**QUICKSHARP KNIFE GRINDER**
Mfg By
A.B. Manufacturing C.
Worcester, Mass

Northfield did not manufacture their own knife grinder until 1961 when the #7 planer was introduced. Jointers and #5 planers that were built with grinders prior to 1961 would have had the A.B. Quicksharp grinder. We assume that A.B. Mfg. quit building these units in the mid 1960's.

# INSTRUCTIONS

Read Carefully Before
Attempting to Setup Grinder

A. B. Manufacturing Co.

Printed in U.S.A.

QUICKSHARP Grinder

The illustrations show examples of what, in general, is required in making setup of the "Quicksharp" Grinder.

Write us giving full data of any special requirements in making installation.

A. B. MANUFACTURING CO.

# SETTING UP INSTRUCTIONS

### *Construction:*

The reason for the success of the "Quicsharp" lies in its unique construction. The Head is pivoted and can be tipped out of the perpendicular to either side, thus making with a 4" cup wheel a concave grind the same as would be made by the face of a circular wheel 12" in diameter. A Tension Spring holds the wheel, when grinding, against knife; this pressure is constant, but never enough to overheat the knife. The Spring allows the wheel to be lifted away from the knife while revolving the cylinder head. The wheel when released returns to the same position as before; the stop is positive, thus any variation in each knife ground is impossible. A one-eighth turn on the feed screw will usually give a grinding cut quite heavy enough; with a little experience, just how much to feed will be observed.

### *The Setup:*

In the set up, the main idea is to get the face of the bridge parallel with the edge of the knife to be ground and bottom edge of bridge 3" above knife. The method of obtaining these results varies with different makes of machines, but the principle is the same with all—simply to get the bridge parallel both ways with the edge of the knife to be ground and hold it there rigid.

The pins that support the brackets are located by a template. The edge A of sliding arm (Plate 1, Fig. 1) is the face line of the bridge when in place on the supporting brackets.

The bottom of foot B of template is the bottom of bridge bracket foot.

With a prick punch D locate the long pins—one right and one left. The short pins are located at E. Hold template perpendicular to knife. The long pins, a (Plate 1, Fig 2.) should be put in first and turned in hard with a pipe wrench and sawed off the right height, which is flush with the top of the template, the ends smooth and the corners rounded off so the brackets will drop on easily.

Next, the short pins, b, are put in and cut off at the right height to come just under the end of the bracket and support its weight (Fig. 3.) The foot B can be unscrewed from one end of arm and screwed to the other end. Be sure and locate one long pin right and one left so the same bracket will always be put on the same pin.

This setting brings knives in the center of wheel. Grinder can be set forward or back to avoid any obstruction or when bevel of knife or design of safety head makes it necessary. (See Plate 5, Fig. 5). The brackets should rest on the pins without strain when





the bridge is put on, if there is any wind or strain when the bridge is put on, the pin that causes it by being too high must be filed down until the grinder rests easily and without cramp on all four pins.

### *Methods of Testing for Parallelism:*

Taking it for granted that the knives as set are right, a simple way of proving that the knife and the bridge are parallel is shown in Fig. 3. Take a piece of wood about two inches wide and eight inches long, with a straightedge. Put the straightedge against the bridge and let the end down on the knife. With the wooden piece at one end of the knife make marks at knife edge and bottom of bridge. Try it at the other end—any variation can be seen and at once corrected. With the bridge parallel with knife edge, a good way to get the same height at both ends of the bridge is to put on the head at one end of bridge and screw down the wheel until it just touches the knife when revolved with a push of the finger (Plate 2, Fig. 1). Lock it there with the binder screw and carry it over to the other end, tip it to same side, and see if the wheel touches the same amount there when head is revolved. If not, both pins at the highest side must be filed down until the touch of the wheel is the same at both ends. The next thing is to to adjust the stop (Plate 1, Fig. 4) so that the knife is held in position to grind the bevel desired. *If possible make stop straight, it is more rigid than when bent* (Plate 7, Fig. 2).

On most planers the regular stop will fit all right, but on some others there is not room for it, and in these cases a strut stop from the pressure bar will have to be used (Plate 2, Fig. 2). The strut can be made from 1/4" round stock ground to a cone point on one end and a chisel point on the other. A 1/8" hole can be drilled in the pressure bar about 1/8" deep to take the cone point. Make the strut a little long and file down the chisel point until the desired bevel is obtained on knife.

It is important to see that the bridge sets down in the "V" way of both brackets, equally, and that the bracket caps are screwed down tight before putting on the head, and also that the split nut in the head properly engages the screw along the top of the bridge. The motor shaft fits into the coupling in the end of the wheel spindle, and the pin in the frame of the motor fits in the slot in the head.

*See that the pin is in slot and that the motor is down in its place before starting.*

If knife head is not designed with means of holding in position when grinding, with belt off, hang a weight on pulley. (Plate 3, Fig. 3). There is usually a hole in the pulley in

which to insert a pin, with a rope and weight. If this is not convenient, a heavy monkey wrench on the rim of the pulley will answer the same purpose, which is to keep the knife against the stop. Where possible it is best to have the pressure of the direction of grinding such that it will tend to hold knife against stop. In starting, have the wheel well up off the knife until the motor has reached its speed, then lower the wheel with the feed screw (Plate 3, Fig. 2) until it begins to spark, tighten binder screw and see if it is cutting the desired bevel. If not, change it at once.

*Turn over the cylinder and grind the other knife, or knives, before feeding the wheel down.*

At the first grinding, the knives have to be shaped to the new concave of the wheel, and it will have to be run back and forth several times, but after the first grind simply running once over and back on each knife will usually give the desired cutting edge.

It is often necessary in order to grind out to the end of knives to tip the head first to one side, then to the other. It is best to start at the left hand end, or handle end, of the bridge, with the head tipped to the right, position 1 (Plate 3, Fig. 2), run over to the right end, position 2, then back as far as possible, position 1; then tip head to the left, position 3, and run out until the grinds meet, position 4; then back to the left hand end, position 3; tip upright and stop. By following this rule every part of the knife will have been gone over twice.

