

(No Model.)

F. HEADEN.

MACHINE FOR CROZING STAVES.

No. 276,398.

Patented Apr. 24, 1883.

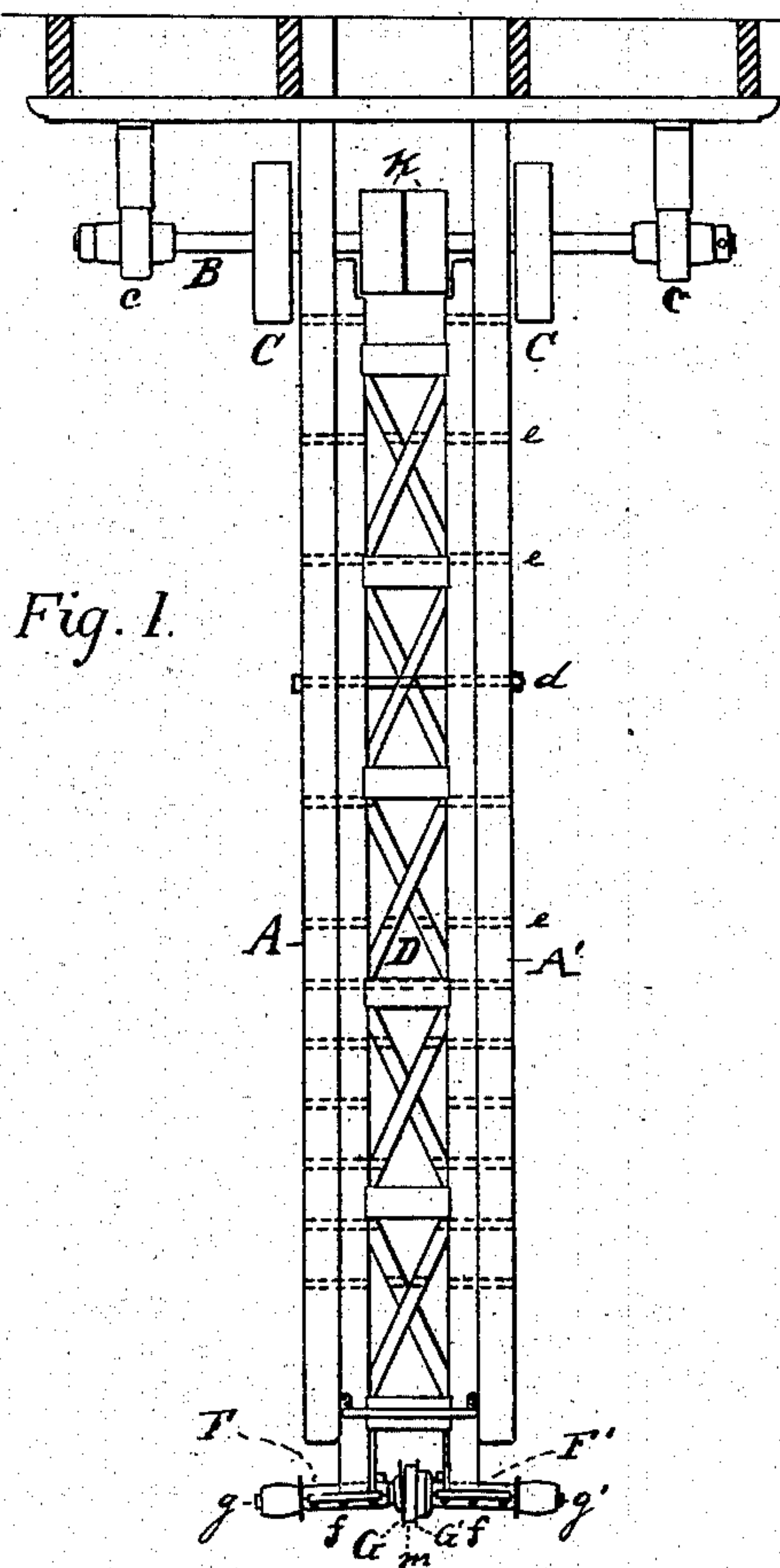


Fig. 1.

