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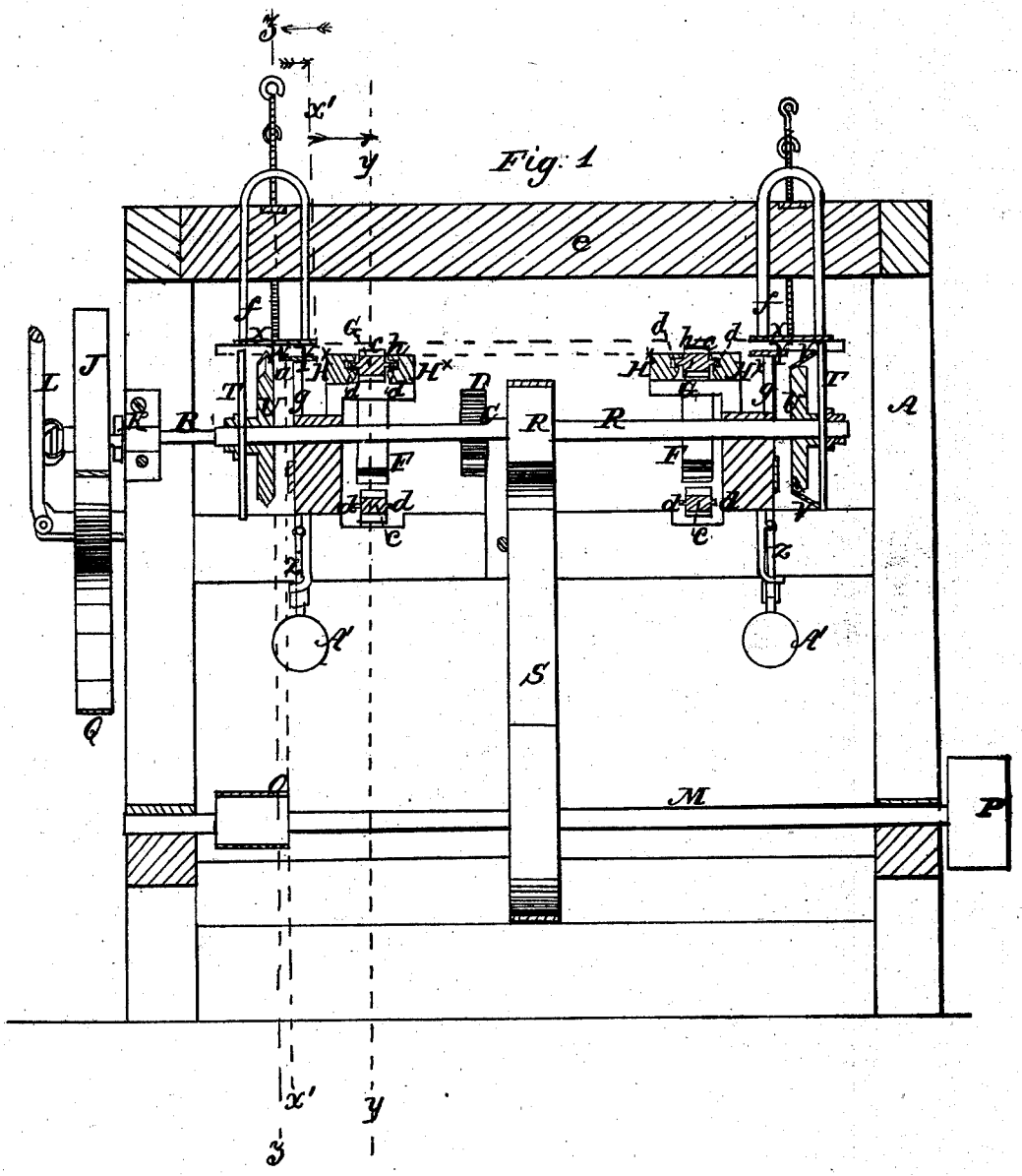
J. S. Thompson,
Stave Machine.

No. 49.320 Patented Aug 8. 1865.