The distance between the head of the feed screw and the stop nut (Fig. 2) should never exceed at any time the thickness of a sheet of thin paper—particular attention must be paid to this point at all times. If the distance between the stop nut and feed screw is enough to let light through and wheel is not grinding, probably it is glazed. The glaze must be dressed off at once, *first screwing the feed screw up to the stop nut to prevent wheel gouging knife when dressed and again released. Never start motor with wheel touching the knife.*

The knives being ground for the first time, a test should be made by running through two pieces of stock, one on each side of the planer, and comparing them. If there is any variation in thickness, the amount of the variation must be filed off the pins on the side that planes the thinnest, and the grinder put on again; in this way, by careful adjusting, planing can be turned out without a variation of a thousandth of an inch, and the pins once made right are right for all time, or until boxes are rebabbitted, or some change is made that will alter the position of the cylinder. Then a little filing of the pins will readjust them to the new conditions.

The first set up on any machine should be carried out carefully, as by it further grinding is to be done; in all subsequent grinding





the brackets have only to be dropped on the pins, and the whole operation of setting up, grinding, and taking down is a matter of from ten to twenty minutes for each head, according to the number and length of the knives.

### *Planers with Cap Boxes:*

In attaching the "QUICSHARP" Knife Grinder it sometimes happens that the gauge, or measurement (Plate 6, 7 and 8), locates the long pin on or near the edge of the boxcap, a (Plate 4, Fig. 1). In this case it is essential to draw back to a point, b, clear of the cap, taking care to go back the same distance from both boxes.

The short pins can be located anywhere so long as they are under the end of the bracket to support it. Sometimes it is best to make a shelf of ½" x 1½" wrought iron to take the bracket pins (Fig. 2). This should be screwed or bolted to the frame of the planer and left in place permanently. It often happens that the adjusting screw of the pressure bar comes in the way, in which case a corner can be sawed off the bracket without harm (Fig. 3) so long as there is enough left to bear on supporting pin.

### *Double Head Planers:*

On double surface planers the method of grinding the lower cylinder varies with the construction of the machine. On most modern planers the lower cylinder pulls out at the side. Of these there are many types.

A glance at the illustration (Plate 4, Fig. 4) will show that the attaching brackets are simply shelves on which to place the supporting pins, so that the brackets can rest upon them the same as in other cases, and the manner of setting up and grinding is exactly the same. Plate 5, Fig. 9 illustrates the method of attaching where a section of bed pulls out with the cylinder, and set up can be made the same as on jointer.

### *Application to a Jointer:*

In adjusting to a jointer (Plate 5, Fig. 9) drill two $\frac{5}{16}$" holes in the back bed about 3¼" from the throat, and 4" in from the sides. Tap these to fit ⅜" cap screws, and fasten down the bridge supporting bracket finger tight. Then put on bridge and screw bracket caps down firmly, having the face of bridge about 1½" back from the edge of the knife.

Get the face of the bridge parallel with the edge of the knife (Plate 1, Fig. 3), then fasten all down tight. Put on the head, and

stop the knife at the desired bevel (Plate 5, Fig. 9), as it may be necessary to pull back the bed so that it will clear the wheel; then proceed to grind with the head tipped toward the left. *When turning over the cylinder head always turn backward.*

When the set up is found to be satisfactory as to bevel, etc., before taking off the grinder mark with a scratch awl the location of the ends of the brackets on the bed, so that the brackets can always be returned to the same position. If the bed has been pulled back, make a stop block that will bring it to the same place again, so that in future grinding, if the brackets are set to the marks on the bed, and the bed is held back the same distance by the block, the grind will always be the same. Always be sure to screw down bracket caps hard before tightening down brackets to bed. A stop should be made for each machine; this is necessary to maintain the same bevel with each grinding.

## *Safety Heads and Knife Bevels:*

In the days of the file and oil stone method of sharpening planer knives, it was customary for many operators to get as long a bevel on knives as they would stand, thus permitting them to be filed and whetted more times before becoming too thick for further use. Thus, knives would be put on with a bevel of 30° and remain on until the whetted edge assumed an angle of 45° or more (Plate 5, Fig. 1).

The question then is: What is an adequate clearance? It will be seen by a glance at Fig. 2 that the bevel, although short, is clearing the wood all around the cut. There is, moreover, with a bevel of this kind, no danger of shavings calking in between the knife and head and springing the knife out of shape, as often happens when the edge is too thin and weak.

We believe from experience gained in a number of tests that a bevel of 38° is the best for all purposes regardless of the thickness of the knife. This can be easily verified by anyone who has a "Quicsharp" by grinding a hand jointer to this bevel and pushing a piece of wide stock over it. It will be found to cut easy and smooth with an entire absence of chatter.

It has also been found that it is possible to get smooth work with a greater projection beyond the chip breaker with a short bevel than with a long one, owing to the edge being more rigid.

Some of the latest type of safety heads (Fig. 8) have flattened off places directly back of the heel of the knife bevel; with this construction the knife can be ground down until there is almost no projection.





Some other makes of safety heads have not this advantage; the cap coming right up to the heel of the knife bevel if it is 30° (Figs. 3 and 4). Grind off the top of caps with the "Quicsharp."

Almost any bevel can be obtained, as the wheel when tipped takes the form of a flat elipse, so that by advancing the wheel and stopping the knife at an angle to suit (Fig. 5) it is possible to grind a long bevel without touching the head. One objection to this, however, is that the slightest variation in the parallel between the bridge and knife edge will show in the grind.

Figs. 6 and 7 show two safety heads of well known makes. It will be seen that the wheel clears the head easily and though the bevel is shortened a little, the original projection is maintained. Knives ground by the "Quicsharp" in this manner are doing smoother work, standing up longer, and giving greater satisfaction in every way than before with the longer bevel.

