

# Operating the No. 1200 De-Luxe 24-inch Scroll Saw

After unpacking the machine, insert the rubber bushings (which will be found in the envelope with the bolts) into the holes in the base, then bolt the machine down to bench or stand. To fasten to our Steel Stand No. 716, use hook bolts NSS-238. Unpack the table, remove the clamp knob and set the table in place with the graduated scale to the front of the machine. When bolting to bench use a rubber washer either under the head of the carriage bolt or under the nut and washer, to prevent "drumming" in the bench.

Place a blade in the machine, setting it perfectly vertical, then set the table pointer to the zero mark on the scale, and lock it in this position with the round-head screw.

Any 1/4 or 1/3 H.P. motor will provide ample power for this machine. It should be bolted in place on the base before the machine is finally bolted down to bench or stand. See that the belt is not too tight; just tight enough to prevent whipping is correct. Direction of motor rotation is not important, unless the other end of the motor shaft is to be used to drive some other machine, in which case the rotation can suit the other machine. Four-speed cone pulley No. 718 should be used on the motor, which will provide speeds of 650, 1,000, 1,300 and 1,750 R. P. M. with a standard 1,750 R. P. M. motor.

## Inserting Blades

To insert jeweler's blades in the chucks, remove the table insert and turn the pulley until the lower chuck is at the top of its stroke. Loosen the chuck thumbscrew DSS-88, and insert the end of the blade about one-half inch *between the two outer flat jaws* DSS-328 and DSS-329, Fig. 3. Hold the blade in a vertical position, and see that the end of the blade is at the center of the jaws. When the blade is in the correct position

tighten the thumbscrew to hold it. Loosen knurled clamp knob NCS-164 on the upper head, and slide the entire upper graduated tube down until the upper end of the blade enters 1/2 inch between the jaws of the upper chuck. Tighten the upper chuck, then raise the graduated tube until the blade has the correct tension and re-tighten clamp knob to hold it in place.

## Adjusting Tension on Blade

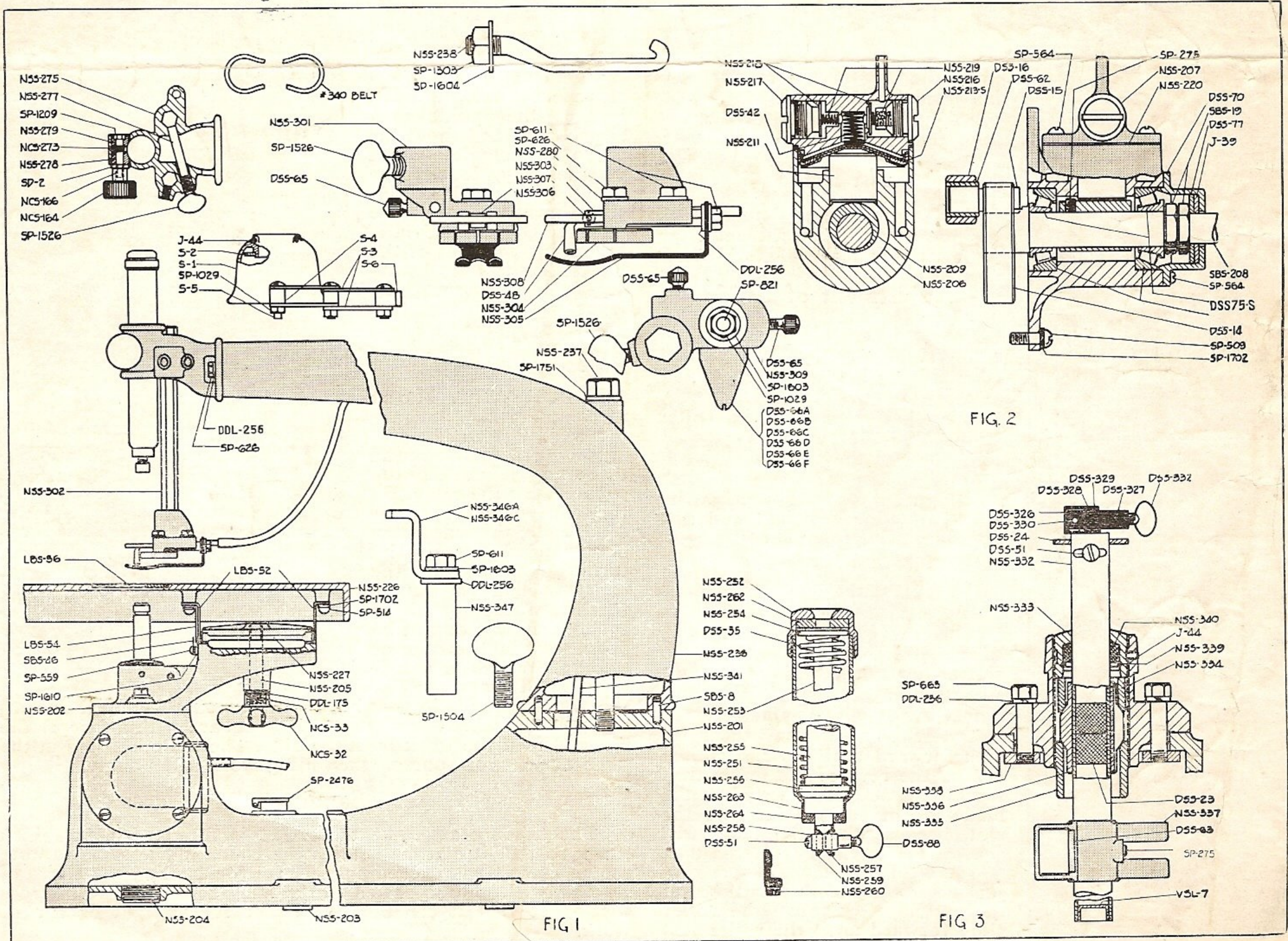
Any degree of tension may be obtained by merely sliding the upper graduated tube up or down and clamping it with clamp knob NCS-166. Since the exact tension required for any blade depends to some extent on the character of the work, the material being sawed, the thickness of the material, the length of the blade engaged by the chucks, etc., it is impossible to specify exactly what graduations should be used for certain blades. Enough tension should be put on the blade to hold it up to the cut, but not so much as to cause the blade to be broken easily. The following tensions for representative blades are intended only as a rough guide:

