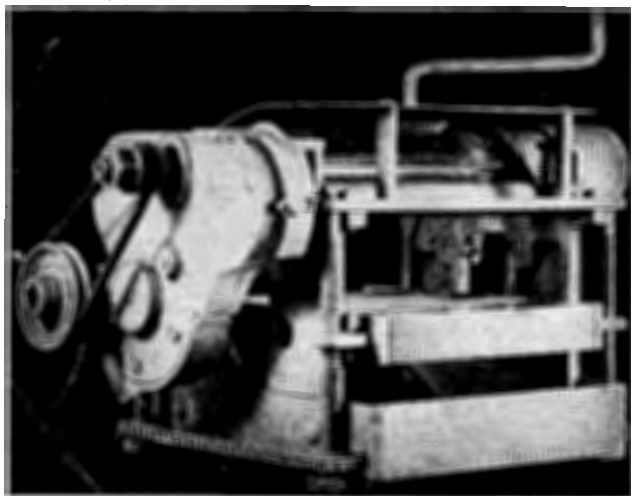


BELSAW MULTI-DUTY PLANER



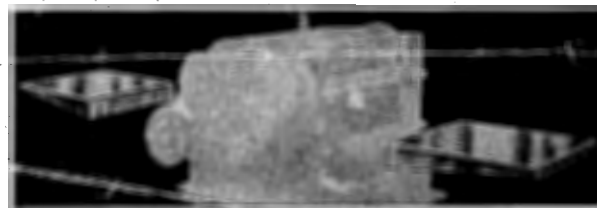
THE BELSAW high-speed thickness planer provides for single surfacing of stock up to 12 in. wide and 6 in. thick at feed rate of 24 feet per minute. Solid round all-steel cutterhead turns at 4,000 r.p.m. in self-aligning heavy-duty ball bearings, FACTORY LUBRICATED and SEALED for ATTENTION-FREE operation. The three 12½ in. long high-speed steel knives make 42 cuts per inch for smooth finish. All-steel welded frame. Table is one piece casting with machined top and two adjustable idler-rolls. Fluted infeed and smooth outfeed rollers have spring tension thrust bearings for self-aligning pressure on stock. Positive feed gear train floats with feed rolls, and has lever control for quick release. Self-aligning and self-adjusting chipbreaker. Pressure bar back of cutterhead holds stock firmly against planer bed, assuring smoother planed lumber. Micromatic bed height control, (one complete turn of thickness setting crank raises or lowers planer bed 1/16"), chip exhausting knife guard. Takes inexpensive attachments for all common planing mill operations, jointing, rabbeting, grooving, matching, knife grinding. Requires 2 HP in soft wood, 3 HP in hard woods.

905 PLANER, complete with three cutterhead knives, and 4 in. diameter arbor pulley for 4 in. flat belt, or two groove 3.8 diameter V-sheave for V-belt. (Specify type wanted.) Wt. 266 lbs. **\$215.00**
 951 EXTRA KNIVES—12½"x15/16"x¼" standard equipment high-speed knives for all BELSAW Models with 3-knife cutterhead—set of three. Wt. 3 lbs. **\$12.00**
 952 EXTRA KNIVES—12½"x15/16"x¼" Super High Speed Steel for continuous planing of hard woods and for fine cabinet finish on thin cuts—extra quality—set of three. Wt. 3 lbs. **\$14.40**

BELSAW EXTENSION TABLES

TWO METAL PLATES, each 12 in. long, bolt securely to ends of cast bed, increasing overall table length to 42 in.—longer than many far costlier surfacers. This extra, rigid support provides additional working space needed for continuous and multiple feeding of shorter pieces. Quickly attached to the BELSAW Planer.

2S-5 EXTENSION TABLES, pair, Wt. 10 lbs. **\$16.25**



Sharpen and Joint Knives With These Planer Attachments



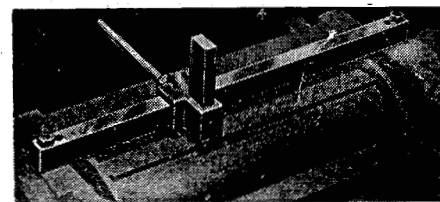
960 Knife Grinding Attachment, complete. Wt. 35 lbs. **\$14.50**

THE BELSAW Model 905 Planer is the only bench planer with provisions for grinding and jointing its own knives.

