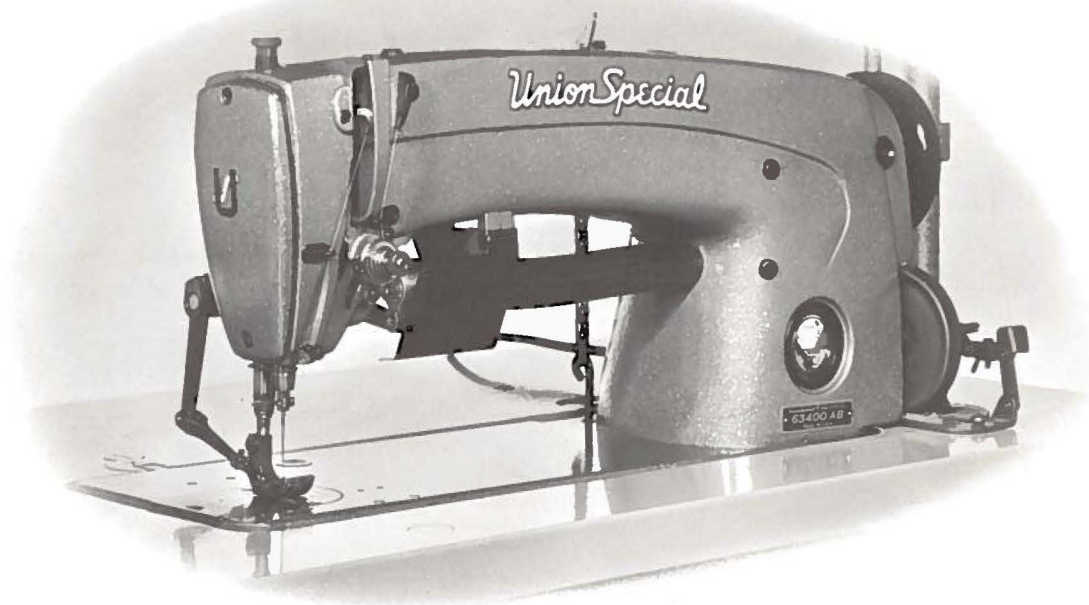


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**INDUSTRIAL  
SEWING  
MACHINES**

**STYLES  
63400AB**



**CLASS 63400**

**STREAMLINED  
HIGH SPEED LOCKSTITCH MACHINE  
WITH  
TOP DRIVEN GRIP-FEED**

**CATALOG  
No.  
121AB**

*Union Special* **MACHINE COMPANY**

**CHICAGO**

From the library of: Superior Sewing Machine & Supply LLC



Catalog No. 121 AB  
(Supplement to Catalog No. 121 M)

INSTRUCTIONS  
FOR  
ADJUSTING AND OPERATING  
LIST OF PARTS

CLASS 63400

Streamlined Lockstitch

Style  
63400 AB

First Edition

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**MACHINE COMPANY**  
INDUSTRIAL SEWING MACHINES  
**CHICAGO**

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## IDENTIFICATION OF MACHINE

Each Union Special machine is identified by a Style number on a name plate on the machine. Style numbers are classified as standard and special. Standard Style numbers have one or more letters suffixed, but never contain the letter "Z". Example: "Style 63400 AB". Special Style numbers contain the letter "Z". When only minor changes are made in a standard machine, a "Z" is suffixed to the Standard Style number. Example: "Style 63400 ABZ".

Styles of machines similar in construction are grouped under a class number which differs from the style number, in that it contains no letters. Example: "Class 63400".

## APPLICATION OF CATALOG

This catalog is a supplement to Catalog No. 121 M and should be used in conjunction therewith. Only those parts which are used on Style 63400 AB, but not used on Style 63400 B are illustrated and listed at the back of this book. For clarity, certain 63400 B parts are shown in phantom to help locate the 63400 AB parts.

Opposite the illustration pages, parts are identified by detail number, part number, description and amount required.

NOTE: When ordering repair parts always use the part number listed in the second column.

Adjusting and operating instructions for Style 63400 AB are similar to those in Catalog No. 121 M for Style 63400 B. The only instructions included in this catalog are the ones that are different from Style 63400 B, or are additional instructions that pertain specifically to Style 63400 AB.

The catalog applies specifically to the Standard Style of machine as listed herein. It can also be applied with discretion to some Special Styles of machines in this class. Reference to direction, such as right, left, front, back, etc., are given from the operator's position while seated at the machine. Operating direction of handwheel is toward the operator.

## STYLE OF MACHINE

High Speed Streamlined Long Arm Lockstitch Machine, with Top Driven Grip-Feed, One Needle, Light, Medium and Heavy Duty, Drop Feed, Rotary Hook, Horizontal Hook Shaft, Push Button Stitch Regulator, Stitch Length Indicator, One Reservoir Enclosed Automatic Lubricating System, Head Oil Siphon, Adjustable Hook Oil Control, Automatic Head Oiling, Needle Bearing Adjustable Feed Eccentric, Needle Bearings for Take-up Lever and Needle Bar Driving Link, Feed Timing on Lower Main Shaft, Maximum Work Space to Right of Needle Bar 11 1/8 Inches.

