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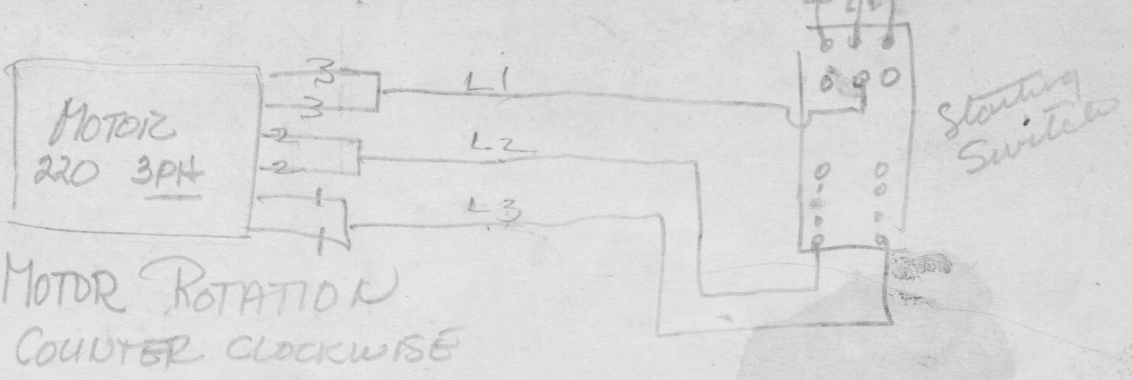

MOTOR ROTATION
COUNTER CLOCKWISE

MANUAL

NATIONAL

BOOKSEWING MACHINES

Joseph E. Smyth Company
720 South Dearborn St., Chicago 5, Ill.

INSTRUCTIONS

For Setting And Adjusting The National Booksewing Machine

NOTE:— National Booksewing Machines are made in four sizes; 16″, 18″, 20″, and 28″. With the exception of certain cross members, etc., the parts for all models are identical. The machine illustrated in this manual is the 16″ model.

SET-UP—With pencil, mark the sewing edge of the section (or signature) to be sewn at the points where the book is to be trimmed. About one-half inch in from the trim marks, make two other marks to locate the first and last stitches. The space between these last marks is the sewing area. Hold the marked section against the needles and hooks, just above the throat plate and in the center of the machine, to determine the number of sewing heads to be used.

Loosen the head binding screws a half-turn and move the heads to their proper positions. Be sure the needles and hooks are centered with the slots in the throat plate before retightening the binding screws. Before moving the heads, clean the head rail to be sure no paper dust can get under the heads. This is important: if paper dust accumulates between the head blocks and the head rail, the needles and hooks will be thrown out of alignment with the feed arm. Heads not being used can be moved to the side and locked, with the hooks and needles removed.

TAKE-UP SPRINGS—Loosen the knurled thumb nuts, move the take-up springs to positions ¼″ to the left of the thread clamp posts, and retighten the thumb nuts.

FRONT PLATE—Remove the front plate by releasing the hanger locks under the right and left hand ends of the plate. Lift the plate and remove it from the machine. Turn the section holder springs outward, loosen the screws on the puncher clamping plate and remove the punches.

LOOPERS—Press lightly on the treadle to release the handwheel brake and operate the machine by hand until the looper bar moves to its extreme right hand position. With the bar in this position, re-check the hook and needle alignment. Loosen the head binding screws to be sure that the needles and hooks are centered with the slots in the throat plate.

The looper bar is marked with numbers corresponding to numbers on the throat plate, using the center of the needle spindle as a check point. There are two needle positions in the spindle. Check the number on the throat plate directly under the center of the needle spindle and use the corresponding number on the looper bar to set the looper. The heel of the looper will then be one-eighth of an inch to the right of the crochet hook. Place all the loopers in the same relative positions.

PUNCHERS—Replace the punches in the puncher plate slots, directly in line with the needles and hooks. Be sure the punchers are seated on the support bar before tightening the screws. Replace the front plate by engaging the lower hinges of the plate with the hinge studs located on the inner sides of the feed arms, and swinging the plate upward to engage the front plate hangers, (which are on the hanger studs located on the upper outer sides of the feed arms) and press down. Be sure that the front plate hanger locks are in position under the studs. These locks hold the plate firmly to the arms.

SIDE KNIVES AND WORK TABLE—Loosen the thumb screws holding the knife brackets to the knife bar and move the knives to the left and right as far as they will go. Lower the work table to its bottom position. There are two lock screws in the work table stand, one on the left side and one directly underneath. When loosening these screws, be sure to hold the work table handwheel to prevent the table from falling sharply.

After moving the knives and lowering the work table, place the marked section on the feed arm and operate the machine by hand until the section is up under the throat plate, stopping the machine before the punches touch the section. The section should slide freely from left to right: if it does not, there is not enough clearance between the front plate and the throat plate. A wedge adjustment is located at each end of the throat plate; loosen the hexagon head screws and tap the wedges inward, raising the throat plate until the proper clearance is obtained. Retighten the screws.

Place the section in sewing position and set the feed gauge. Before starting to sew, position the section holder springs which are within the sewing area, and remove the others. Do not allow these springs to come in contact with the front plate while the machine is in operation; continual rubbing will wear grooves in the plate, and ruin the slots.

After sewing three or four sections, the work table can be raised to a point where the sections rest lightly on the chains. The side knives can be moved in against the work just tightly enough to support it. When the sewed books are beyond the knife bar, the back support plate can be placed in position; the hooks on the bottom of the support plate must engage with the chain.

CHAIN CARRIER—The chain carrier can be adjusted to move the books back in an upright position. This adjustment is made by loosening the wing nut on the stud in the slotted feed pawl lever and raising the connecting bar for a faster feed or lowering it for a slower feed. Be sure the wing nut is securely retightened after making such adjustment.

OILING—Before using the machine, oil all moving parts to insure long lasting satisfactory performance. A good grade of light oil, such as Faxam 50 should be used on bearings, slides and other moving parts. A heavier oil, such as Febis K 53 should be used in the cam tracks. If the machine is to stand idle for any length of time, it should be kept covered to prevent air-borne dust and grit from settling on the moving parts.

THREADING—Pass the thread through the holes in the thread guide bar directly above the spools, over the thread release rod and down through the holes in the smaller guide rod, down and around the three-quarter inch shaft, up through the holes in the tops of the head yokes, down between the thread discs, left under the thread clamp, (using the threading hook) up through the take-up spring loop from the back, down through the thread guide stud and through the eye of the needle from the front.

When changing thread, tie the ends of the thread together at the spool, raise the thread clamp with the finger and pull through past the knot. Break the thread at the knot and rethread the needle.