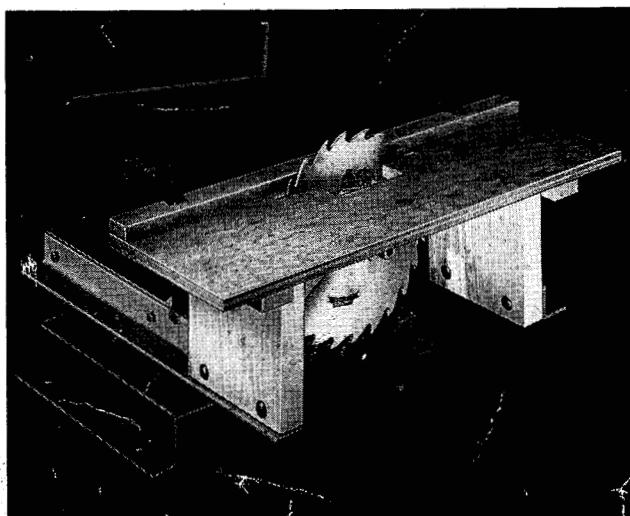
Knife Grinding Attachment consists of cup-type abrasive wheel mounting on offset arbor and adjustable table for holding knives so you can re-grind knives as needed . . . a highly desirable and needed attachment for all shop tools.

Knives can be kept sharp between grindings with BELSAW Knife Jointing Tool which also joints knives to true round in the cutterhead. This outstanding feature alone puts the BELSAW in the big planer class. Fine quality grade India stone adjustable for depth in cast holder that moves on machined track across knives, as illustrated.

955 Knife Jointing Tool, complete. Wt. 8 lbs. **\$12.50**



KNIFE JOINTING TOOL



SAW TABLE ATTACHMENT

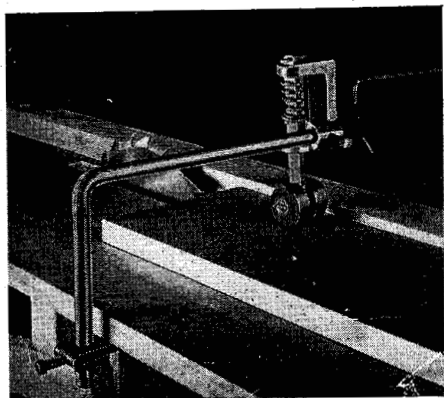
965 Saw Table Attachment. The busiest of all planing mill and cabinet shop machines can be readily used as an attachment to the BELSAW Multi-Duty Planer. The Metal Extension Brackets bolt securely to the Planer bed and support wood table which you can easily assemble. See illustration at the left. Serves for jointing, trimming, milling tongue and groove, and other special work, using saws or flying bits on the cutterhead extension arbor. The illustration shows the Saw Table Attachment metal parts and how they bolt to the planer. Also shows the suggested construction of the wood table you assemble from the complete instructions and scale drawings sent on receipt of your order. Extension arbor provides for mounting 966 Combination Saw; 970 Matcher Cutters; 972 Molding Cutter Head and 975 Pattern Knives (See page two).

965 Saw Table Attachment, metal parts only. Wt. 15 lbs. **\$5.50**

966 Combination Saw, 12-in., 14 gauge, 1 in. arbor hole, 44 teeth, 4000 RPM. Wt. 4 lbs. **\$7.60**

Please Turn Page

Multi-Duty Attachments for BELSAW PLANER



BELSAW HOLDDOWN

BELSAW two-way Holddown, for use with Saw Table provides pressure on both width-guide and bed. Roller with spring action for clamping on stock on Saw Table. The BELSAW two-way Holddown mounts in either vertical or horizontal position. A much needed Saw Table Attachment accessory... saves time and labor... pays for itself by increasing production. 968 Holddown, complete devise. Wt. 5 lbs... **\$4.50**

THE BELSAW IS MORE THAN JUST A BENCH PLANER!

● THE BELSAW Multi-Duty Planer is more than a 12" bench surfacer... it is being used by thousands of expert woodworking operators throughout the United States, Canada, and in many foreign countries. A great many of these satisfied BELSAW customers use the planer for continuous single surfacing... an important job it will do faster and better, at lower cost than many higher priced planers. But, in addition to its recognized outstanding performance as a bench planer, the BELSAW is designed to provide for many inexpensive attachments for handling numerous other planing mill operations.

