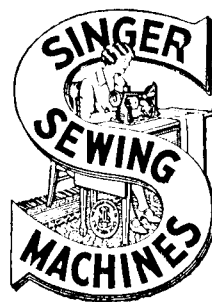


SINGER
159-1/159-2

LIST OF PARTS



MACHINES Nos. 159-1 and 159-2

THE SINGER MANUFACTURING COMPANY

INSTRUCTIONS FOR OILING

To ensure easy running and prevent unnecessary wear, the parts which are in movable contact should be oiled, and when the machine is in continuous use, it should be oiled at least twice each day.

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INSTRUCTIONS FOR ORDERING

In ordering from this list, use **ONLY** the part **NUMBER** in the **FIRST** column.

The number stamped on a Sewing Machine Part is in every case the number of the single part only.

Every combination of parts sent out as such has its specific number, which, although not stamped on the parts, must be used when ordering the combination.

Each number always indicates the **SAME PART** in whatever list it appears, or for whatever machine.

The letters after some of the numbers indicate the style of finish only, as follows:

- A—Hardened, Polished, Nickel Plated and Buffed
- B—Polished, Nickel Plated and Buffed
- C—Hardened Only
- D—Polished Only
- E—Soft, Not Polished
- F—Hardened and Polished
- H—Blued
- J—Nickel Plated Only
- K—Hardened and Nickel Plated
- L—Brass Plated
- M—Oxidized
- N—Japanned, Dull
- P—Japanned, Bright
- R—Merlized
- T—Copper Plated
- T. A.—Hardened, Polished, Copper and Nickel Plated and Buffed
- T. B.—Copper and Nickel Plated and Polished
- T. J.—Copper and Nickel Plated Only
- T. K.—Hardened, Copper and Nickel Plated
- T. M.—Copper Plated and Oxidized
- T. L.—Copper and Brass Plated
- U—Zinc Plated
- V—Silver Plated
- W—Polished and Nickel Plated
- Y—Black Nickel Plated Only
- Z—Chromium Plated
- Z. B.—Polished, Nickel Plated, Buffed and Chromium Plated
- Z. J.—Nickel and Chromium Plated

These letters **MUST BE USED** when they appear in the list; and **AFTER** the number **as** in the list.

In this series:

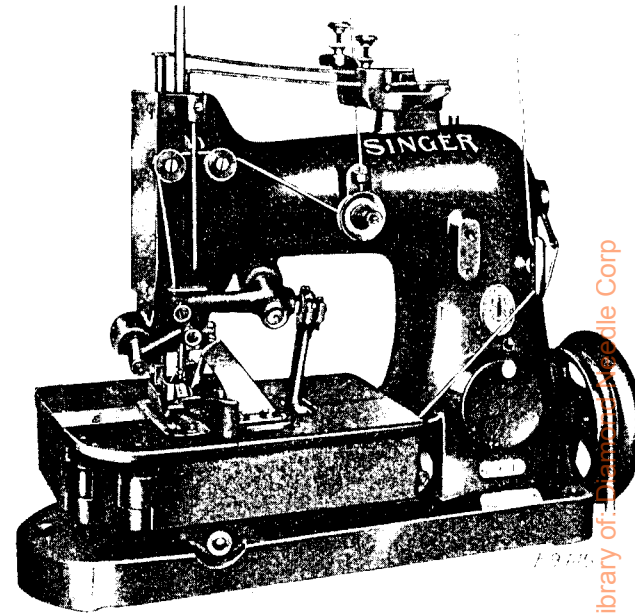
- 1 to 1500 and 50001 to 51500 are Screw Numbers
- 1501 to 1800 and 51501 to 51800 are Nut Numbers
- 1801 to 2000 and 51801 to 52000 are Roller Numbers
- 2001 to 50000 and 52001 and upward are numbers of Machine Parts

The figures in the second column refer only to the plates, illustrating the parts, and are **NOT TO BE USED** in ordering.

Parts marked with an asterisk (*) are furnished only when repairs are made at factory.

LIST OF PARTS COMPLETE

FOR



MACHINE No. 159-1

FOR OVEREDGING HEAVY BURLAP BAGS WITH FLAX, JUTE OR HEMP TWINE; ALSO FOR FELT PADDING, CARPETS, ETC., UP TO 3/8 INCH IN THICKNESS.

TWO-THREAD CHAIN STITCH. ONE NEEDLE. SPREADER AND LOOPER. BIGHT 1/2 INCH, LENGTH OF STITCH 3/8 TO 5/8 INCH. NEEDLE BAR STROKE 2 1/4 INCHES.

TWO INDEPENDENT PRESSER BARS AND HINGED PRESSER FEET. FOOT LIFTER. BALANCE WHEEL NO. 122007. DIAMETER OF BELT GROOVE 4 3/8 INCHES.

SPEED 1600.

OBSOLETE, SUPERSEDED BY 159-2 MACHINE

NO.	PLATE	NAME
*132301	---	Arm, upper and lower (solid) with 15101 and two 15405.
49091	8812	Arm Oil Tube with 49092, for oiling Crank Connecting Rod (lower bearing)

from the library of: *Singer Sewing Machine Corp*

NO.	PLATE	NAME
52084	8812	Arm Oil Tube with 52045, for oiling Arm Rock Shaft Intermediate Bearing....
52630	8812	Arm Oil Tube with 49092, for oiling Crank Connecting Rod (upper bearing)
56003	8812	Arm Oil Tube with 52045, for oiling Needle Bar Connecting Link.....
52045	20964	Arm Oil Tube Packing (wick).....
49092	8812	“ “ “ “ (felt).....
122097	20963	“ Rock Shaft.....
49003	8801	“ “ “ “ Bushing (back).....
448c	8801	“ “ “ “ “ Set Screw
122003	8801	“ “ “ “ (front).....
448c	8801	“ “ “ “ “ Set Screw
49004	8801	“ “ “ “ (intermediate)
448c	8801	“ “ “ “ “ Set Screw.....
132302	20955	Arm Rock Shaft Collar with two 443c... 443c 8801 “ “ “ “ Set Screw.....
132303	20955	“ “ “ “ Crank (back) with 50582c and two 51157c.....
50582c	20955	Arm Rock Shaft Crank (back) Position Screw.....
51157c	20955	Arm Rock Shaft Crank (back) Set Screw
122099	20955	“ “ “ “ (front) with 50582c and 51157c.....
50582c	20955	Arm Rock Shaft Crank (front) Position Screw.....
51157c	20955	Arm Rock Shaft Crank (front) Set Screw
49005	8801	“ “ “ “ Flanged Bushing (front)
448c	8801	“ “ “ “ “ “ “ Set Screw.....
132304	20963	Arm Rotary Shaft.....
132368	—	“ “ “ “ 132304 with 122086.
49011	8801	“ “ “ “ Bushing (front)....
430c	8801	“ “ “ “ “ “ Set Screw.....
49010	8801	Arm Rotary Shaft Collar with two 1259c 1259c 8801 “ “ “ “ Set Screw.....
49012	20959	“ “ “ “ Flanged Bushing (back) with 49013 and 49093.....
49093	20964	Arm Rotary Shaft Flanged Bushing (back) Oil Pad, long (braided cotton)
49013	8812	Arm Rotary Shaft Flanged Bushing (back) Oil Pad, short (braided cotton)
159F	20957	Arm Rotary Shaft Flanged Bushing (back) Screw.....

NO.	PLATE	NAME
49014	8801	Arm Rotary Shaft Flanged Bushing (intermediate).....
448c	8801	Arm Rotary Shaft Flanged Bushing (intermediate) Set Screw.....
64805	8812	Arm Rotary Shaft Oil Pad (braided cotton) for Front Bearing.....
64805	8812	Arm Rotary Shaft Oil Pad (braided cotton) for Intermediate Bearing....
4288	20959	Arm Side Cover (back).....
51224w	20967	“ “ “ “ Thumb Screw..
4288	20959	“ “ “ “ (front).....
51224w	20967	“ “ “ “ Thumb Screw..
122007	20963	Balance Wheel, 4 $\frac{3}{8}$ in. diam., with two 430c.....
430c	8801	Balance Wheel Set Screw.....
132305	20963	Cloth Plate with two 132306.....
132306	20964	“ “ “ Oil Tube with 49092, for oiling Feed Eccentric Connection... 132306 20964 Cloth Plate Oil Tube with 49092 for oiling Loper Rock Shaft Connecting Rod.....
49092	8812	Cloth Plate Oil Tube Packing (felt)...
132307	20955	“ “ “ Slide.....
132308	—	Cloth Plate complete, Nos. 132305, 132307, 132323, 132324, two each 42005, 52716 and four 217j.....
50467F	20957	Cloth Plate Screw.....
122012	20959	Crank Connecting Rod with 896c, 49109 and two 145E.....
122086	—	Crank Connecting Rod 122012 with 1513j and 50447c.....
896E	20957	Crank Connecting Rod Adjusting Screw
49109	8801	“ “ “ “ Washer
145E	20957	“ “ “ “ Cap Screw....
50447c	20957	“ “ “ “ Hinge Screw....
1513J	20958	“ “ “ “ “ Nut
132309	20959	Face Plate.....
193E	20957	“ “ “ Screw.....
132310	20953	Feed Bar.....
132311	—	Feed Bar complete, Nos. 190j, 457c, 1258c, 122016, 122017, 132310, 132312 and two 704c.....
122016	20953	Feed Bar Extension.....
704c	20953	“ “ “ “ Screw.....
52716	20953	“ “ “ “ Hinge Pin.....
1258c	8801	“ “ “ “ Set Screw.....
122017	20964	“ “ “ “ Oil Pad (braided cotton)....

NO.	PLATE	NAME
132312	20953	Feed Bar Wearing Plate.....
190J	20953	" " " " Screw.....
132313	20952	" Dog, 13 teeth (5 1/2 teeth to the inch) for 132357 and 132359.....
157E	20957	Feed Dog Screw.....
457c	20957	" " Stop Screw.....
132314	20961	" Eccentric with two 1036c.....
132315	20961	" " Connection with 2653, 4784 and two 145e.....
145E	20957	Feed Eccentric Connection Cap Screw ..
4784	8812	" " " Oil Pad (felt)
2653	8812	" " " " " Pin..
1036c	20957	" " Set Screw.....
122023	8801	" Lifting Cam with 1258c.....
1258c	8801	" " " Set Screw.....
50086c	20957	" Regulating Screw Stud.....
1714c	20957	" " " " Nut.....
49031	8801	" " " " Sleeve....
49032	8801	" " " " Washer....
132317	20961	" Rock Shaft with two 1258c.....
132358	20961	" " " Hinge Pin.....
122026	8801	" " " " " Bushing....
453c	20957	" " " " " " Set Screw.....
1258c	8801	Feed Rock Shaft Hinge Pin Set Screw...
132318	20961	Finger Guard.....
132319	20961	Guide.....
132320	20961	" Finger.....
203J	20957	" " Screw.....
690J	20957	" Screw.....
9525	8801	" " Washer.....
132321	20952	Looper.....
132322	20955	" Eccentric with two 1036c.....
1036c	20957	" " Set Screw.....
132323	20963	" Gate (left) with 1259c.....
132324	20963	" " (right) with 1259c.....
52716c	20953	" " Hinge Pin.....
1259c	8801	" " " " Set Screw.....
42005	20965	" " Lock Spring.....
217J	20958	" " " " Screw.....
132325	20960	" Rock Shaft with two each 1120c and 1259c.....
132326	20962	Looper Rock Shaft Connecting Rod with two each 127E and 158E.....
132365	—	Looper Rock Shaft Connecting Rod 132326 with 132322 and 132327.....