When changing needles or hooks, be sure the flat surfaces on the shanks are to the front. Also be sure that the needles—or hooks—are up as far as they will go into the spindle before tightening the screws.

PASTING—A paste box is furnished with each machine. The paste box stand is adjustable for height and angle to suit the operator by means of the set screw in the plate which is fastened to the wooden table. To fill the paste box, raise the hinged cover and remove the paste wheel. Pour in the paste, replace the paste wheel and close the cover. The paste scraper can be adjusted to give the proper amount of paste to the edge of the section. The consistency of the paste should not be too stiff, nor much paste applied to the section.

The first section sewed should not be pasted, but the second should be, as well as the last. The object of not pasting the first section is to keep the presser bar free of paste. The presser bar must be kept clean at all times.

CUTTING-OFF—When cutting the books apart, be sure to cut only the single (or needle) thread. Be careful not to cut the chain stitch made by the crotchet hook.

TAPE SEWING—When sewing tape, drop the roll in the tape box, bring the end down behind the tape tension plate in front of the tape box, down through the two tape guide bars in front of the throat plate, and between the two adjustable tape guides. When sewing a double seam with half-inch tape, it is necessary to place two heads together and sew along one edge with the needle and along the other edge with the crotchet hook. Adjust the tape guides accordingly. Before starting to sew, be sure the tapes are behind the presser bar. By raising the presser bar pull lever on the right side of the throat plate and disengaging it from the presser bar crank stud, the presser bar can be brought out to allow the tapes to be placed behind it. Be sure to re-engage the pull lever with the stud before sewing.

The proper point at which to depress the tapes between the books is after the last section of the book has been sewed and the feed arm is starting down, and just before the presser bar starts to move down. Depress the tape by pressing on the thumb lever at the right side of the throat plate. After depressing the tape, the presser bar will continue its travel under the throat plate, allowing the tape to be folded and creased squarely. When cutting books apart, use a pair of scissors. Cut the tapes in the center to give a uniform length of tape for each book.

SUGGESTIONS FOR SEWING LARGE WORK—When sewing large work, especially work that will not stand in an upright position without support, it is desirable to use sheets of stiff binders' board at intervals in the sewed work. The boards should be cut approximately one half inch shorter than the length of the signature, and the same amount narrower than the width of the section, and placed in front of the sewed work with the upper edge underneath the presser bar at intervals of from four to six inches. Experience will show what spacing should be used to keep the sewed work in an upright position without resorting to setting the side knives tightly against the sewed work.

Machine Size	*Range up to*	*Number of heads*	*Speed sects./min.*	*Power required*
16″	16″ x 15½″	6	50 to 60	½ HP
18″	18″ x 15½″	6	50 to 60	½ HP
20″	20″ x 15½″	8	50 to 60	¾ HP
28″	28″ x 15½″	12	40 to 50	¾ HP

The front plates of 16″ machines are marked with numbers running up to 12; 18″ machines are numbered up to 14; 20″ machines are numbered up to 16, and 28″ machines up to 22.

PLATE I

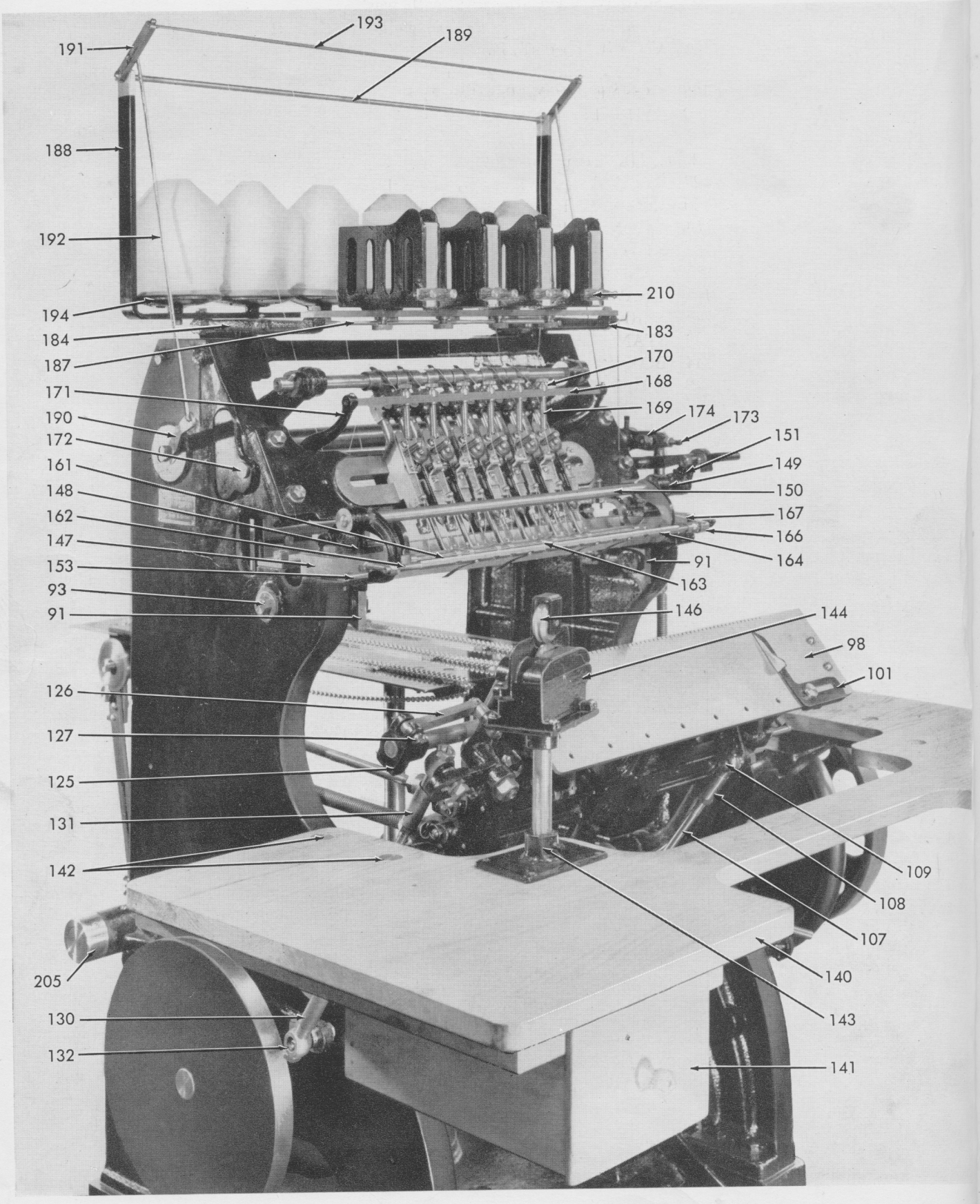
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Plate 1 - Legend