The use of these profit-boosting attachments are possible only because the BELSAW Planer cutterhead has an extension arbor on which the operator can quickly and easily mount saws, matcher cutters, and molding cutterhead taking flying bits. These are illustrated and described on this and the preceding page.



MATCHER CUTTERS

BELSAW Matcher Cutters for milling tongue in 13/16 in. flooring consist of two 6 in. diameter Patented Type Solid Plate Cutters, one 3/8 in. thick and the other 1/4 in. thick, with 7/32 in. spacer. The 1/4 in. thick cutter is used for producing the matching groove. Can be used separately for other grooving and in combination with regular dado chippers for variety of molding cuts. Easily mounted on planer's extension arbor for use with saw table. 970 Matcher Cutters, complete. Wt. 7 lbs..... **\$28.95**

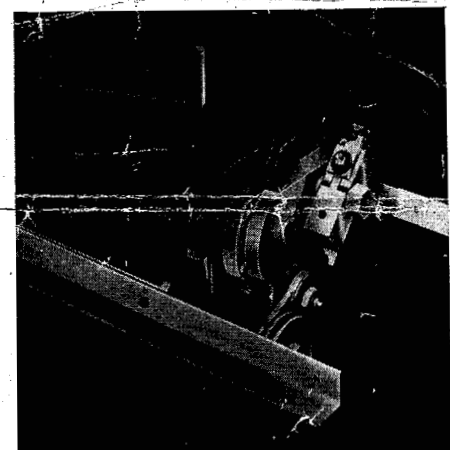


BELSAW MOLDING CUTTER HEAD

Molding Cutter Head attaches to planer extension arbor to take flying bit type knives up to 2 in. width for jointing, milling and other forms of molding cuts on the saw table. While boards up to 6 in. width may be edge-jointed on regular planer bed, the flying bits in attachment molding head permit jointing wider boards up to 2 in. thickness.

The 972 Molding Cutterhead is illustrated at the left, with a pair of the 975 Knives (N-Casing), locked in position on the Molding Cutterhead. The illustration at the right shows the Molding Cutterhead with pattern N-Casing Knives mounted on the planer's extension arbor. The Saw Table Attachments are shown bolted to the Planer bed... wood parts of the saw table have been removed to show the Saw Table metal supports and give a full view of the Molding Cutterhead and knives.

972 Molding Cutter Head, Wt. 4 lbs..... **\$15.00**



- A—Jointing, Rabbeting
- B—Groove, for Matched Flooring
- C—Tongue, for Matched Flooring
- D—Siding
- E—Shiplap
- (D and E combined for Novelty Siding)
- F & G—Pair of each for V-Joint Matched Ceiling
- H—Door Molding
- I—Bash Molding
- M—OG Stop
- N—Casing
- Q—Quarter Round

Other profiles may be obtained on order by sending accurate dimension drawing of pattern desired.

PATTERN KNIVES FOR WORKED LUMBER AND MOLDING

AT LEFT and below are illustrations and description of flying bits for use with 972 Molding Cutter Head. One pair is required for each pattern desired.

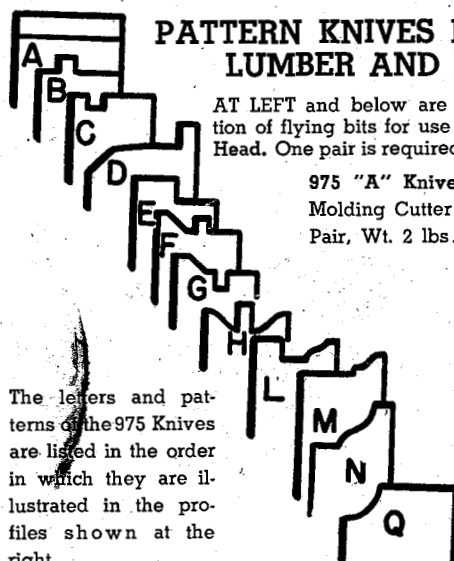
975 "A" Knives, for jointing with 972 Molding Cutter Head.