## *Back Grinding:*

Any angle of cut can be obtained with the "Quicsharp" by back grinding (Plate 7, Fig. 3).

Turn the knives bottom side up and set temporarily for back grinding.

Grind the bevel desired. Now turn the knives over, face up, and set in the usual way.

The face of the knives can be ground until the back grinding is nearly gone.

The back ground bevel must not come nearer than $\frac{3}{32}$" from the edge of lip (chipbreaker) on cylinder head.

The face of back grinding can be about $\frac{3}{16}$" wide when first ground.

## *Method of Setting Out Knives:*

As before stated, a pair or set of knives, if in balance when first put on, can be ground by the "Quicsharp" until worn out without removing them from the cylinder, and the balance maintained all the while, if the method here shown is used, and reasonable care exercised.

Before setting out, make marks on the cylinder (Plate 3, Fig. 1) with a scratch awl at the back of the knives at both ends, and between every bolt, and set out from these marks every time the same distance. For instance, setting them out $\frac{1}{16}$" the first time, $\frac{1}{8}$" the next, $\frac{3}{16}$" the next, and so on. This will insure the balance remaining the same at all times.

## General:

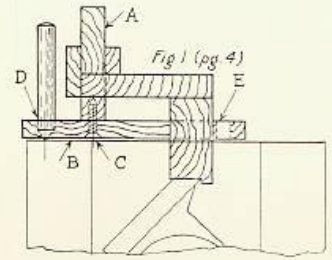
A few set ups illustrated (Plates 6, 7 and 8) suggest ways and methods used on some standard machines. That the application of the "Quicsharp" is practically universal is evidenced by the fact that in one shop where forty planers and jointers are in use (almost every one different), not one was found on which the "Quicsharp" could not be used.

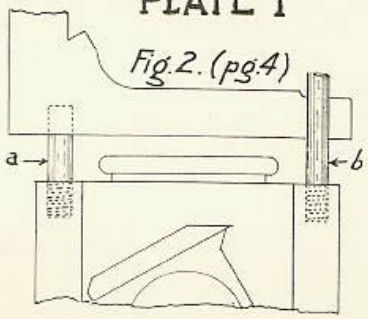
Do not be alarmed if the motor warms up. These motors will stand 190° without injury. This temperature is allowed by the United States Government for motors of this type. *Do not run with a glazed wheel.* The dresser furnished is short enough to be used on the wheel while at work, but it is well to look at the wheel before putting on. If it shows signs of glaze, lay the head down on the bed with the motor in place, start up, and while holding the motor in place with one hand, dress off the wheel with the other.

We are glad to get illustrations and descriptions of any special set ups that have been used. Where our experience in attaching "Quicsharp" to hundreds of machines will be of value we are glad at all times to offer suggestions.

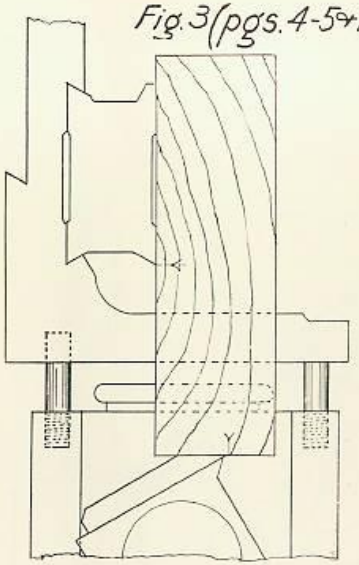


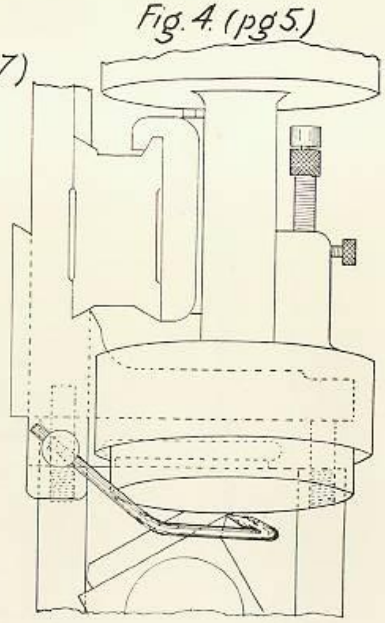
# PLATE 1




Numbers in brackets refer to pages on which description of illustrations may be found




40KG

PLATE 2

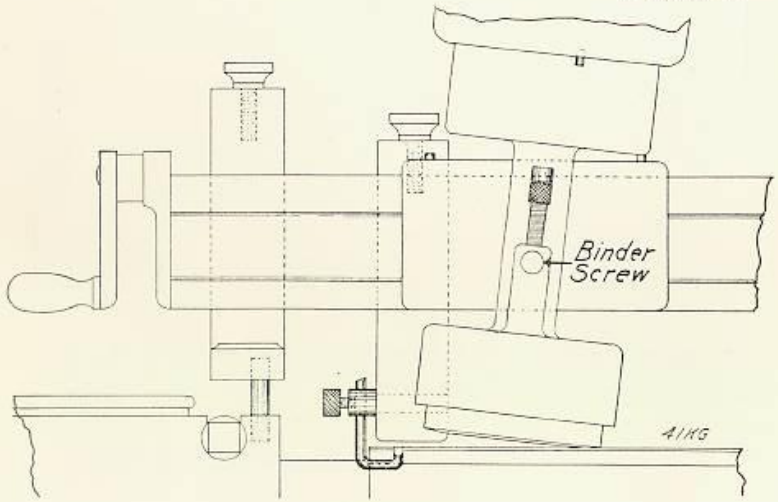



Fig. 1 (pg. 5)