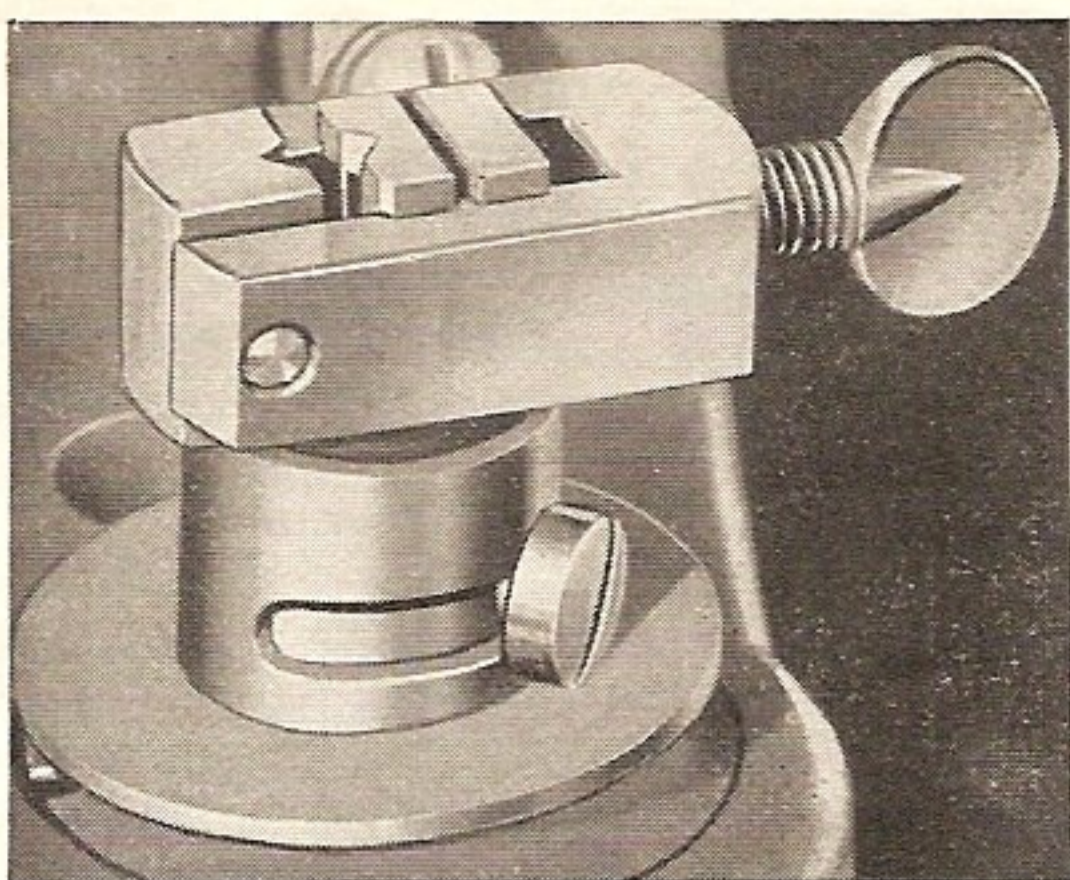
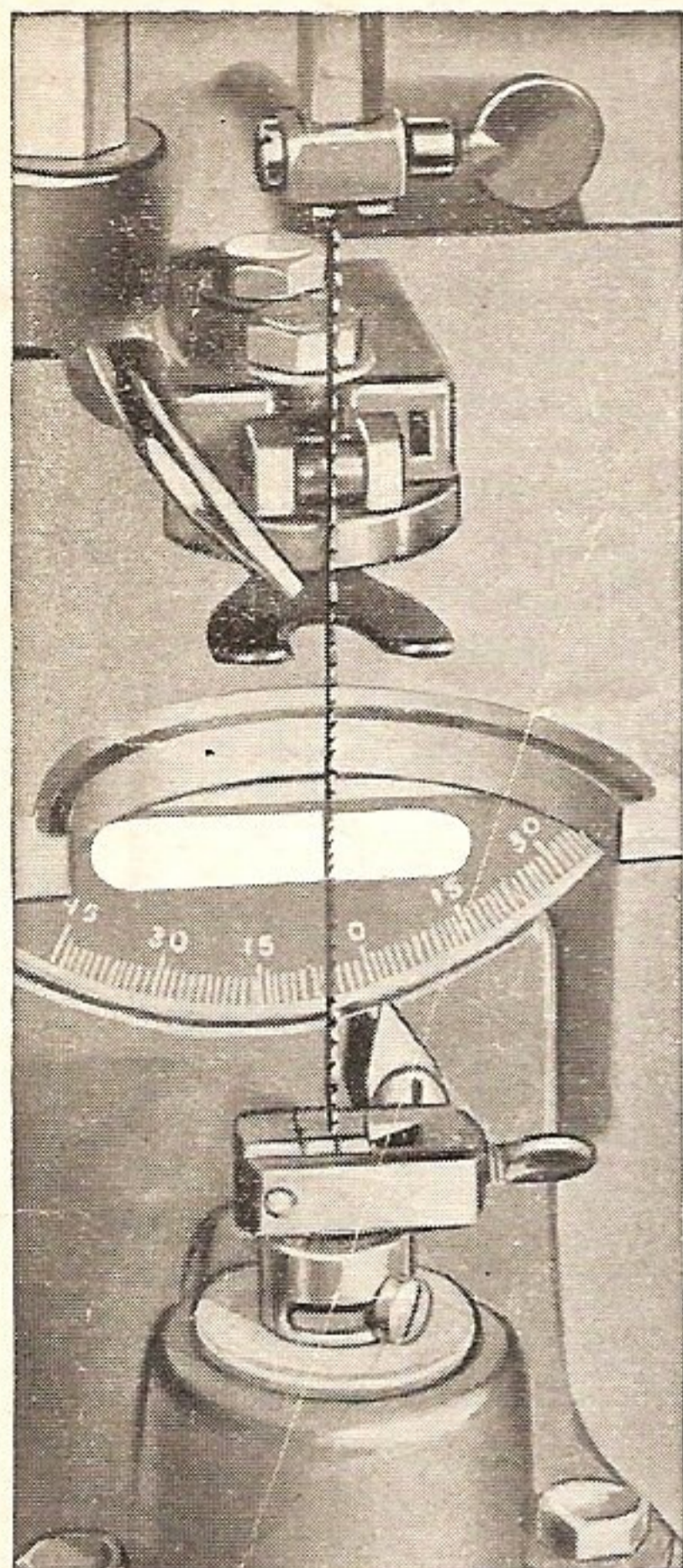
70028-21-J	12-14
16054-30-J	14-16
20085-12-J	16-18
20125-20-J	16-18

Since blades over 1/8 in. wide are generally used as sabre blades no tensions are given for wider blades.

It must be remembered that these tensions are only approximate. The adjustable tension is especially valuable for the finer puzzle and marquetry blades, and the graduations on the upper tube enable the user to return to the same tension every time he uses a particular blade.

Effective April 10th, 1937  
Prices quoted herein are  
subject to 10% increase.

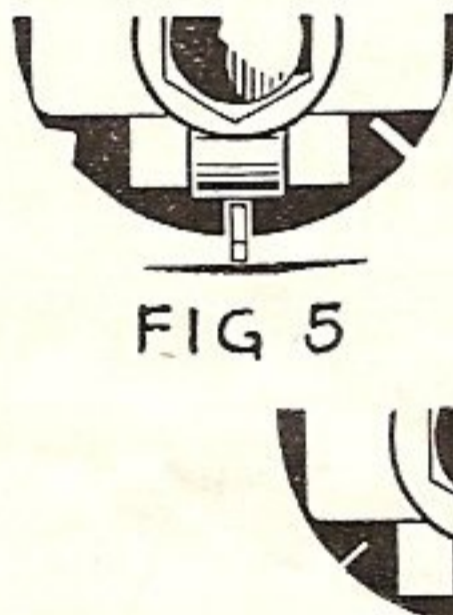




Above: Chuck in normal position. Jeweler's blades are held between flat jaws as at upper left saber blades and files in V-jaws as at lower left.