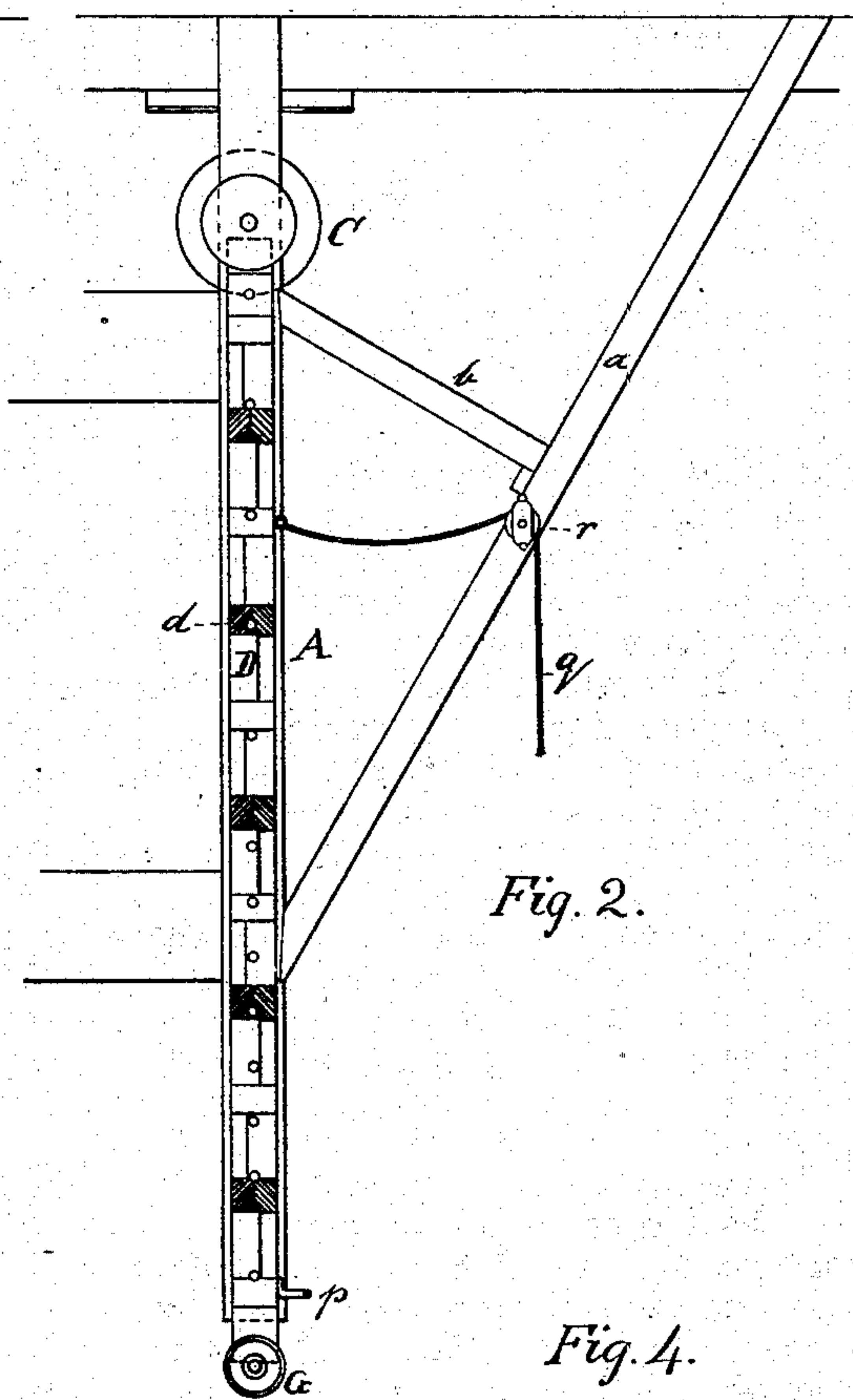


Fig. 2.

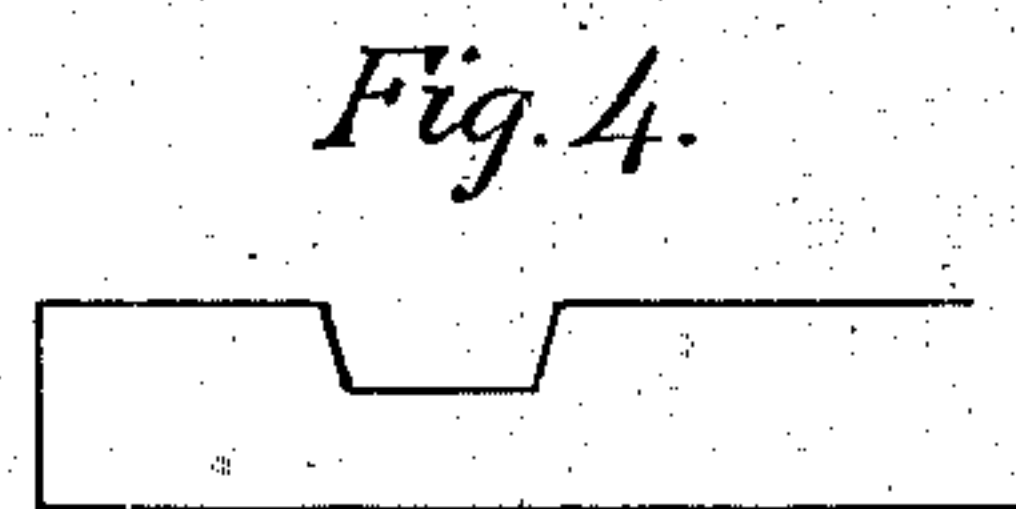


Fig. 4.