91 STOP, Feed arm
93 SCREW, Feed arm stop—with washer
98 PLATE, Feed arm front—101 gauge, feed—R. H.
101 GAUGE, Feed—R. H.
107 ROD, Puncher connection
108 CONNECTION, Puncher—L. H.
109 STUD, Puncher connection crank
125 END, Looper bar
126 LINK, Looper bar connecting
127 STUD, Looper bar end link—with cotter pin
130 CONNECTION, Looper—R. H. thread
131 CONNECTION, Looper—L. H. thread
132 STUD, Looper connection ball
140 TABLE, Wood
141 DRAWER, Wood table
142 SCREW, Wood table
143 STAND, Paste box
144 BOX, Paste
146 WHEEL, Paste—upper
147 PLATE, Throat
148 BRACKET, Throat plate—L. H.
149 BRACKET, Throat plate—R. H.
150 SHAFT, Presser bar
151 CRANK, Presser bar
153 WEDGE, Throat plate adjusting
161 BAR, Tape guide
162 END, Tape guide bar
163 GUIDE, Tape
164 BAR, Section holder spring
166 CAM, Section holder spring bar
167 SPRING, Section holder spring bar cam
168 BAR, Take-up spring
169 SPRING, Take-up
170 NUT, Take-up spring binding—with washer
171 ARM, Take-up spring bar
172 SHAFT, Take-up
173 SCREW, Take-up crank adjusting—with nut
174 CRANK, Take-up
183 BRACKET, Thread rack—R. H.
184 BRACKET, Thread rack—L. H.
187 ROD, Thread rack bracket guide
188 FRAME, Thread rack
189 ROD, Thread rack frame guide
190 ARM, Thread release
191 CRANK, Thread release
192 ROD, Thread release connection
193 ROD, Thread release pull
194 CUP, Spool
205 COLLAR, Position—large
210 SPRING, Tape box tension plate

When ordering parts, be sure to give the size or serial number of the machine for which the parts are desired.

