J. Maley,

Crozing Staves.

No. 84,500. Patented Dec. 1, 1868.

Fig. 3.

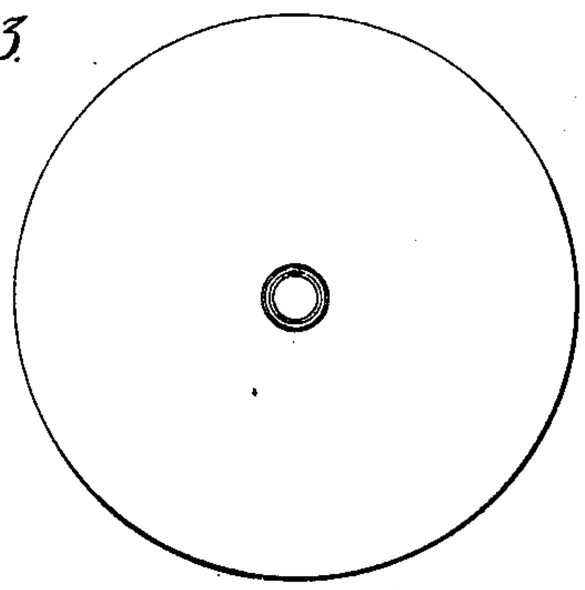


Fig. 4.

Fig. 2.