### Inserting Saber Blades

Saber blades are held between the V-jaws of the lower chuck, instead of between the flat jaws. The chuck is turned so that the thumb-screw faces the front of the machine, by loosening screw DSS-51 (See Fig 3), turning the chuck to the left and re-tightening the screw. Do not neglect this last



precaution. Slip the saber blade between the V-jaws of the chuck, opening the jaws wide for the purpose, then tighten the thumbscrew.

### Pin Blades

To use pin blades, simply knock the pins out, and insert them in the same manner as jeweler's blades.

### Adjustment of Guide

The guide on this machine is of a universal type, which makes it adaptable to blades of practically any size. It consists of three parts, the bracket, NSS-301, the roller slide NSS-307 with its roller NSS-306 and the guide disk NSS-304. The slide and the guide disk are fastened to the bracket by means of screws SP-611 and SP-1603 and are adjustable independently of each other.

To adjust the guide to a blade of any thickness, loosen both hexagon-head screws SP-611 and 1603, then rotate the guide disk until a slot comes to the front which will suit the thickness of the blade. Select a slot which is neither too loose nor too tight. Draw the guide disk forward until its rim is just behind the root of the teeth, then tighten the screw. Be sure that the blade is not set too far into the slot, because then the teeth will rub on the slot sides. If the disk is set with the edge of the slot just behind the teeth it will be set correctly. Now move the roller slide forward until the roller just

lightly touches the back of the blade, tighten the screw clamping the slide, and the guide is set.

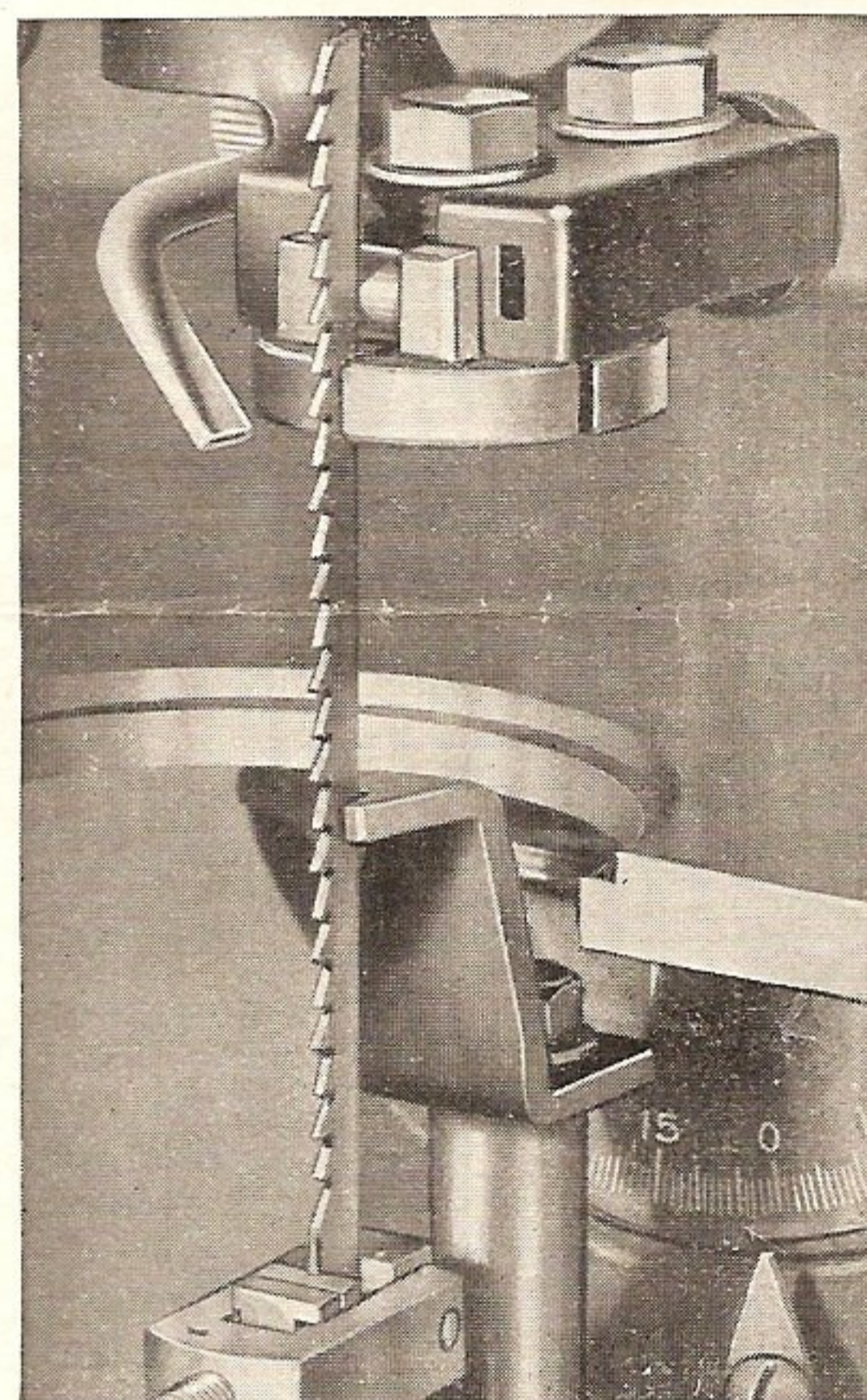
No matter what the thickness or the width of the blade, a slot and a roller position can be found that will guide it correctly. Fig. No. 4, for example, shows the relative positions of guide disk and roller when a wide, thick blade is used in the machine, using a wide slot in the disk, and having the roller set well back. Fig. 5 shows how a narrow, thick blade is adjusted, using the same slot and merely moving the disk and roller forward. Fig. 6 shows the adjustment for a wide, thin blade and Fig. 7 the adjustment for a narrow, thin blade. The drawing below Figs. 5 and 6 show how the V-notch of the guide is used for the very finest jewelers, puzzle or marquetry blades, the guide being set in the same way as for heavier ones.

If a great deal of cutting is done with one blade, as in marquetry and puzzle cutting, it is recommended that a set of individual blade guides No. 1202 be purchased and used instead of the regular universal guide.

Fig. 8 shows a side view of the guide properly adjusted both for a wide blade with coarse teeth and a narrow blade with fine teeth. Note how in each case the disk can be set so that the blade is guided right at the bottom of the teeth.