63400 AB For miscellaneous seaming operations on hard to handle materials, such as vinyls, foam laminates, wash and wear, and material made of natural fibers. 1 13/64 inch needle bar travel. Top driven grip-feed independently adjustable. Seam Spec. 301-SSa-1. Type 180 GXS or 180 GYS needle. Maximum recommended speed 5500 R. P. M.

## NEEDLES

Each Union Special needle has both a type and a size number. The type number denotes the kind of shank, point, length, groove, finish and other details. The size number, stamped on the needle shank, denotes largest diameter of the blade, measured in thousandths of an inch across the eye. Collectively, the type number and the size number represent the complete symbol, which is given on the label of all needles packaged and sold by Union Special.



## NEEDLES (Continued)

Needle Type 180 GXS or 180 GYS is recommended for Style 63400 AB. The description and sizes available are listed below.

Type No.	Description and Sizes
180 GXS	Round shank, round point, lockstitch, short length, ball eye, single groove, wide angle groove, struck groove, deep spot, ball point, chromium plated - sizes 028, 032, 036, 040, 044, 048, 054, 060.
180 GYS	Round shank, round point, lockstitch, short length, ball eye, single groove, wide angle groove, struck groove, deep spot, chromium plated - sizes 028, 032, 036, 040, 044, 048, 054, 060.

To have needle orders promptly and accurately filled, an empty package, a sample needle, or the type and size number should be forwarded. Use description on label. A complete order would read: "1000 Needles, Type 180 GXS, size ".036".

Selection of the proper needle size should be determined by the size of thread used. Thread should pass freely through the needle eye in order to produce a good stitch formation.

### SELECTING THE SIZE OF THE NEEDLE

The strength requirement of the seam produced is largely dependent upon the size of thread employed. The quality of the work desired is largely dependent upon the size of the needle employed.

The following table shows the preferred size of needle for a given size and kind of thread. The choice, however, should give consideration to factors referred to above, which may dictate the selection of a needle size slightly larger or smaller than the size specified.

Cotton Thread Size	Mercerized Thread Size	Needle Size
0	-	060
30	B	054 to 060
36	A	048 to 054
40	A	044 to 048
50	0	044 to 048
60	00	040 to 044
70	000	036 to 040
80	0000	032 to 036
90	0000	032 to 036
100	-	028 to 032

### IDENTIFYING PARTS

Where the construction permits, each part is stamped with its part number. Parts too small for a complete catalog stamping are identified by letter symbols which distinguish one part from another that is similar in appearance.

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

**IMPORTANT! ON ALL ORDERS, PLEASE INCLUDE PART NAME AND STYLE OF MACHINE FOR WHICH PART IS ORDERED.**

## ORDERING OF REPAIR PARTS

The arrangement of this catalog is to facilitate easy and accurate ordering of replacement parts for Style 63400 AB.

Exploded view plates at the back, cover the differences between the Standard Style listed in this catalog and Style 63400 B covered in Catalog No. 121 M. Each plate presents a sector of the machine, parts being aligned as in their assembled position. On the page opposite the illustration will be found a listing of the parts with their part numbers, descriptions and the number of pieces required in the particular view being shown.

Numbers in the first column are reference numbers only, and merely indicate the position of the part in the illustration. Reference numbers should never be used in ordering parts. Always use the part number listed in the second column. Each exploded view plate carries a reference number for each part available for sale.

Sub-assemblies, which are sold complete, or by separate part, are in a bracket or a solid line box on the picture plate. Component parts of sub-assemblies, which can be furnished for repairs, are indicated by indenting their descriptions under the description of the main sub-assembly.

## USE GENUINE NEEDLES AND REPAIR PARTS

Success in the operation of these machine can be secured only with genuine Union Special Needles and Repair Parts as furnished by the Union Special Machine Company, its subsidiaries and authorized distributors. They are designed according to the most approved scientific principles, and are made with utmost precision. Maximum efficiency and durability are assured.

Genuine needles are packaged with labels marked *Union Special*. Genuine repair parts are stamped with the Union Special trade mark. Each trade mark is your guarantee of the highest quality in materials and workmanship.

## TERMS

Prices are strictly net cash and subject to change without notice. All shipments are forwarded f.o.b. shipping point. Parcel Post shipments are insured unless otherwise directed. A charge is made to cover the postage and insurance.



## INSTALLING

**CAUTION!** When unpacking, **DO NOT** lift machine out of box by placing one hand on handwheel. Using both hands on bed casting, lift gently.

Before leaving factory, each Union Special machine is sewed off, inspected and carefully packed. After the machine and accessories have been removed from the packing box, the following steps should be followed:

### PREPARATION OF MACHINE FOR INSTALLATION

A bag of assembly parts, consisting of one frame thread eyelet, one eyelet attaching screw, one extra bobbin, two hinge studs, and two screws for holding miscellaneous attachments to the bed plate, is packed with each machine.

Insert hinge studs in holes provided for them in rear of cloth plate. Assemble the upper frame eyelet (A, Fig. 2A).

### STANDARD ACCESSORIES

Included also with each machine is a box of **STANDARD ACCESSORIES**--containing one bobbin winder assembly, the machine mounting frame, one oil drain jar and its clamp spring, one knee lifter assembly and its rubber pad, bed positioning spring and screw, four isolator pads and clips, and one machine rest pin. These parts are essential when setting up the machine.