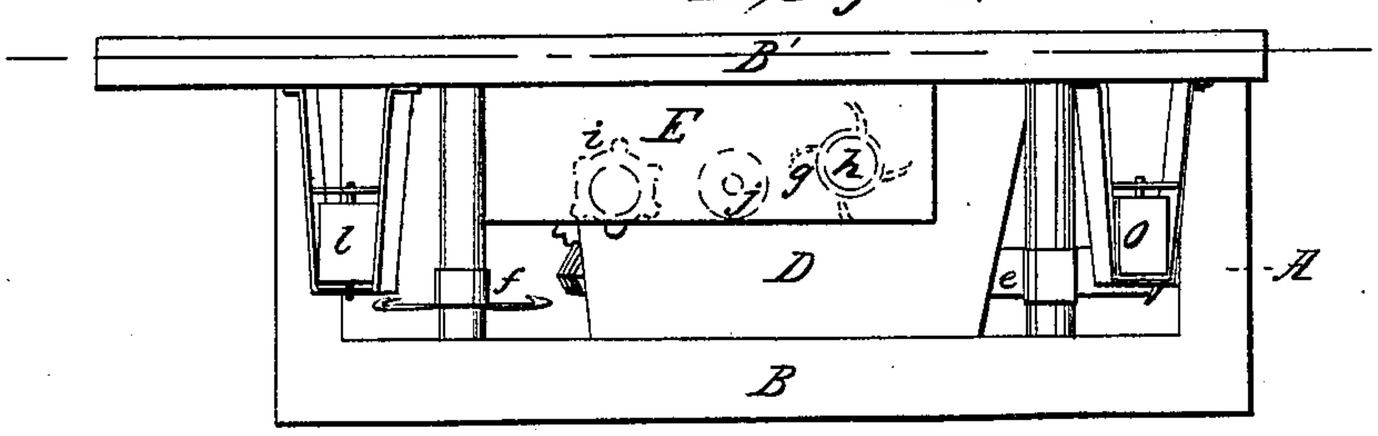
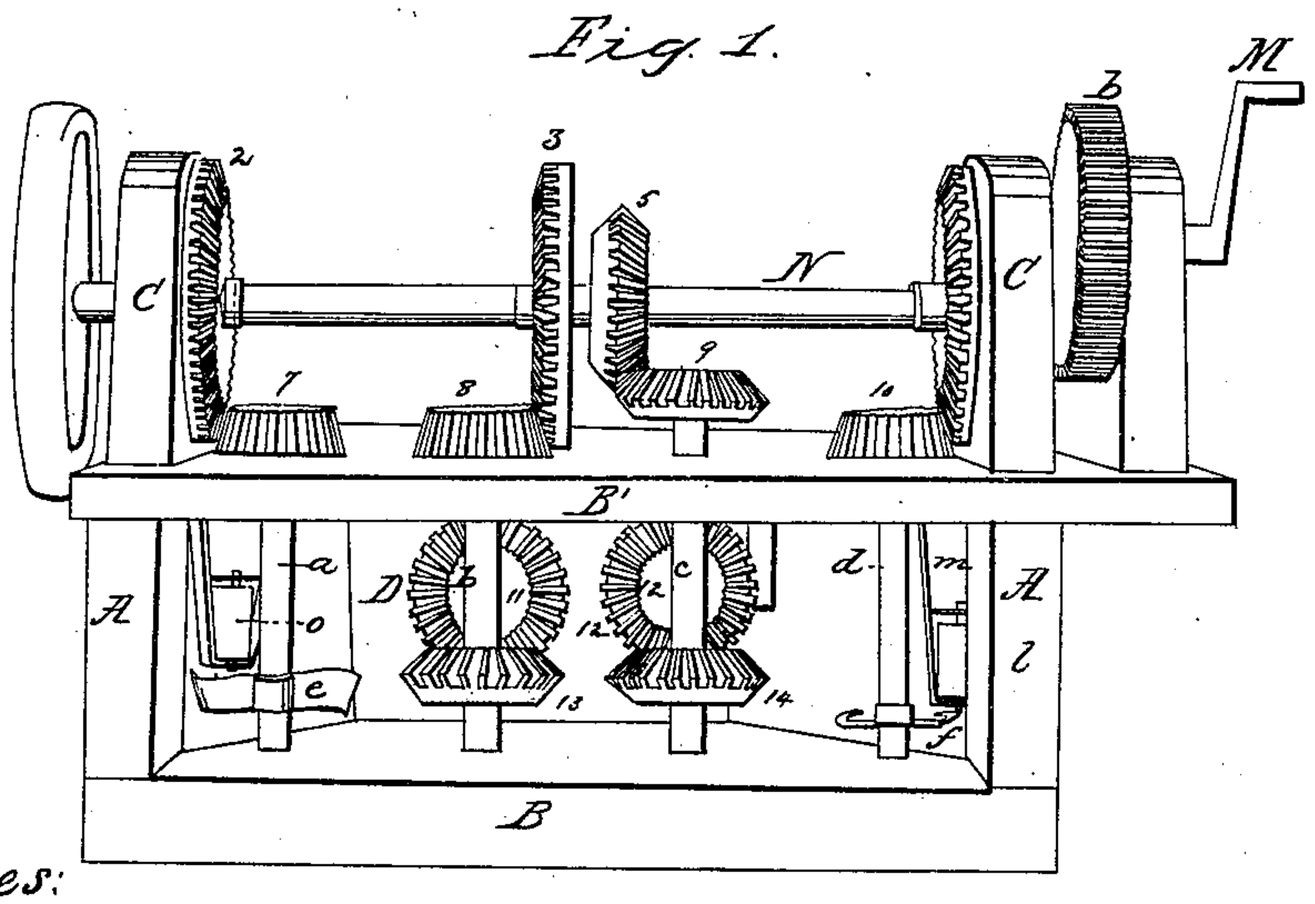


Fig. 1.



Witnesses:
H. P. K. Peck
Martin Dowd

Inventor
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United States Patent Office.

JOHN MALEY, OF MIDDLETOWN, OHIO, ASSIGNOR TO HIMSELF AND MARTIN DOWD, OF SAME PLACE.

Letters Patent No. 84,500, *dated December* 1, 1868.

IMPROVEMENT IN MACHINE FOR CROZING BARRELS.

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 MALEY, of Middletown, in the county of Butler, in the State of Ohio, have invented certain new and useful Improvements in Machines for Crozing, Chamfering, and Levelling Barrels; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Figure 1 represents a perspective view of my machine.