NO.	PLATE	NAME
132327	20958	Looper Rock Shaft Connecting Rod Ball Screw Stud (eccentric).....
1513c	20958	Looper Rock Shaft Connecting Rod Ball Screw Stud Nut.....
158E	20957	Looper Rock Shaft Connecting Rod Cap (lower) Screw.....
127E	20957	Looper Rock Shaft Connecting Rod Cap (upper) Screw.....
42077	20958	Looper Rock Shaft Connecting Rod Guide.....
171E	20958	Looper Rock Shaft Connecting Rod Guide Screw.....
132358	20961	Looper Rock Shaft Hinge Pin.....
132330	20961	" " " " " Bushing
448c	8801	" " " " " " Set Screw.....
68350	20964	Looper Rock Shaft Hinge Pin Oil Cup...
1259c	8801	" " " " " Set Screw
1120c	20957	" Set Screw.....
122042	20962	Needle Bar (hollow).....
122043	20958	" " Bushing (lower).....
452c	20957	" " " " Set Screw..
122044	20958	" " " (upper).....
452c	20957	" " " " Set Screw..
*49101	20958	" " Connecting Link.....
49057	20958	" " " " Hinge Stud
1517J	20958	" " " " " Nut.....
122045	20958	Needle Bar Connecting Stud with two 145E.....
1454e	20958	Needle Bar Connecting Stud Clamping Screw.....
1753c	20957	Needle Clamping Nut.....
122018	20962	Presser Bar (left).....
59033	20954	" " " Bushing (lower)....
452c	20957	" " " " " Set Screw.....
122049	20954	Presser Bar (left) Bushing (upper)....
452c	20957	" " " " " Set Screw.....
124193	20954	Presser Bar (left) Collar with two 1253c
1253c	20954	" " " " Set Screw....
122050	20953	" " " Lifting Bracket with 1258c.....
1258c	8801	Presser Bar (left) Lifting Bracket Set Screw.....
122051	20962	Presser Bar (right).....

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14 PARTS FOR MACHINE No. 159-1

NO.	PLATE	NAME
132369	20956	Tension (needle thread) Spring.....
59537	20967	" " " " Bushing
122064	20956	" " " " Thread Eyelet
447c	20956	" " " " " "
		Set Screw.....
132345	20956	Thread (looper) Controller.....
132346	20965	" " " " Eccentric with two 200c.....
132347	20958	Thread (looper) Controller Eccentric Connecting Rod with two each 171E and 896E.....
132367	---	Thread (looper) Controller Eccentric Connecting Rod 132347 with 193J, 55034, 132346 and 132348.....
132348	20958	Thread (looper) Controller Eccentric Connecting Rod Ball Stud.....
1259c	8801	Thread (looper) Controller Eccentric Connecting Rod Ball Stud Set Screw.
896E	20957	Thread (looper) Controller Eccentric Connecting Rod Cap (large) Screw..
171E	20958	Thread (looper) Controller Eccentric Connecting Rod Cap (small) Screw..
55034	20958	Thread (looper) Controller Eccentric Connecting Rod Guide.....
193J	20957	Thread (looper) Controller Eccentric Connecting Rod Guide Screw.....
200c	20965	Thread (looper) Controller Eccentric Set Screw.....
132351	20960	Thread (looper) Controller Lever with 1259c.....
42053	20954	Thread (looper) Controller Lever Hinge Stud.....
453c	20957	Thread (looper) Controller Lever Hinge Stud Set Screw.....
190J	20953	Thread (looper) Controller Screw.....
58800	20956	" " " " Guide Roller.....
132352	20956	" " " " Cover.....
1042c	20956	" " " " Screw.....
122065	20965	" (upper) Guide (side of arm).....
457c	20957	" " " " " " " Set Screw.....
132363	20956	Thread (upper) Guide Roller (side of arm)
132364	20956	" " " " Cover.....
1042c	20956	" " " " Screw.....
132353	20956	" " Pull-off.....
1520R	20954	" " " Nut.....
132354	20956	" " Take-up.....

PARTS FOR MACHINE No. 159-1 15

NO.	PLATE	NAME
1154J	20958	Thread (upper) Take-up Screw.....
132355	20964	" " " " Stripper.....
1120c	20957	" " " " " Set Screw
132356	20956	" Eyelet, double (side of arm).....
447c	20956	" " " " " " " Set Screw.....
132357	20952	Throat Plate (large needle hole) for 132313.....
132359	20951	Throat Plate (small needle hole) for 132313.....
742F	20957	Throat Plate Screw.....
*15104	---	Trade Mark.....
15105	---	" " Rivet.....

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

**Needles in Containers marked
"For Singer Machines"
are not Singer made needles. 2**

From the library of: Diamond Needle Corp

**LIST OF PARTS COMPLETE
FOR
MACHINE No. 159-2**

FOR OVEREDGING HEAVY BURLAP BAGS WITH FLAX, JUTE OR HEMP TWINE; ALSO FOR FELT PADDING, ETC., UP TO 1/2 INCH IN THICKNESS.

TWO-THREAD CHAIN STITCH. ONE NEEDLE. SPREADER AND LOOPER. BIGHT 1/2 INCH. LENGTH OF STITCH 3/8 TO 5/8 INCH. NEEDLE BAR STROKE 2 3/8 INCHES. TWO INDEPENDENT PRESSER BARS AND HINGED PRESSER FEET. FOOT LIFTER. BALANCE WHEEL 122007. DIAMETER OF BELT GROOVE 4 3/8 INCHES.

SPEED 1600.

This Machine is the same as 159-1
with the following exceptions:

NO.	PLATE	NAME
132397	20966	Arm Rotary Shaft, in place of 132304.....
132398	—	“ “ “ 132397 with 122086, in place of 132368.....
132371	20966	Cloth Plate with two 132306, in place of 132305.....
132372	—	Cloth Plate complete, Nos. 132307, 132371, 132377, 132378, 132399, two 42005 and four 2175, in place of 132308
132373	20968	Feed Dog, 15 teeth (5 1/4 teeth to the inch) for 132396, in place of 132313.....
50073e	20967	Feed Dog Screw, in place of 157E.....
132374	20969	“ Eccentric Connection with 896e, 2653, 4784, 49109 and two 145e, in place of 132315.....
896e	20957	Feed Eccentric Connection (back bearing) Adjusting Screw.....
49109	8801	Feed Eccentric Connection (back bearing) Adjusting Screw Washer.....
132376	20968	Guide Finger, in place of 132318.....
132400	20971	“ “ for overedging felt padding
132377	20966	Looper Gate (left) with 1259c, in place of 132323.....
132378	20966	Looper Gate (right) in place of 132324.....
132399	20967	“ “ Hinge Pin, in place of 52716
132379	20967	Presser Foot (left) Finger Guard, in place of 132331.....
132380	—	Presser Foot (left) Plate, in place of 132332.....

NO.	PLATE	NAME
132381	20967	Presser Foot (left) Seam Guide.....
217J	20958	“ “ “ “ “ Screw..
132382	—	“ “ “ Shank, in place of 122057.....
132383	20967	Presser Foot (left, hinged) with Seam Guide complete, Nos. 2175, 646e, 132379 to 132382 and two 337J, in place of 132333.....
132384	—	Presser Foot (right) Plate, in place of 132334.....
132385	—	Presser Foot (right) Shank, in place of 122060.....
132386	20967	Presser Foot (right, hinged) complete, Nos. 646e, 132384 and 132385, in place of 132335.....
132401	20971	Presser Foot Tape Guide, for overedging felt padding.....
236J	20971	Presser Foot Tape Guide Screw.....
132387	20968	Spreader, in place of 132336.....
132388	20967	“ Eccentric with two 1036e, in place of 132322.....
132389	20968	Spreader Holder with three 1120e, in place of 132337.....
132390	20968	Spreader Holder Crank, in place of 132338.....
132391	20967	Spreader Holder Crank Hinge Stud Bushing, in place of 132339.....
51407e	20967	Spreader Holder Crank Hinge Stud Bushing Clamping Screw, in place of 1259c.....
1373c	20967	Spreader Holder Hinge Screw, in place of 50562c.....
1650J	20967	Spreader Holder Hinge Screw Nut, in place of 1520a.....
132392	20969	Spreader Lever, in place of 132340.....
132393	—	“ “ Connecting Rod 132341 with 132327 and 132388, in place of 132366.....
132394	20967	Thread (looper) Controller, in place of 132345.....
132395	20969	Thread (looper) Controller Lever with 1259c, in place of 132351.....
51408e	20967	Thread (looper) Controller Screw, in place of 190a.....
132363	20956	Thread Looper Guide Roller, in place of 58800.....

18 PARTS FOR MACHINE No. 159-2

NO.	PLATE	NAME
132396	20968	Throat Plate, in place of 132357 and 132359 (for heavy Burlap Bags, Jute or Hemp Twine, Needles No. 29 to No. 34) for 132373.

NOTE: Throat Plate No. 132396 is furnished with this Machine unless otherwise specified on order.

132403	---	Throat Plate (for Felt Padding, light Burlap Bags, light Thread, Needles No. 24 to No. 28) for 132373.
--------	-----	--

ACCESSORIES

NO.	PLATE	NAME
4718	8812	Machine Base Cushion (felt).
50144j	8811	" " Thumb Screw with 49095.
49095	8812	" " " Washer.
120344	8811	Oiler (copper plated) with 120345.
120345	8811	" Spout, 5 in. long.
11831	8811	Screw Driver (large).
26026	8811	" " (small).
120341	20964	Tweezers (curved).
8909	8811	Wrench for 1513 and 1517.
8908	8811	" " 1753.
49079	20960	" " 1714.
132405	---	" " 132327.

