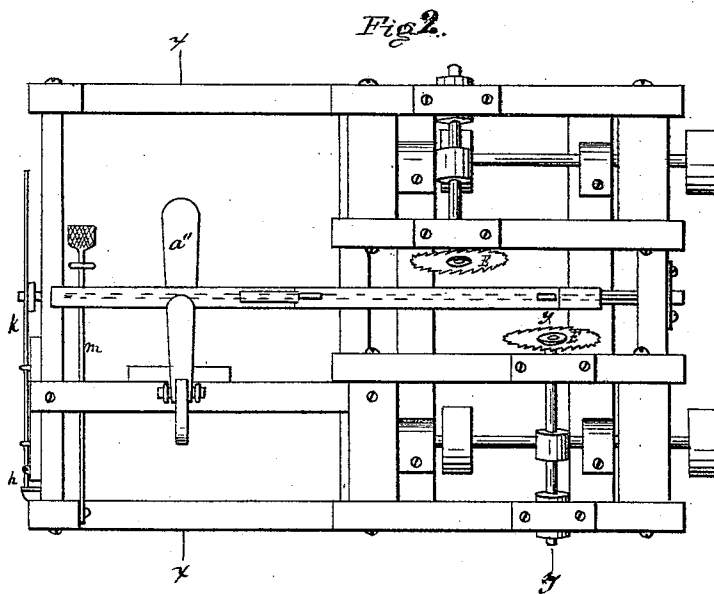
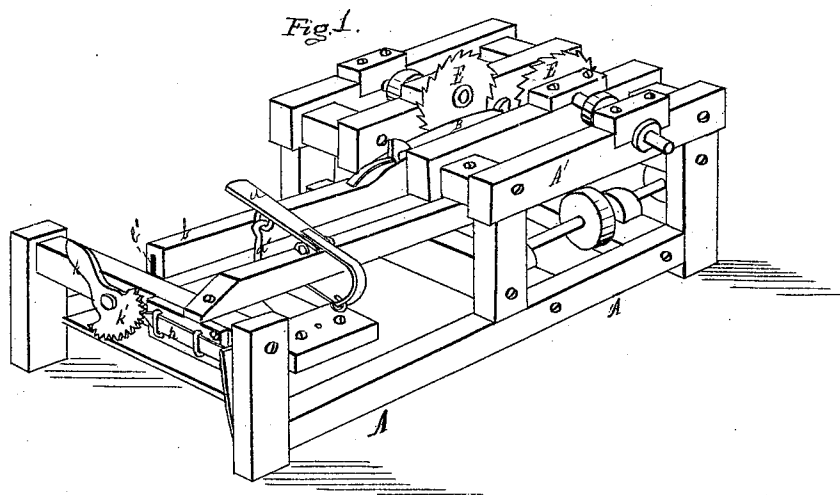


H. B. CORNISH & C. P. HUNT.

MACHINE FOR JOINTING STAVES.

No. 175,669.

Patented April 4, 1876.



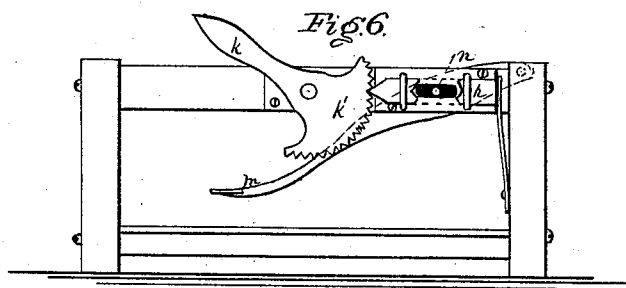
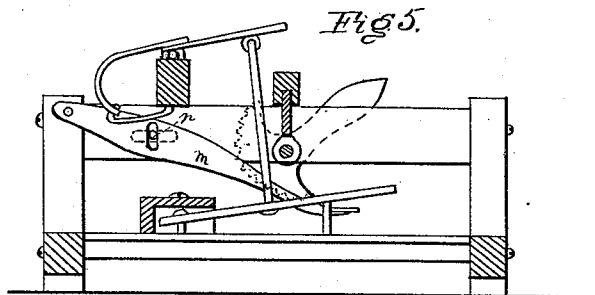
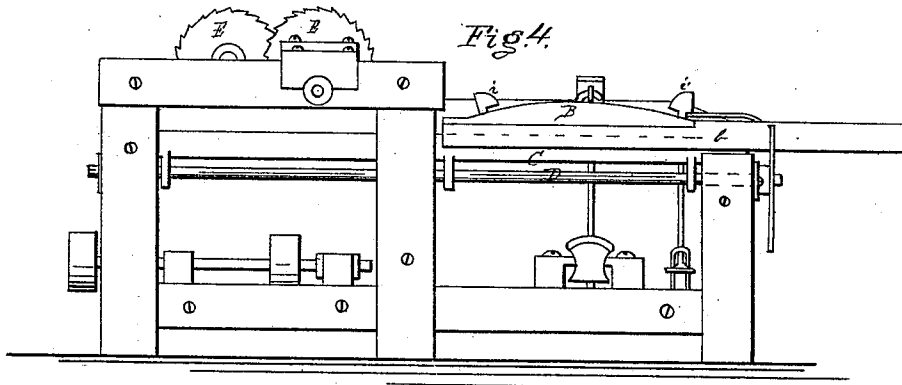
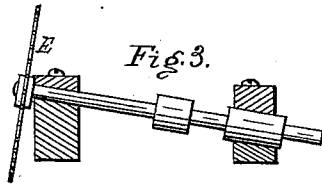
Witnesses:
F. B. Townsend
Will A. Woxon

Inventor:
Harry B. Cornish
Charles P. Hunt
per attys.
A. & Evans & Co.