Pair, Wt. 2 lbs..... **\$7.50**

975 "B" through "Q" Knives, shaped for tongue and groove milling novelty siding, V-matched ceiling, and other standard patterns specified. Pair, Wt. 2 lbs..... **\$8.50**

Please order by number, 975, specifying letter and pattern wanted.

The letters and patterns of the 975 Knives are listed in the order in which they are illustrated in the profiles shown at the right.



Above is a reproduction of a photograph of a log cabin built by a Michigan BELSAW customer. The cabin was constructed entirely of native lumber, sawed on a BELSAW Sawmill and surfaced with a BELSAW Multi-Duty Planer. This BELSAW customer, Mr. E. C. Eddy, Mio, Michigan, and many thousands of others, have developed profitable construction businesses with BELSAW equipment.

BELSAW MACHINERY CO

315 Westport Road

Phone LOgan 9255

KANSAS CITY 2, MO.

BELSAW MULTI-DUTY PLANER

BASIC PRINCIPLES:

Modern surfacing machines operate on the principle of rotary cutting. The rotary cutter is a steel cylinder in which cutting knives are securely fastened. With the cylinder revolving, the stock is fed against it by mechanical power.

Each knife striking the wood cuts a small hollow into its surface. As the wood is moved forward, a small ridge is formed when the next knife strikes and makes another hollow. Machine planing produces a series of these minute hollows and ridges on the surface of the stock. The proper combination of cutterhead speed, cutting angle of knives, and number of knife cuts per inch of feed, develop a smooth planed surface.

THICKNESS PLANING gives uniformly exact desired thickness determined by space allowed between bed and cutterhead. Stock is power fed under the cutterhead while held against the bed by feed and pressure rolls, for uniform depth cut. Chipbreaker presses on stock in front of cut to prevent lifting fibers—leaving crevices. Pressure bar rides planed stock back of cut, holds stock against planer bed as it passes under cutterhead and outfeed roll. Adjustable spring tension permits the operator to tighten pressure bar if board chatters or knives dig into it.

Stock to be surfaced on any thickness planer must have one flat side. Warped or twisted boards cannot be straightened on a thickness planer—one surface must first be planed flat on the JOINTER.

JOINTING is the operation of producing a level, flat, smooth surface. Stock is fed by hand, over the cutterhead on two flat tables. The front or infeed table is the one toward which cutterhead revolves. The infeed table is lowered below cutting circle of knives for desired depth of cut—outfeed table must be exactly level with top of cutter stroke. A fence, adjustable sideways and with provision for tilting from 0° to 45° is quite similar to that used on a table saw. A guard that will cover the portion of the knives not in contact with the board acts as a safety feature.

Just as a board cannot be "straightened" on a thickness, it cannot be planed to uniform thickness on the jointer. The two are companion machines.

SETTING UP:

Support bench must be heavy and solid, approximately 20% high with bed bolts on 9" centers across and 14" lengthwise—leveled true. Bolt machine solidly. Check level of cutterhead.

If you have ordered the 2S-5 Extension Tables, bolt to each end of bed. If these factory extensions are not available it is advisable to support stock both at infeed and outfeed ends with flat boards or rollers to keep it same level as bed over its full length.

Table rolls are factory set approximately 1/128" above bed which is best for light cuts of dry lumber. For surfacing green, rough timber the bed rolls should be raised to 1/32".

Be sure the cutterhead and the table are level, check them with a spirit level. They are correctly set at factory but may become altered in shipment handling. If planer table requires adjustment, release synchronizing chain at master link on roller chain models or release idler on detachable link chain machines. Sprocket wheel will turn pillar screw as needed. Cutterhead position is secured with taper pins through castings into side pillar. Pins may be driven out for change.

OPERATION:

Cutterhead speed range is 3500 to 4500 rpm. Maximum efficiency is at 4000 rpm, giving 42 knife cuts per inch and outfeed of 14 lineal feet per minute.

Planer requires 2 horse-power for light duty, 3 horse-power for heavy duty in harder woods.

The bed is adjustable to give any specific thickness from 1/4" to 6" maximum.

Each full turn of the hand crank moves bed 1/16", scale pointer on side pillar shows distance between bed and cutter stroke.

Maximum depth cut is 1/8" (two full turns of crank). Do not exceed. For deeper cuts make reruns, taking equal amounts off both sides. Make certain that stock to be planed has one flat side. Measure the thickest part of the board and set the scale pointer so bed is from 1/16 to 1/8" less than that thickness. Determine the direction of the grain in the board and feed so that knives will cut with the grain.