MACHINE BASE

NO.	PLATE	NAME
49123	8812	Machine Base Oil Pipe.
49124	8812	" " " Valve.
50468E	20957	" Screw.
122084	8812	" Washer (leather).
122080	8810	" Base with 49123, 49124 and three each 50468E and 122084.

FOLD GUIDE

NO.	PLATE	NAME
120895	20961	Fold Guide.
132320	20961	" " Finger.
217j	20958	" " " Screw.
120896	20961	Fold Guide complete, Nos. 120895, 132320 and two 217j.
690j	20957	Fold Guide Screw.
9525	8801	" " " Washer.

FOOT LIFTER PARTS

NO.	PLATE	NAME
6439	---	Chain, 36 in. to 45 in., with 56864 and 56865.

NOTE: When ordering No. 6439, state length required.

4879	8811	Chain Connecting Link.
56864	8811	" Hook (large).
56865	8812	" " (small).
122081	8810	Lifting Lever.
122082	20965	" " Connection.
8020	20957	" " Hinge Screw.
16069	20961	" " Spring.
871E	20957	" " Stop Screw.
4884	8810	Treadle.
4882	8811	" Shaft.
4883	8811	" Spring.
4884	8810	" Stand.
4885	8810	Treadle complete, Nos. 4879, 4881 to 4884 and two wood screws 1 in. No. 4885.
122083	---	Foot Lifter complete, Nos. 8020, 871E, 4885, 6439, 16069, 122081 and 122082.

TAPE HOLDER

FOR BINDING FELT PADS WITH TAPE

NO.	PLATE	NAME
26912	20970	Tape Holder Bracket Wire.
51137C	20971	" " " " Set Screw.
26913	---	Tape Holder Bracket Wire complete, Nos. 26912, 26915 and 26919.
26915	20970	Tape Holder Disc (8 inch).
26069	---	" " " Hub.
26917	20970	Tape Holder Disc complete, Nos. 26069 and 26915.
26919	20970	Tape Holder Tape Guide.
26073	---	" " Tension Adjusting Collar with 286B.
13211	20971	Tape Holder Tension Adjusting Collar Spring.
286B	20971	Tape Holder Tension Adjusting Collar Thumb Screw.
28809	20970	Tape Holder (straight, 8 inch disc) complete, Nos. 13211, 26073, 26913 and 26917.

NOTE: Tape Holder complete No. 28809 is not furnished with machine unless specified on order.

THREAD UNWINDER

FOR TWO SPOOLS

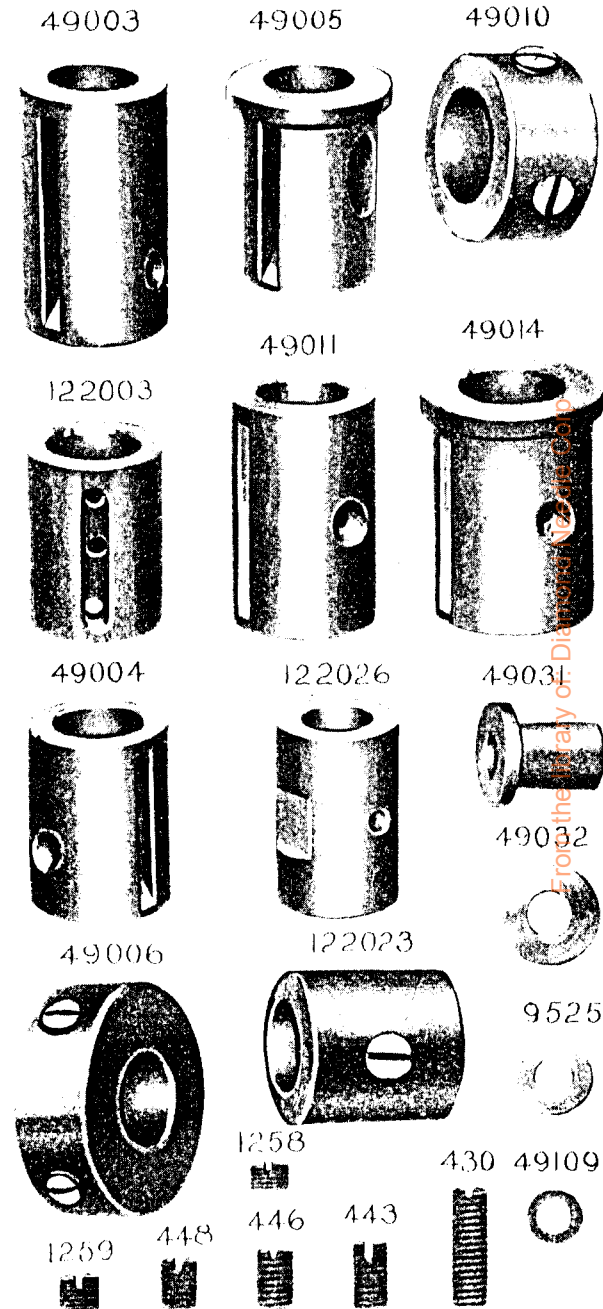
NO.	PLATE	NAME
225257	20335	Spool Rest with 201018c.....
150203	20335	" " Cushion (felt).....
225388	20335	" " Rod.....
200383c	20965	" " " Set Screw.....
201018c	20957	" " " Set Screw.....
202490	20335	" Stand with 200383c.....
225391	20335	Thread Guide.....
201696a	20965	" " Lock Nut.....
225326	20965	" " Position Cup.....
225324	20335	" " Rod with 208e and 225322
208e	20957	" " " Screw.....
225322	20965	" " " Washer.....
225258	20335	Thread Unwinder complete, Nos. 201696a, 202490, 225257, 225324, 225326, 225388, two 225391 and three wood screws $\frac{7}{8}$ in. No. 12...
27739	20962	Thread Cone (wood) for large cones....
225390	20962	" " Holder, for inverted cones

NOTE: Nos. 27739 and 225390 are used with, but not included in 225258.

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

Needles in Containers marked "For Singer Machines" are not Singer made needles. 2