PLATE II

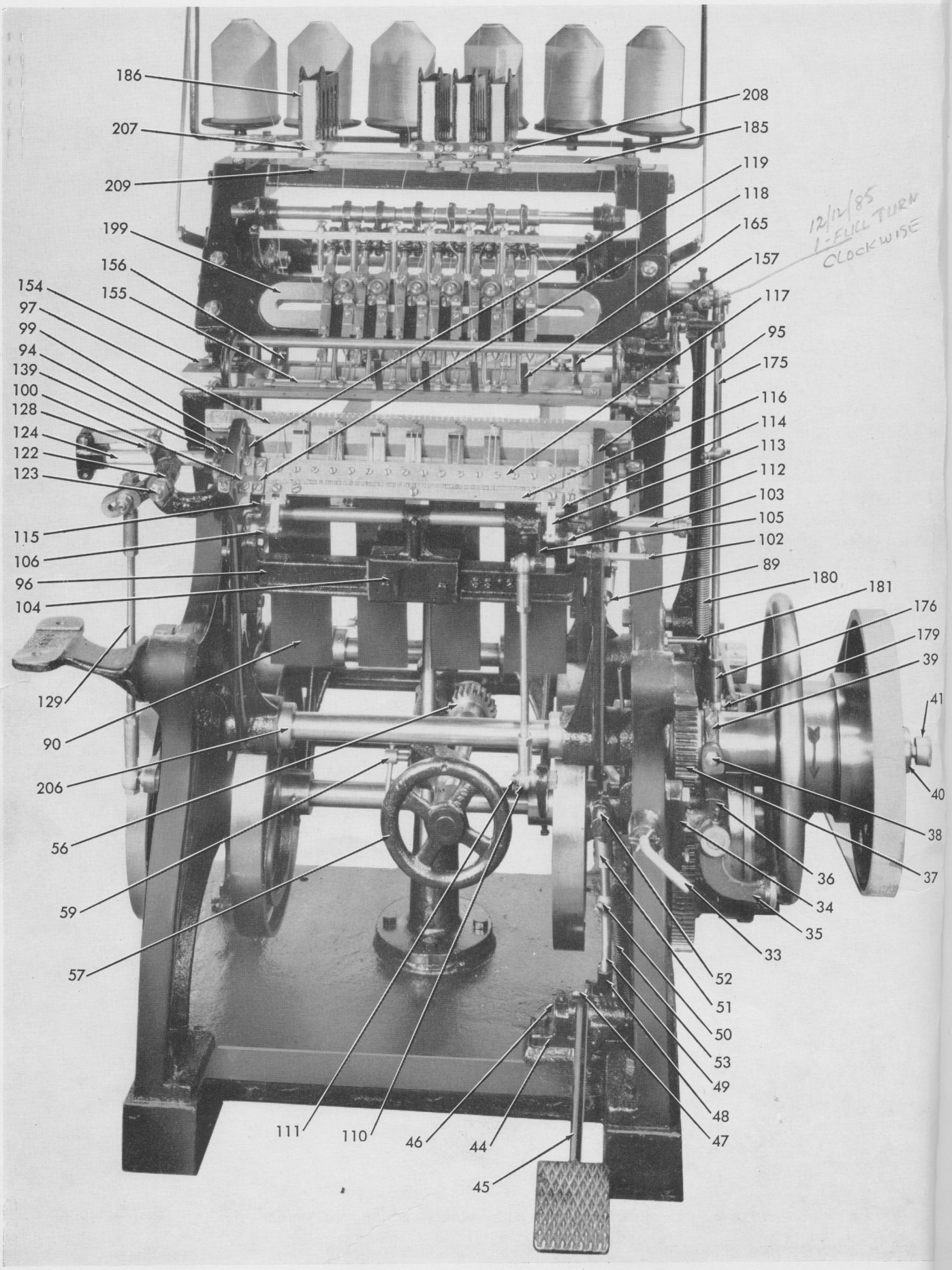

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Plate II - Legend

33 LOCK, Safety
34 BRACKET, Clutch yoke
35 BRAKE, Friction
36 YOKE, Clutch
37 GEAR, Pinion—with leather washer
38 STUD, Clutch ring pivot
39 RING, Clutch
40 COLLAR, Position—with fibre thrust washer
41 GREASE CUP
44 BRACKET, Treadle
45 TREADLE
46 PIN, Treadle
47 STUD, Lower treadle connection—with nut
48 CONNECTION, Lower treadle
49 ROD, Treadle connection
50 STUD, Treadle spring ball
51 CONNECTION, Treadle upper—with lock nut
52 STUD, Upper treadle connection—with cotter pin
53 SPRING, Treadle
56 GEAR, Work table
57 HANDWHEEL, Work table
59 SCREW, Work table lock
89 STUD, Feed arm spring arm
90 APRON, Feed arm
94 ARM, Feed—L. H.
95 ARM, Feed—R. H.
96 BRACE, Feed arm
97 PLATE, Feed arm back
99 STUD, Front plate hanger
100 STUD, Front plate hinge
102 STUD, Looper tilting arm spring
103 SHAFT, Puncher
104 BRACE, Puncher shaft
105 CRANK, Puncher shaft
106 CRANK, Puncher plate
110 CONNECTION, Puncher—R. H.
111 STUD, Puncher connection lever
112 STUD, Puncher plate crank—with nut
113 CONNECTION, Puncher plate
114 HINGE, Puncher plate
115 STUD, Puncher plate hinge
116 BAR, Puncher support
117 PLATE, Puncher locking
118 WAY, Puncher
119 GUIDE, Puncher angle
122 CRANK, Looper
123 STUD, Looper crank pivot
124 BAR, Looper
128 STUD, Looper crank link—with nut
129 ROD, Looper connecting
139 HOLDER, Front plate tension spring
154 SCREW, Throat plate lock—with washer
155 BAR, Tape depresser
156 ARM, Tape depresser bar—L. H.
157 ARM, Tape depresser bar—R. H.
165 SPRING, Section holder
175 ROD, Take-up connecting
176 CONNECTION, Take-up—R. H.
179 STUD, Take-up connection lever
180 SPRING, Take-up cam tension
181 STUD, Take-up cam tension spring frame
185 BAR, Tape box
186 BOX, Tape
199 RAIL, Head
206 COLLAR, Position—small
207 PLATE, Tape box tension
208 SCREW, Tape box tension plate
209 SCREW, Tape box binding

When ordering parts, be sure to give the size or serial number of the machine for which the parts are desired.

PLATE III

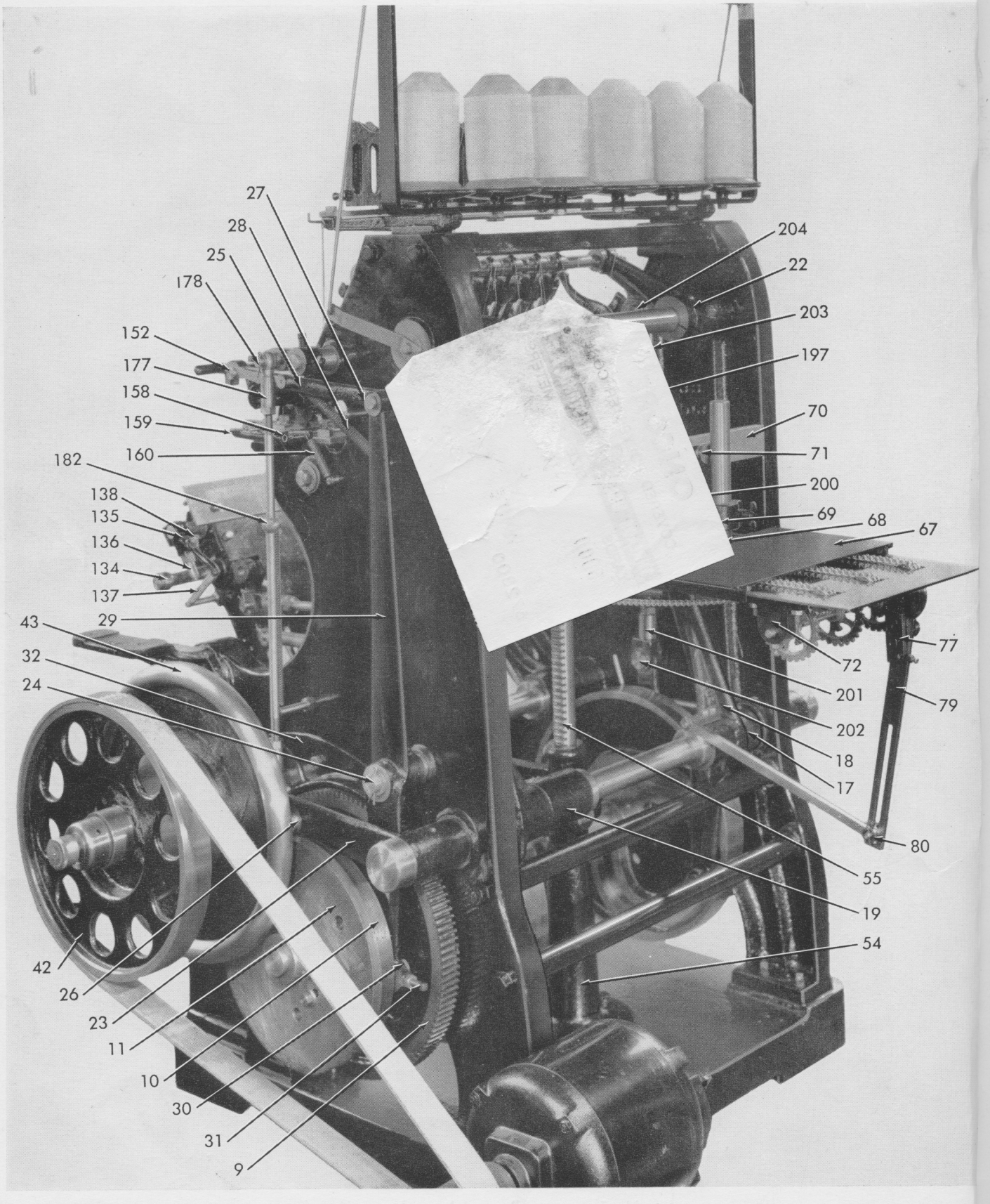

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Plate III - Legend

9 GEAR, Spur
10 CAM, Presser bar
11 CAM, Take-up
17 LEVER, Head motion cam
18 LEVER, Feed arm cam
19 LEVER, Puncher cam
22 LEVER, Head motion shaft
23 LEVER, Take-up cam
24 STUD, Presser bar cam lever frame
25 LEVER, Presser bar pull
26 ROLLER, Take-up cam—with stud
27 STUD, Presser bar pull lever hinge
28 SPRING, Presser bar pull lever
29 LEVER, Presser bar cam
30 STUD, Presser bar cam
31 SCREW, Presser bar
32 GUARD, Gear
42 PULLEY, Friction
43 HANDWHEEL, Fricti
54 STAND, Work table
55 RACK, Work table gear
67 PLATE, Back pressure
68 POST, Back pressure plate
69 BLOCK, Back pressure plat
70 BLOCK, Wood—long and sh
71 SCREW, Wood block—with k
72 BRACKET, Chain carrier R. H ore
77 BAR, Chain carrier friction
79 LEVER, Chain carrier feed pawl
80 STUD, Chain feed adjusting—with wing nut
134 COLLAR, Looper tilting
135 ARM, Looper tilting
136 STUD, Looper tilting arm—with roller
137 SPRING, Looper tilting arm
138 SCREW, Looper adjusting—with nut
152 STUD, Presser bar crank—with nut
158 SHAFT, Tape depresser
159 LEVER, Tape depresser thumb
160 SPRING, Tape depresser thumb lever
177 CONNECTION, Take-up—L. H.
178 STUD, Take-up connection crank
182 STUD, Take-up cam tension spring ball
197 BRACKET, Knife—L. H.
200 ROD, Head motion connection
201 CONNECTION, Head motion cam lever
202 STUD, Head motion cam lever connection
203 CONNECTION, Head motion shaft lever
204 STUD, Head motion shaft lever connection

When ordering parts, be sure to give the size or serial number of the machine for which the parts are desired.