Push board under infeed roller with flat side down. Start board so it will run as nearly as possible in straight line. Support it to keep it level over entire travel. Short pieces should be followed with pusher stock of similar thickness to prevent kickback, and sniping on end. If stock does not feed straight, check feed roll spring tension, also clearance at table ends.

The finish produced with standard equipment is the most popular and considered very high quality for bench planer. Near cabinet finish on light cuts in seasoned stock may be obtained by dropping table rolls to bed surface and by changing the 4.4 diameter V-sheave to larger size—which reduces rate of feed and gives more knife cuts per inch.

MAINTENANCE:

KEEP MACHINE WELL LUBRICATED, use gear grease on gear train—first grade gun viscosity in bearings—machine oil in bed needle bearings and feed roll bearings.

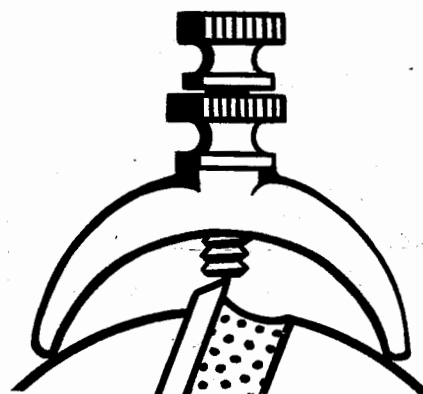
Cutterhead runs in Heavy Duty self-aligning ball bearings lubricated and sealed at the factory against leakage and contamination. Result—attention-free operation for years. They require no lubrication.

Plain outfeed and fluted infeed rollers have spring tension thrust bearings for self-aligning pressure on stock. Offset extensions of these shafts carry power driven gears and support gear train that rises and falls with feed rolls.

There is no scraper on outfeed roll, it should be hand cleaned with sandpaper and kerosene when packed or rusted. Infeed fluted roll protected from chips by baffle design chip breaker. If this roll becomes filled with chips, clean it for positive material feed. Top control stop on chipbreaker limits its upward travel, do not exceed factory setting. Bottom stop is adjustable by bending bar, keep it as set in factory because excess drags feed.

Pressure bar directly behind cutterhead rides on newly planed surface and holds stock firmly on bed. If board does not feed clear through planer, loosen pressure bar. If stock chatters and shows snipe at ends, tighten the pressure bar.

Thin knives 12 1/2 x 1 1/8 x 1/8" are held in cutterhead by 1/2" socket set screws that press on heavy gib. Knife extends 1/8" to 3/32" past gib for proper cutting action. Gib flush with cutterhead to curl chips and throw them out exhaust hood.



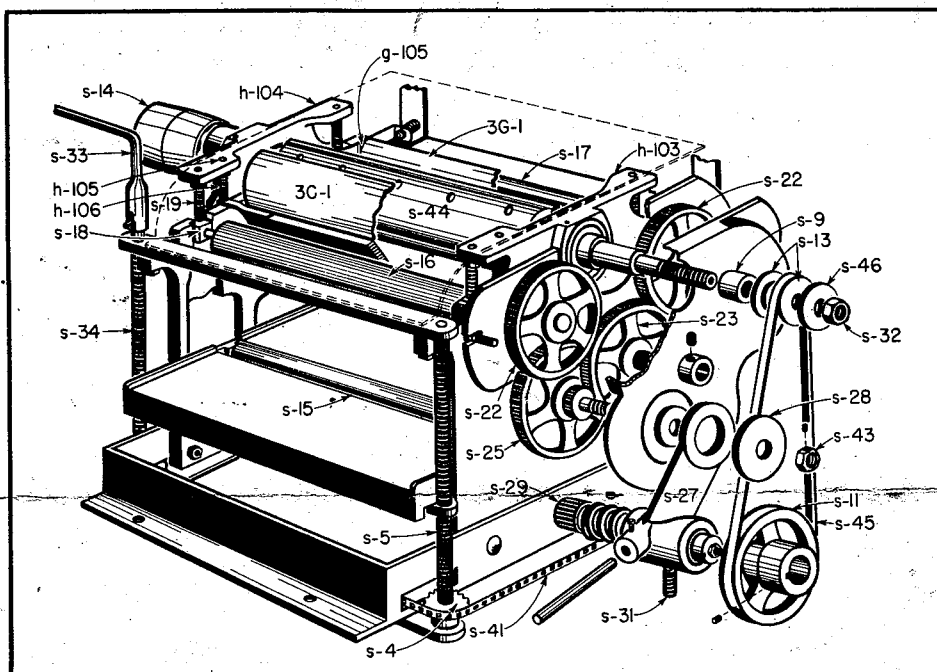
Knife setting gauge makes replacing a quick operation. Projection should be exactly the same along full cutting edge and equal for all knives.