PLATE 8801—FULL SIZE



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PLATE 8810—ONE-FOURTH SIZE

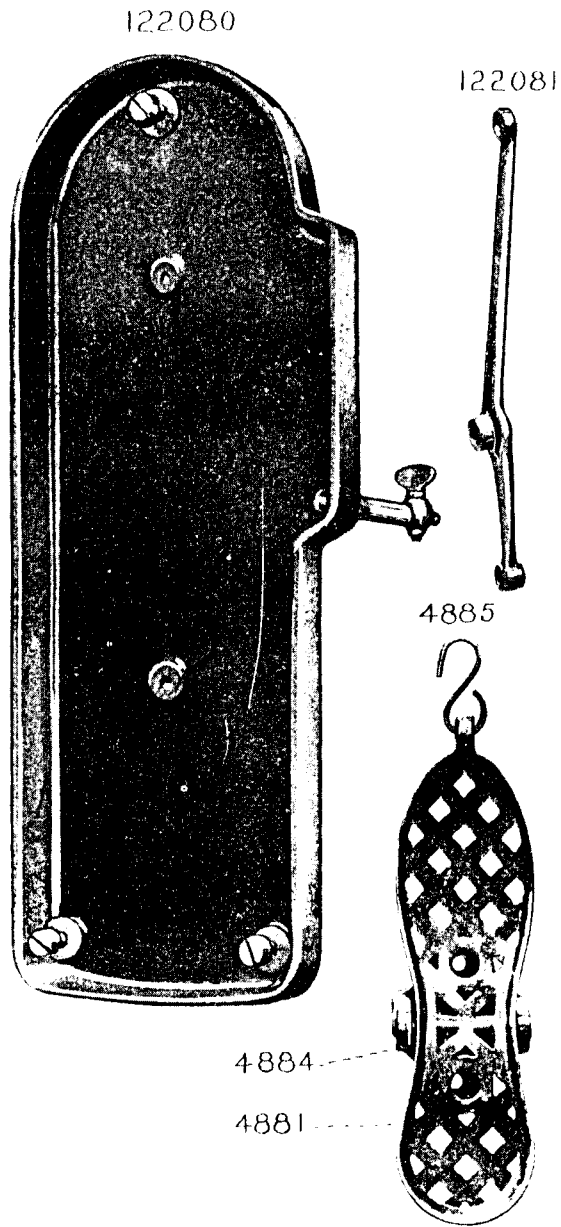


PLATE 8811—ONE-HALF SIZE

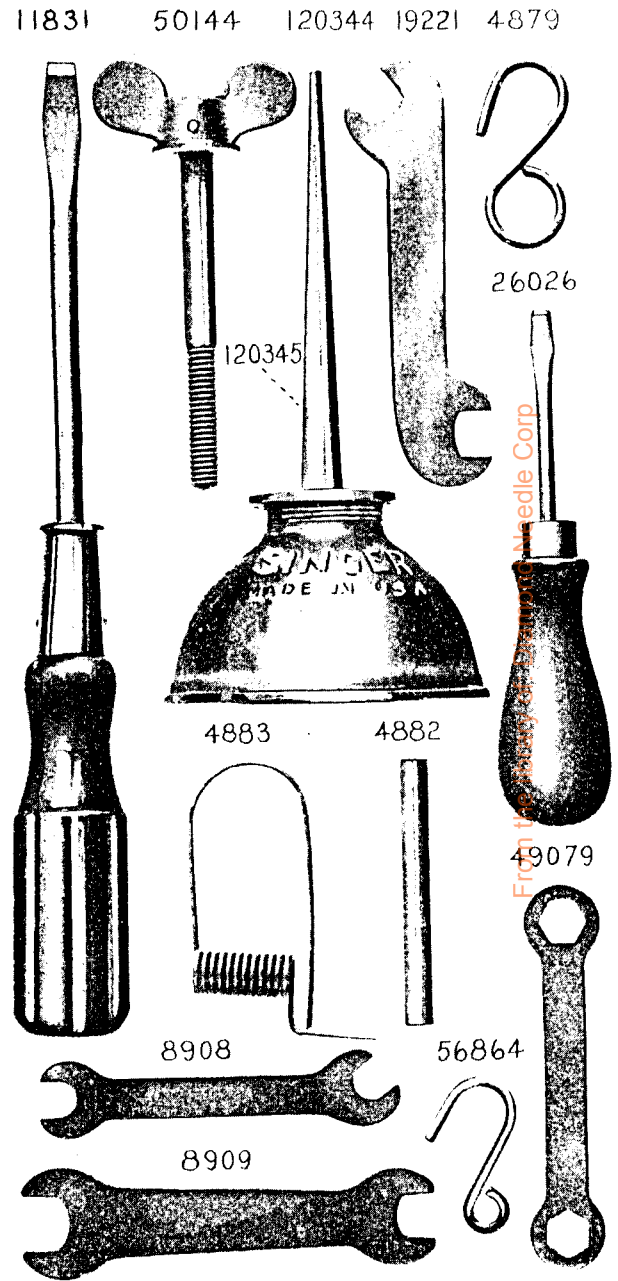


PLATE 8812—FULL SIZE

49091 52084 52630 56003 64805

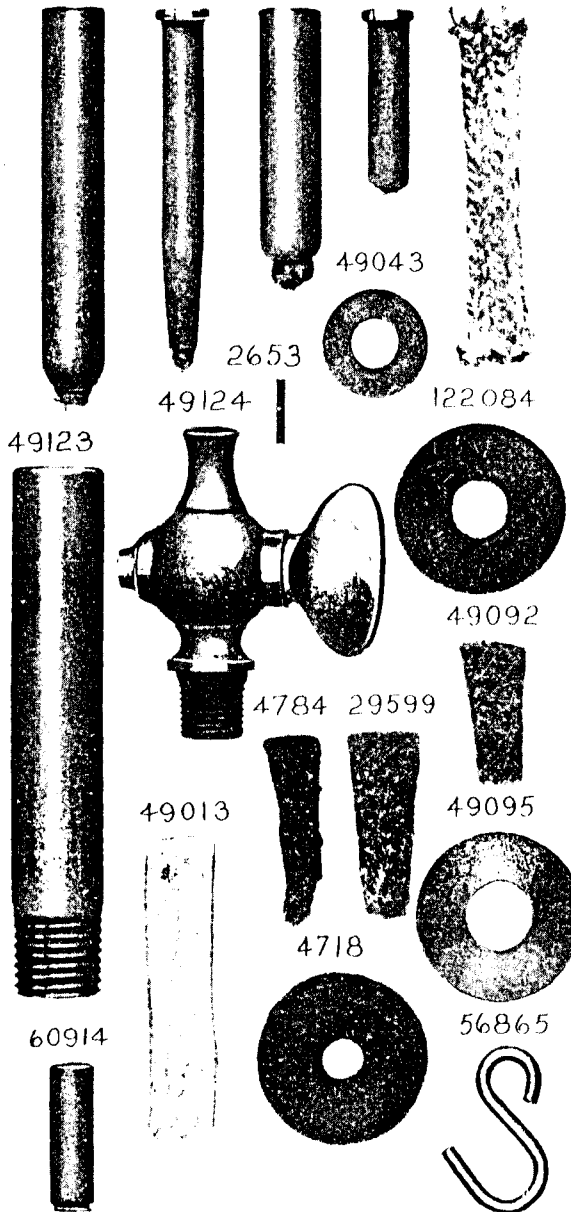
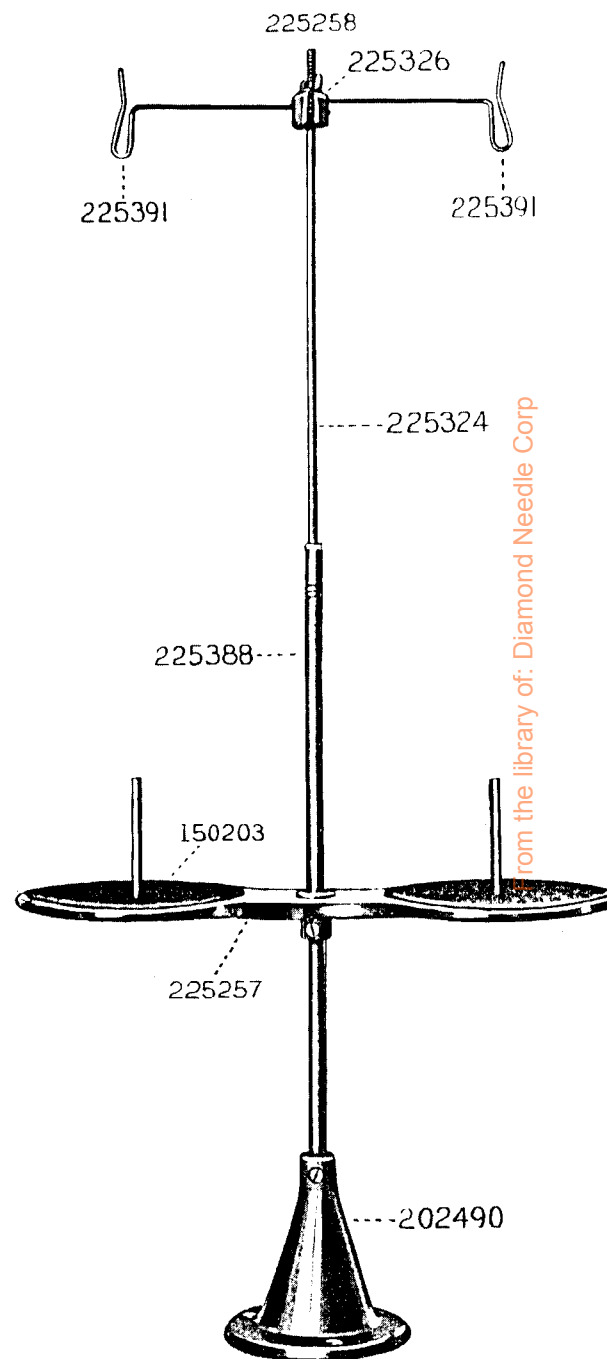