Fig. 1



Witnesses;
Thos Drach
C. L. Poplff

Inventor;
J. S. Thompson
per Munn & Co
attorneys

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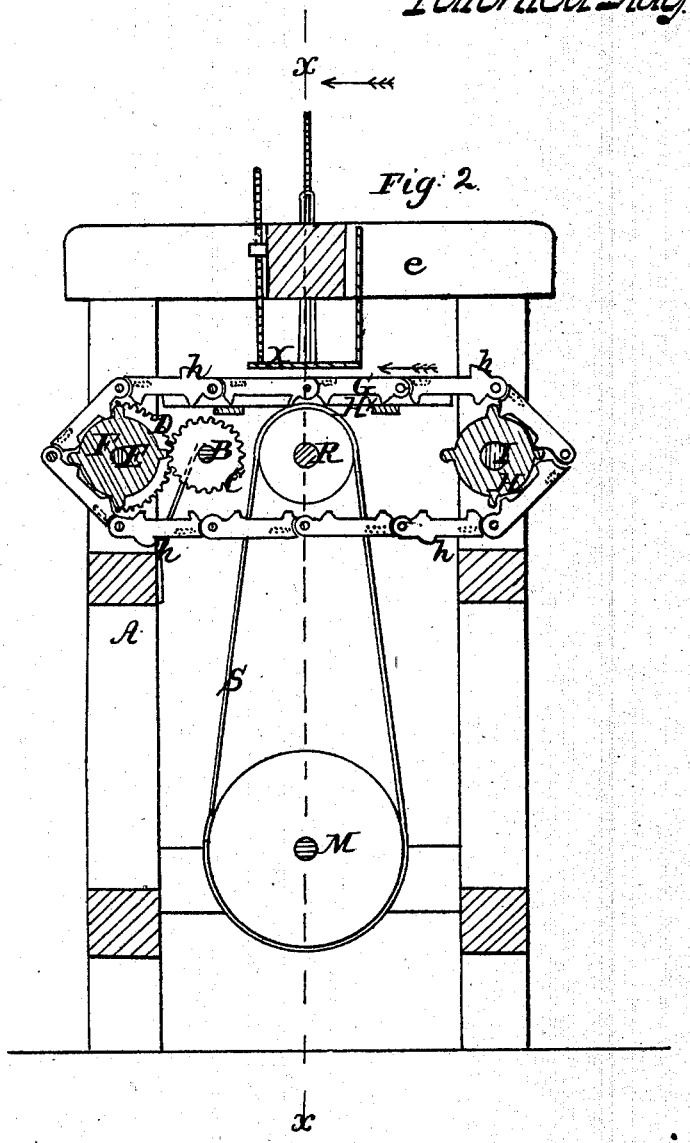
Fig. 2.



Witnesses;
Thos Tusch
C L Tofflf

Inventor;
J. S. Thompson
per Munn & Co
attorneys

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J. S. Thompson,

Stave Machine.

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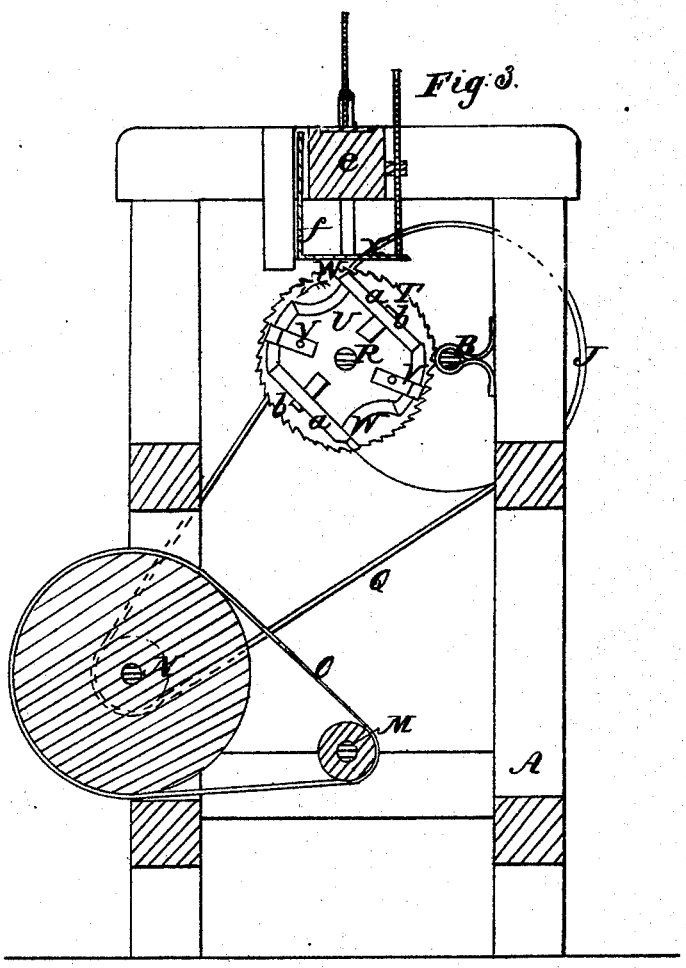
Fig. 3.