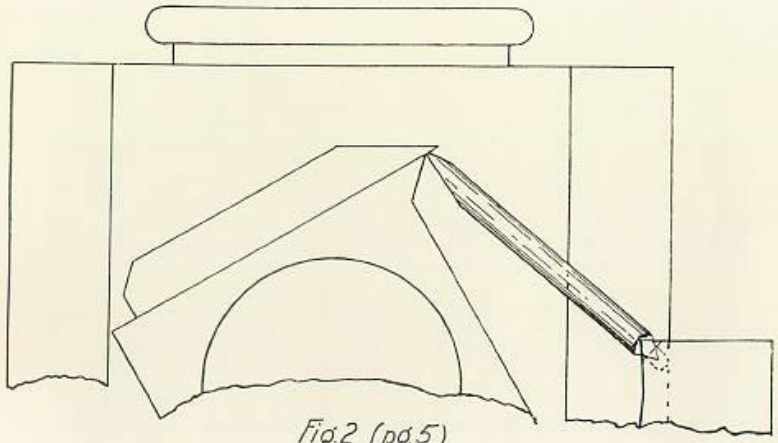


Fig. 2 (pg. 5)

PLATE 3

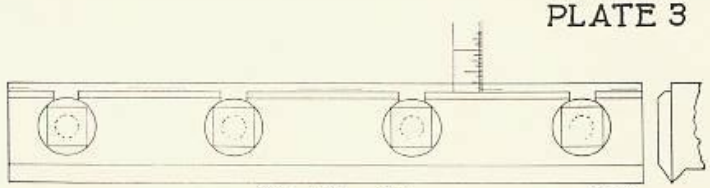



Fig. 1 (pg. 9)

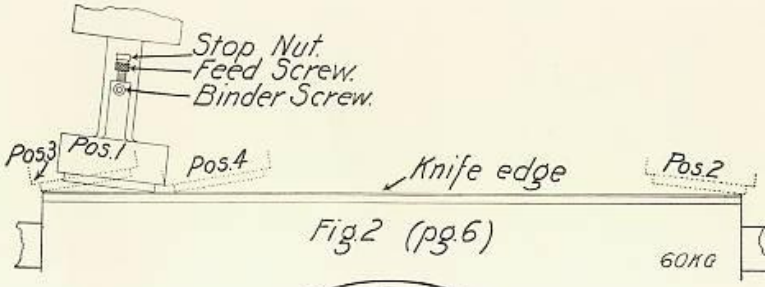



Fig. 2 (pg. 6)

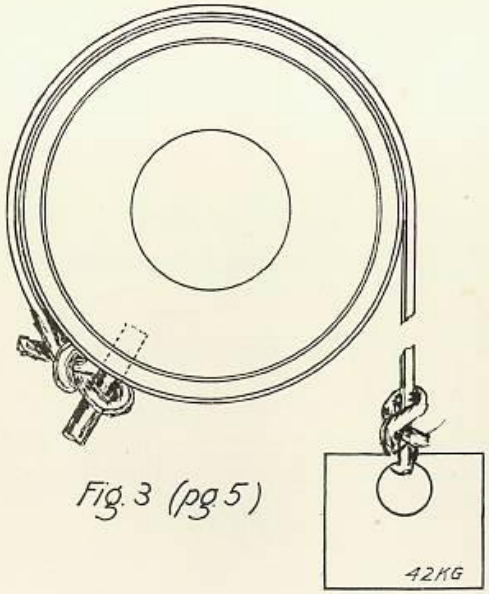



Fig. 3 (pg. 5)

PLATE 4

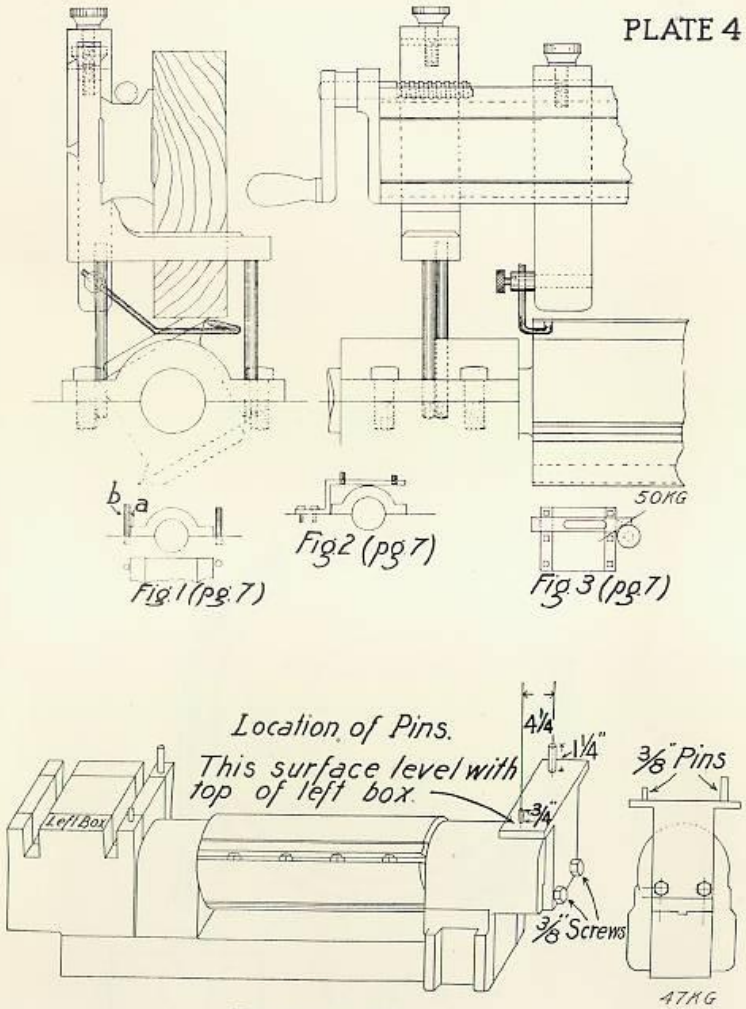
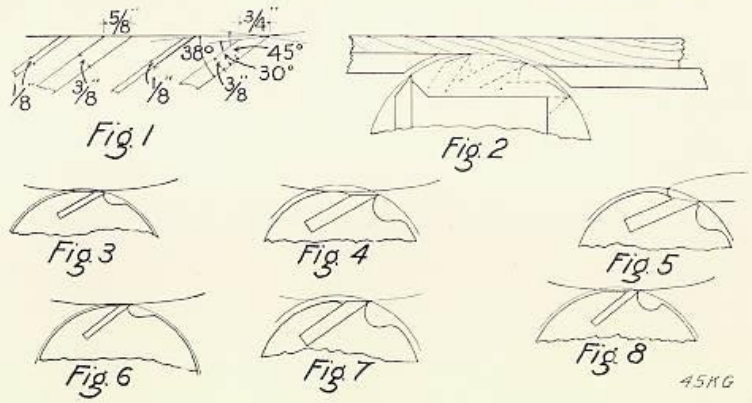