Make certain that bolts holding knives are ALWAYS tight.

Joint knives in planer frequently using jointing tool to keep sharp until heel becomes 3/32" then regrind using Knife Grinder. An extra set of knives is advisable.

BELSAW MACHINERY CO

KANSAS CITY 2, MISSOURI



TOP JOINTER TABLE

INSTALLATION:

Remove chip exhaust hood.

Saw 1"-1½" off length of chipbreaker shield to clear jointer tables and also provide ¾" rise of chipbreaker. Slots at 1" intervals across the shield simplifies the cross cutting.

Remove bolt from machine yoke bar near four corner screws.

Set top jointer tables over cutterhead, bolt down on yoke bar.

Screw infeed and outfeed tables IN, at maximum height there will be about 1" between them. Level both tables with top of knife stroke, at knife protrusion of 5/32"-7/32", lips parallel to cutterhead. Bracket w-255 rides in grooved track... has slotted hole at table top. To raise one side loosen nuts under jointer table, adjust bracket w-255, tighten all nuts.

Replace pressure bar bolts with 2½" set screw. Attach to pressure bar with two jam nuts. Spring presses between nut and casting leg. Stop pressure bar down travel max. 1/128" below cutterhead circle... spring tension sufficient to hold planed stock firmly on planer bed.

Replace planer crank s-33 with extension crank, u-269.

Make a guard as illustrated to cover feed belt assembly.

OPERATION:

Feed stock with the grain. Take off high surfaces first, when board is flat make a complete pass.

Thickness of cut depends upon lowering infeed table, maximum is ¼". Outfeed table is kept even with top of cutterhead stroke.

Push block having friction surface of rubber or wood projecting heel holds stock securely against knives and prevents kickback of short lengths. Use this safety device, do not feed stock by hand.

BEVEL... tilt fence and rerun stock till full angle is secured.

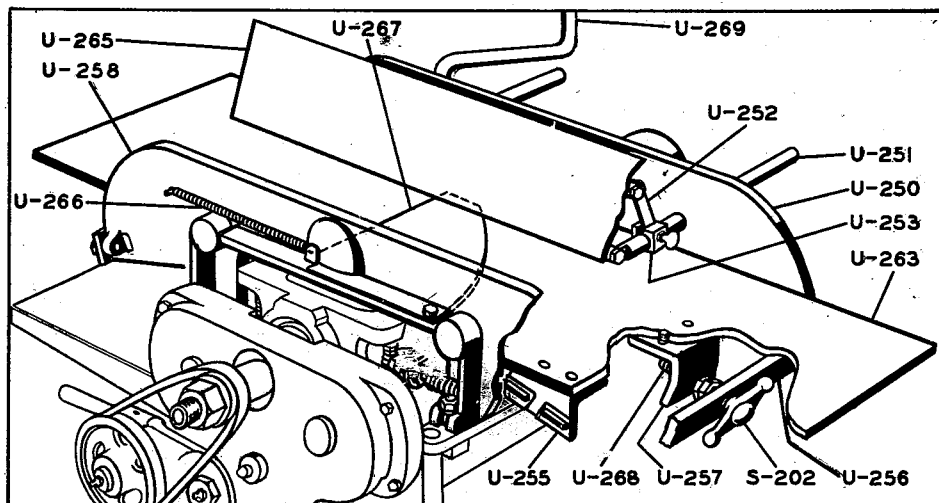
CHAMPFER... same as bevel, but rerun only till desired chamfer face width is secured. Side casting and angle guide make useful jig to hold stock.

SAFETY RULES:

Keep knives sharp, fasten securely. Use a light cut, too heavy cut may cause a kickback.