PLATE 20335—ONE-SIXTH SIZE



from the library of: Diamond Needle Corp

PLATE 20951—FULL SIZE

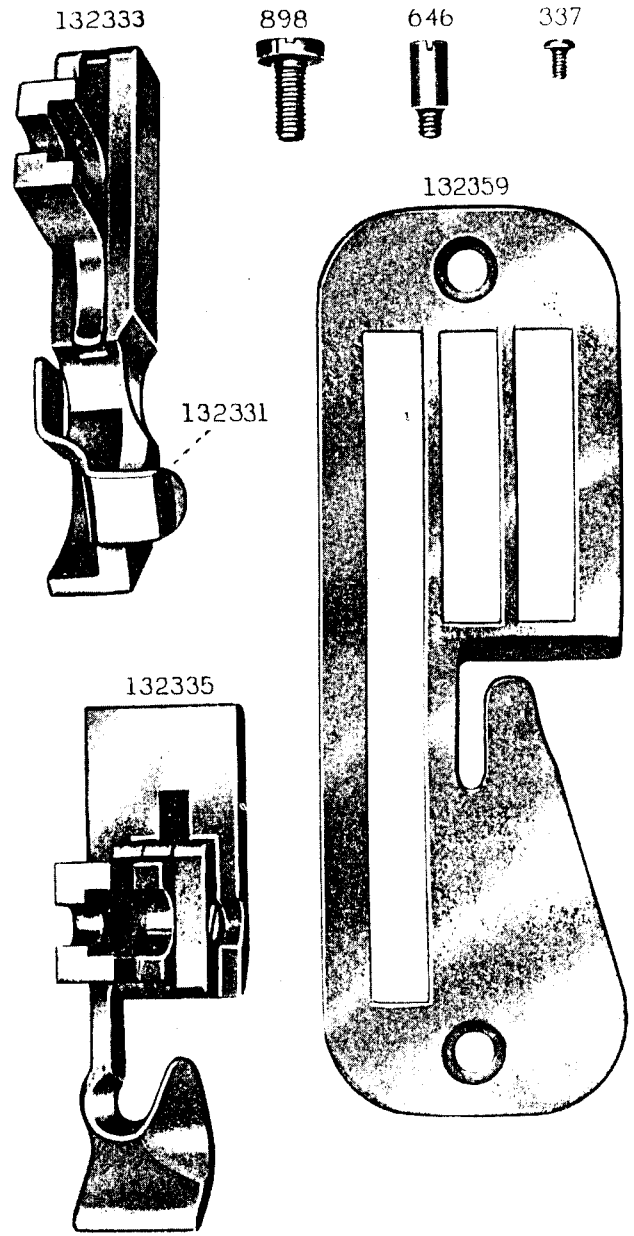


PLATE 20952—FULL SIZE

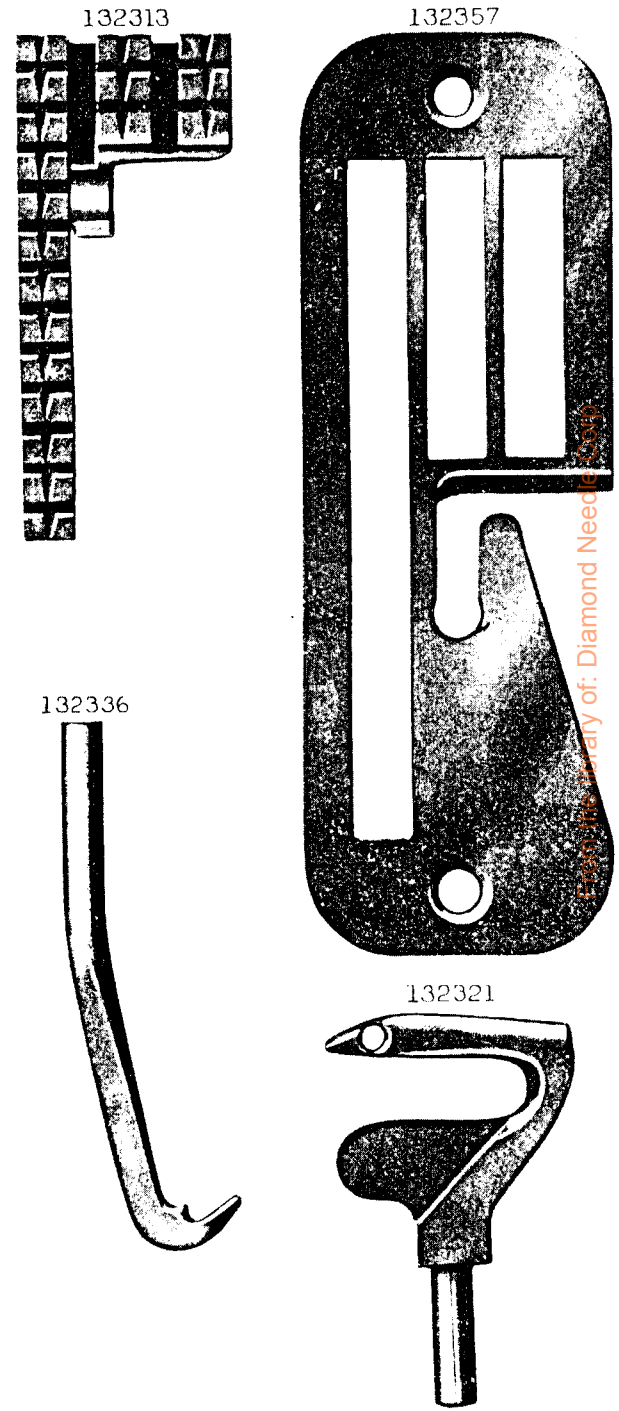


PLATE 20953—FULL SIZE

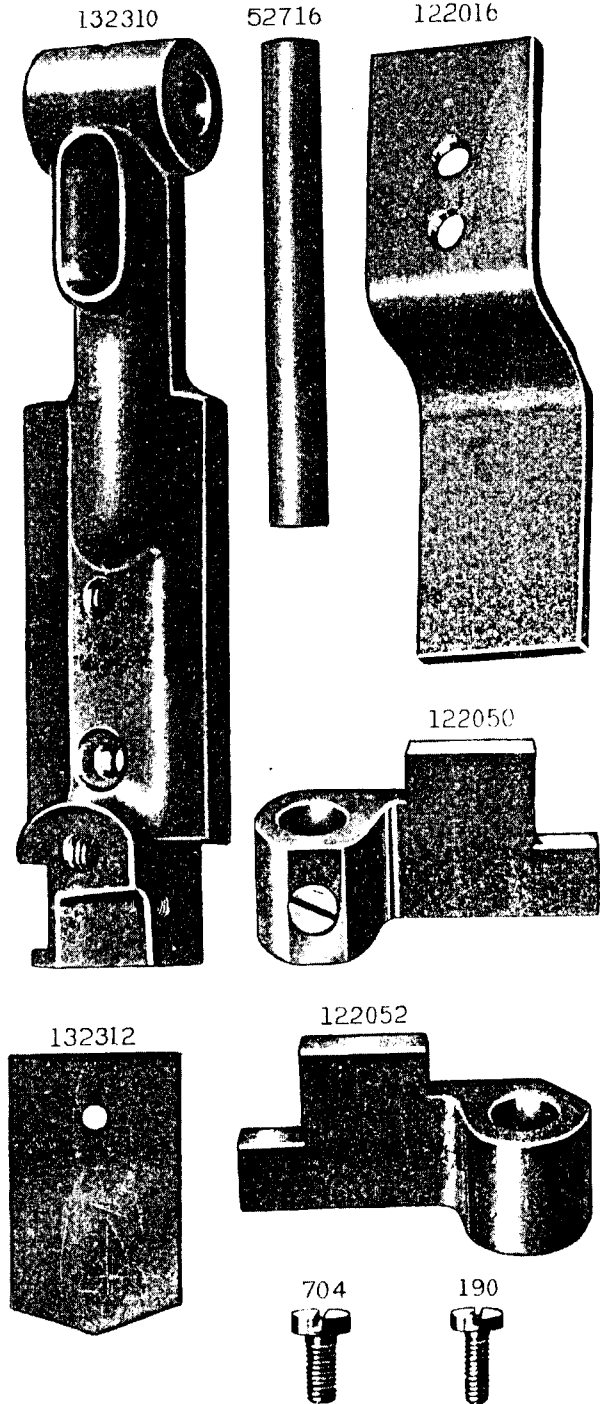
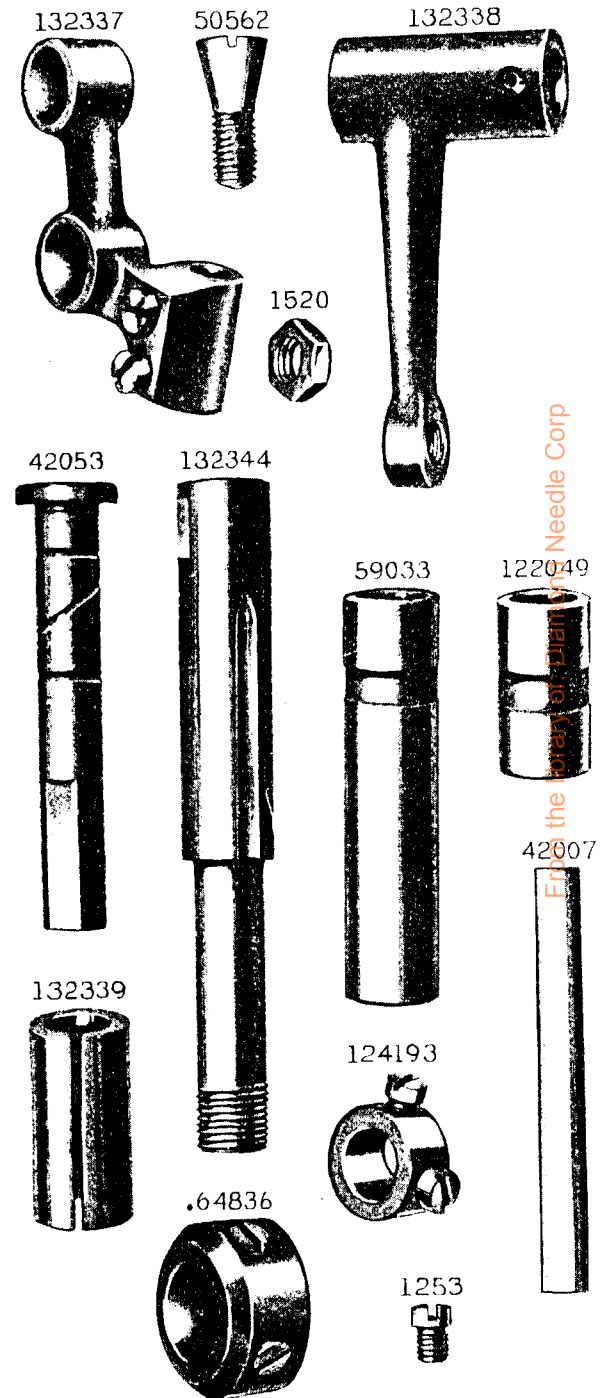


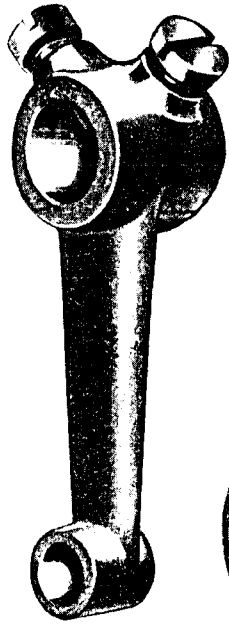
PLATE 20954—FULL SIZE



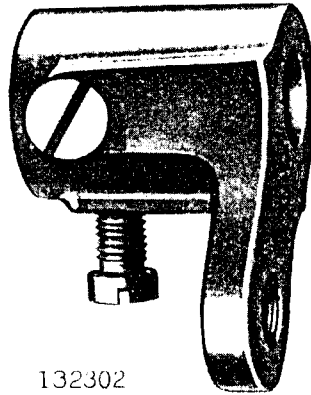
From the Library of the Army Ordnance Corps Needle Corp

PLATE 20955—FULL SIZE

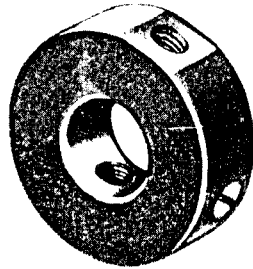
122099



132303



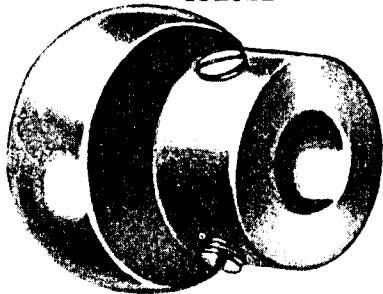
132302



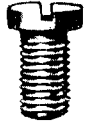
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132322



51157

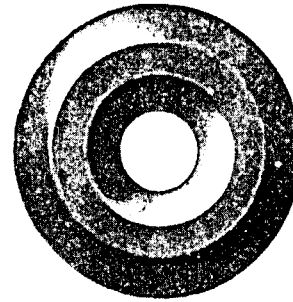


50582



PLATE 20956—FULL SIZE

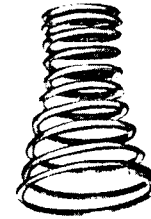
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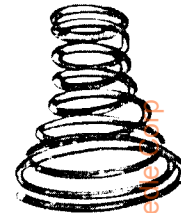
42336



50261



132369



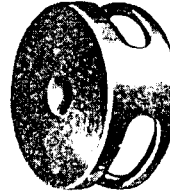
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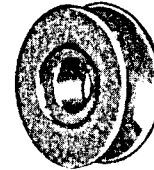
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132364



132363



1042



132352



58800



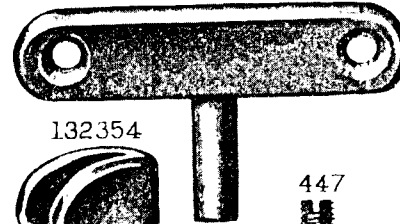
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132353



132356



132354



122064



447



From the library of: Diamond Needle Co.