PLATE IV

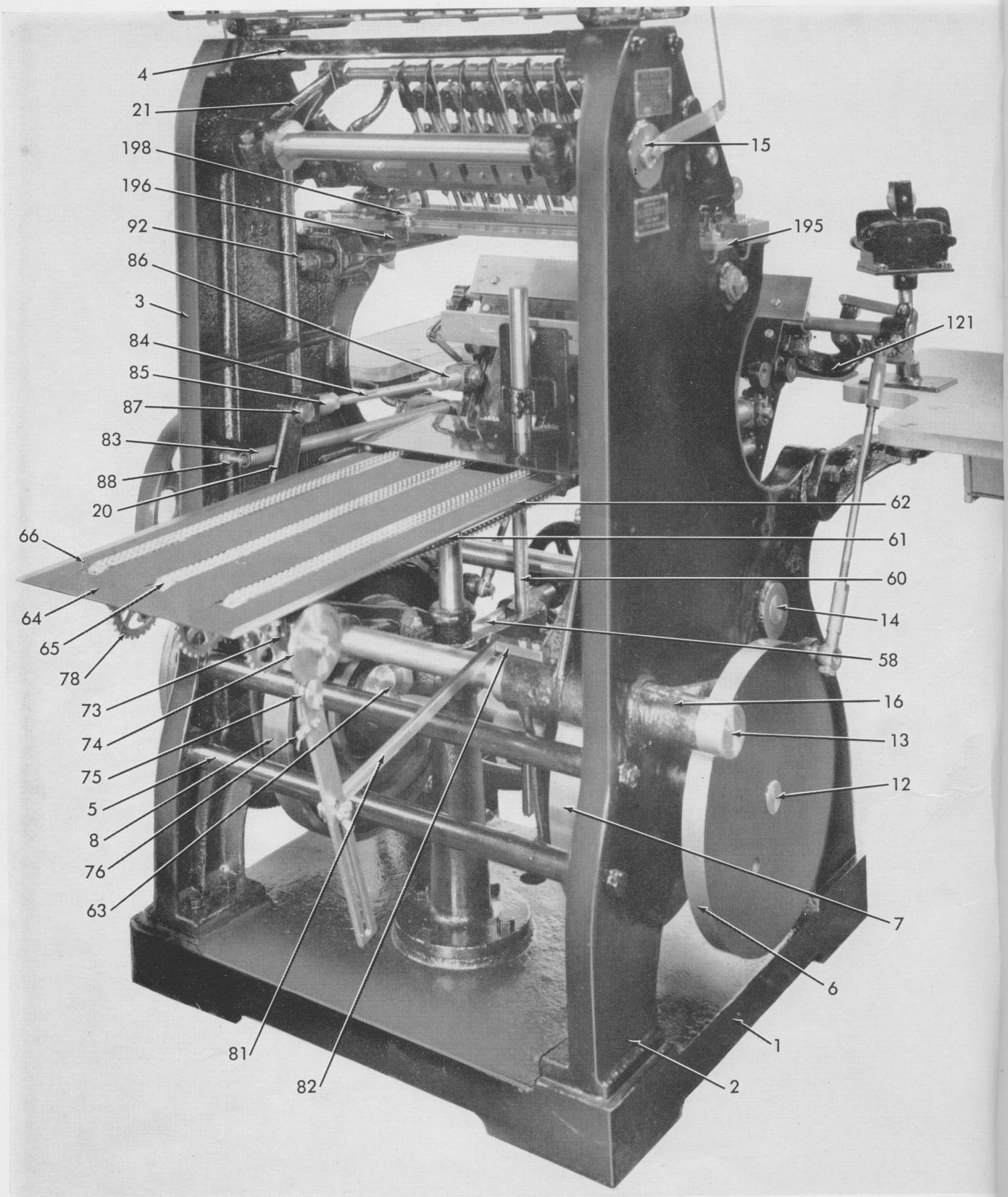
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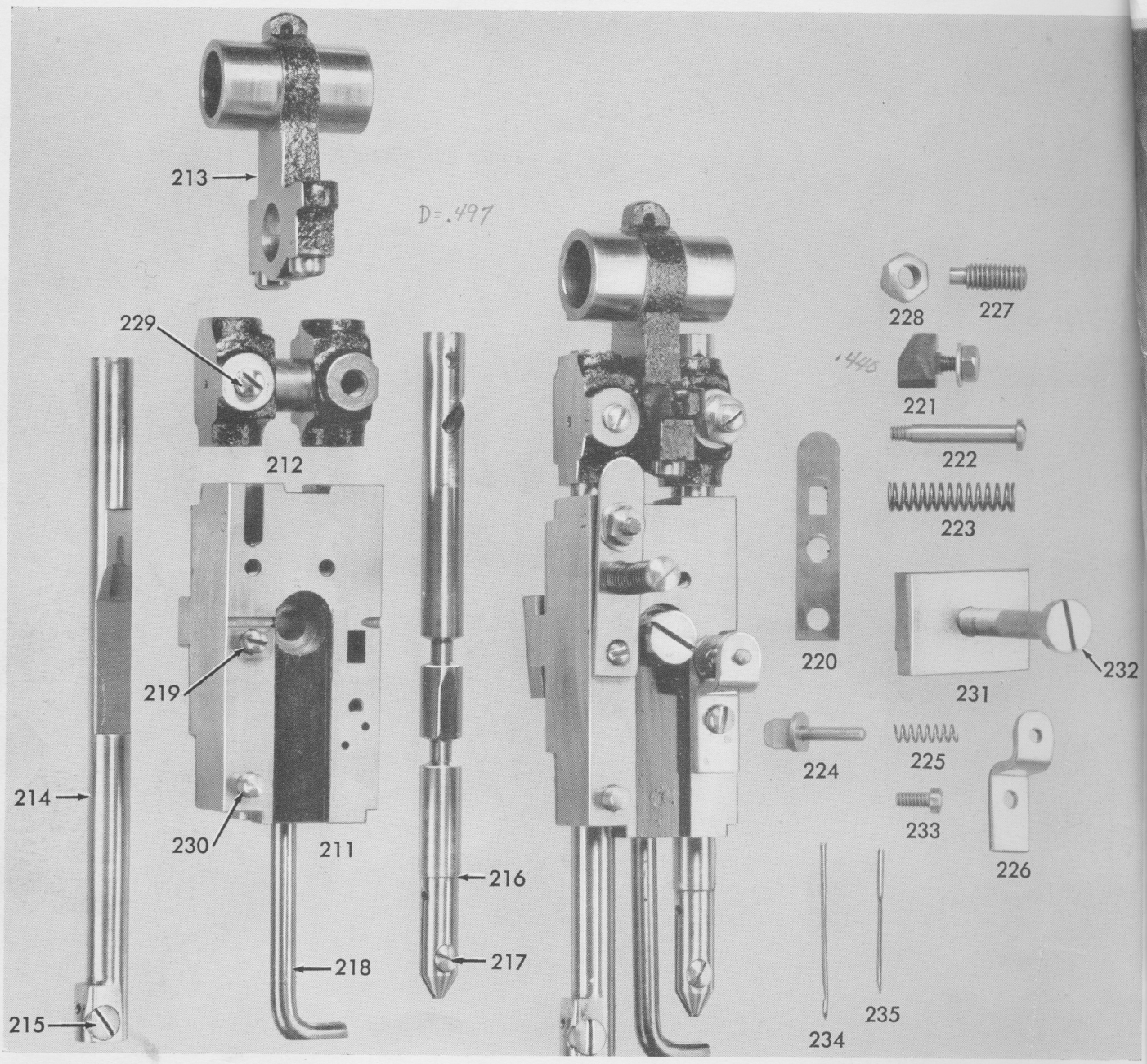
Plate IV - Legend

