the left from time to time to maintain a perfect, horizontal balance of the unit.

Operation of the Machine

The motor is started by moving the switch on the machine bracket to the "ON" position. When the bag to be closed is brought into position under the machine head, grasp the control handle (B2, Fig. 4) with the right hand, wrapping the fingers around the belt shifter lever (C2), and swing the machine to the edge of the bag away from you, holding the top of the bag with the left hand, ready to be fed under the presser foot. The machine is started by drawing up the belt shifter lever (C2) with the fingers of the right hand, which shifts the belt from the loose pulley to the balance wheel of the machine.

As soon as the edge of the bag has passed under the presser foot, the left hand is moved to the other edge of the bag, while the machine sews across the bag in a natural manner. The machine is permitted to "chain off" about two inches beyond the edge of the bag, then the machine is stopped and, while still holding the

unit toward you, press the chain cutting lever (P, Fig. 4) to the right and upward to cut the chain of thread between the bag and the heel of the presser foot.

The bag is now closed and the machine is ready for the next bag.

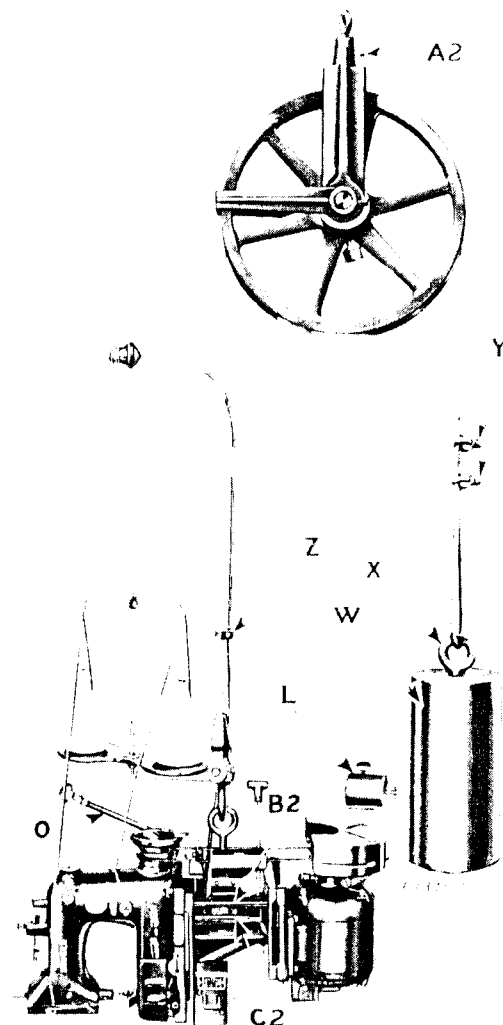


Fig. 4. Machine 146-31
ready for operation

INSTRUCTIONS FOR USING SINGER MACHINE HEAD 146-71

Description

Machine head 146-71 has one needle and one looper and makes the two thread chain stitch. The machine makes three to six stitches to the inch and is fitted with chain cutting shears. It is designed for operation with the balance wheel at the top.

To Oil the Machine

To insure easy running and prevent unnecessary wear of the machine, all parts which are in movable contact require oiling and, when in continuous use, the machine should be oiled frequently. Oil should be applied to all oil holes and reservoirs.

Speed

The maximum speed recommended for Machine head 146-71 is 2000 stitches per minute, depending upon the nature of the material, the thread being used and the length of stitch.

Needles and Thread

The needles for Machine head 146-71 are of Class and Variety 124x2 and are made in sizes 25, 26, 27, 28, 29, 30 and 31.

The size of the needle to be used should be determined by the size of the thread, which must pass freely through the eye of the needle. If rough or uneven thread is used, or if it passes with difficulty through the eye of the needle, it will interfere with the successful use of the machine.

Orders for needles must specify the quantity required, the size number, also the class and variety numbers separated by an x. The following is an example of an intelligible order:

"100 No. 27 124x2 Needles"

The best stitching results will be obtained when using the needles furnished by the Singer Sewing Machine Company.