PLATE 5




Safety Heads and Knife Bevels. (pgs. 8 & 9)

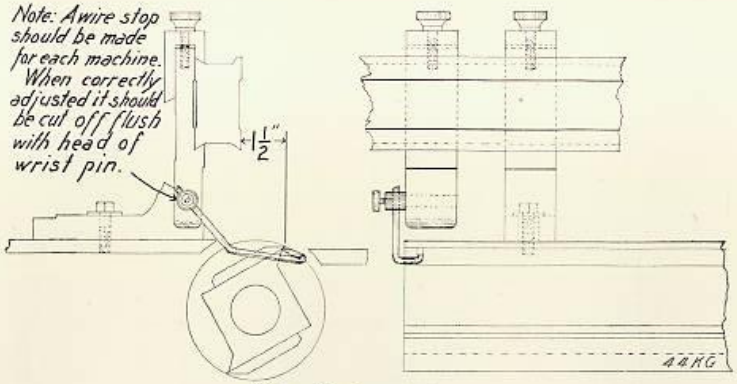



Fig. 9 (pg. 7)

Note: The 3/16" wire guage can be bent to any angle as shown: except where, absolutely, necessary it should be straight. (Plate 6. Fig 2) Made straight, it is much more rigid.

PLATE 6

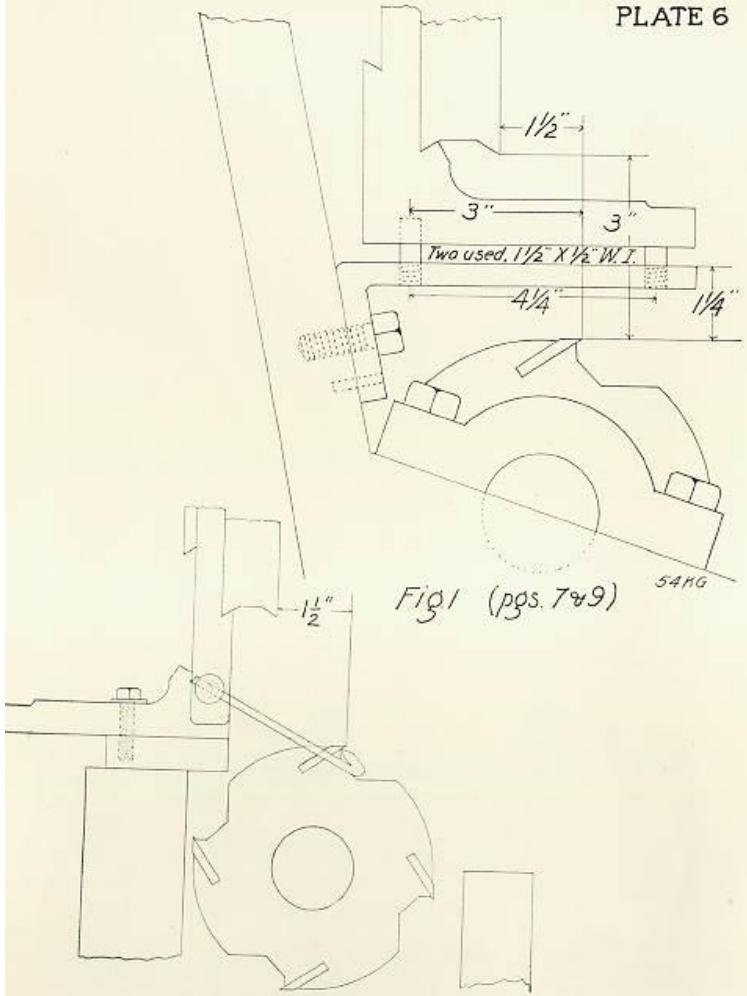



Fig 1 (pgs. 7 & 9)

Fig 2 (pgs. 7 & 9)