### TABLE TOPS

Lockstitch machines are installed in table tops, prepared with cut-out, so that the bed plate is **FLUSH** with the top of the machine mounting frame.

### MACHINE MOUNTING FRAME INSTALLATION

On a suitable tableboard, place machine mounting frame (21393 N) in the machine cut-out with the hinge lugs to the rear (Fig. 1). Insert the countersunk wood screw through left hinge pad and tighten securely. Assemble bed positioning spring (63474 A) over right hinge pad; insert round head wood screw and tighten securely. Assemble the retaining plate (21393 R) to outside front of pan section, as shown, and snug up nuts lightly.

Place sewing head in the frame mounting, and after being sure there is about 1/16 inch clearance between the cloth plate edge and the frame sides, rap the retaining plate smartly upward with a hammer to insure a good grip on the underside of the board and tighten locking nuts securely.

Tip machine back against rest pin, and assemble the knee press assembly as shown. All end play of the cross shaft should be taken up by the cone bearings, but must not bind.

## MACHINE MOUNTING FRAME INSTALLATION (Continued)

Before the machine is put into production, the bell crank (21665 J) of the knee lifter rod should be adjusted. The left stop screw (22597 F) should be set so that the maximum lift of the presser bar and its parts do not interfere with moving parts within the head. This may be done by setting the stop screw so that the presser bar raises approximately 5/16 inch.

### BOBBIN WINDER

The bobbin winder should be secured to the table top so that its pulley will be located directly in front of the sewing machine belt and will bear against the belt when in operation. The base of the winder has two elongated attaching holes, which allow the mechanism to be moved closer to or farther away from belt as needed. The pulley of the winder, when in operation, should exert only enough pressure against the belt to wind the bobbin. Regulation and operation of the bobbin winder is described under "Winding the Bobbin", under OPERATOR'S INSTRUCTIONS, in Catalog No. 121 M.

### BELTS

These machines are equipped to use either #1 "Vee" or round belts.

### THREADING

Thread machine as indicated in Fig. 2A. Threading at check spring has been enlarged for clarity. Needle is threaded from left to right.