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UNITED STATES PATENT OFFICE

HARRY B. CORNISH AND CHARLES P. HUNT, OF MINNEAPOLIS, MINNESOTA,
ASSIGNORS OF TWO-THIRDS THEIR RIGHT TO J. D. PUTNAM & CO., OF
RIVER FALLS, AND ISRAEL GRAVES, OF HUDSON, WISCONSIN.

IMPROVEMENT IN MACHINES FOR JOINTING STAVES.

Specification forming part of Letters Patent No. **175,669**, dated April 4, 1876; application filed
December 4, 1875.

To all whom it may concern:

Be it known that we, HARRY, BUTTON CORNISH and CHARLES PLAT HUNT, of Minneapolis, Hennepin county, State of Minnesota, have invented an Improvement in Machines for Jointing Staves, of which the following is a specification:

This invention relates to improvements in machines for jointing the staves or giving to the edges of the staves a straight and square surface, and the required curve, taper, or "bilge;" and the invention consists in the combination of devices for accomplishing said object, as will be hereinafter fully described, and pointed out in the claims.

In the accompanying drawing, forming part of this specification, Figure 1 is a perspective view. Fig. 2 is a plan view. Fig. 3 is a section through *y y* of Fig. 2. Fig. 4 is a side elevation. Fig. 5 is a section through *x x* of Fig. 2. Fig. 6 is an end view, with a portion broken away to show the slot.

A A is the main framing of the machine, upon which some of the operating mechanism is mounted. B is the form, upon which the stave to be jointed is confined, and the form is secured to the sliding beam *b* in any suitable manner. The form is constructed of the same bilge as the barrel or cask to be made, and is provided with two hooks, *i i'*, for securing the stave thereon. One end of the stave to be jointed is first placed under the hook *i*, and the other end is then sprung under the spring-hook *i'* by means of the pivoted spring-lever *a*, operated by means of the connecting-rod *a'* and foot-lever *a''*, as clearly shown in the drawing. The beam *b* is provided on its under side with a longitudinal slot, *b'*, fitting over the guide C, and capable of a sliding longitudinal movement thereon. This guide is securely attached to a shaft, D, capable of an oscillating or swinging movement, for the purpose of allowing the beam and form carrying the stave to be swung from one side to the other, so that the stave can be operated upon both sides by the two saws E E, as will be hereinafter explained.

The shaft and guide carrying the beam and

form can be secured in any desired position by means of the spring-pawl *h*, working in the notched segment *k* on the lever or handle *k*, which turns or swings the shaft. The spring-pawl is operated through the medium of the pivoted and slotted foot-lever *m* and connecting-rod *n*, working in said slotted lever *m*, as clearly shown in the drawing, for the purpose of releasing the pawl from contact with the segment, when it is desired to change the position of the shaft and guide carrying the beam and form. E E are two circular saws, facing toward each other, and journaled in suitable bearings in the top framing A' A' of the main frame of the machine. These saws are arranged in such relation to each other that when the form and beam carrying the stave is inclined toward one of the saws, and pushed forward on the guide, one side of the stave is finished by said saw, and when inclined toward the other saw, and drawn back on the guide, the other side of the stave is finished by the other saw. The stave is then removed from the form and a new one inserted, in the manner hereinbefore described, when the operation is repeated.

It will be perceived that the center upon which the beam swings or oscillates is, from the top of the form, one-half the diameter of the cask or barrel to be made, and each saw is inclined in the direction of this center, their plane passing through it. With this particular difference the staves, when set up together, should touch first on the inside corner in order to make a tight joint. The saws, therefore, are not inclined quite enough to strike the center, but pass it on either side, as clearly shown in Fig. 2, thus leaving the stave a little full on the inside for the purpose stated. The saws are operated through the medium of belts and pulleys, as clearly shown in the drawing.

In a full-sized machine the inclination of the saws will be made adjustable, and also the position of the center upon which the form moves, so that any size of cask or barrel can be made. By the above-described machine a wide or narrow stave gets exactly the right joint, and both ends of the stave will be ex-

actly the same width; therefore one size head will fit either end of the cask or barrel exactly alike.

We claim as our invention—

1. The combination, with the form B, having hook *i* and spring-hook *i'*, of the spring-lever *a*, connecting-rod *a'*, and foot-lever *a''*, for the purpose specified.

2. The combination, with the spring-pawl

h, of the connecting-rod *n* and pivoted and slotted foot-lever *m*, for the purpose specified.

In testimony that we claim the foregoing we have hereunto set our hand.

HARRY BUTTON CORNISH.
CHARLES PLAT HUNT.

Witnesses:

ABNER MORSE,
JOHN DAY PUTNAM.