Witnesses;
Thos Tusch
C L Tophoff

Inventor;
J. S. Thompson
Jas. Munn & Co.
attorneys

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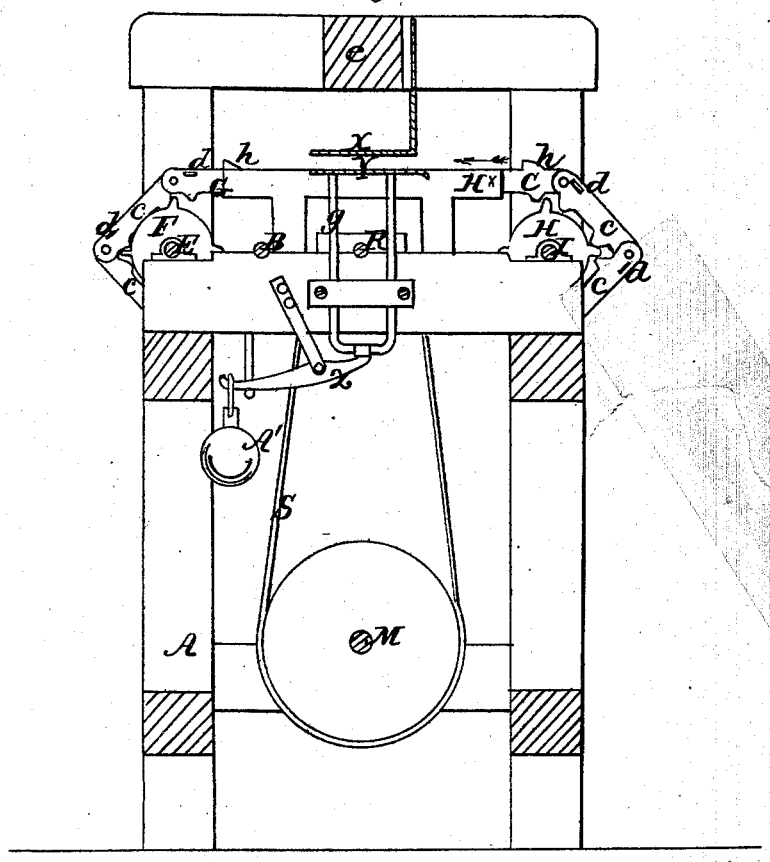
J. S. Thompson,

Stave Machine.

No. 49320. Patented Aug. 8, 1865

Fig: 4.



Witnesses;
Thos Tusch
C L Topliff

Inventor;
J. L. Thompson
Jno Mowry & Co
Attorneys

UNITED STATES PATENT OFFICE.

JOHN S. THOMPSON, OF GLENS FALLS, NEW YORK.

IMPROVEMENT IN STAVE-MACHINES.

Specification forming part of Letters Patent No. **49,320**, dated August 8, 1865.

To all whom it may concern:

Be it known that I, JOHN S. THOMPSON, of Glens Falls, in the county of Warren and State of New York, have invented a new and Improved Stave-Machine; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1, Sheet No. 1, is a longitudinal vertical section of my invention, taken in the line *x x*, Fig. 2; Fig. 2, a transverse vertical section of the same, taken in the line *y y*, Fig. 1; Fig. 3, Sheet No. 2, a transverse vertical section of the same, taken in the line *z z*, Fig. 1; Fig. 4, a transverse vertical section of the same, taken in the line *x' x'*, Fig. 1.