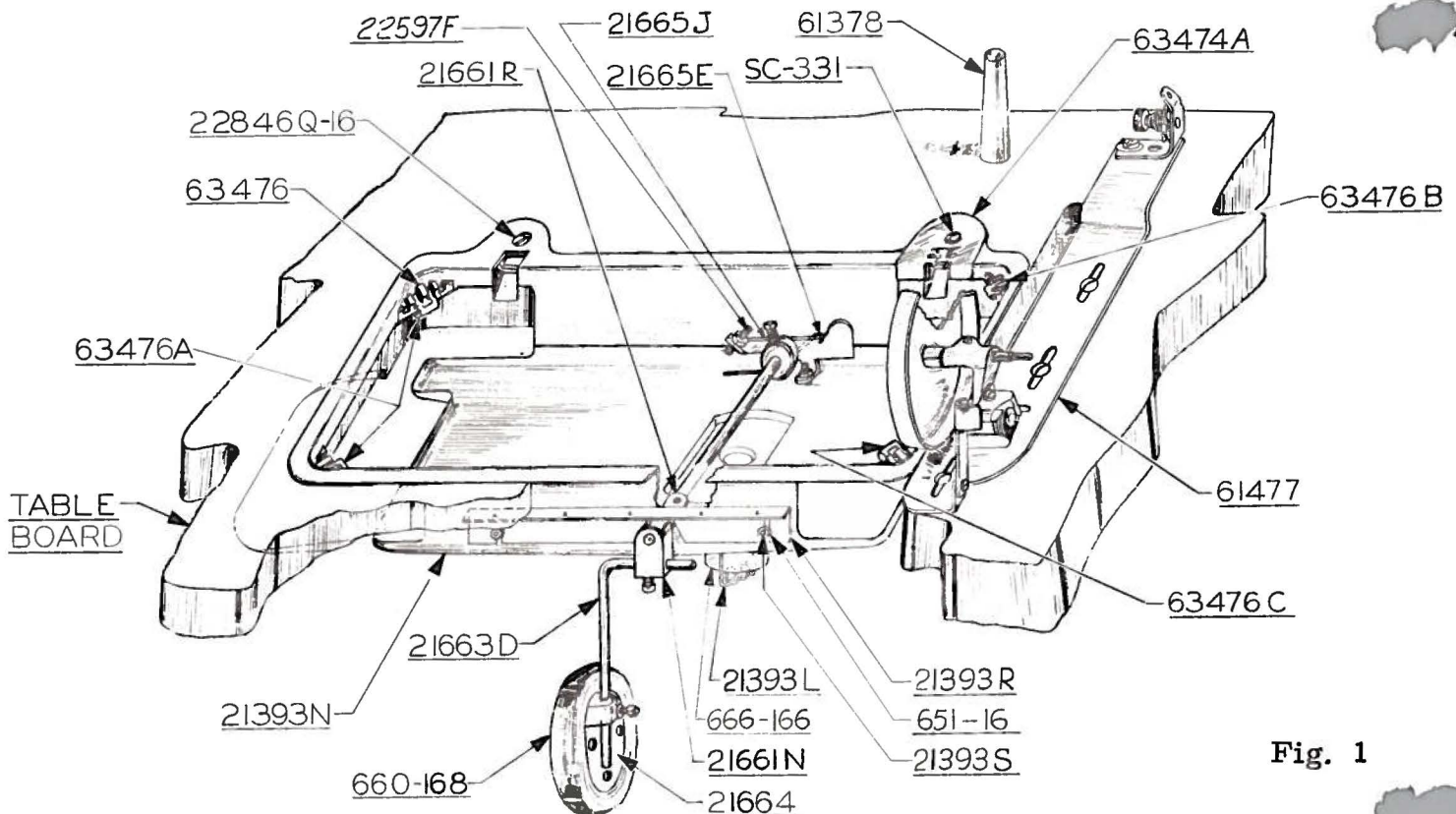


Fig. 1



## OILING

**CAUTION!** Oil has been drained from the main reservoir before shipment and the reservoir must be filled before starting to operate.

Fill main reservoir at plug screw (B, Fig. 2A) and check oil level at gauge (C); oil is at maximum level when needle is in yellow band marked "FULL". Oil should be added when needle is in yellow band marked "LOW". Use a stainless water-white straight mineral oil of a Saybolt viscosity of 90 to 125 seconds at 100° Fahrenheit in the main reservoir. This is equivalent to Union Special specification No. 175.

Oil may be drained from main reservoir by removing plug screw (D, Fig. 2A).

The quantity of oil supplied to the hook is controlled by dial (E). Turning the dial in the direction of the arrow (counterclockwise) increases the oil flow and in a clockwise direction decreases the flow of oil.

**NOTE:** The top driven grip-feed mechanism must be manually oiled at (F, Fig. 2A) twice daily.

It is recommended that a new machine, or one that has been out of service for a long period, be lubricated by removing the head cover and oiling all the moving parts. After oiling, replace head cover as no further hand oiling will be required. Run machine slowly for several minutes to distribute oil to the various parts. Full speed operation can then be expected without damage.

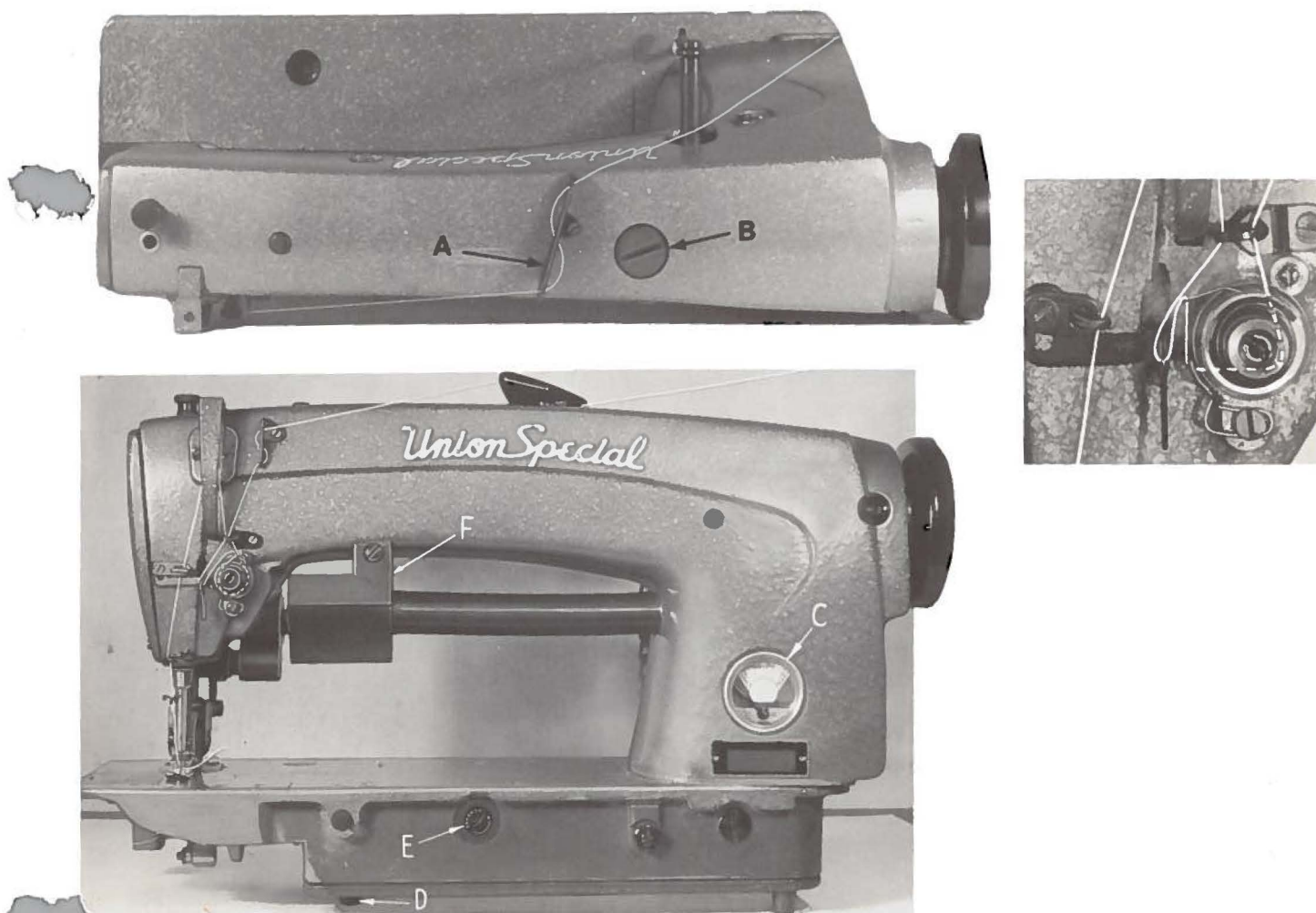


Fig. 2A

## INSTRUCTIONS FOR MECHANICS

The adjusting instructions for Style 63400 AB are the same as for Style 63400 B covered in Catalog No. 121 M, with the additions as follows:

### TO CHANGE STITCH LENGTH AND SET THE TOP-GRIP-FEED

- (a) Remove the snap ring from one end of the top-grip-feed drive connecting hinge pin (A, Fig. 28) and withdraw pin. This is to avoid chipping teeth of the presser foot feed dog or the main feed dog while setting the stitch to the required length.
- (b) Loosen nut (A, Fig. 29) (it has a left hand thread).
- (c) Turn screw (B) counterclockwise to its extreme position and retighten nut (A).

NOTE: Be sure that the top feed crank link assembly (C) has equal lateral clearance on both sides, so there is no bind. Should adjustment be necessary, loosen screws (B, Fig. 28) and move the top-grip-feed rocker arm (C) as required. Retighten screws (B).

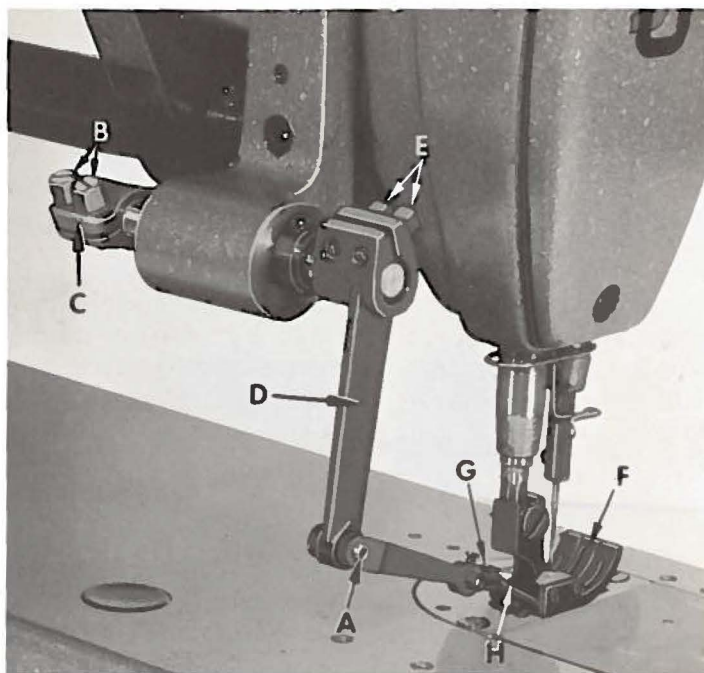


Fig. 28

- (d) Turn handwheel to position the top-grip-feed drive arm (D) at the extreme forward end of its travel.
- (e) Replace the top-grip-feed drive connecting hinge pin (A) and secure with snap ring.

NOTE: It may be necessary to loosen screws (E, Fig. 28) and slightly rotate the top-grip-feed drive arm (D), for alignment to insert the hinge pin. Hold the top-grip-feed drive arm so presser foot feed dog is at its extreme forward position, tighten screws (E).

At this point the presser foot feed dog is set at its maximum length of travel.

- (f) With the presser foot (F, Fig. 28) raised slightly, rotate handwheel in operating direction. The presser foot feed dog should be synchronized to move forward or rearward simultaneously with the main feed dog. Should timing be necessary, loosen the two set screws holding the top-grip-feed drive shaft head (D, Fig. 29) to the top-grip-feed drive shaft. While holding the handwheel advance or retard the top-grip-feed drive shaft head (D) as required. Snug-up screws, rotate handwheel in operating direction and observe relationship between upper and lower feed dogs. Repeat timing adjustment as necessary to obtain desired conditions. Retighten screws securely.

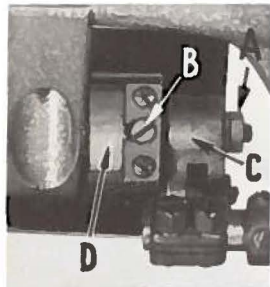


Fig. 29

- (g) Loosen nut (A, Fig. 29) and turn screw (B) clockwise as necessary to set the stitch length of the top-grip-feed