1 BASE
2 FRAME, Side—L. H.
3 FRAME, Side—R. H.
4 BRACE, Top frame
5 ROD, Frame support—with tube
6 CAM, Looper
7 CAM, Feed arm and head motion
8 CAM, Feed arm and puncher
12 SHAFT, Cam
13 SHAFT, Lever
14 SHAFT, Feed arm
15 SHAFT, Head motion
16 LEVER, Looper cam
20 LEVER, Feed arm cam
21 LEVER, Head motion shaft
58 SHAFT, Work table gear
60 SHAFT, Work table front bracket
61 BRACKET, Work table cross
62 BRACKET, Work table front
63 COLLAR, Work table gear shaft
64 TABLE, Work
65 CHAIN, Work table
66 ROLLER, Work table chain
73 BRACKET, Chain carrier L. H.—⅝″ bore
74 WHEEL, Chain carrier feed—with shaft and bushing
75 PAWL, Chain carrier feed
76 SCREW, Chain carrier feed pawl adjusting
78 SPROCKET, Chain carrier
81 BAR, Chain carrier connection
82 PIN, Chain carrier drive
83 SPRING, Feed arm
84 ROD, Feed arm connection
85 CONNECTION, Feed arm—R. H. thread
86 CONNECTION, Feed arm—L. H. thread
87 STUD, Feed arm connection
88 STUD, Feed arm spring frame
92 SCREW, Feed arm stop adjusting—with nut
121 BRACKET, Looper crank
195 BAR, Knife
196 BRACKET, Knife—R. H.
198 SCREW, Knife

When ordering parts, be sure to give the size or serial number of the machine for which the parts are desired.