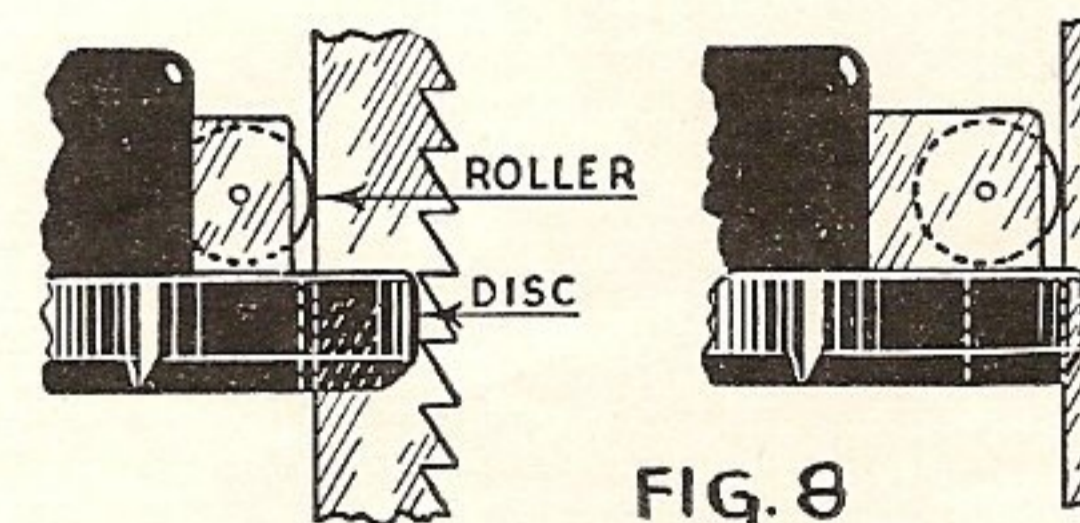
### Filing

Regular filing-machine files, having  $\frac{1}{4}$  inch round shank, are the proper kind to use in this machine; the round shank provides stiffness and strength which are not found in tapered-shank files. They may be flat, round, half-round, three-cornered or square—in fact of any commercial cross section, but must not be more than 5 inches long.



To insert the file, remove the table insert, loosen the guide-post thumbscrew and shove the guide up completely out of the way, loosen the jaws of the chuck and insert the file between the V-jaws. If the work is fed from the front of the table, the chuck thumbscrew should face the front also, so that the pressure of the work is taken by the back of the chuck.

**IMPORTANT.** Most machine files are not perfectly straight, and occasionally it will be found that one will not line up square with the table. In the case of a round or square file, this can often be adjusted merely by turning the file in the chuck until a position is reached where the file is square. If this cannot be done, say in the case of a flat file which is decidedly bent toward one flat side, grasp the file in the chuck with the edge facing the front, then tilt the table slightly until it is square with a face of the file, and feed the work from the side. The table is tilted in the same manner, of course, when filing work at an angle.



How the guide is set for either a wide or a narrow blade. Photo above shows guide correctly set for saber blade, using both upper and lower guides.

### Sanding

The sanding attachment No. 711 is fitted with a  $\frac{1}{4}$  inch shank so that it may be held in the chuck in the same manner as the files. It is exceedingly useful for sanding the edges of scroll-sawed or band-sawed work, being semi-circular in cross section so that it can be used either for straight or curved work.

Garnet-paper sleeves of the proper size are available for the sanding attachment. To change sleeves, simply loosen the knurled nut at the top of the sander, slip off the old sleeve and slip on the new one, then re-tighten the nut.

To use the sander, remove the table insert and move the guide up out of the way. Set the sander shank down into the V-jaws of the lower chuck, with the straight or curved face forward as required, then tighten the chuck thumbscrew.

### Changing Lower-Chuck Position

For certain kinds of work it is necessary or desirable to change the position of the lower and upper chuck so that the teeth of the saw blade face the side of the table. The normal position of the lower chuck is with the thumbscrew facing the right. To turn the chuck through 90 degrees, so that the thumbscrew faces the front, simply loosen the screw holding the chuck to the lower plunger (DSS-51), turn the chuck with the thumbscrew to the front, and re-tighten the screw. To turn the chuck with the thumbscrew facing the left, remove screw DSS-51, then turn the chuck completely around to the left, which will expose a new hole to receive screw DSS-51. When blade is sidewise, table should be turned through 90 degrees also, otherwise slot in insert will not line up with blade.

### Changing Upper-Chuck Position

To change the position of the upper chuck, loosen knurled clamp knob NCS-164, so as to loosen the upper-plunger graduated tube. Slide the tube either up or down until the keys on the tube are disengaged from the keyway in the head casting, then turn the tube until the key engages in the other keyway, and slide the tube up or down to position again.

### Tilting and Rotating Table

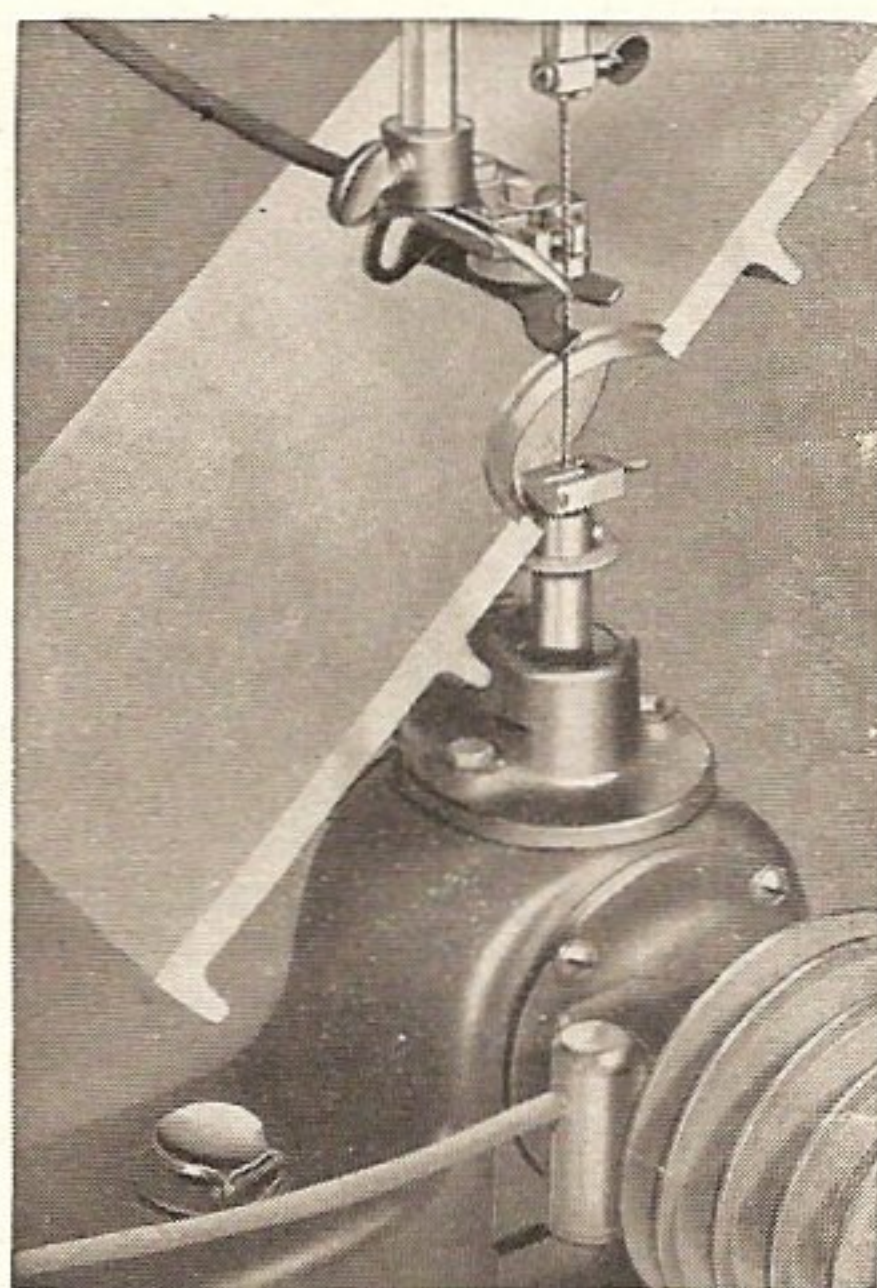
To tilt the table, simply loosen knob NCS-32 and tilt the table to the degree desired, then re-tighten clamp.