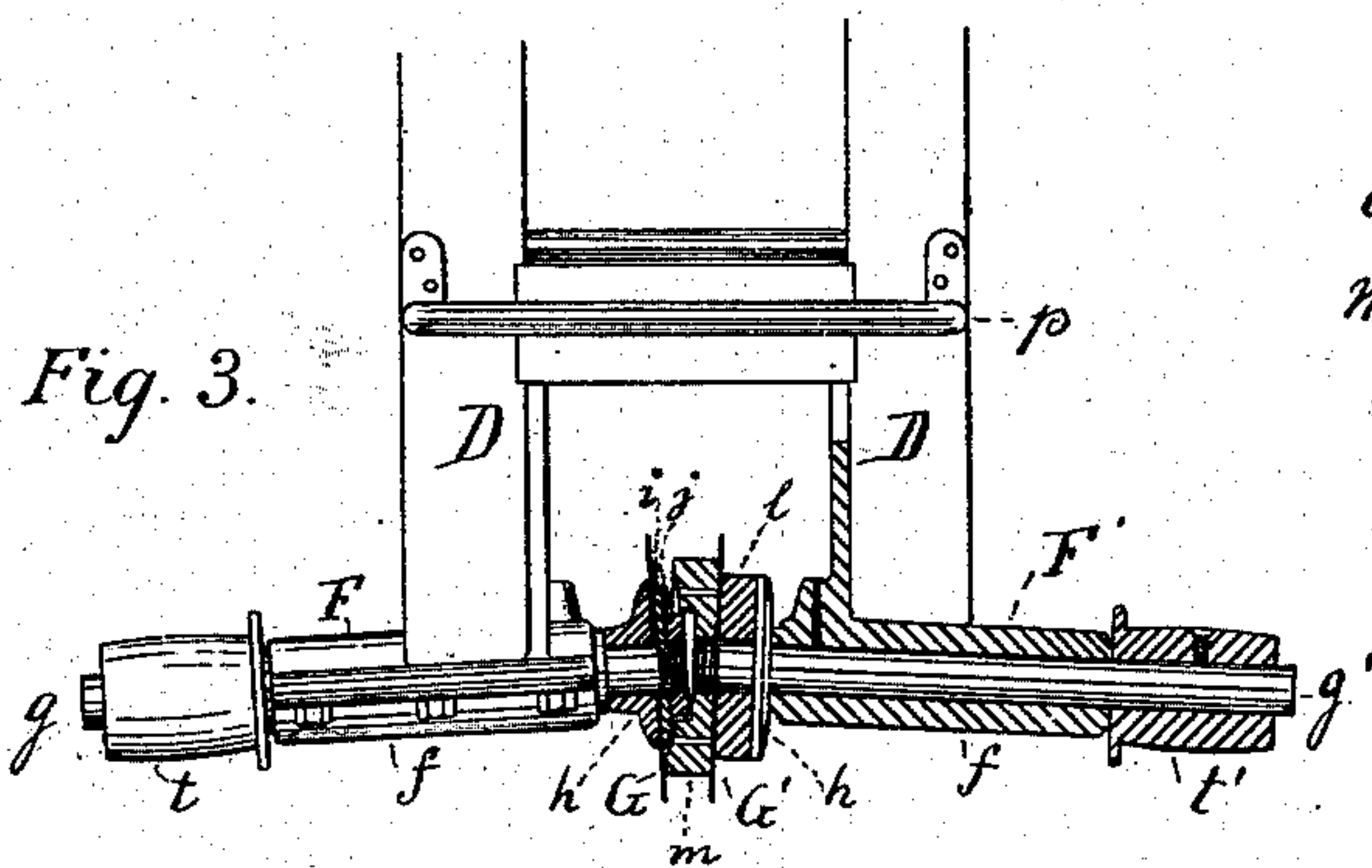


Fig. 3.

