

J. J. Ralys,

2. Sheets, Sheet 1.

Barrel Head Mach.

No. 113795.

Patented Apr. 18, 1871.

Fig. 1.

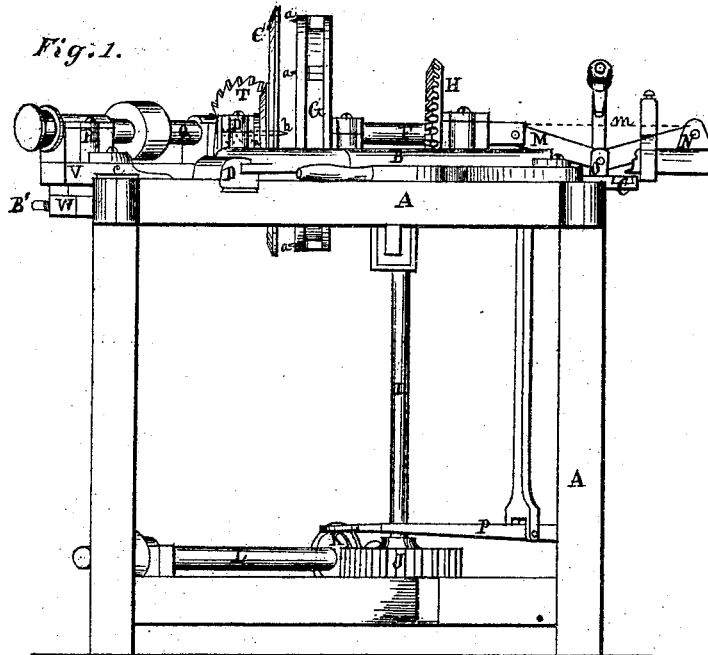
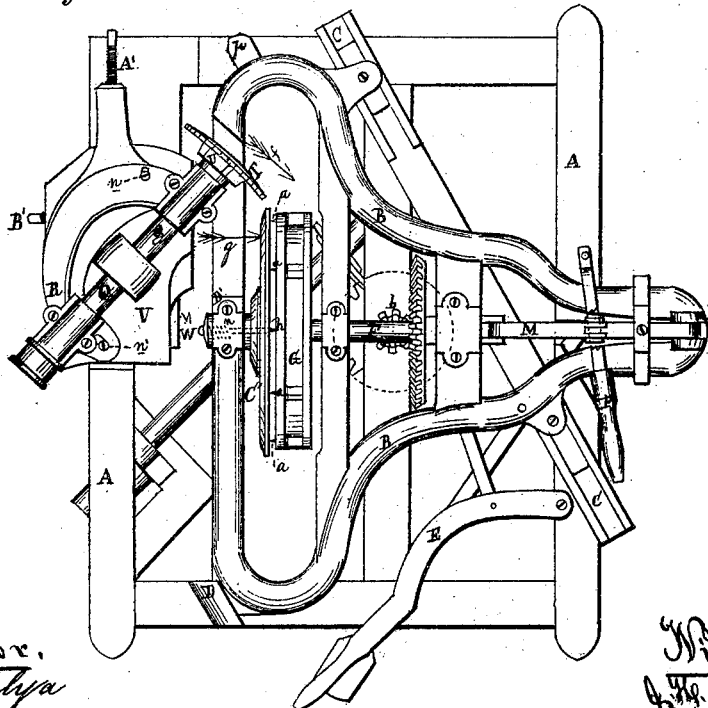


Fig. 2.



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Fig. 3.