Either right or left twist thread can be used in the needle and the looper.

<p style="text-align: center;">Genuine Singer Needles should be used in Singer Machines. These Needles and their Containers are marked with the Company's Trade Mark "SIMANCO." 1</p>

<p style="text-align: center;">Needles in Containers marked "For Singer Machines" are <u>not</u> Singer made needles. 2</p>

To Set the Needle

To set the needle, loosen the clamping nut at the lower end of the needle bar and put the needle up into the bar as far as it will go with the long groove toward you; then securely tighten the clamping nut.

To Thread the Needle

Pass the thread from the unwinder through the tension thread guide (1), to the right between the tension discs (2), up and over

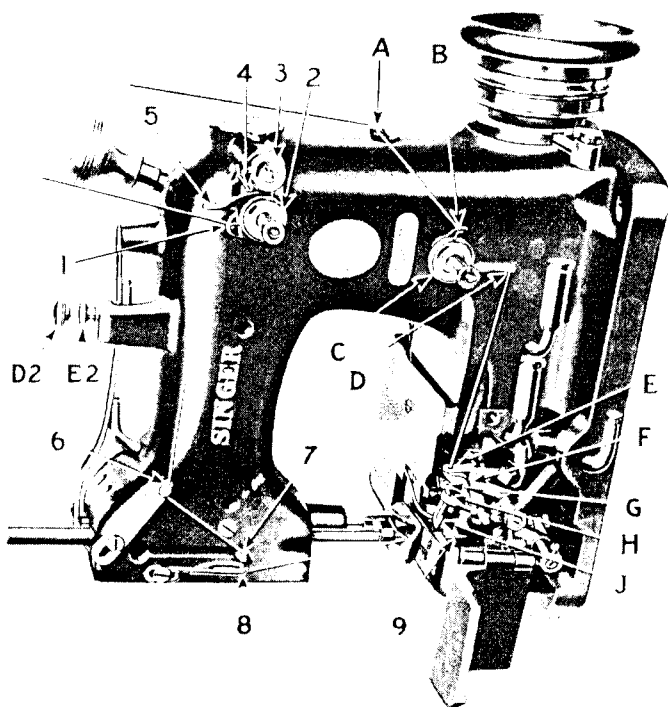


Fig. 5. Needle and Looper Threading

the thread nipper (3), under the wire guide (4), down through the thread guide (5), the thread controller (6), and the take-up eyelet (7), into the controller wire (8), and from front to back through the eye (9) of the needle. Draw about two inches of thread through the eye of the needle with which to commence sewing.

To Thread the Looper

Lead the thread from the unwinder down through the eyelet (A), through the tension thread guide (B), down to the left between the tension discs (C), to the right and down through the thread guide (D), through the eyelet (E), to the right or back of the thread take-up (F), and down through eyelet (G), then through the hole (H) in the heel of the looper and from front to back through the eye (J) near the point of the looper. Draw about two inches of thread through the eye of the looper with which to commence sewing.

To Regulate the Pressure on the Material

The pressure of the presser foot on the material is regulated by means of the thumb screw (D2, Fig. 5) at the top of the machine.

To increase the pressure, loosen the lock nut (E2, Fig. 5) and turn the thumb screw (D2) downward. To decrease the pressure, turn the thumb screw (D2) upward. When the desired pressure is obtained, securely tighten the lock nut (E2).

The pressure should be sufficient to carry the material and the chain along smoothly. Too much pressure will cause the chain to cut, too little pressure will cause the machine to chain off imperfectly.

To Regulate the Tensions

The tensions are regulated by the thumb nuts at the front of the tension discs. To increase the tensions, turn the thumb nuts over from you. To decrease the tensions, turn the thumb nuts toward you. The needle thread requires sufficient tension to set the stitch properly in the goods, the looper thread requires less tension, in fact, only enough to prevent excessive amounts of thread being pulled off by the action of the looper.