PLATE 7

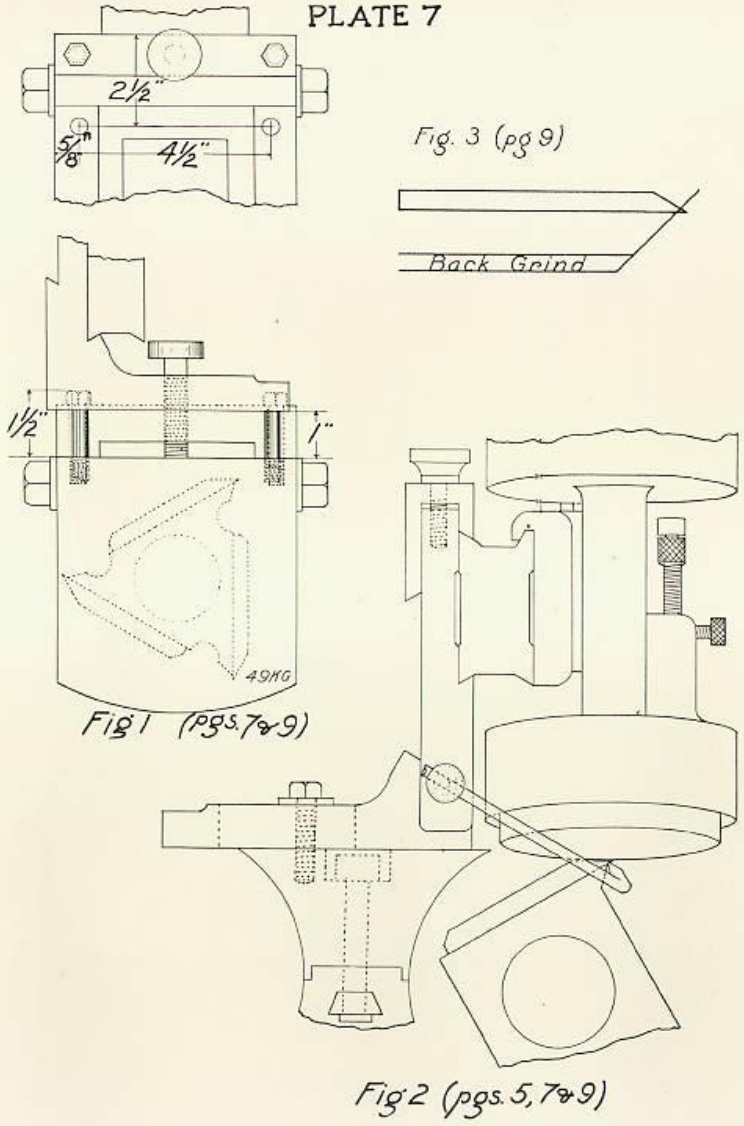



Fig. 3 (pg 9)

Fig 1 (pgs. 7 & 9)

Fig 2 (pgs. 5, 7 & 9)

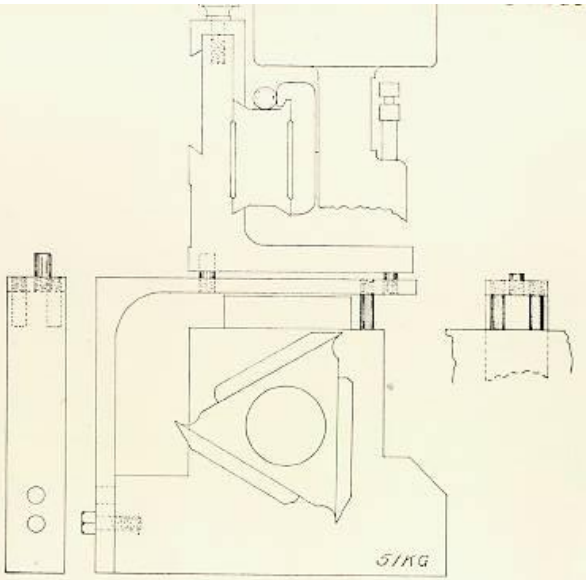



Fig.1 (pgs.7&9)

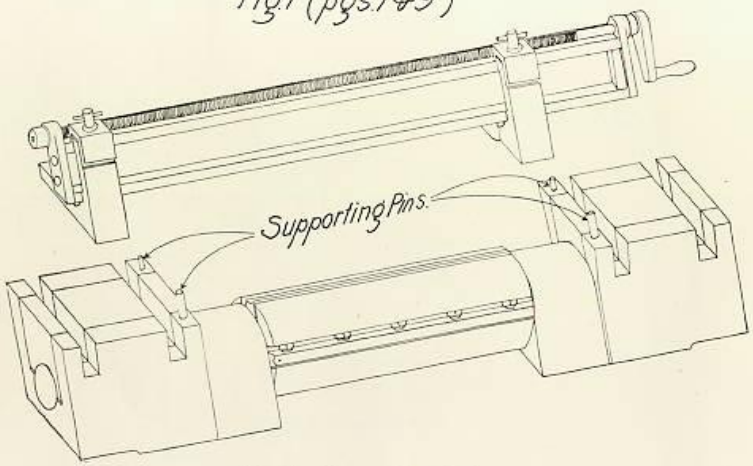



Fig.2 (pgs. 7&9)


## The Improved "Quicsharp" Grinder with Ball Bearing Spindle

The "QUICSHARP" was the pioneer in grinding — without removing from the head — planer and jointer knives.

In the more than thirty years since the "QUICSHARP" was put on the market it has solved, for thousands, the problem of grinding knives; sometimes one grinder serving many machines of different makes.

It combines the four essentials of a portable grinder:

*First:* Light enough to be easily carried from machine to machine.

*Second:* Adaptable to different makes and sizes of planers.

*Third:* Easily attached.

*Fourth:* It must grind true.

The "QUICSHARP" Grinder is motor driven, the motor being mounted in grinder head. Current is taken from an ordinary lamp socket. To the saddle is attached a split nut engaging the feed screw which lays along the top of bridge. Saddle can be fed the length of the bridge in either direction and at any speed desired. Bridge is supported at the ends, or any point most convenient, by two angular brackets. *The grinding wheel, which is cup-faced, can be raised or lowered by a thumb-screw, and can be set to remove the required amount from knives, automatically feeding itself to a positive stop.* In grinder head is a tension spring which maintains a constant and uniform pressure on the grinding wheel, but never too much, thus eliminating all danger of overheating and burning the knives.

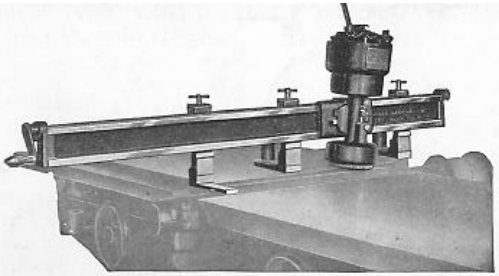
The grinder head is pivoted at the center and can be tilted to either side of the perpendicular, and is held in place against a stop, giving the same angle on either side of the perpendicular. The tilted head, with cup wheel, gives a slight concave grind to the knives.

