



# UNITED STATES PATENT OFFICE.

A. H. CROZIER, OF OSWEGO, NEW YORK.

## MACHINE FOR CUTTING BARREL-HEADS.

Specification of Letters Patent No. 20,864, dated July 13, 1858.

To all whom it may concern:

Be it known that I, A. H. CROZIER, of Oswego, in the county of Oswego and State of New York, have invented an Improved Machine for Turning the Heads of Barrels, Casks, &c.; and I do hereby declare the following to be a correct description of the same, reference being had to the accompanying drawings, in which—

10 Figure 1 is a perspective view of the machine complete; Fig. 2, a side elevation of the same showing the cutting tool in position to bevel the edge of the head; Fig. 3, a similar elevation showing the saw in position for cutting the head into the circular form, and the cutting tool removed from the work; Fig. 4, an enlarged view of the beveling tool; and Fig. 5, a vertical section through the disks showing the mode in which they are driven.

The same part is marked in all the figures by the same letter of reference.

The nature of my invention consists in an improved arrangement of machinery for cutting and beveling the heads of barrels, casks &c., in which both the cutting and beveling tools are controlled by a single winch or lever worked by the operator, and in which it is not necessary to stop the motion in order to put in the material or take out the finished work—all as hereinafter more particularly described.

In the drawings A marks the frame of the machine; B, a loose pulley on the end of the main shaft; C, a fast pulley on the same; D, the main shaft; E, a grooved pulley on D; F, spool on saw shaft; G, dished circular saw; H, worm on shaft D; I, pinion on cross shaft; J, cross shaft; K, pinion on shaft J; L, cogs on lower face of disk; M, lower disk or head holder; N, pulley near end of shaft D; O, band; P, band roller in which the cutter shaft is fixed; Q, beveling cutter; R, upper disk or head holder; S, shaft of the same; T, screw head of S; U, slide; V, guide in which V moves; W, rod connecting U with the rock lever; X, rock lever; X', X', journal boxes of the cutter shaft, which are attached to lever X; Y, pinion pivoted to lever X; Z, rack guide; a, winch working pinion Y; b, stop on rod W; c, another stop on the same; d, shaft of cutter; e, spiral spring; f, shaft of M; g, socket in which shaft f turns and works vertically; h, upper journal of shaft f.

To enable others to make and use my im-

proved head turner, I will proceed to describe its construction and operation.

I place the machine in a strong frame of iron A; the driving power is applied, from any suitable prime mover, to pulleys B and C on the end of the main shaft D. This shaft D carries pulleys E and N, and worm H. Pulley E by a cord or band drives spool F on the saw shaft. Pulley N, by band O, drives roller P on the cutter shaft. Worm H drives pinion I on end of cross shaft J. On the other end of said shaft is a pinion K gearing into cogs L on the lower face of disk M. The lower end of the shaft f of disk M works in a socket g attached to the frame of the machine. On this shaft is a collar between which and socket g is placed a spiral spring e through the center of which shaft f plays. The upper part of shaft f passes through an upright journal box h. The spring e tends to force the collar i up against the journal box h raising the shaft f up so that cogs L will be out of gear with pinion K. Above disk M, and detached from it is disk R attached to shaft S which has a screw thread on its upper portion, as shown, controlled by wheel or head T. By turning wheel T disk R is raised or lowered as desired. Disk R is loosely pivoted to the lower end of shaft S, so as to be capable of independent revolution upon it. When the disk R is brought into contact disk M by screwing down shaft S, the two disks will be capable of revolving together. The disk M, when not pressed down by the disk R is held up by the action of spring e so that the cogs L are out of gear with pinion K, as seen in Fig. 3, and disk M will not be kept in motion by the revolution of said pinion. When, however, the disk R is forced down upon disk M, the spring e, is compressed, and the disk M is lowered down so that cogs L will fall into gear with pinion K and the two disks be revolved by the revolution of that pinion.

The shaft of the dished saw G revolves in journal boxes that form part of the sliding arc U which works in guide V. This guide is connected by rod W with rock lever X. The rod W has two stops, a and b, upon it, the end of lever X moving freely between them. The rock lever X is pivoted at its center to the frame of the machine as shown. It moves between guides (see Fig. 1) the outer one of which Z has a rack

upon its upper surface. Into this rack  
 plays pinion Y which is pivoted to lever X  
 and turned by winch *a*. Attached to lever X  
 are the journal boxes X' X', of the  
 5 cutter shaft *d*. Fixed to this shaft is roller  
 P which is driven by a band from pulley N.  
 On the top of shaft *d* is the beveling tool  
 or cutter Q. The back and forth movement  
 of winch *a* will cause lever X to vibrate on  
 10 its center and bring tool Q up toward, or  
 away from disk M. This winch is controlled  
 by the operator.

The operation of the machine is as follows:  
 Power being applied to pulley C,  
 15 the saw G and cutting tool Q are respectively  
 set in motion by reason of their connection  
 with pulleys E and N. The disk R being  
 drawn up out of contact with M, the cogs  
 L are not in gear with pinion K, and both  
 20 disks are therefore at rest. The stuff to  
 be turned and beveled is placed on disk M;  
 disk R is screwed down upon it until disk  
 M is sufficiently depressed to throw cogs  
 L into gear with pinion K, when  
 25 revolution will be imparted to both disks  
 and to the material clamped between them.  
 The operator then turns the winch *a* to the  
 right which brings the saw G up to its work  
 of giving the circular form to the head.  
 30 When that is accomplished, the winch *a*  
 is turned to the left which withdraws the

saw G and brings the tool Q up to cut the  
 bevel on the edges of the head. The stops  
*b* and *c* on rod W enable the operator to  
 commence bringing up the cutter before  
 35 withdrawing the saw, and vice versa, thus  
 saving time. When the beveling is accomplished,  
 the disk R, is retracted by means of wheel  
 T; the spring *e* throws disk M up  
 out of gear with pinion K; its motion is  
 40 easily arrested; the finished head removed,  
 and a fresh blank inserted for a repetition  
 of the operation.

Having thus fully described my invention  
 what I claim and desire to secure by  
 45 Letters Patent is—

1. The disk M constructed and operated  
 as described.

2. The method hereinbefore described of  
 connecting the saw and cutter so that both  
 50 are controlled by the same winch or lever  
 substantially as specified.

3. Attaching the saw to a sliding stock  
 as, and for the purpose described.

In testimony that the foregoing is a correct  
 55 specification of my said invention, I have  
 hereunto set my hand this twentieth day  
 of April A. D. 1858.

A. H. CROZIER.

Witnesses:

H. R. CARRIER,  
 CYRUS CARRIER.