Figure 2 represents a front view of the lower portion, taken at the line *x x* of fig. 1.

Figures 3 and 4 represent the top and edge view of the turn-table, upon which a barrel is to be placed for the operation of the machine.

The object of my invention is to provide a machine for the use of coopers, which will, at a single operation, rotate the barrel, cut the crozing-groove for the head, and chamfer and level the edge. These several parts of the work will be accomplished at the same time by the simple operation of a hand-crank.

My machine, for greater convenience in use, may be fastened by hinges to an ordinary work-bench in such a manner that it can be raised up to set the edge of a barrel beneath, as hereinafter explained.

The system of gearing is connected with the frame A B B′, which is made of wood, in a firm and substantial manner.

The main shaft N has its bearings in the extended portions of the frame at C, and is provided with the bevelled pinions 2, 3, 4, 5, and a small pinion in rear of the crank-shaft pinion 6.

There are four vertical shafts, *a b c d*, provided with bevelled pinions, 7, 8, 9, 10, which gear into the four pinions on the main shaft.

The bevelling and crozing-tools *e f* are secured upon the two shafts, *a d*, and the levelling-tool *g* is secured upon the short horizontal shaft *h*, to which the bevelled pinion 11 is secured.

The shafts which carry the levelling-tool *g* and corrugated feed-roll *i*, are journalled in the curved faceboard D, and the pendant E, seen in fig. 2.

Betweon these two shafts there is a horizontal friction-roll, *j*.

The two suspended vertical friction and guide-rolls, *k l*, are placed in the metal hangers *m*, secured by bolts to the under side of the central portion of the frame B′.

The corrugated feed-roll *i* and planing-tool *g* are operated through the medium of the bevelled gears 8, 9, 11, 12, and 13, 14.

The front of the machine A B D is made in a curved form, to fit the inner surface of the barrel at its chime, and, when in use, the chime will come in contact with the feed-roll *i*, roller *j*, and planing-tool *g*, while the curved lower part of the machine D B, crozing-tool *f*, and chamfering-tool *e*, will be within the end of the barrel, and the two vertical guide-rolls, *o l*, suspended in hangers *m*, will be outside of the ends of the staves of the barrel.

The tool *e* is formed with bits having inclined edges, as represented in the drawing, for the purpose of chamfering the ends of the staves, and the tool *f*, also, has two bits, with their ends bent back, as represented, for cutting the groove for the barrel-head.

All of the tools have a rotary motion with their shafts when the machine is in operation.

The four-bitted planing-tool *g* upon the short horizontal shaft *h*, (seen in dotted lines in fig. 2,) performs the work of planing and levelling the ends of the barrel.

When the workman has jointed and trussed the barrel, he will place it upon the pivoted turn-table, represented in figs. 3 and 4, in front of the work-bench, to which the machine will be hinged in such a manner that it can be let down upon the chime of the barrel to perform its work. Its position upon the barrel will be that already described. The workman will then rotate the crank M, which will actuate the main shaft N through the medium of the gear-wheel 6, and the small pinion on the projecting end of shaft N, (and not shown in the drawing,) which will cause the feed-roll *i* to rotate the barrel with the turn-table, upon which it will stand. And, as the barrel revolves with the table, the crozing-knife, chamfering-tool, and planing-tool are revolving rapidly, performing their several parts of the work at the same time.

The use of my improved machine will greatly facilitate the manufacture of coopers' ware, as will be apparent from the foregoing description.

Having fully described my invention,

What I claim as my improvement, is—

The curved frame A B D, and vertical guide-rolls *o l*, in combination with the feed-rolls *i j*, and tools *e f g*, for planing, crozing, and chamfering barrels, arranged and operating conjointly by means of the system of gearing, substantially as and for the purpose described.

In testimony whereof, I have hereunto set my hand, this 10th day of April, A. D. 1868.

JOHN MALEY.

Witnesses:

H. P. K. PECK,

CHARLES SHURTE.