**IMPORTANT.** When the table is to be tilted to a full 45 degrees to the right, the position of the lower chuck must be reversed as described above, so that the thumbscrew points to the left, otherwise the thumbscrew will strike the table.

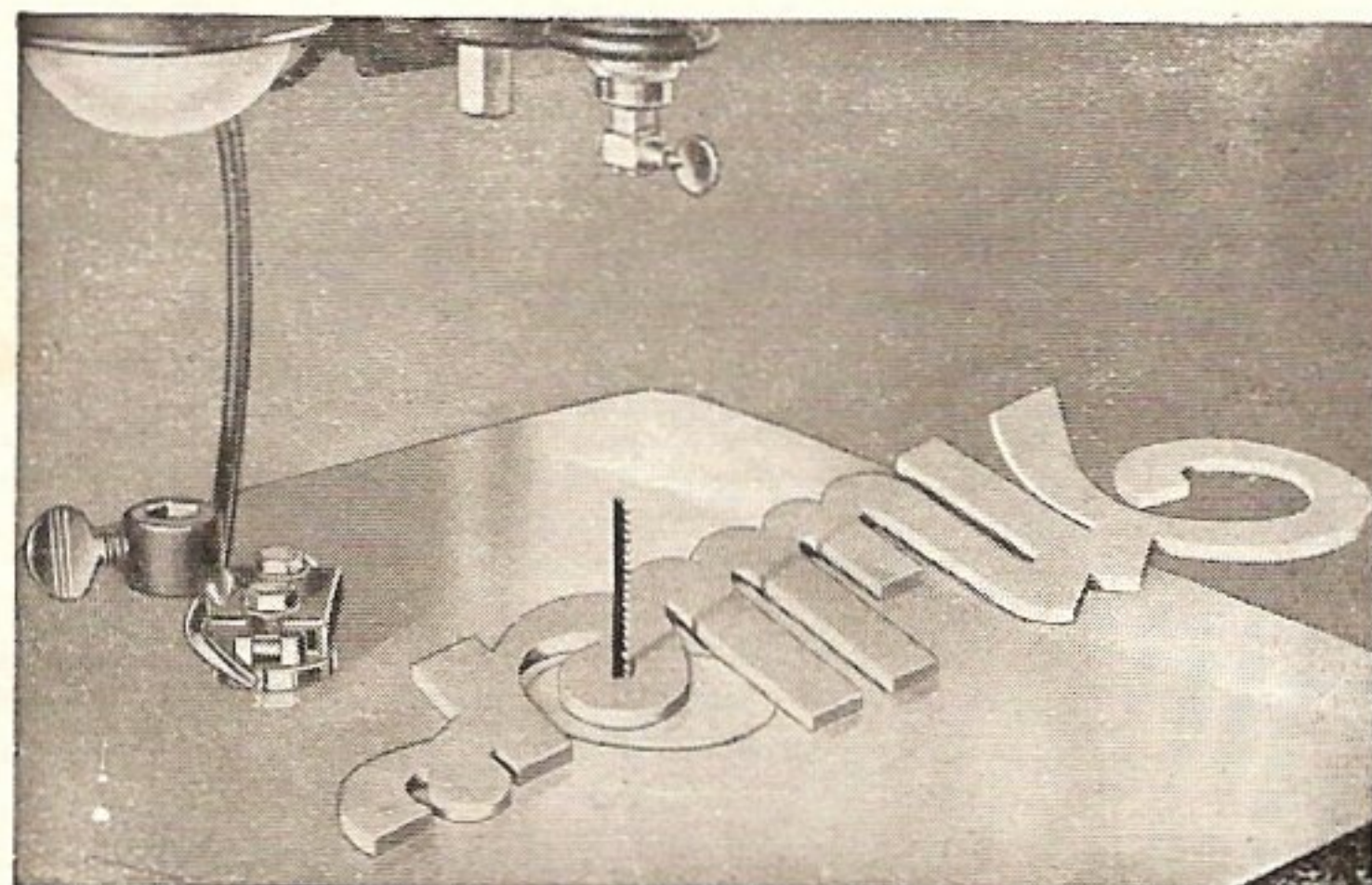
If, when ripping or cutting work at an angle, the length of the work is such that it would strike the rear column of the machine before the cut is completed, the table may be rotated through 90 degrees so that it may be tilted to the front. With the work then fed from the side any length may be accommodated. Rotation of the table is effected by loosening capscrews SP-665 (Fig. 3).

### Reversing Drive Shaft

The machine is shipped with the drive pulley at the left side of the machine. If necessary the drive can be reversed so that the pulley is at the right. Remove the four screws holding the drive-shaft housing to the base, also the four holding the opposite crank-case cover; housing and cover can be removed. The crosshead (NSS-337, Fig. 3) must now be turned half-way round. To do this, remove setscrew SP-253, hold the chuck to prevent the plunger from turning, turn the crosshead around until it faces the other opening in the crankcase and until the screw hole is opposite the other hole in the plunger. Re-insert the screw SP-253 and tighten firmly.

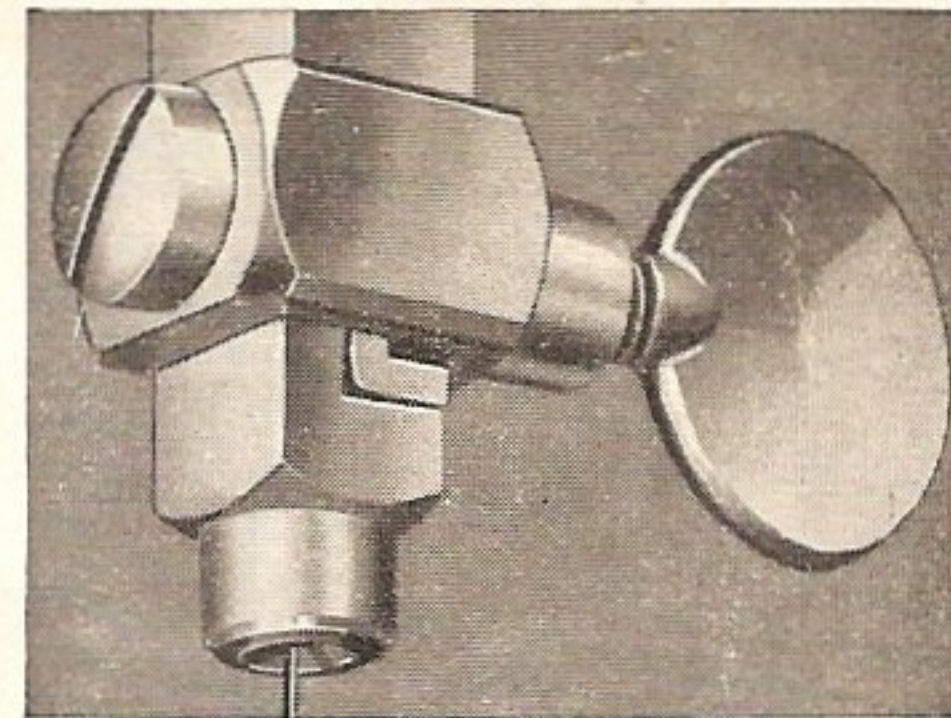


Above: Table rotated through 90 deg., and also tilted so that long work may be ripped at an angle.