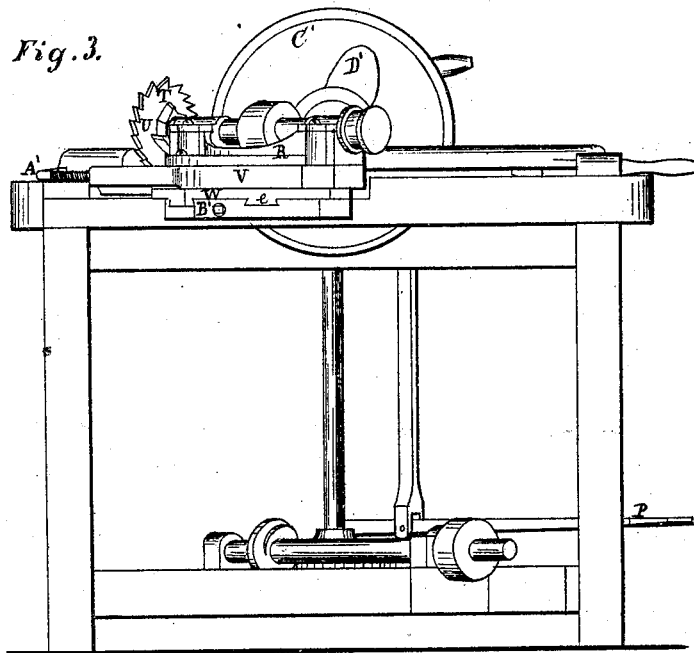
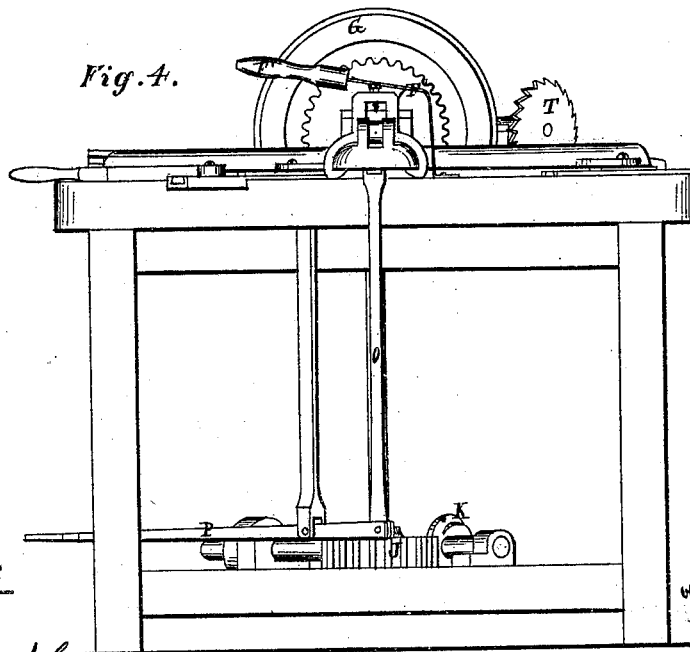


Fig. 4.



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JOHN JACKSON RALYA, OF CLEVELAND, OHIO.

Letters Patent No. 113,795, dated April 18, 1871.

IMPROVEMENT IN MACHINES FOR TURNING BARREL-HEADS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, JOHN JACKSON RALYA, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and improved Barrel-Head Turner; and I do hereby declare that the following is a full, clear, and complete description of the same, reference being had to the accompanying drawing making part of this specification, in which—

Figure 1 is a side elevation of the machine.

Figure 2 is a plan view.

Figures 3 and 4 are also side elevations.

Like letters of reference refer to like parts in the several views.

The nature of this invention relates to a machine for making barrel-heads, and the object thereof is to saw the head of the exact size, and bevel the edge of the same so as to fit the chime-groove or croze at one operation.

It also relates to a device for adjusting the saw in its relation to the clamp for holding the heading, so that there shall be no variation in the diameter of the heads, nor difference in the chamfer of the same, as hereinafter more fully set forth.

In the drawing, fig. 1—

A represents a frame or table, in the top of which is arranged the carriage B, fig. 2.

Said carriage is secured to the table in guides C D, and in which it is made to slide backward and forward diagonally in relation to the frame by the handle E, for a purpose presently shown.

In said carriage is hung, on the end of the shaft F, the head-holder G, which consists of a strong metallic disk, from the face of which projects a number of short spurs, *a*.

The disk referred to is made to revolve by means of the spur-wheel H, fig. 1, said wheel being caused to engage a bevel-pinion, *b*, fig. 2, on the upper end of the shaft I, the shaft, in turn, being operated by the gear J, actuated by an endless screw or worm, K, on the shaft L.