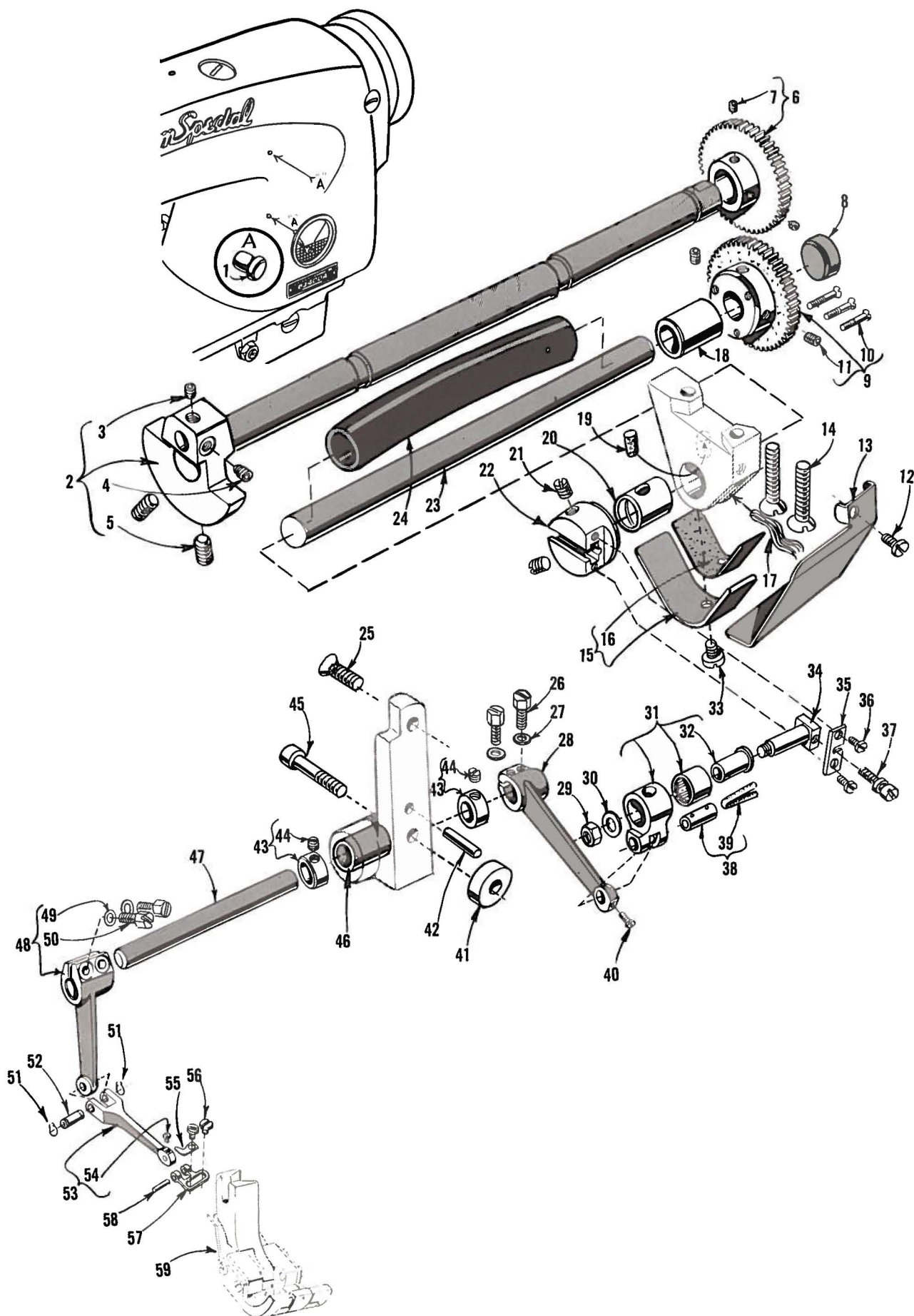
## TO CHANGE STITCH LENGTH AND SET THE TOP-GRIP-FEED (Continued)

comparable to the main feed stitch length. Retighten nut (A). Recheck for equal lateral clearance on both sides of top feed crank link assembly as described before.

- (h) As a basic setting, the presser foot feed dog should line up with the main feed dog left to right. The last tooth of the top and bottom feeds should match tooth point to point, in-line-of-feed. This can be accomplished by loosening screws (E, Fig. 28) which will allow forward, rearward or lateral positioning of presser foot as required. Retighten screws (E). A minute adjustment of the presser foot feed dog, from left to right, can be obtained by loosening screws (G) which secures the presser foot feed dog to the connecting rod grip feed hinge (H), position as required and retighten screws (G).

NOTE: Care must be taken to assure that no binding condition exists in the moving parts of the presser foot and that the needle centers the needle hole of the presser foot.

- (i) Sew off sample of material and examine to see if top and bottom plies come out evenly. Should the plies come out uneven, the top driven grip-feed mechanism can be adjusted INDEPENDENTLY to satisfy this condition. Refer to paragraphs (f) and (g) for this adjustment. Recheck settings covered in paragraph (h).