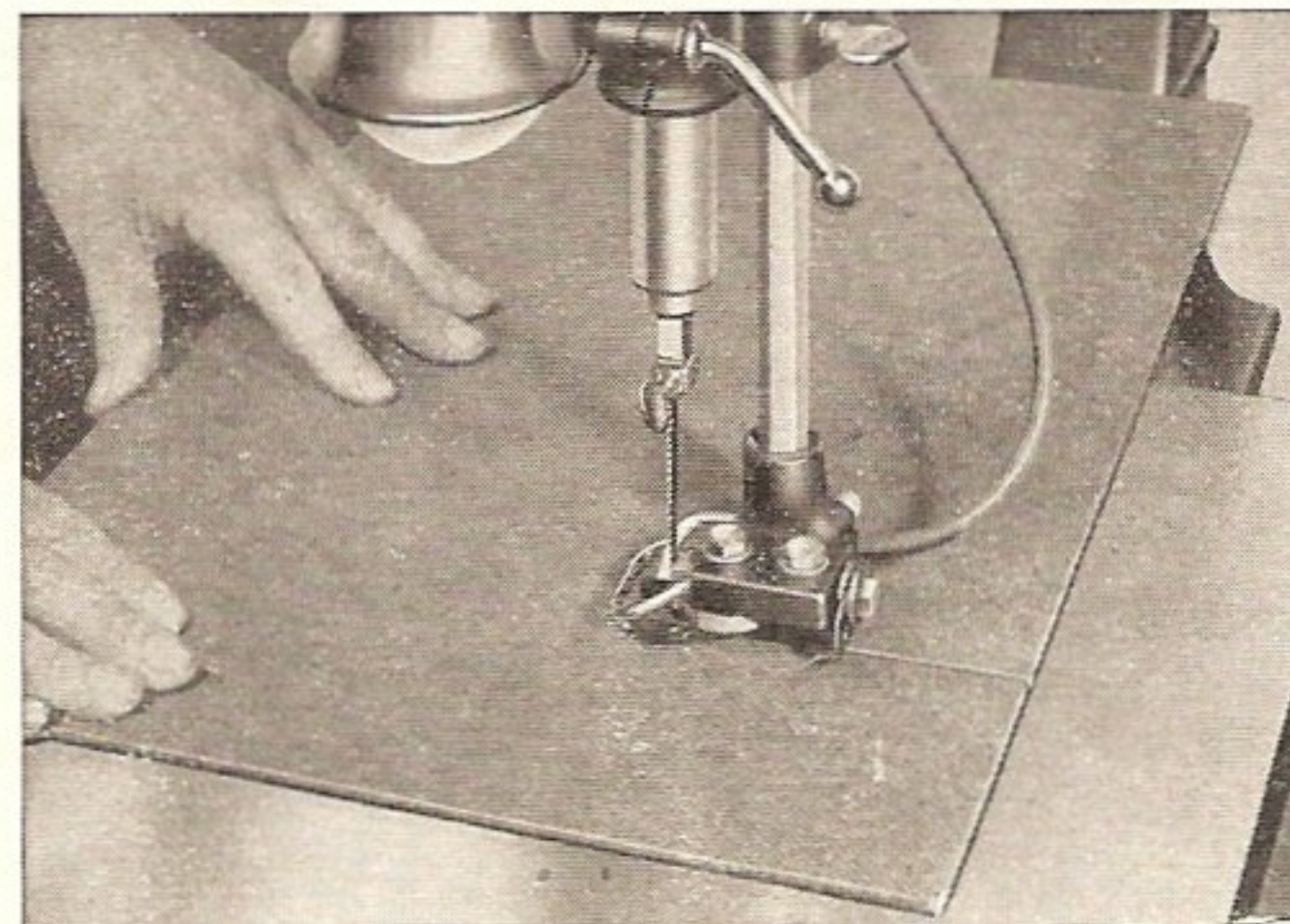


Left: when necessary, the guide may be completely removed and laid aside when additional clearance is desirable above the blade.

Scrape all dirt from the cover flanges, then spread a thin coating of shellac on the flanges and fasten in place with the screws. The pump-housing cover, NSS-207, should now be reversed so that the outlet tube is at the top. Turn the pulley by hand several times to be sure that everything is correct before turning on the power.



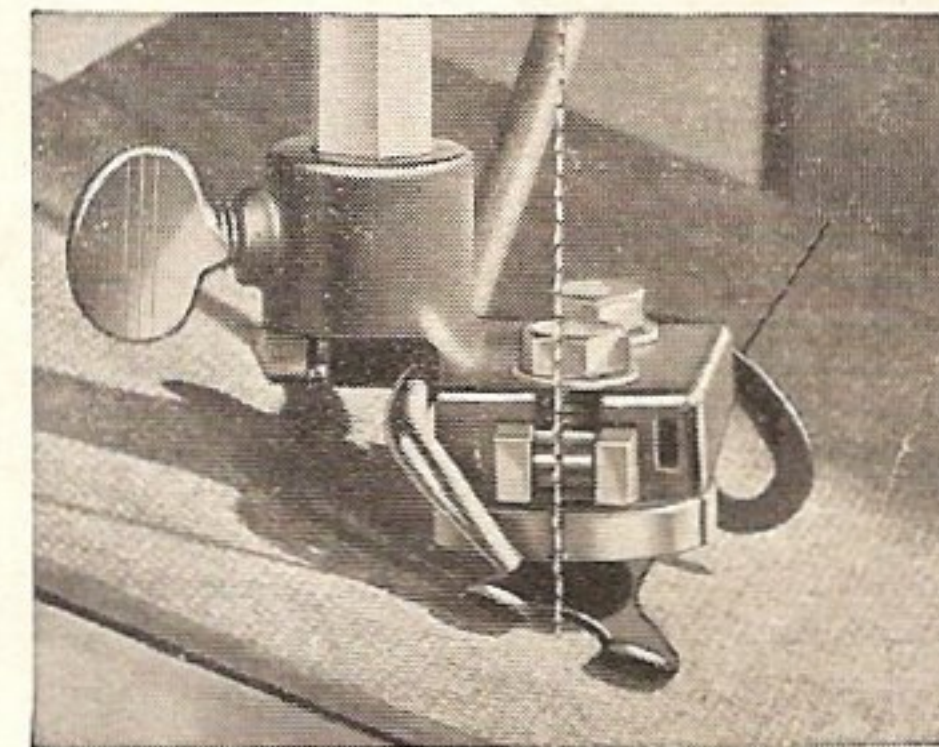
Above: Special puzzle-blade jaw for upper chuck, which replaces regular jaw and centers blade automatically. At left, chucks turned 90 deg., and guide post transferred so as to permit cutting from the side.