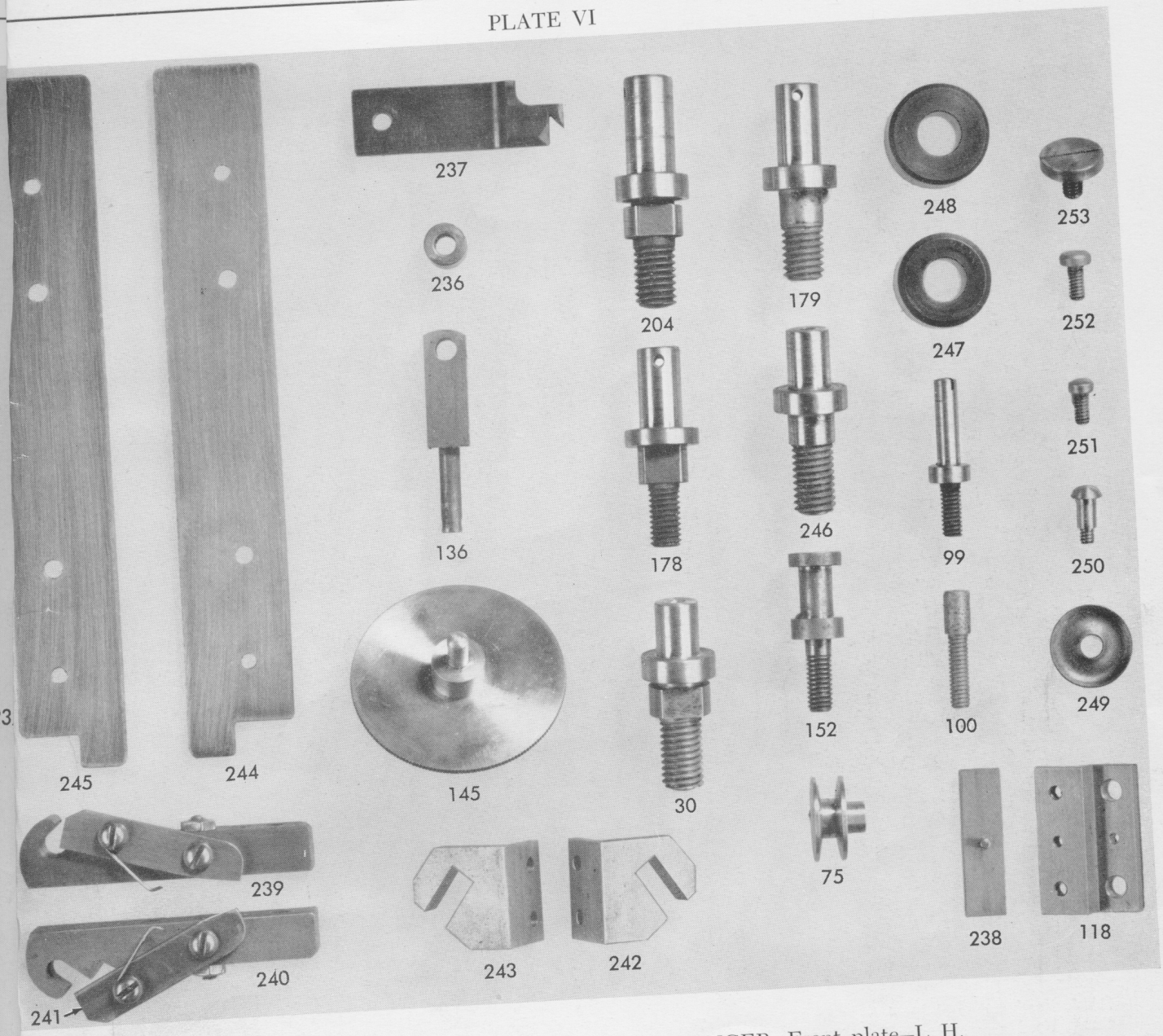
PLATE V



211 BLOCK, Head
212 HEAD, Cross
213 YOKE, Head
214 SPINDLE, Needle
215 SCREW, Needle
216 SPINDLE, Crochet hook
217 SCREW, Crochet hook spindle
218 GUIDE, Crochet hook
219 STUD, Thread clamp position
220 PLATE, Thread clamp
221 CAM, Thread clamp
222 POST, Thread clamp
223 SPRING, Thread clamp post
224 TRIGGER
225 SPRING, Trigger
226 GUIDE, Trigger
227 SCREW, Crochet spindle spiral
228 NUT, Spiral screw lock
229 SCREW, Needle spindle set
230 STUD, Thread guide
231 NUT, Head binding
232 SCREW, Head binding
233 SCREW, Trigger guide
234 HOOK, Crochet
235 NEEDLE

When ordering parts, be sure to give the size or serial number of the machine for which the parts are desired.

PLATE VI



30 STUD, Presser bar cam roll—with nut
75 PAWL, Chain carrier feed
99 STUD, Front plate hanger
100 STUD, Front plate hinge
118 WAY, Puncher
136 STUD, Looper tilting arm—supplied with roller
145 WHEEL, Paste—lower
152 STUD, Presser bar crank—supplied with nut
178 STUD, Take-up connection crank
179 STUD, Take-up connection lever
204 STUD, Head motion shaft lever connection
236 ROLLER, Looper tilting
237 LOOPER
238 GIB, Puncher way
239 HANGER, Front plate—R. H.
240 HANGER, Front plate—L. H.
241 LOCK, Front plate hanger
242 HINGE, Front plate—R. H.
243 HINGE, Front plate—L. H.
244 KNIFE, Support—R. H.
245 KNIFE, Support—L. H.
246 STUD, Cam roll—regular
247 ROLLER, 28 mm.
248 ROLLER, 30 mm.
249 DISC, Thread
250 SCREW, Thread disc
251 SCREW, Puncher
252 SCREW, Looper
253 SCREW, Feed gauge

When ordering parts, be sure to give the size or serial number of the machine for which the parts are desired.

ALPHABETICAL PARTS LIST

Name	*Part No.*	*Plate*
APRON, Feed arm	90	II
ARM, Feed—L. H.	94	II
ARM, Feed—R. H.	95	II
ARM, Looper tilting	135	III
ARM, Take-up spring bar	171	I
ARM, Tape depresser bar—L. H.	156	II
ARM, Tape depresser bar—R. H.	157	II
ARM, Thread release	190	I
BAR, Chain carrier connection	81	IV
BAR, Chain carrier friction	77	III
BAR, Knife	195	IV
BAR, Looper	124	II
BAR, Puncher support	116	II
BAR, Section holder spring	164	I
BAR, Take-up spring	168	I
BAR, Tape box	185	II
BAR, Tape guide	161	I
BAR, Tape depresser	155	II
BASE	1	IV
BLOCK, Back pressure plate adjusting	69	III
BLOCK, Head	211	V
BLOCK, Wood—long and short	70	III
BOX, Paste	144	I
BOX, Tape	186	II
BRACE, Feed arm	96	II
BRACE, Puncher shaft	104	II
BRACE, Top frame	4	IV
BRACKET, Chain carrier L. H.—⅜" bore	73	IV
BRACKET, Chain carrier R. H.—⅜" bore	72	III
BRACKET, Clutch yoke	34	II
BRACKET, Knife—L. H.	197	III
BRACKET, Knife—R. H.	196	IV
BRACKET, Looper crank	121	IV
BRACKET, Thread rack—L. H.	184	I
BRACKET, Thread rack—R.H.	183	I
BRACKET, Throat plate—L. H.	148	I
BRACKET, Throat plate—R. H.	149	I
BRACKET, Treadle	44	II
BRACKET, Work table cross	61	IV
BRACKET, Work table front	62	IV
BRAKE, Friction	35	II
CAM, Feed arm and head motion	7	IV
CAM, Feed arm and puncher	8	IV
CAM, Looper	6	IV
CAM, Presser bar	10	III
CAM, Section holder spring bar	166	I
CAM, Take-up	11	III
CAM, Thread clamp	221	V
CHAIN, Work table	65	IV
COLLAR, Looper tilting	134	III
COLLAR, Position—with fibre thrust washer	40	II
COLLAR, Position—large	205	I
COLLAR, Position—small	206	II
COLLAR, Work table gear shaft	63	IV
CONNECTION, Feed arm—L. H. thread	86	IV
CONNECTION, Feed arm—R. H. thread	85	IV
CONNECTION, Head motion cam lever	201	III
CONNECTION, Head motion shaft lever	203	III
CONNECTION, Looper—L. H. thread	131	I
CONNECTION, Looper—R. H. thread	130	I
CONNECTION, Lower treadle	48	II
CONNECTION, Puncher—L. H.	108	I
CONNECTION, Puncher—R. H.	110	II
CONNECTION, Puncher plate	113	II
CONNECTION, Take-up—L. H.	177	III
CONNECTION, Take-up—R. H.	176	II
CONNECTION, Treadle upper—with lock nut	51	II
CRANK, Looper	122	II
CRANK, Presser bar	151	I
CRANK, Puncher plate	106	II
CRANK, Puncher shaft	105	II
CRANK, Take-up	174	I
CRANK, Thread release	191	I
CUP, Spool	194	I
DISC, Thread	249	VI
DRAWER, Wood table	141	I
END, Looper bar	125	I
END, Tape guide bar	162	I
FRAME, Side—L. H.	2	IV
FRAME, Side—R. H.	3	IV
FRAME, Thread rack	188	I
GAUGE, Feed—R. H.	101	I
GEAR, Pinion—with leather washer	37	II
GEAR, Spur	9	III
GEAR, Work table	56	II
GIB, Puncher way	238	VI
GREASE CUP	41	II
GUARD, Gear	32	III
GUIDE, Crochet hook	218	V
GUIDE, Puncher angle	119	II
GUIDE, Tape	163	I
GUIDE, Trigger	226	V
HANDWHEEL, Friction	43	III
HANDWHEEL, Work table	57	II
HANGER, Front Plate—L. H.	240	VI
HANGER, Front plate—R. H.	239	VI
HEAD, Cross	212	V
HINGE, Front plate—L. H.	243	VI
HINGE, Front plate—R. H.	242	VI
HINGE, Puncher plate	114	II
HOLDER, Front plate tension spring	139	II
HOOK, Crochet	234	V
KNIFE, Support—L. H.	245	VI
KNIFE, Support—R. H.	244	VI
LEVER, Chain carrier feed pawl	79	III
LEVER, Feed arm cam	18	III
LEVER, Feed arm cam	20	IV
LEVER, Head motion cam	17	III
LEVER, Head motion shaft	22	III
LEVER, Head motion shaft	21	IV
LEVER, Looper cam	16	IV
LEVER, Presser bar cam	29	III
LEVER, Presser bar pull	25	III
LEVER, Puncher cam	19	III
LEVER, Take-up cam	23	III
LEVER, Tape depresser thumb	159	III
LINK, Looper bar connecting	126	I
LOCK, Front plate hanger	241	VI
LOCK, Safety	33	II
LOOPER	237	VI
NEEDLE,	235	V
NUT, Head binding	231	V
NUT, Spiral screw lock	228	V
NUT, Take-up spring binding—with washer	170	I