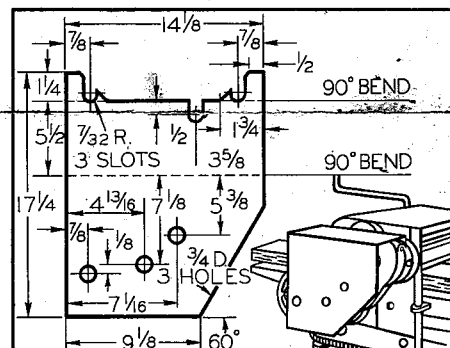
Wear no loose fitting clothing and no gloves, tuck in necktie and roll up sleeves. Do not place hands near knives... use a pusher board at all times.

Be sure tables are locked tight and fence secure before starting motor. Keep floor clean around machine.

**PARTS LIST**
Model 905**THREE KNIFE HEAD—CAST TABLE**

Order Part No.	Description	Shipping Wt. in Lbs.	Price Each
3C-1	Chipbreaker Assembly	7	\$12.20
e-102	Table Roll Bearing Boss	1	2.00
3G-1	Pressure Bar Assembly	1	23.60
g-105	Pivot Bushing	1	1.20
h-103	Left Bearing Housing	7	11.70
h-104	Right Bearing Housing	7	11.70
h-105	Chipbreaker stop	1	.50
h-106	Chipbreaker spring	1	.33
m-2	Ball Bearing, Cutterhead	2	9.60
q-5	Bed Roll Bearing	1	1.90
s-4	Sprocket	1	1.90
s-5	Corner screw (3)	2	1.90
s-9	Sleeve	1	1.30
s-11	V sheave 4.4	3	3.80
s-13	V pulley, 2 pieces	1	2.80
s-14	Drive pulley 4"x4"	6	5.70
s-15	Table Roller	7	2.80
s-16	Infeed roll, 1½" fluted	8	11.40
s-17	Outfeed roll, 1½" plain	8	5.70
s-18	Feed roll bearing	1	1.90
s-19	Feed roll tension spring	1	.40
s-22	Feed gear 80T	2	5.70
s-23	Idler gear, 80T	2	5.70
s-24	Axle for S-23	1	.90
s-25	Compound gear 124T-21T	5	11.40
s-26	Axle for s-25	1	.90
s-27	Feed sheave arm	4	.70
s-28	Feed sheave arm plate	1	.50
s-29	Feed pinion, with axle 21T	2	3.80
s-30	Roller bearing for s-29	1	3.80
s-31	Feed belt tension spring	1	.40
s-32	Arbor nut	1	1.30
s-33	Crank	3	3.80
s-34	Corner crank screw (1)	2	2.20
s-39	Planer head gib (3)	2	2.90
s-41	Roller Chain-Diamond #65, buy locally		
s-43	Nut ¾"	½	1.50
s-44	Planer cutterhead, 3 blade SAB	37	95.10
s-45	V belt A26, buy locally		
s-46	Washer	½	.50
s-50	Drive sheave 3.8 2 groove	5	4.50
951	Planer knife 12½"x15/16"x¼" (set of 3)	2	12.00
952	Planer knife—Super High speed steel for continuous planing of hard woods and for fine cabinet finish on thin cuts — extra quality — 12 1/2 x 15/16 x 1/8 (set of 3)	2	14.40

When ordering parts always give both MODEL No. and SERIAL No. shown on your machine's nameplate. Include allowance for postage; we will prepay and refund unused portion.

**PARTS LIST**
920 Jointer Table

Part No.	Description	Shp. Wt. in Lb.	Price Each
s-202	Handle	3	\$ 0.75
u-250	L. H. Support Casting	29	26.25
u-251	Slide Rod	2	1.95
u-252	Fence Link	¼	.60
u-253	Tilt Locking Clamp	½	1.80
u-254	L. H. Table Bracket (not shown)	3	3.75
u-255	R. H. Tablet Bracket	3	3.75
u-256	Yoke	3	1.95
u-257	Height Control Bracket	1	1.20
u-258	R. H. Support Casting	29	26.25
u-263	Jointer Table	22	18.50
u-265	Fence	9	4.35
u-266	Spring	1/16	.35
u-267	Knife Guard		3.30
u-268	Screw ¼"x 4		.35
u-269	Extension Crank	2	4.20