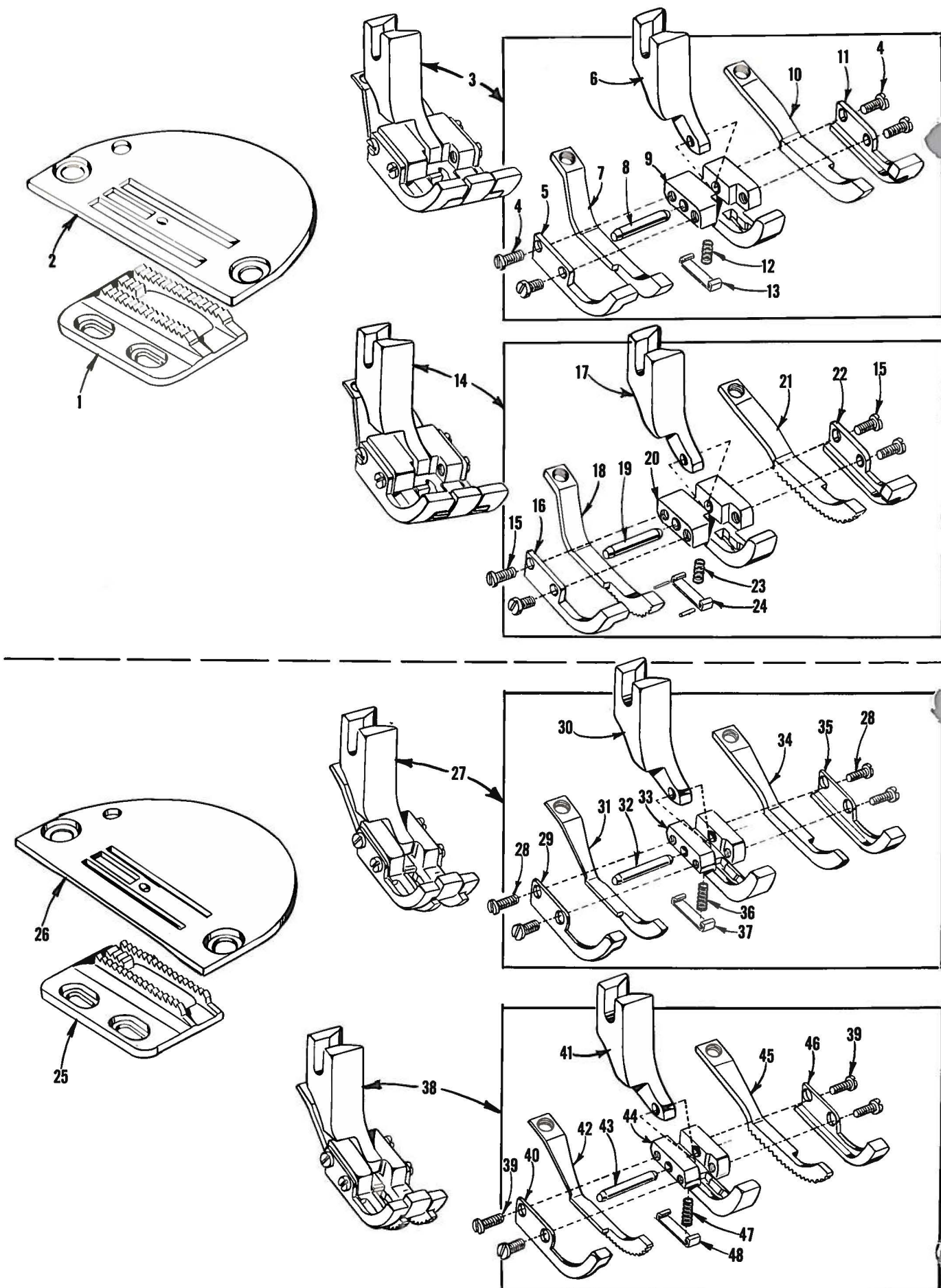
The parts illustrated on pages 12 and 14, and described on this page and page 15 represent the parts that are used on Style 63400 AB, but not used on Style 63400 B.

Use Catalog No. 121 M (Style 63400 B) for all parts not illustrated or described in this catalog.

Reference numbers that are inside a bracket on the picture plates and have indented descriptions, indicate they are component parts of a complete part or assembly.