ALPHABETICAL PARTS LIST

Name	Part No.	Plate
ıain carrier feed	75	IV
ı carrier drive	82	IV
dle	46	II
Back pressure	67	III
Feed arm back	97	II
Feed arm front	98	I
Puncher locking	117	II
Tape box tension	207	II
Thread clamp	220	V
Throat	147	I
ack pressure plate	68	III
hread clamp	222	V
, Friction	42	III
Work table gear	55	III
Head	199	II
Clutch	39	II
Feed arm connection	84	IV
Frame support—with tube	5	IV
Head motion connection	200	III
Looper connecting	129	II
Puncher connection	107	I
Take-up connecting	175	II
Thread rack bracket guide	187	I
Thread rack frame guide	189	I
Thread release connection	192	I
Thread release pull	193	I
Treadle connection	49	II
LER, 28 mm.	247	VI
LER, 30 mm.	248	VI
LER, Looper tilting	236	VI
LER, Take-up cam—with stud	26	III
LER, Work table chain	66	IV
EW, Chain carrier feed pawl adjusting	76	IV
EW, Crochet hook spindle	217	V
EW, Crochet spindle spiral	227	V
EW, Feed arm stop—with washer	93	I
EW, Feed arm stop adjusting—with nut	92	IV
EW, Feed gauge	253	VI
EW, Head binding	232	V
EW, Knife binding—with washer	198	IV
EW, Looper	252	VI
EW, Looper adjusting—with nut	138	III
EW, Looper connection ball stud adjusting—with nut (at ends of connections)	133	
EW, Needle	215	V
EW, Needle spindle set	229	V
EW, Presser bar adjusting—with nut	31	III
EW, Puncher	251	VI
EW, Take-up crank adjusting—with nut	173	I
EW, Tape box binding	209	II
EW, Tape box tension plate	208	II
EW, Thread disc	250	VI
EW, Throat plate lock—with washer	154	II
EW, Trigger guide	233	V
EW, Wood block—with knurled head	71	III
EW, Wood table	142	I
EW, Work table lock	59	II
HAFT, Cam	12	IV
HAFT, Feed arm	14	IV
HAFT, Head motion	15	IV
HAFT, Lever	13	IV
HAFT, Presser bar	150	I
HAFT, Puncher	103	II
HAFT, Take-up	172	I
HAFT, Tape depresser	158	III
HAFT, Work table front bracket	60	IV
HAFT, Work table gear	58	IV
SPINDLE, Crochet hook	216	V
SPINDLE, Needle	214	V
SPRING, Feed arm	83	IV
SPRING, Looper tilting arm	137	III
SPRING, Presser bar pull lever	28	III
SPRING, Section holder	165	II
SPRING, Section holder spring bar cam	167	I
SPRING, Take-up	169	I
SPRING, Take-up cam tension	180	II
SPRING, Tape box tension plate	210	I
SPRING, Tape depressor thumb lever	160	III
SPRING, Thread clamp post	223	V
SPRING, Treadle	53	II
SPRING, Trigger	225	V
SPROCKET, Chain carrier	78	IV
STAND, Paste box	143	I
STAND, Work table	54	III
STOP, Feed arm	91	I
STUD, Cam roll—regular	246	VI
STUD, Chain feed adjusting—with wing nut	80	III
STUD, Clutch ring pivot	38	II
STUD, Feed arm connection	87	IV
STUD, Feed arm spring arm	89	II
STUD, Feed arm spring frame	88	IV
STUD, Front plate hanger	99	II
STUD, Front plate hinge	100	II
STUD, Head motion cam lever	202	III
STUD, Head motion shaft lever connection	204	III
STUD, Looper bar end link—with cotter pin	127	I
STUD, Looper crank link—with nut	128	II
STUD, Looper crank pivot	123	II
STUD, Looper connection ball	132	I
STUD, Looper tilting arm—with roller	136	III
STUD, Looper tilting arm spring	102	II
STUD, Lower treadle connection—with nut	47	II
STUD, Presser bar cam lever frame	24	III
STUD, Presser bar cam roll—with nut	30	III
STUD, Presser bar crank—with nut	152	III
STUD, Presser bar pull lever hinge	27	III
STUD, Puncher connection crank	109	I
STUD, Puncher connection lever	111	II
STUD, Puncher plate crank—with nut	112	II
STUD, Puncher plate hinge	115	II
STUD, Take-up cam tension spring ball	182	III
STUD, Take-up cam tension spring frame	181	II
STUD, Take-up connection crank	178	III
STUD, Take-up connection lever	179	II
STUD, Thread clamp position	219	V
STUD, Thread guide	230	V
STUD, Treadle spring ball	50	II
STUD, Upper treadle connection—with cotter pin	52	II
TABLE, Wood	140	I
TABLE, Work	64	IV
TREADLE	45	II
TRIGGER	224	V
WAY, Puncher	118	II
WEDGE, Throat plate adjusting	153	I
WHEEL, Chain carrier feed—with shaft and bushing	74	IV
WHEEL, Paste—lower	145	VI
WHEEL, Paste—upper	146	I
YOKE, Clutch	36	II
YOKE, Head	213	V

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