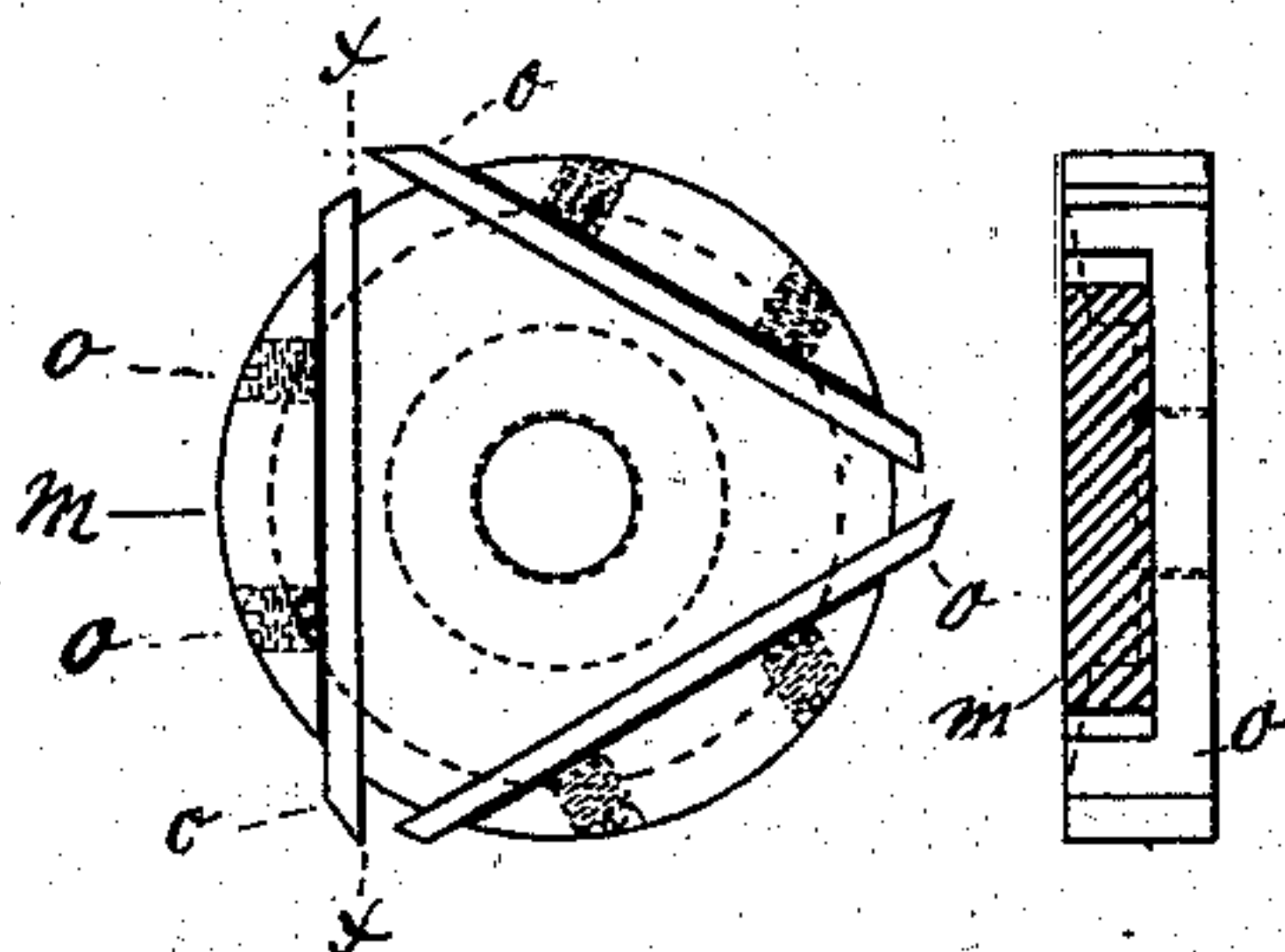


Fig. 5.



Fig. 6.

WITNESSES:

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FRANK HEADEN, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO
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MACHINE FOR CROZING STAVES.

SPECIFICATION forming part of Letters Patent No. 276,398, dated April 24, 1883.

Application filed February 20, 1883. (No model.)

To all whom it may concern:

Be it known that I, FRANK HEADEN, of Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Machines for Crozing Staves; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to machines for cutting croze-channels into tank or tub staves to the proper curve before such staves are put together, and more particularly to devices for cutting such croze-channels with beveling sides.

Therefore my invention consists of the novel devices and combinations of devices hereinafter described and specifically claimed.