To Regulate the Length of Stitch

To regulate the length of stitch, loosen the nut on the feed connection at the rear of the machine. To increase the length of stitch, move the feed connection in the slot toward the base of the machine; to decrease the length of stitch move the feed connection toward the arm of the machine. When the desired length of stitch is obtained, securely tighten the nut.

INSTRUCTIONS FOR ADJUSTERS AND MACHINISTS

To Set the Loooper Thread Controller

The function of the looper thread controller (J2, Fig. 6) is to keep the thread under control during the backward movement of the

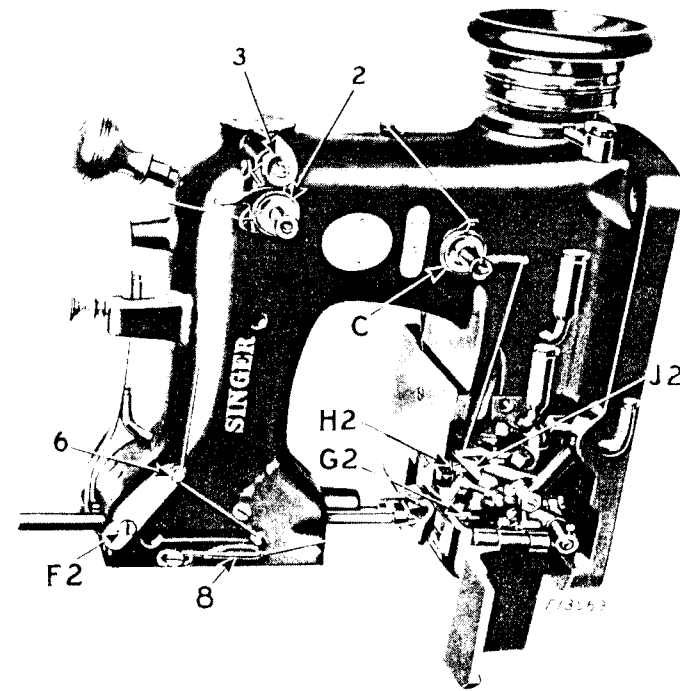


Fig. 6. Adjustments

looper to prevent the skipping of stitches, and also to provide the correct amount of thread to set the stitch.

To set the looper thread controller, loosen the screw (H2, Fig. 6) which holds the controller in position and move the controller backward or forward as required. The looper thread controller may be aided when making different lengths of stitches by increasing or decreasing the tension (C, Fig. 6). For short stitches, increase the tension, and for long stitches, decrease the tension.

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To Adjust the Needle Thread Controller

The needle thread controller (6, Fig. 6) may be raised or lowered for various lengths of stitch. When making short stitches, the controller should be at its highest position. For the longest stitch, it should be at its lowest position.

To make this adjustment, loosen the screw (F2) and raise or lower the controller as required, then tighten the screw.

The function of the thread controller wire (F) is to assist in drawing up the thread. It should be set so that when the thread starts to become taut between the controllers (6 and F) on the downward stroke of the needle bar, the needle thread around the looper should be just slipping off the point of the looper so that there is no strain on the needle thread.

To Adjust the Needle Thread Nipper

The nipper (3, Fig. 6) is provided to assist the tension (2, Fig. 6) in holding the thread when the stitch is being set. This nipper is correctly adjusted when the machine leaves the factory, and no further adjustment is necessary. However, if for any reason the nipper is removed from the machine, when replacing it, the nipper cam on the end of the rock shaft should be set so that the nipper will close just before the eye of the needle enters the goods. It should release the thread on the up stroke of the needle bar when the material being fed forward starts to draw the thread.

To Adjust the Needle Guard

The needle guard (G2, Fig. 6) may be adjusted slightly, according to the diameter of the needle which is being used.

Correct Height of Feed Dog

Best results are obtained when the feed dog, at its highest position, lifts the presser foot from .095 to .110 inch. This may be varied slightly if desired.

Lift of Presser Foot

The presser foot should be set to lift $\frac{7}{16}$ inch above the throat plate.

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