Similar letters of reference indicate corresponding parts.

This invention relates to a new and improved machine for chamfering and crozing staves, and also for sawing them of a uniform length, the several operations above named being performed simultaneously or at the same time, and the work performed in a perfect manner, by a very simple mechanism.

A represents a framing, which may be constructed in any proper manner to support the working parts, and B is a shaft placed in the upper part of the framing, and having a pinion, C, on its inner end, which gears into a pinion, D, on a shaft, E, the latter having two wheels, F F, upon it, provided with teeth, around which two endless chains, G G, pass, the latter also passing around similar wheels, H H, on a shaft, I, in the framing, the chains G G being parallel with each other and having a horizontal position in the framing.

On the shaft B there is placed loosely a pulley, J, which may be connected with the shaft B when desired, so as to communicate motion to it by means of a clutch, K, arranged in the usual or in any proper manner, the pulley J being actuated so as to be connected with or disconnected from B by means of a lever, L. (See Fig. 1.)

By means of the gears and shafting above described motion is given to the endless chains G G.

M is a shaft in the lower part of the framing A, from which motion is communicated to a shaft, N, by means of a belt, O. This shaft M has a driving-pulley, P, at one end of it, and the shaft N communicates motion to the pulley J by means of a belt, Q.

R is a shaft in the upper part of the framing A, to which motion is communicated from the shaft M by means of a belt, S. On each end of this shaft R there is placed a circular saw, T, and on said shaft, near each circular saw T, there is keyed a cutter-head, U, each having two chamfering-cutters, V V, and two crozing-cutters, W W, attached to it. The chamfering-cutters V V have an oblique position, extending from the heads U U to the saws T T.

The crozing-cutters W W are of **V** shape, and are secured to the cutter-heads U by means of caps *a* and screws or bolts *b*.

The links *c* of the chains G G are provided with lateral projections *d*, one at each side, and these chains pass between guides $H^{\times}$ $H^{\times}$, which are secured in the framing A in such a position that the upper parts of the chains will work or pass between the guides, (see more particularly Fig. 1,) the projections *d* passing through grooves in the inner sides of the guides.

To the upper cross-piece, *e*, of the framing A there are secured, by pendent bars or frames *f*, horizontal plates X, and underneath these plates there are horizontal plates Y, which are attached to uprights *g*, the latter being allowed to slide vertically in the framing, and resting on the inner ends of levers Z Z, which have weights A' on their outer ends, said weights having a tendency to keep the plates Y elevated quite close to the plates X, as will be fully understood by referring to Fig. 4.

Certain links of the chains G G have hooks *h* formed or cast on them, there being two links without hooks between two which are provided with them, as shown in Figs. 2 and 4. These hooks *h* serve to hold the staves on the chains and carry them to the saws and cutters.

The operation is as follows: Power is applied to the shaft M, and the chains G G, saws T, and cutter-heads U move in the direction indicated by the arrows. The staves (shown in red) are carried by the chains G G to the saws and cutters, and while the staves are being acted upon by the saws and cutters the staves near their ends pass between the fixed plates X and the yielding plates Y. These plates serve to hold the staves firmly in position while being

acted upon by the saws and cutters. The saws, it will be seen, cut the staves of a uniform length. The chamfering-cutters V V chamfer the staves or bevel them at their inner sides, while the cutters W cut the crozes to receive the heads of the cask or barrel. Thus it will be seen that the operation of sawing the staves of a uniform length and the chamfering and the crozing of the same are all performed at one operation. This work may be rapidly performed and in a perfect manner, and the machine attended by any one of ordinary ability. The yielding plates Y conform to the different thicknesses of the staves.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

The combination of the endless chains G G, guides $H^{\times}$ $H^{\times}$, circular saws T, cutter-heads U, cutters V W, plates X, and yielding plates Y, all constructed, arranged, and operating as and for the purposes described.

JOHN S. THOMPSON.

Witnesses:
MEREDITH B. LITTLE,
D. B. KETCHUM.