PLATE 20957—FULL SIZE

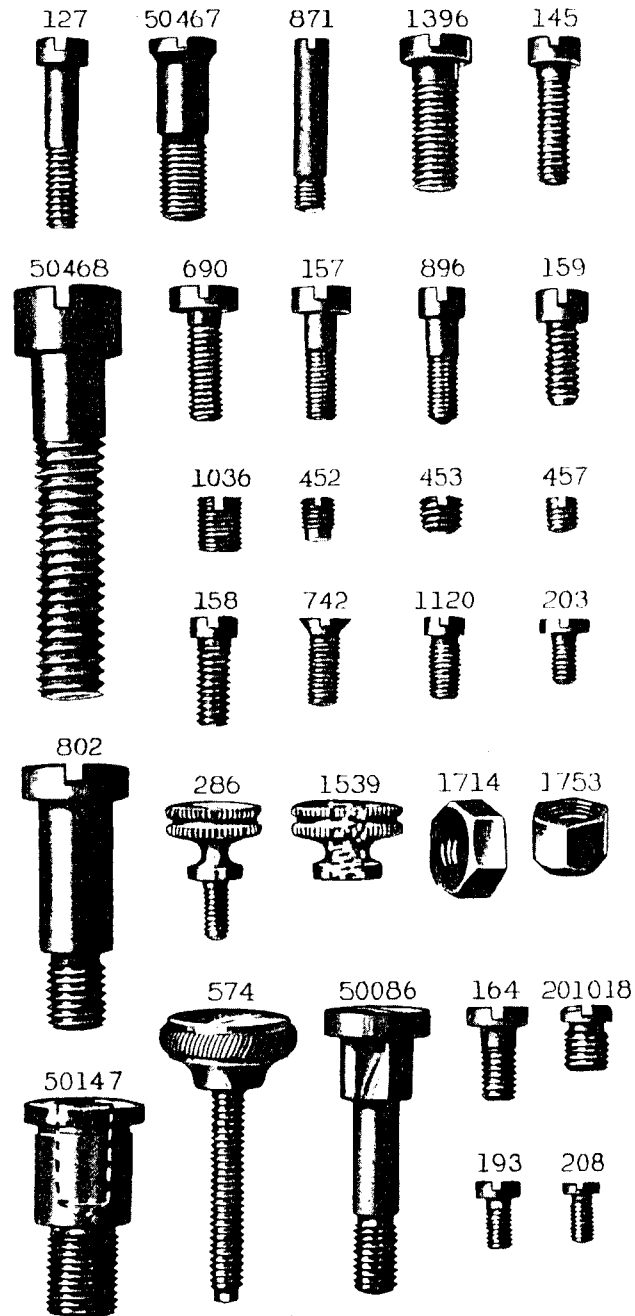


PLATE 20958—FULL SIZE

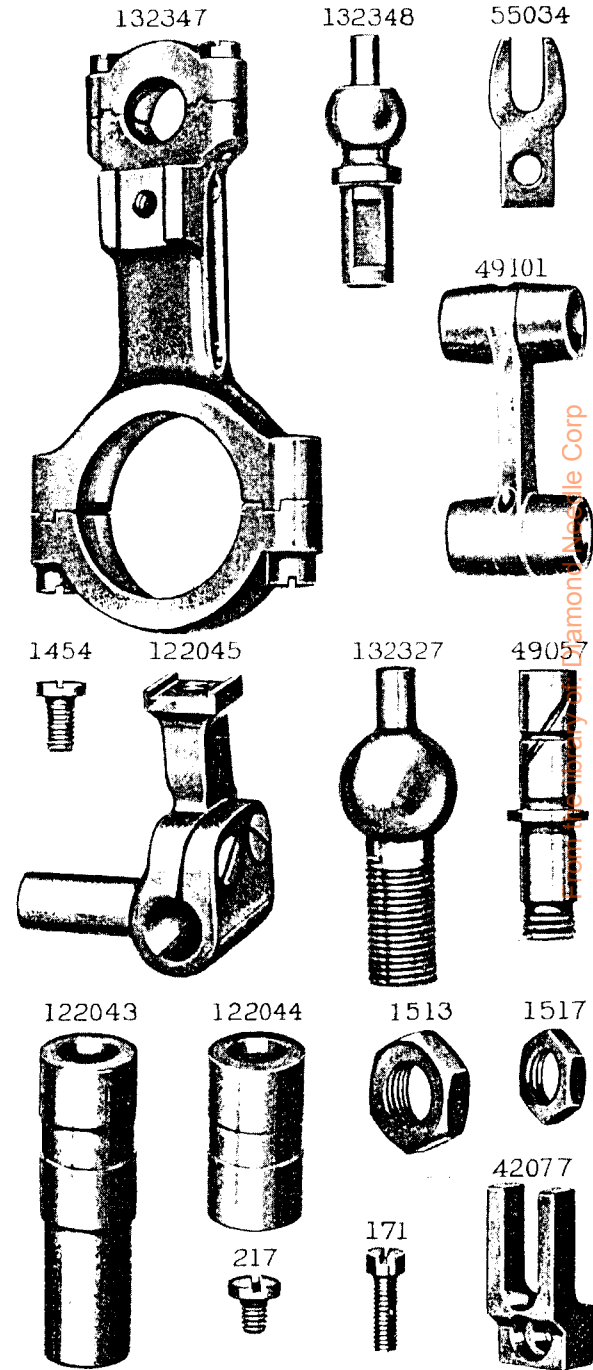


PLATE 20959—ONE-HALF SIZE

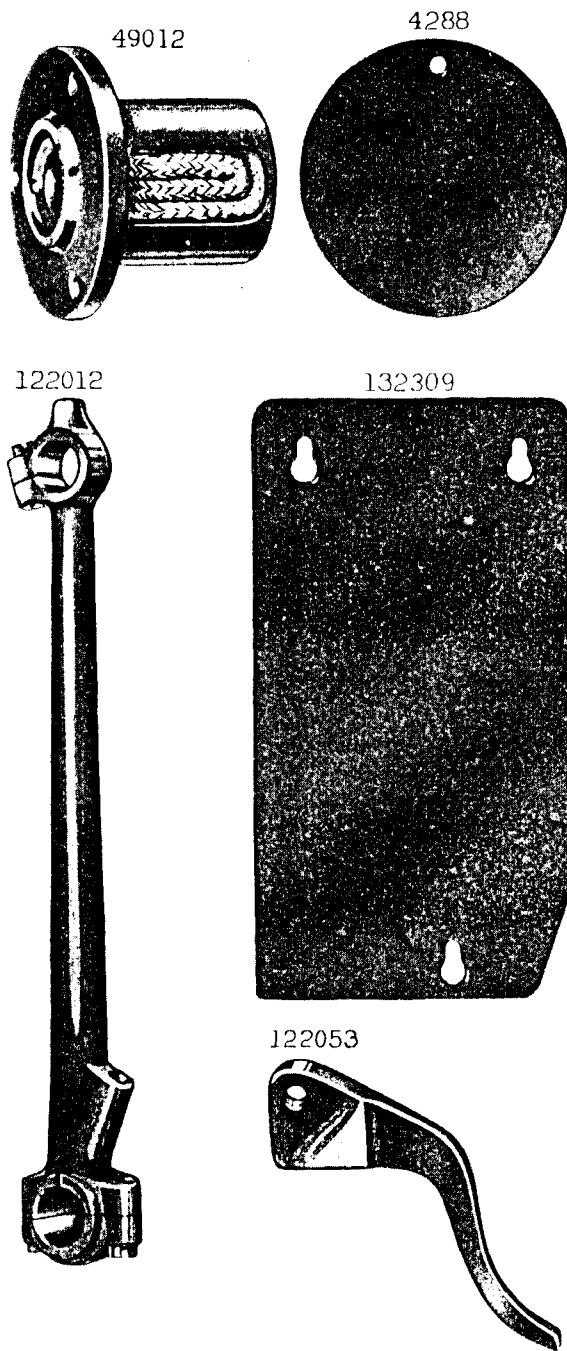


PLATE 20960—ONE-HALF SIZE

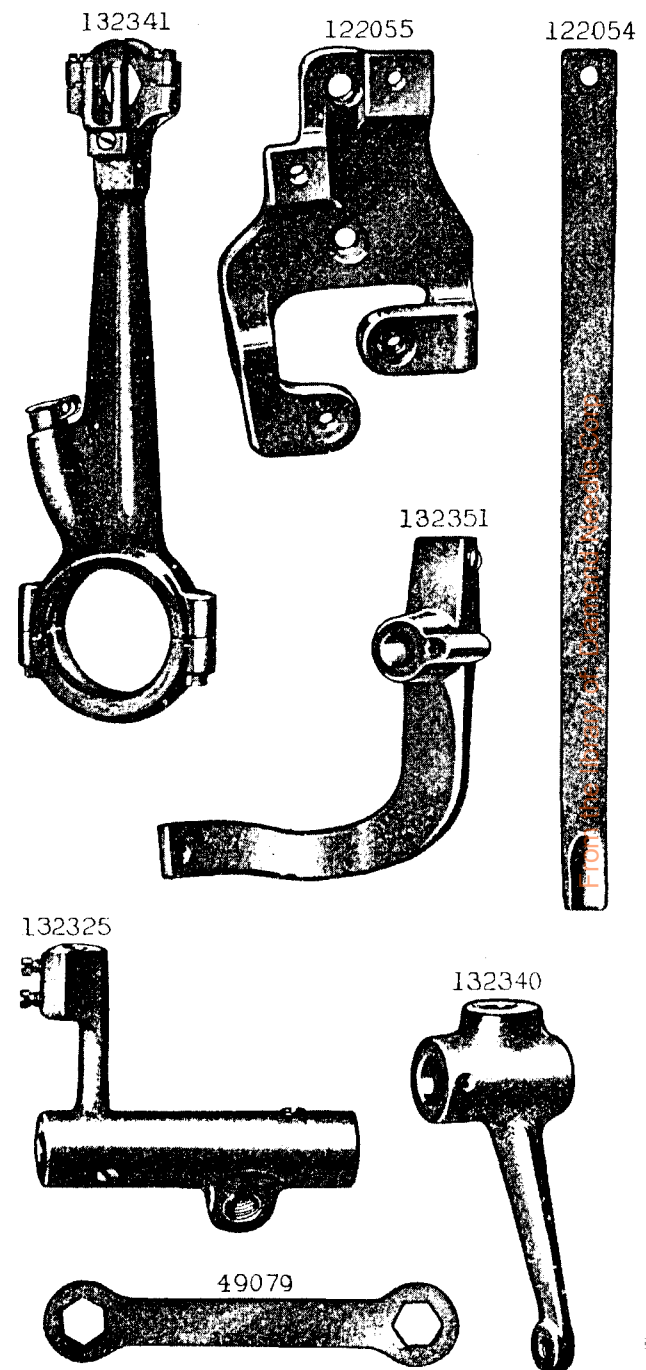


PLATE 20961—ONE-HALF SIZE

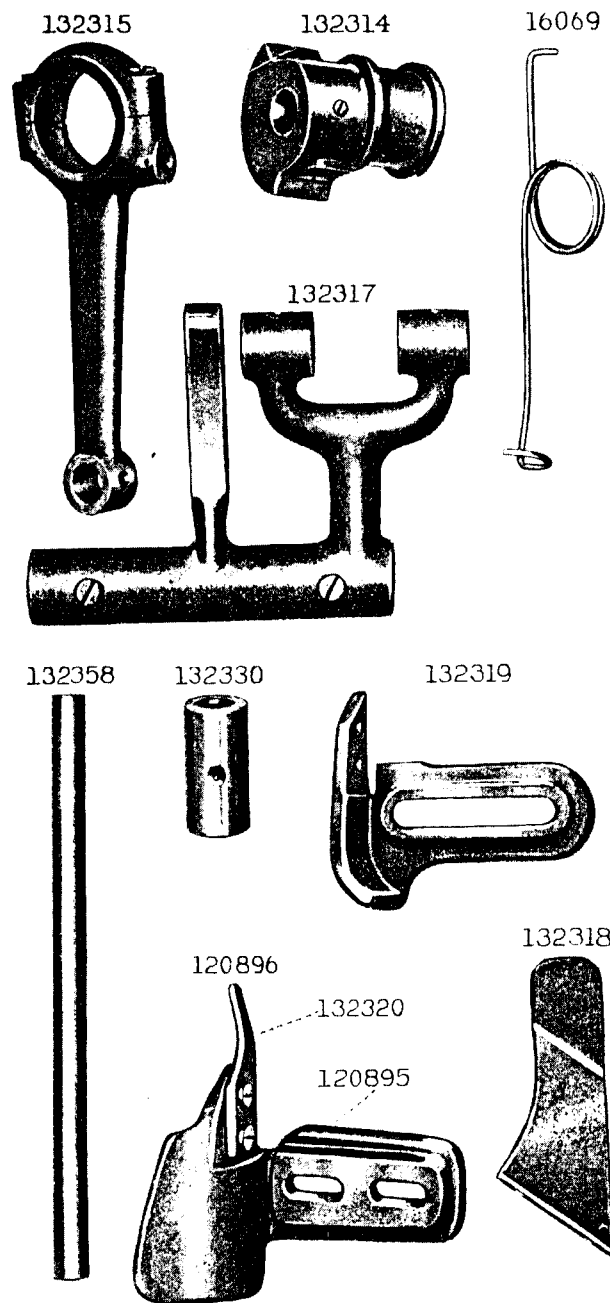


PLATE 20962—ONE-HALF SIZE

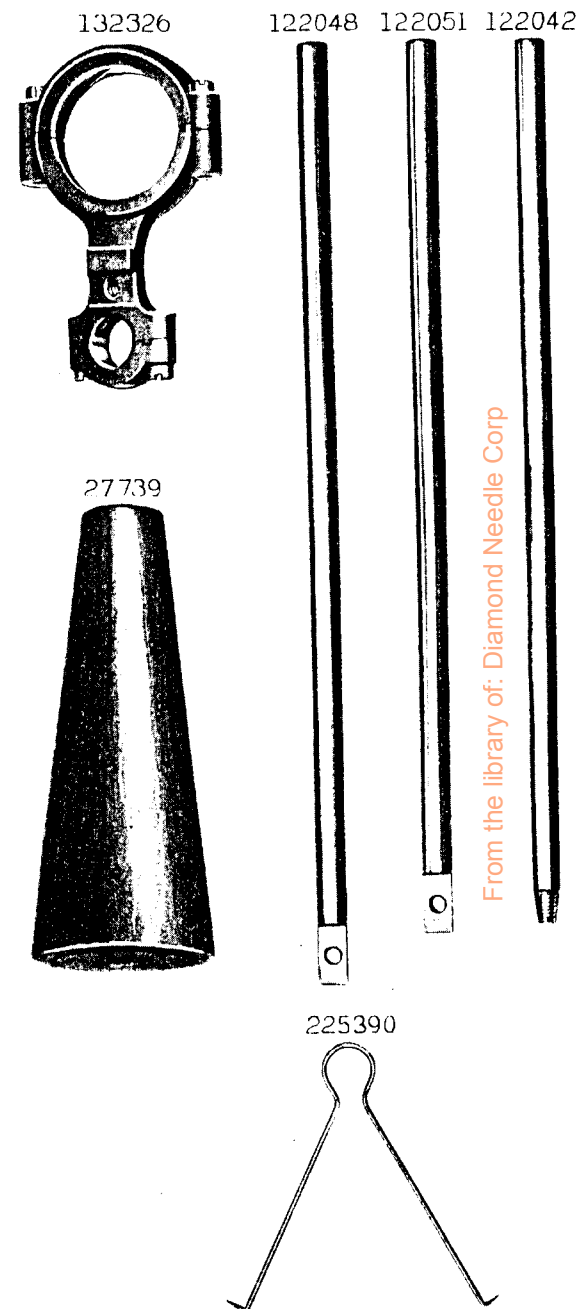
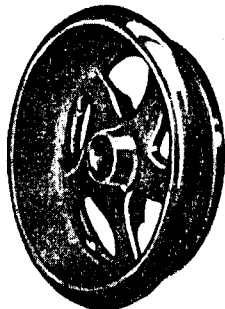