Below: How spring hold-down is tilted to suit tilt of table.

### Air Blower

The blower is designed so that plenty of air is furnished to blow sawdust away from around the lines marking the design on the work, but not enough to cause a blast which might blow sawdust in the eyes. If the blower fails, examine the rubber tubing and see that it is not choked, kinked, or caught under the base in any way. Examine the nozzle on the guide and see that it is clear. If the trouble is not found here, then remove the pump-housing cover by loosening screw SP-564 (Fig. 2), remove the diaphragm NSS-213-S and see that this is in good shape and does not need renewal. No trouble should be encountered with the valves.



### Changing Guide Position

When the saw is set to cut from the side of the table, the guide post, carrying the guide, is transformed from the hexagon hole at the left of the upper head to the hole at the right. This automatically brings the guide to the proper position for side cutting. Thumbscrew SP-1526 is also transferred from one tapped hole to the other to adjust the post. Only the thumbscrew need be transferred, as the lock pin is not required in the right-hand hole.

### Oiling

All lower parts which require lubrication are enclosed in the crankcase. The case must be filled before using. Fill it with light winter-grade automobile oil or Finol to within one-eighth inch of the lower end of the oil cup SP-2476. The upper plunger bearing is self-lubricating, and, as the plunger itself is hard-chrome plated, this requires no attention for the life of the machine. Crankcase capacity is 1 1/4 pints. If oil comes out of filler during operation there is too much oil in the crankcase.

### Puzzle-Blade Jaw

To insert special puzzle-blade jaw NSS-260 (Fig. 3) in place of the regular jaw, remove screw DSS-51, holding the fixed jaw in place in the upper chuck, remove this jaw, slip the puzzle jaw up into place and re-insert screw DSS-51.

### Blades

This scroll saw is designed to take jeweler's blades 5 inches long and saber blades 4 1/2 inches long. There is no advantage in using pin blades, in fact there is a disadvantage, as a wider range of sizes can be obtained in jeweler's blades.

Always use the widest blades possible, consistent with the radius of the curves to be sawn. Use narrow blade for sawing small, abrupt curves and for fine, delicate work only. This will not only save blades, but will produce the best work.

### Recommended Blades and Speeds

The accompanying table gives approximate speeds at which various materials may be cut, together with the blades recommended for cutting them. Remember, however, that these recommendations are only approximate, and that in some cases they may be bettered by individual experiment:

TABLE of BLADES and SPEEDS RECOMMENDED for CUTTING MATERIALS on the No. 1200 24-INCH SCROLL SAW

	70028- 21-J	10025- 21-J	10035- 21-J	16054- 30-J	20072- 15-J	20085- 12-J	20125- 20-J	20125- 15-J	20125- 10-J	28250- 20-J	28250- 7-J	703	704
Hardwood..... <sup>13</sup> / <sub>16</sub> "							1750				1750	1750	1750
Soft Wood..... <sup>13</sup> / <sub>16</sub> "									1750		1750	1750	1750
Plywood..... <sup>1</sup> / <sub>4</sub> "	1000	1000	1000	1000		1750			1750		1750	1750	1750
Plymetal..... <sup>1</sup> / <sub>4</sub> "				1000	1750	1750	1000	1000	1000	1000	1000		
Aluminum..... <sup>1</sup> / <sub>16</sub> "				1000	1000	1000	1000	1000	1000	1000			
Brass..... <sup>1</sup> / <sub>16</sub> "					1000	1000	650	650	1000	650			
Red Fibre..... <sup>1</sup> / <sub>4</sub> "								1000	1000		1000		
Red Fibre..... <sup>1</sup> / <sub>8</sub> "				1000				1000	1000		1000		
Bakelite..... <sup>1</sup> / <sub>4</sub> "								650	1000		1000		
Sheet Iron..... <sup>1</sup> / <sub>16</sub> "					650	650		650		650			
Cold Rolled Steel..... <sup>1</sup> / <sub>16</sub> "				1000	650	650		650		650			
Engravings.....								1750					