#### TOP DRIVEN GRIP-FEED MECHANISM AND MISCELLANEOUS PARTS

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Amt. Req.</u>
1	63494 B	Plug, plastic, for arm -----	2
2	29475 AZ	Mainshaft and Counterweight Assembly -----	1
3	22894 W	Set Screw -----	1
4	22894 U	Spot Screw -----	1
5	22894 V	Screw -----	2
6	63439 U	Grip-Feed Driving Gear -----	1
7	22651 CD-3	Set Screw -----	2
8	63493 A	Bed Plug -----	1
9	63439 V	Grip-Feed Driven Gear -----	1
10	22525 C	Screw -----	3
11	22894 J	Set Screw -----	2
12	22711	Screw, for drive shaft guard -----	1
13	63439 X	Guard, for drive shaft -----	1
14	22657 E-24	Screw, for drive shaft bracket -----	2
15	63979 A	Oil Shield, for drive shaft bushing -----	1
16	666-244	Felt Lining -----	1
17	WO-3	Columbia Yarn -----as required	
18	63479 C	Grip-Feed Drive Shaft Bushing, right -----	1
19	666-198	Felt Wick, for drive shaft bushing, left -----	1
20	63479 D	Grip-Feed Drive Shaft Bushing, left -----	1
21	22591	Screw, for drive shaft head -----	2
22	63439 R	Grip-Feed Drive Shaft Head -----	1
23	63439 Y	Grip-Feed Drive Shaft -----	1
24	63479 A	Grip-Feed Drive Shaft Sleeve -----	1
25	22656 D-12	Screw, for grip-feed mechanism support -----	1
26	22519 C	Screw, for grip-feed rocker arm -----	2
27	51235 G	Washer, for grip-feed rocker arm -----	2
28	51235 A	Grip-Feed Rocker Arm -----	1
29	269	Nut, for feed crank stud -----	1
30	20	Washer, for feed crank stud -----	1
31	63439 AE	Feed Crank Link Assembly -----	1
32	63439 AD	Ferrule -----	1
33	22730	Screw, for oil shield -----	1
34	51236 G	Feed Crank Stud -----	1
35	51236 B	Feed Crank Stud Cap -----	1
36	22768	Screw, for feed crank stud cap -----	2
37	82	Adjusting Screw, for feed crank stud -----	1
38	51054	Feed Link Crank Link Pin -----	1
39	666-149	Felt Wick -----	1
40	77	Screw, for feed rocker arm -----	1
41	63439 W	Spacer, for grip-feed mechanism support -----	1
42	53564 G	Dowel Pin, for grip-feed mechanism support -----	1
43	482	Collar, for grip-feed rocker arm shaft -----	2
44	98	Screw -----	1
45	22652 D-20	Screw, for grip-feed mechanism support -----	1
46	63485 A	Bushing, for grip-feed mechanism support -----	1
47	63439 E	Grip-Feed Rocker Arm Shaft -----	1
48	56335 H	Grip-Feed Drive Arm -----	1
49	51235 G	Washer -----	2
50	22519 C	Screw -----	2
51	660-310	Retaining Ring -----	2
52	56341 E	Hinge Pin -----	1
53	56335 J	Grip-Feed Drive Connection -----	1
54	22738	Screw -----	1
55	51330 S	Chain Cutting Knife -----	1
56	87 U	Screw, for grip-feed connecting rod hinge -----	2
57	56334 F	Grip-Feed Connecting Rod Hinge -----	1
58	36263-936	Hinge Pin -----	1
59		Presser Foot (See Page 15) -----	1





PRESSER FEET, FEED DOGS AND THROAT PLATES  
(WIDE SEWING COMBINATIONS)

Ref. No.	Part No.	Description	Amt. Req.
1	61405 AG	Feed Dog, 16 teeth per inch, marked "BK"-----	1
2	61324 D-063	Throat Plate, .063 inch needle hole -----	1
	61324 D-073	Throat Plate, .073 inch needle hole -----	1
	61324 D-083	Throat Plate, .083 inch needle hole -----	1
	61324 D-093	Throat Plate, .093 inch needle hole -----	1
3	63420 G	Presser Foot Assembly (without teeth) -----	1
4	22738	Screw -----	4
5	61430 BP	Feed Section Guide, left, marked "B" -----	1
6	61430 BL	Presser Foot Shank -----	1
7	63430 N	Feeding Section, left, (without teeth) marked "L" ----	1
8	1594 A	Hinge Pin -----	1
9	61430 BK	Presser Foot Bottom -----	1
10	63430 R	Feeding Section, right, (without teeth) marked "N" ---	1
11	61430 BR	Feed Section Guide, right, marked "C" -----	1
12	61430 BT	Spring -----	1
13	56330 F	Yielding Section -----	1
14	61420 CG	Presser Foot Assembly (with 16 teeth per inch) -----	1
15	22738	Screw -----	4
16	61430 BP	Feed Section Guide, left, marked "B" -----	1
17	61430 BL	Presser Foot Shank -----	1
18	61430 BM	Feeding Section, left, 16 teeth per inch, marked "BM"-----	1
19	1594 A	Hinge Pin -----	1
20	61430 BK	Presser Foot Bottom -----	1
21	61430 BN	Feeding Section, right, 16 teeth per inch, marked "BN"-----	1
22	61430 BR	Feed Section Guide, right, marked "C" -----	1
23	61430 BT	Spring -----	1
24	61430 BS	Yielding Section -----	1

(NARROW SEWING COMBINATIONS)

25	61405 AK	Feed Dog, 16 teeth per inch -----	1
26	61424 AK	Throat Plate, .073 inch needle hole -----	1
27	63420 F	Presser Foot Assembly (without teeth) -----	1
28	22738 B	Screw -----	4
29	61430 CH	Feed Section Guide, left, marked "G" -----	1
30	61430 BL	Presser Foot Shank -----	1
31	63430 P	Feeding Section, left (without teeth) marked "M" ----	1
32	1594 A	Hinge Pin -----	1
33	61430 CE	Presser Foot Bottom -----	1
34	63430 M	Feeding Section, right, (without teeth) marked "K"-----	1
35	61430 CJ	Feed Section Guide, right, marked "F" -----	1
36	61430 BT	Spring -----	1
37	56330 F	Yielding Section -----	1
38	61420 CJ	Presser Foot Assembly (with 16 teeth per inch) -----	1
39	22738 B	Screw -----	4
40	61430 CH	Feed Section Guide, left, marked "G"-----	1
41	61430 BL	Presser Foot Shank -----	1
42	61430 CF	Feeding Section, left, 16 teeth per inch, marked "D"-----	1
43	1594 A	Hinge Pin -----	1
44	61430 CE	Presser Foot Bottom -----	1
45	61430 CG	Feeding Section, right, 16 teeth per inch, marked "E" -----	1
46	61430 CJ	Feed Section Guide, right, marked "F" -----	1
47	61430 BT	Spring -----	1
48	56330 F	Yielding Section -----	1



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