PLATE 20963—ONE-FOURTH SIZE

122097



122007



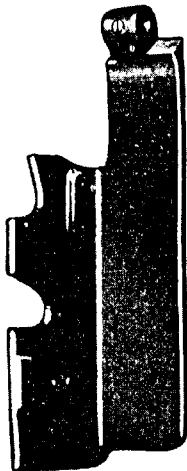
132304



132323



132324



132305

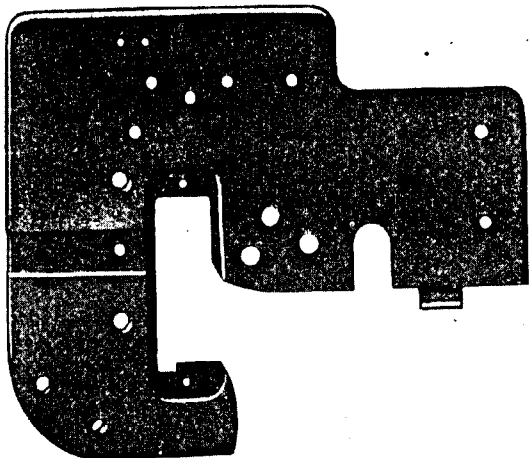


PLATE 20964—FULL SIZE

49093



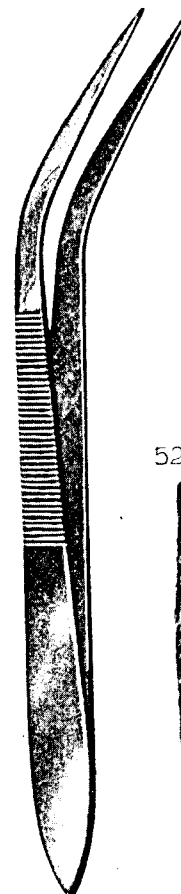
122017



132355



120341



52045



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128845

132306



68350



PLATE 20965—FULL SIZE

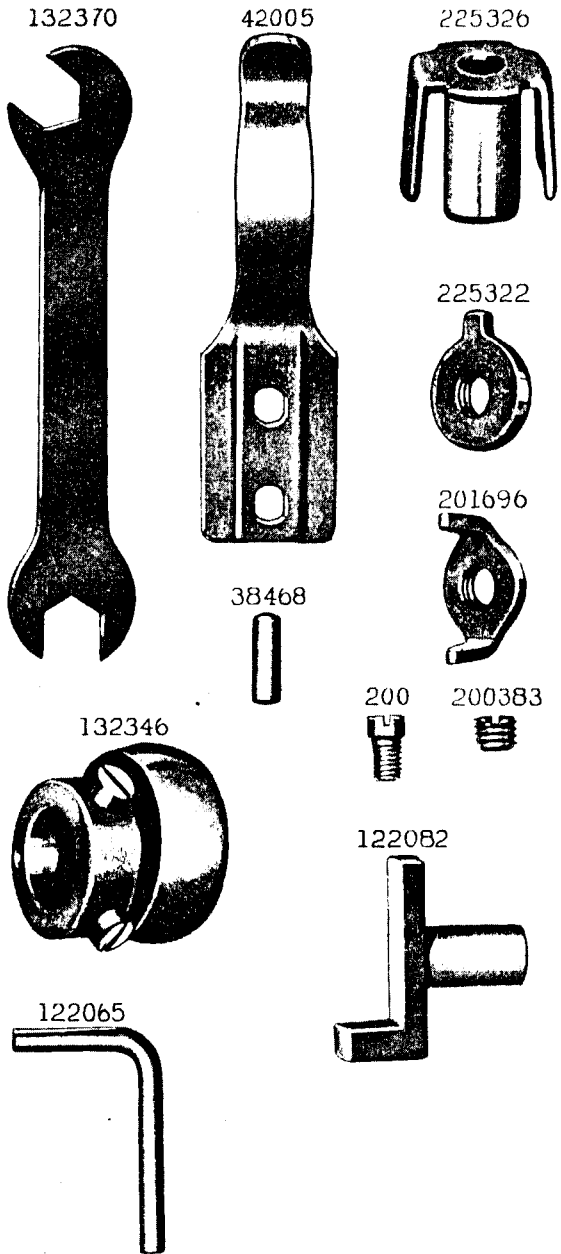


PLATE 20966—ONE-FOURTH SIZE