THIS CONSTRUCTION GIVES A STRONGER CUTTING EDGE. THE CONCAVE OBTAINED WITH CUP WHEEL WOULD REQUIRE A 12" CIRCULAR WHEEL.

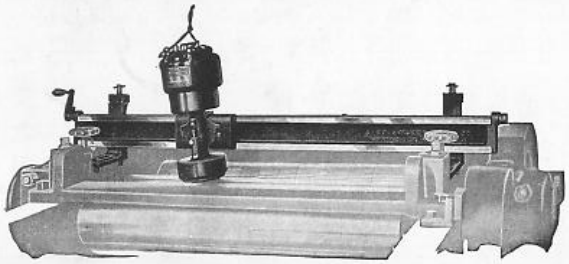
A positive stop holds each knife in exactly the same relative position to the wheel, therefore each knife must be ground true to the bed. When used on a surfacer the angular brackets are held in place by fixed pins located in the frame of the planer. These pins fit into holes in the foot of the bracket. The setup having once been made for each machine, it is only necessary when using the grinder to place it in position on the supporting pins; as relation of grinder to the knives is not changed, knives are always ground the same.

The care and adjustment of knives is the most important part in the operation of planers. This inexpensive grinder does all that the costly automatic does, and much more. It occupies no floor space, gets its power from a lamp socket, is simple and durable.

***It Will Save Its Cost Many Times Over***



Grinder Attached to Jointer and Planer



When ordering, be sure and give us the following motor information: Direct or alternating current, volts, phase, cycles; longest and shortest knife to be ground.

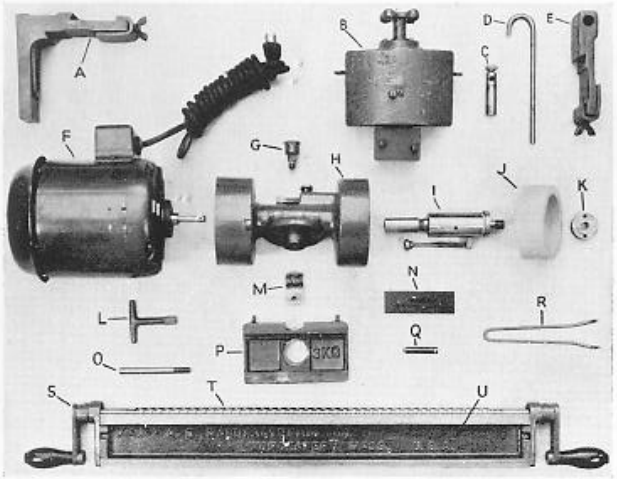
***Grinders are made in the following sizes:***

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | 0 | will | grind | knives | 18″ long. | *Code:* | Yaket |
| No. | 00 | " | " | " | 24″ long. | " | Yakna |
| No. | 1 | " | " | " | 34″ long. | " | Yakba |
| No. | 2 | " | " | " | 40″ long. | " | Yakga |
| No. | 3 | " | " | " | 48″ long. | " | Yakos |
| No. | 4 | " | " | " | 60″ long. | " | Yakse |

FULL INSTRUCTIONS FOR DIFFERENT SET-UPS AND OPERATING SENT WITH EACH GRINDER

Printed in U.S.A.

# QUICSHARP TRADE MARK Grinder




In Correspondence refer to parts by letters, name and list number.

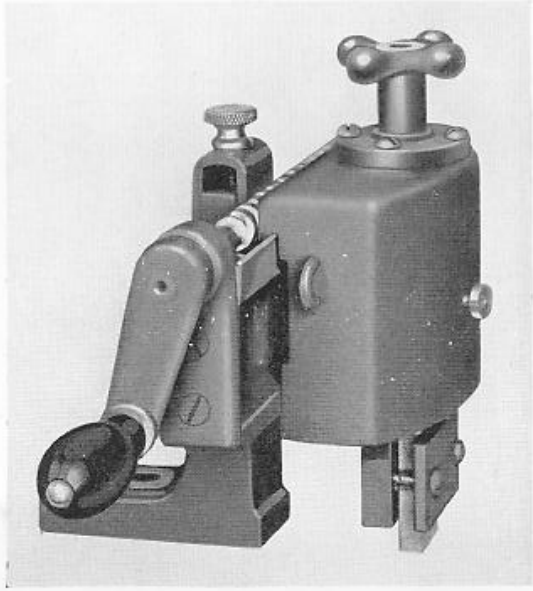
## List No. 22

| | | | |
|---|---|---|---|
| (A) | Bridge Bracket | (L) | T Wrench |
| (B) | Jointer | (M) | Split Nut (number threads?) |
| (C) | C. P. Stud | (N) | Jointer Stone |
| (D) | C. P. Stop | (O) | ⅜" Pin |
| (E) | Cutter Positioning Bracket | (P) | Saddle |
| (F) | Motor | (Q) | Wheel Dresser |
| (G) | Grease Cup | (R) | Spanner |
| (H) | Grinder Head | (S) | Crank Handle |
| (I) | Grinder Head Sleeve Unite | (T) | Bridge Screw (Length?) |
| (J) | Wheel | (U) | Bridge (Length?) |
| (K) | Wheel Washer Nut | | |

A. B. MANUFACTURING CO.

70 Piedmont Street Worcester 2, Mass. U.S.A.

QUICSHARP TRADE MARK Grinder



## "Quicsharp". Jointing - Attachment

Most of the users of the "Quicsharp" Grinder do not find it necessary, on the general run of work, to use this attachment.

However, standing and running balance of a highspeed cylinder head is never exactly the same and where the very finest work that can be produced is required use a "Quicsharp" Grinder and Jointing Attachment.

The Jointing Attachment will find the long spots on knives caused by the throw or imperfection of running balance on high speed cylinders.