To the outer end of the shaft F is pivoted one end of a jointed link, M, whereas the opposite end of the link is pivoted in the cheeks of the stay N, fig. 1, attached to and projecting upward from the outer end of the carriage, as shown.

To the joint of said link M is pivoted the upper end of a link, O, fig. 4, whereas the lower end is pivoted to a treadle, P, whereby it is operated by the foot for producing a reciprocating movement of the disk.

Q, fig. 2, is a shaft, journaled in the adjusting-stay R.

To the inner end of said shaft is hung a saw, T, close to the side of which are the beveling-cutters U, fig. 3.

The stay in which the shaft carrying the saw is jour-

naled is secured to the frame by the interposition of a carriage, V, fig. 3.

Said carriage is fitted to a bed-plate, W, by means of a dovetailed slide, *c*, fig. 1, and which is made to move backward and forward in said bed-plate by the adjusting-screw A', figs. 2, 3, whereby the saw can be adjusted in its position and relation of distance to the disk or head-holder G, as may be desired, in direction of the arrow *f*, fig. 2.

Said bed-plate W is also attached to the frame by means of a dovetailed slide, *e*, fig. 3, and which, together with the carriage and saw, can be moved by the adjusting-screw B', figs. 2, 3, toward or away from the disk, as may be required, in the direction of the arrow *g*.

By the co-operation of these two movements the saw can be easily and readily adjusted in its relation to the head-holder, as the size of the head and the bevel of its edge may render it necessary.

C', figs. 1 and 2, is a supplementary disk, hung on a short shaft journaled in the box D'.

The position and relation of said disk C' to the head-holder G are such as shown in the drawing, in which it will be seen that they face each other and co-operate in holding the heading while it is being sawed or turned.

In the center of the supplementary disk C' is a movable point or spur, *h*. Said spur is fitted loosely in the shaft of the disk, and which may be pressed into the shaft back from the face thereof, but which is again projected out beyond the face of the disk on the removal of the pressure by a spring situated in the shaft back of the spur.

Said spring and the inner end of the spur are indicated by the dotted lines *n*, figs. 1 and 2.

Having described the construction and arrangement of this machine, the practical operation of the same is as follows:

The stuff of which the barrel-head is made consists of two or more pieces of heading jointed and strongly put together, forming a square piece of heading, the exact center of which is obtained by means of a scribe constructed for that purpose. The heading thus centered is placed between the two disks G and C', and the center-mark placed on the center *h* of the disk C', which may be seen for this purpose through the hole D', made in the side of the disk for that purpose. The center-mark of the heading on being adjusted to the center *h* of the disk, the header or disk G is then forced against it by the operator, who places his foot on the treadle P, thereby throwing upward the jointed link M, attached thereto by the link O. This upward movement of the link O brings the jointed link M to a horizontal position, as indicated by the dotted line

m, fig. 1, the result of which will be to force the holder or disk *G* against the heading placed between it and the disk *C'*, thereby clamping it tightly between them, and which is prevented from turning therein by the spurs *a*, which penetrate the wood and hold it securely while being sawed or turned.

The center or spur *h* of the supplementary disk is forced back into the shaft by the pressure applied in clamping the heading; hence no hole is made through the heading by the center.

The heading, when thus clamped between the two disks, is made to approach the saw by means of the handle *E*, which the operator seizes by the hand and pushes from him.

The direction of the slides *C D* is such as to move the carriage toward the saw, which will bring the heading projecting beyond the face of the clamp or heading-holder to the edge thereof.

The relative position and distance of the saw and cutters *U* to the heading or heading-holder is such as to cut the heading the proper angle or bevel to fit in the chime-groove, and of the exact diameter for the head of the barrel.

The carriage being stopped by a check, *p*, at the exact distance to allow the heading to be sawn through and beveled by the cutters, hence every head will be of necessity exactly of the same diameter and of the same bevel.