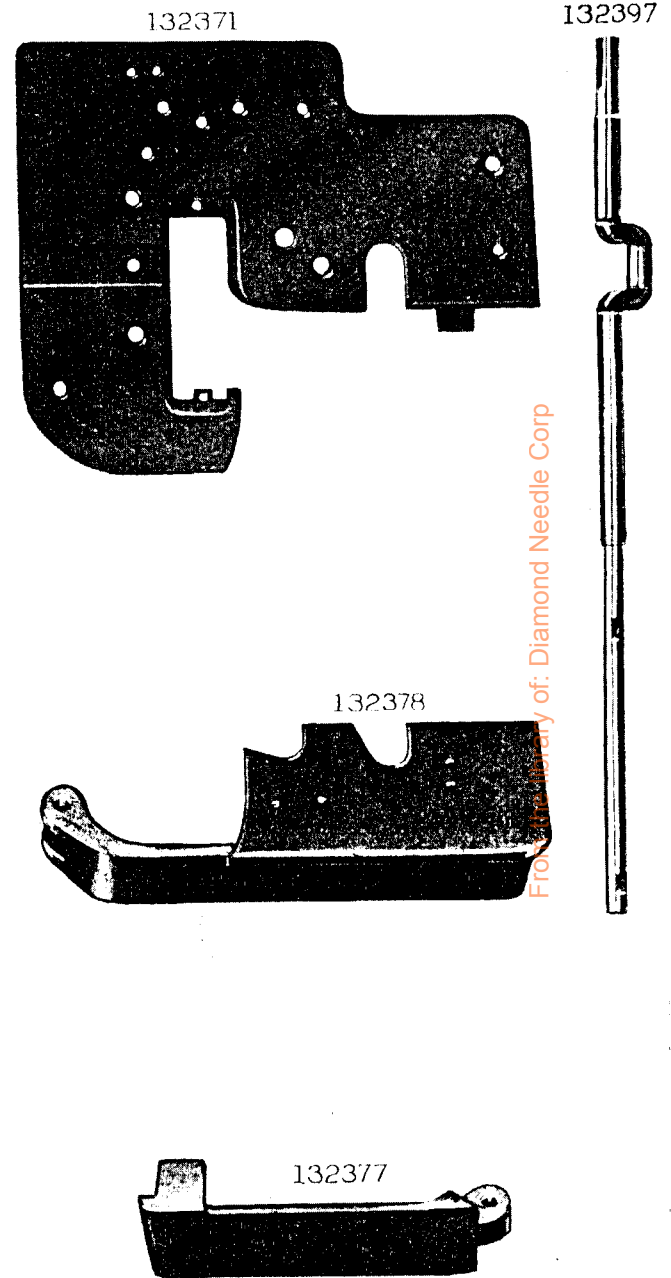


PLATE 20967—FULL SIZE

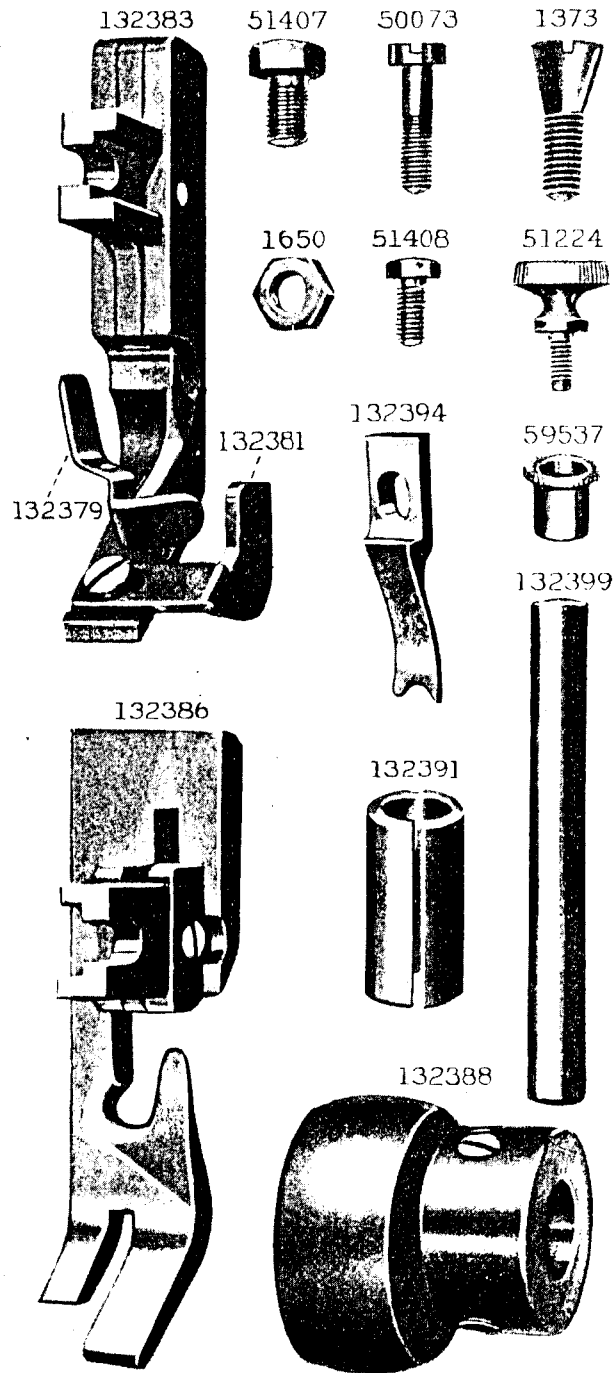
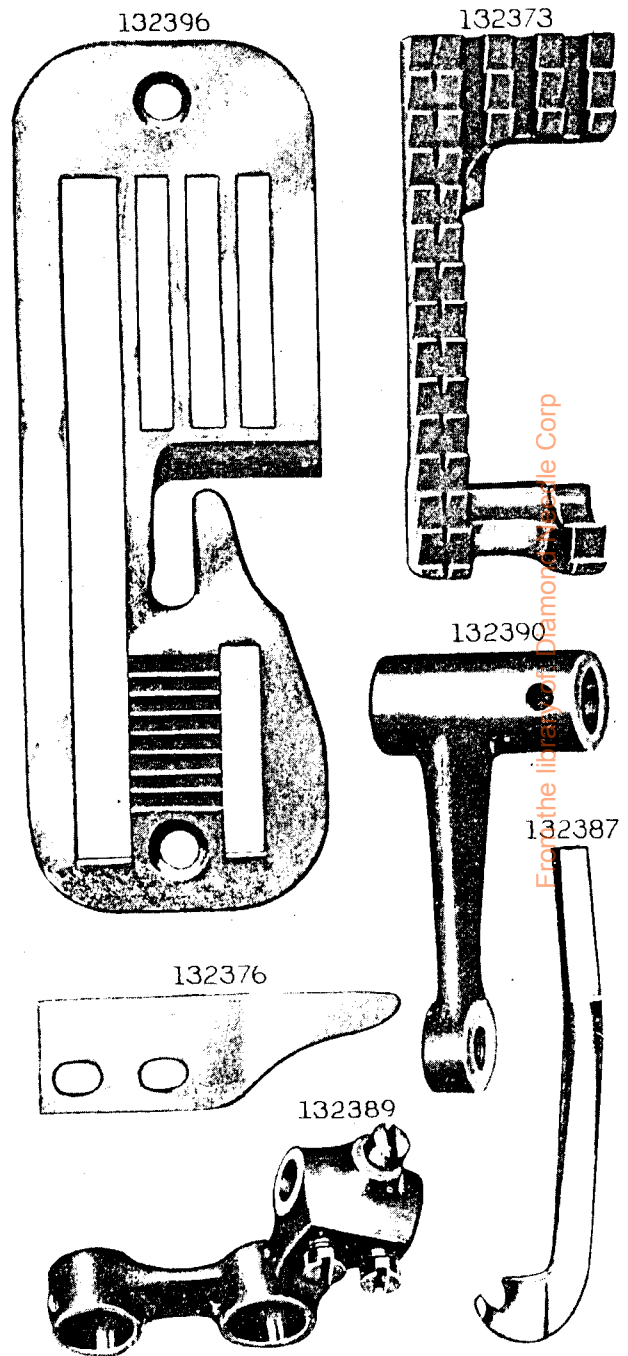


PLATE 20968—FULL SIZE



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PLATE 20969—ONE-HALF SIZE

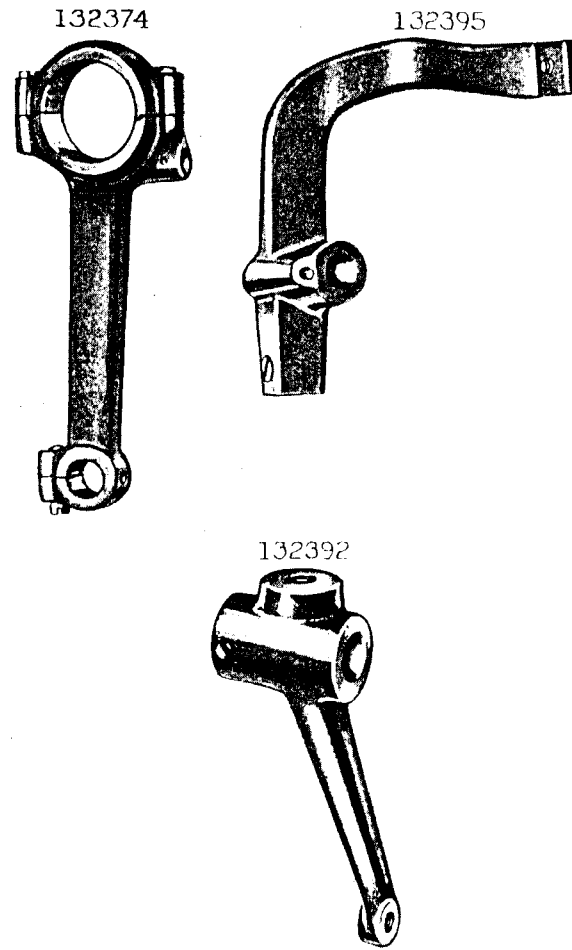


PLATE 20970—ONE-HALF SIZE

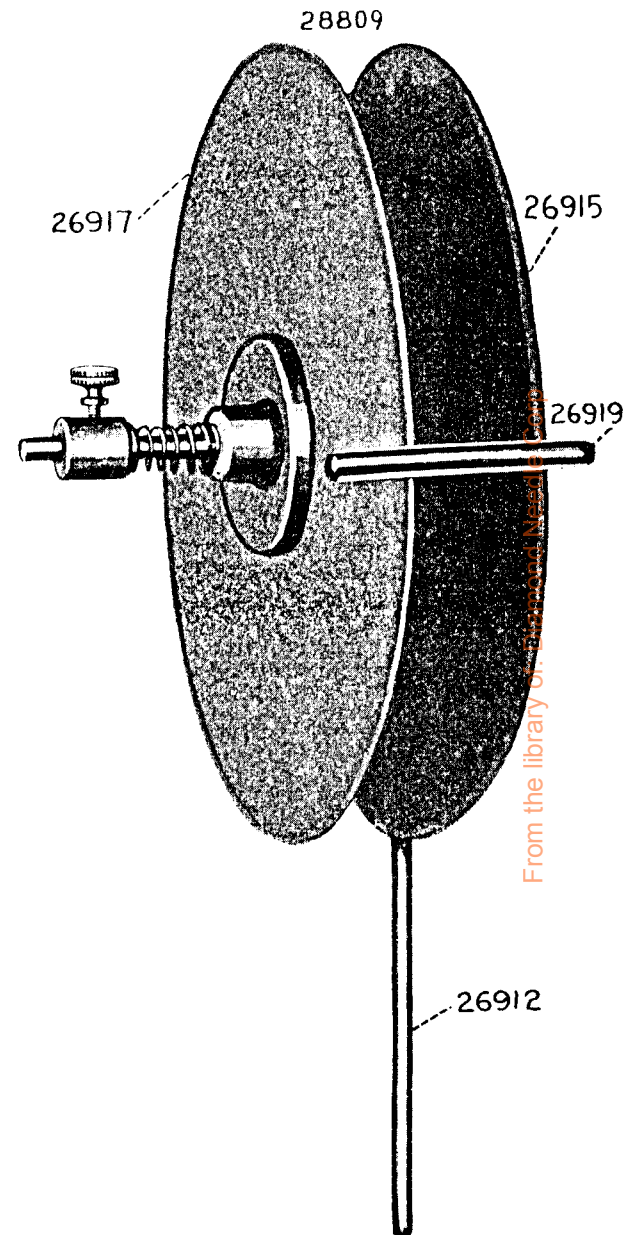


PLATE 20971—FULL SIZE

13211



286



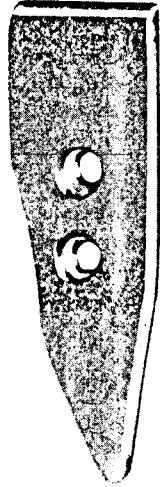
51137



236



132400



132401