In the accompanying drawings, Figure 1 represents a front elevation of the machine; Fig. 2, a vertical cross-section of the same; Fig. 3, an enlarged sectional elevation of the saws and cutter-head as attached to the lower end of a swinging frame; Fig. 4, the edge view of a stave having the croze-channel cut; Fig. 5, an elevation of the cutter-head, and Fig. 6 a cross-section of the same on line *x x*.

Corresponding letters in the several figures of the drawings designate like parts.

A A' denote two timbers framed to be pending from the ceiling of the shop and steadied by braces *a* and *b*.

B is the counter-shaft, that is projected through the timbers A, and is journaled in hanger-bearings *c*, having loose and tight pulleys K for driving the same from the line-shafting, and pulleys C for driving the saw-arbors.

Between the timbers A, so as to be guided thereby, is pivotally suspended, by a bolt, *d*, the swinging frame D, that is composed of two beams rigidly connected by cross-timbers, braces, and bolts in any usual manner. The pivot-bolt *d* may be passed through any one of a series of holes, *e*, that are bored through timbers A and frame D, for varying the radius to which the croze in the staves is to be cut, according to the diameter the tank or tub is to be.

To the lower end of frame D are rigidly secured the flanges of long journal boxes F and F', having caps *f*, that are bolted to their bottom sides. These journal-boxes are arranged to have a relative angular position, and are to hold the arbors *g* and *g'* of circular saws G and G', the exteriorly-projecting ends of such arbors having each mounted a flanged pulley, *tt'*, for driving them by belts stretched over pulleys C and *t*. Each saw-arbor *g g'* is provided with a face-plate, *h h'*, in the usual manner, and saw G is secured against face-plate *g* by a washer, *i*, and nut *j*, that is screwed upon the end of the saw-arbor. The saw G' is tightened against a loose collar, *l*, that is placed intermediate of such saw and the face-plate *h'*, the thickness of which collar *l* may be varied according to the distance the saws are to be placed apart for cutting the croze the desired width. This saw G' is secured against collar *l* by the cutter-head *m*, which is screwed upon the end of saw-arbor *g'*. This cutter-head has planed in its rear surface three grooves, that are at a triangular position for inserting and adjustably securing by set-screws the knives *o*. In its front the cutter-head *m* is recessed for clearing the washer *i* and nut *j* of saw-arbor *g*. The cutters *o* are so adjusted that their cutting-edges are just about on a line with the teeth of the circular saws G and G'.

The stave being placed at the proper position and elevation upon a stationary bench or table, below the swinging frame D, such frame is pushed or pulled across the stave either by taking hold of a handle-bar, *p*, that is secured to one side of the lower end of frame D, or by pulling a rope, *q*, which is coupled to the upper portion of swinging frame D, and is thence passed over a sheave, *r*, when the saws G and G' will cut the beveled sides of the croze, and the cutters *o* will cut away the intermediate material and will plane out the bottom of the croze, the radius of such croze being determined by the position of pivot-bolt *d* in timbers A and frame D.

The machine as described is very simple in its construction, and can be readily adjusted to cut the croze to the proper radius and desired width, and will cut the croze-channel with beveled sides and smooth, the most

prominent feature of my invention being the two circular saws placed on an angular position relative to each other, and the intermediate cutter-head secured against the face of one of the saws, all arranged for cutting a croze-channel with beveled sides. I can arrange as well these parts in fixed journals on a bench or table, to project through an opening from under the table in a manner to cut the croze by moving the staves over the table on a carriage that follows a segmental track corresponding with the radius of the tank or tub for which such staves are intended to be used.

What I claim is—

1. In a machine for crozing staves, the arbors g and g' , journaled in relative angular positions, each arbor having secured a circular saw, G G' , and one arbor carrying a cutter-head, m , intermediate of such saws, all substantially as described, to operate as specified.

2. In a machine for crozing staves, the arbors g and g' , journaled at a relative angular position in suitable boxes to the lower end of

a swinging frame, D , each arbor having secured a circular saw, G and G' , and one arbor, g' , carrying a cutter-head, m , intermediate of such saws, all substantially as and for the purpose set forth.

3. In a machine for crozing staves, the frame D , pivotally secured between pending timbers A and A' , and having at its bottom end journal-boxes F and F' for arbors g and g' , that are placed at a relative angular position to each other, having pulleys t for rotating them by belts from counter-shaft pulleys C , and arbor g , carrying circular saw G , while arbor g' has mounted the circular saw G' and cutter-head m , with cutters o , all substantially as described and shown, to operate as specified.

In testimony that I claim the foregoing as my invention I affix my signature in presence of two witnesses.

FRANK HEADEN.

Witnesses:

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