The heading, having been sawed, is taken from the holder by drawing back the disk *G* from its contact with the heading. This is done by means of the treadle *P*, fig. 4, which reaches across over the jointed link *M*.

Now, on pressing the short arm of said treadle down the link *M* will be depressed from the position of the straight line, indicated by the dotted line *m*, to that shown, thereby drawing back the disk *G* away from the heading, which can now be removed and another placed therein, as before.

It will be obvious that, as the saw and cutters may become worn by constant usage, their position relatively to the head-holder will be more or less changed from that first assumed by them; hence from time to time they will need adjusting so as to maintain their first position, and thus saw the heading of a uniformity in size. This required adjustment is made by the screws *B'* and *A'*, referred to in figs. 1 and 2.

Should it be necessary to set the saw nearer the holder in the direction of the arrow *g*, the screw *B'* is operated for that purpose, and thereby adjusts the saw to the most exact nicety. In the direction of the arrow *f* the saw is adjusted by the screw *A'*.

By this means the saw can be easily and readily adjusted to cut any size head that may be required.

The position of the saw for cutting the angle of the bevel can also be readily changed by loosening the set-screws *n*, whereby the shaft and saw are secured to the carriage.

The usual manner of adjusting the saw for the purpose specified is by set-screws sliding in slots, which, on being loosened, allow the several parts to be moved. The objection to such a manner of adjusting the saw is that it requires much time, and therefore a consequent loss in the working of the machine; also, the saw cannot be adjusted to the degree of exactness that it can be by the adjusting-screw, without wasting much of the material for testing the position of the saw as to its being right.

By means of the adjusting-screw, to which a wrench

is applied, the saw can be moved to the least possible degree, and without stopping the machine for that purpose; hence, there is much less time lost and labor expended in making the necessary adjustment to obtain or preserve the saw in the position to cut the heads all of the same size.

A considerable time and a large amount of material are saved by the use of the movable center *h*, as the exact center of the heading from which the head is to be sawed is at once and easily placed at the center of the clamp or head-holder, which, as before said, consists of the two disks *G* and *C'*.

The center of the piece of heading, as above said, is found immediately by a circular scribe having a central point; the scribe being laid on the heading before it is clamped in the disks.

As usually practiced, the heading is placed between the disks at a venture as to its being exactly central with the head-holder or clamp, hence, without great care being exercised in adjusting the heading in the clamp, it will sometimes be cut further in on one side than on the other; therefore the head will not be cut round, there being left a part uncut by the saw, hence the head is of no value for that size barrel, and is, therefore, thrown away or worked up into smaller barrel-heads. In this way much heading material is lost in factories where one-sized barrels only are made.

To avoid this waste of heading is the purpose of the movable spur or center *h*, as above described, and which may be seen through the hole *D'* in the side of the disk *C'*; hence but little care is required to insert the heading in the clamp, as the dent made in the center of the heading when out of the clamp can be easily placed upon the center or spur *h* of the disk; therefore, each piece of heading, if it is large enough for a head, will be cut equally on all sides, and hence be round and of the proper size and bevel for heading the barrel.

Claims.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The self-adjusting center *h*, with spring *n*, in combination with the disks *C' G*, arranged and operating in relation to each other, substantially as and for the purpose set forth.
2. The disks *C' G*, shaft *F*, and link *M*, in combination with the connecting-rod *O* and treadle *P*, connected to the sliding frame *B*, as and for the purpose substantially set forth.
3. The disks *C' G* and sliding frame *B*, in combination with the saw *T* and cutters *U*, with the shaft of said saw and cutters, arranged in connection with the adjustable table or carriage, substantially as and for the purpose set forth.
4. The bed-plate *W* and carriage *V*, provided with adjusting-screws, in combination with the saw *T*, cutters *U*, and disks *C' G*, attached to the sliding frame, as and for the purpose substantially set forth.
5. The saw-shaft *Q*, supported on the adjustable plate *R*, with the sliding plate or carriage *V* and bed-plate *W*, provided with adjusting-screws, in combination with the disks *C' G*, as and for the purpose substantially set forth.

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