## Replacement Parts

Number	Name of Part	No. Req.	Each	Number	Name of Part	No. Req.	Each
<b>Upper-Plunger and Head Parts</b>				<b>Lower Plunger and Chuck, complete...</b>			
NSS-275	Upper Head, only	1	\$0.65	NSS-332-S	Lower Plunger and Chuck, complete...	1	1.45
NSS-275-S	Upper Head, complete with Plunger, Casing, Chuck, etc. (less guide)	1	3.75	NSS-333	Bearing Retaining Screw	1	.20
NSS-251	Upper Plunger Casing	1	.65	NSS-334	Bearing Ring	1	.06
NSS-251-S	Upper Casing Assembly complete with Chuck	1	2.70	NSS-335	Bearing Seat	1	.12
NSS-252	Knurled Safety Cap	1	.25	NSS-336	Upper Bearing	1	.30
NSS-253	Upper Plunger, only	1	.40	NSS-339	Packing Spring	1	.05
NSS-254	Upper Plunger Washer	1	.05	NSS-340	Upper Bearing Packing	1	.05
NSS-255	Upper Plunger Bearing	1	.45	NSS-346-A	Sabre-Blade Guide for <sup>3</sup> / <sub>8</sub> in. Blade	1	.15
NSS-256	Upper Plunger Bearing Collar	1	.15	NSS-346-C	Sabre-Blade Guide for <sup>1</sup> / <sub>4</sub> in. Blade	1	.15
NSS-257	Upper Chuck Loose Jaw	1	.05	NSS-347	Sabre-Blade Guide Post	1	.15
NSS-258	Upper Chuck Body	1	.10	DDL-256	<sup>1</sup> / <sub>4</sub> x <sup>11</sup> / <sub>16</sub> Washer	2	.05
NSS-259	Upper Chuck Fixed Jaw	1	.08	SP-1603	<sup>1</sup> / <sub>4</sub> -in. Washer	1	.05
NSS-260	Special Jaw	1	.15	SP-611	<sup>1</sup> / <sub>4</sub> -20 x <sup>1</sup> / <sub>2</sub> Hx. Hd. Screw	1	.05
NSS-262	Upper Plunger Bumper	1	.05	SP-1504	<sup>5</sup> / <sub>16</sub> -18 x <sup>11</sup> / <sub>16</sub> Thumbscrew	1	.08
NSS-263	Upper Plunger Seal Retainer	1	.06	SP-559	10-32 x <sup>1</sup> / <sub>2</sub> R. H. Screw	1	.05
NSS-264	Upper Plunger Felt Seal	1	.05	SP-665	<sup>1</sup> / <sub>4</sub> -20 x <sup>11</sup> / <sub>4</sub> Hx. Hd. Screw	1	.05
NSS-277	Guide Post Lock Plunger	1	.05	SP-1610	Indicator Spacer	2 for	.05
NSS-301	Saw-Guide Bracket	1	.30	SBS-46	Indicator Pointer	1	.05
NSS-301-S	Saw Guide, complete with Bracket, Roller, Disk, Nozzle, etc.	1	1.00	J-44	S-32 x <sup>5</sup> / <sub>16</sub> Headless Setscrew	1	.05
NSS-280	<sup>1</sup> / <sub>4</sub> in. Washer	1	.05	DDL-175	Washer	1	.05
NSS-302	Hex. Guide Post	1	.15	NCS-32	Star Wheel, <sup>7</sup> / <sub>16</sub> -14 Tap	1	.20
NSS-303-S	Blade Support, complete with Roller	1	.15	NCS-33	Star Wheel Spring	1	.05
NSS-304	Blade Guide Disk	1	.25	DSS-51	Special Screw	1	.05
NSS-305	Hold-down Spring	1	.10	DSS-326-S	Lower Chuck, complete with Jaws	1	1.00
NSS-306	Blade-support Roller	1	.05	DSS-326	Lower Chuck Body only	1	.75
NSS-307	Roller Pivot Pin	1	.05	DSS-328	Lower Chuck V-Jaw	1	.14
NSS-308	Blade Guard	1	.05	DSS-329	Lower Chuck Plain Jaw	1	.12
DSS-35	Upper Plunger Spring	1	.25	DSS-332	Lower Chuck Thumbscrew	1	.05
DSS-48	Blower Nozzle	1	.15	DSS-24	Dust Washer	1	.05
DSS-65	Knurled-head Setscrew	1	.08	<b>Base Parts</b>			
DSS-88	Upper Chuck Thumbscrew	1	.05	NSS-201	Base	1	6.50
DSS-51	Special Screw	1	.05	NSS-203	Rubber Foot	4	.05
NCS-164	Clamp Knob	1	.20	NSS-204	Oil Plug	1	.12
DDL-256	<sup>1</sup> / <sub>4</sub> x <sup>11</sup> / <sub>16</sub> Washer	2	.05	NSS-337-S	Crosshead with Steel Shoe	1	.60
SP-611	<sup>1</sup> / <sub>4</sub> -20 x <sup>1</sup> / <sub>2</sub> Hx. Hd. Screw	2	.05	DSS-63	Steel Crosshead Shoe	1	.15
SP-626	<sup>1</sup> / <sub>4</sub> -20 x <sup>3</sup> / <sub>4</sub> Hx. Hd. Screw	3	.05	NSS-338	Clamp Ring	1	.15
SP-1029	<sup>1</sup> / <sub>4</sub> -20 Hx. Nut	1	.05	DSS-4	Housing Cover	1	.50
SP-1526	<sup>5</sup> / <sub>16</sub> -18 x <sup>11</sup> / <sub>16</sub> Thumb Screw	2	.06	DSS-9	Lower Plunger Bushing	1	.12
SP-1603	<sup>1</sup> / <sub>4</sub> Washer	2	.05	SBS-8	Dowel	2 for	.05
NSS-309	Individual Guide Bracket	1	.65	SP-509	<sup>1</sup> / <sub>4</sub> -20 x <sup>1</sup> / <sub>2</sub> R. H. Screw	8	.05
<b>Drive-Shaft Parts</b>				SP-275	<sup>1</sup> / <sub>4</sub> -28 x <sup>1</sup> / <sub>4</sub> Allen Screw	1	.07
NSS-206	Drive-Shaft Housing	1	.85	SP-808	<sup>5</sup> / <sub>16</sub> x 1 Carriage Bolt	4	.05
NSS-206-S	Drive-Shaft Housing Assembly, including Bearings, Pump, etc.	1	8.75	SP-1604	<sup>1</sup> / <sub>4</sub> -in. Washer	4	.05
NSS-207	Pump Head	1	.45	SP-1030	<sup>5</sup> / <sub>16</sub> Hex. Nut	4	.05
NSS-208-S	Drive-Shaft, with Crank and Pin	1	2.25	SP-1702	<sup>1</sup> / <sub>4</sub> Lock Washer	4 for	.05
NSS-209-S	Eccentric Sleeve, with Screw	1	.20	SP-2476	Oil Filler Cup	1	.20
NSS-211	Plunger	1	.30	<b>Table Parts</b>			
NSS-213-S	Blower Piston	1	.15	NSS-226	Table only	1	3.00
NSS-216	Exhaust Valve Screw	1	.10	NSS-226-S	Table, complete with Trunnions	1	3.60
NSS-217	Inlet Valve Screw	1	.10	LBS-52	Trunnion	2	.08
NSS-218	Valve	2 for	.05	LBS-54	Index Plate	1	.20
NSS-219	Valve Spring	2 for	.05	LBS-56	Table Insert	3 for	.40
DSS-16-S	Fiber Slide Block	1	.40	LBS-56-B	Blank Insert	3 for	.40
DSS-42	Blower Spring	1	.05	SP-514	<sup>1</sup> / <sub>4</sub> x <sup>3</sup> / <sub>8</sub> R. H. Screw	4 for	.05
DSS-70-S	Felt Seal Cap with Washers	1	.30	SP-1702	<sup>1</sup> / <sub>4</sub> Lock Washer	4 for	.05
SBS-19	<sup>5</sup> / <sub>16</sub> -18 Special Nut	2	.05	<b>Over-Arm Parts</b>			
DSS-75-S	Timken Bearing	2	1.60	NSS-236	Over Arm	1	3.25
SP-275	<sup>1</sup> / <sub>4</sub> -28 x <sup>1</sup> / <sub>4</sub> Allen Screw	1	.05	NSS-237	Bolt	1	.15
SP-564	6-32 x <sup>3</sup> / <sub>8</sub> R. H. Screw	7 for	.10	NSS-341	Rubber Tubing	60 in.	.15
DSS-327	Yoke	1	.45	NSS-344	Nipple	1	.05
<b>Trunnion Swivel Bracket Parts</b>				SP-626	<sup>1</sup> / <sub>4</sub> x <sup>3</sup> / <sub>4</sub> Hx. Hd. Cap Screw	2	.05
NSS-202	Trunnion Swivel Bracket	1	1.25	DDL-256	<sup>1</sup> / <sub>4</sub> Washer	2	.05
NSS-205	Trunnion Clamp Stud	1	.06	SP-1751	<sup>5</sup> / <sub>8</sub> Shakeproof Washer	1	.05
NSS-227	Trunnion Clamp Plate	1	.15	<b>Miscellaneous</b>			
NSS-332	Lower Plunger, with Corks and lower Cap	1	.45	340	V Belt (13 in. center to center)	1	.80
				718	Four Step Motor Pulley ( <sup>1</sup> / <sub>2</sub> in. bore)	1	.75
				882	Lamp Attachment with Cord and Plug, Links and Bracket	1	1.50
				1203	Belt Guard complete for No. 1200 Scroll Saw only	1	6.85