Grind according to directions with "Quicsharp."

Then pass Jointer over cutters very lightly until high points have been taken out.

With a good sharp oil stone whet off heel caused by jointing.

Knives worked as above will produce the truest and smoothest surface obtainable.

Each knife will cut equally.

A. B. MANUFACTURING CO.

WORCESTER 2, MASS., U. S. A.

**Instructions for Setup and Operation**
**Of A & B Knife Grinder for Northfield Jointers**

Set rail legs into place on the out feed table. The legs are numbered for each side of the table. Be sure that the pins are in the table holes. DO NOT tighten the ½" bolts in the legs until you have placed the rail into the legs and tightened the rail clamps.

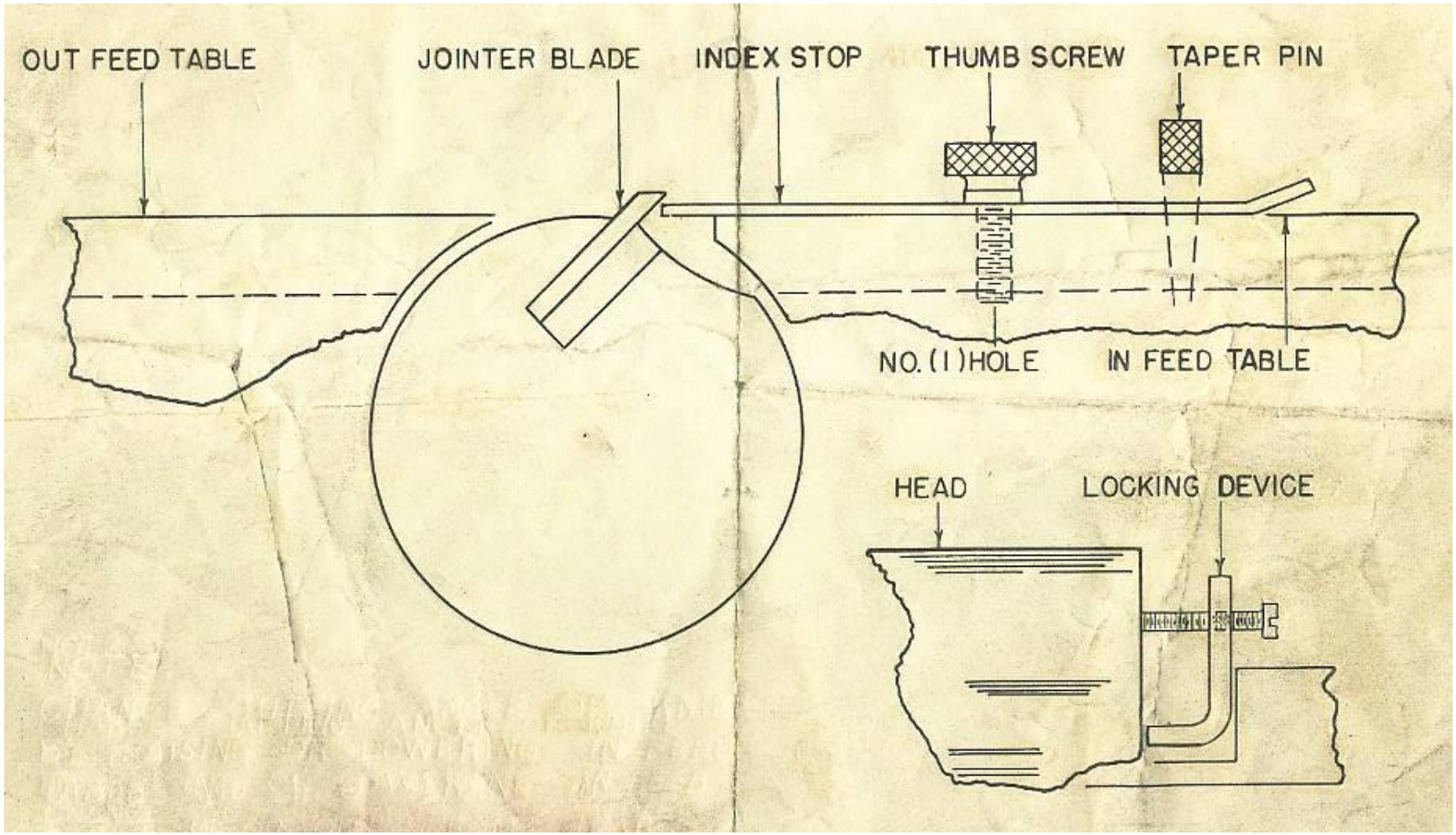
Tighten the ½" bolts. Put the grinding head into place on the rail. Back the out feed table off so that about 2/3 of the grinding wheel is to the rear of the knife. After this is done, be sure that the two (2) hand knobs on the out feed table are tight. A print is enclosed to show how the head is held in place while grinding. It also shows how the knife stop is installed on the in feed table.

Use the large hand wheel to lower the in feed table for correct angle of the knife. The in feed table must also be backed away from the head a slight distance to get the correct angle on the knife. Place the motor unit on the grinding unit. You are now ready to grind the knives.

After the first knife is ground, remove the ¼" bolt in the knife stop and turn the strap away from the head. Next, turn the second knife into the place and replace the bolt in the stop. You are now ready to grind the next knife.

Notice that the grinding head can be tilted in two positions. ALWAYS keep the grinding head tilted towards the pulley (or motor side) of the cutterhead. DO NOT take too heavy a cut at one time. It is always bet to take several light cuts; otherwise you may burn the cutting edge of the knives.

Keep passing the grinder over the knife until there is no longer any sign of grinding action. Always start cutting on the highest knife first and work down to the lowest.


OUT FEED TABLE
JOINTER BLADE
INDEX STOP
THUMB SCREW
TAPER PIN
NO. (1) HOLE
IN FEED TABLE
HEAD
LOCKING DEVICE