

P. Welch,

Making Barrel Heads,

No 42,244,

Patented Apr. 5, 1864.

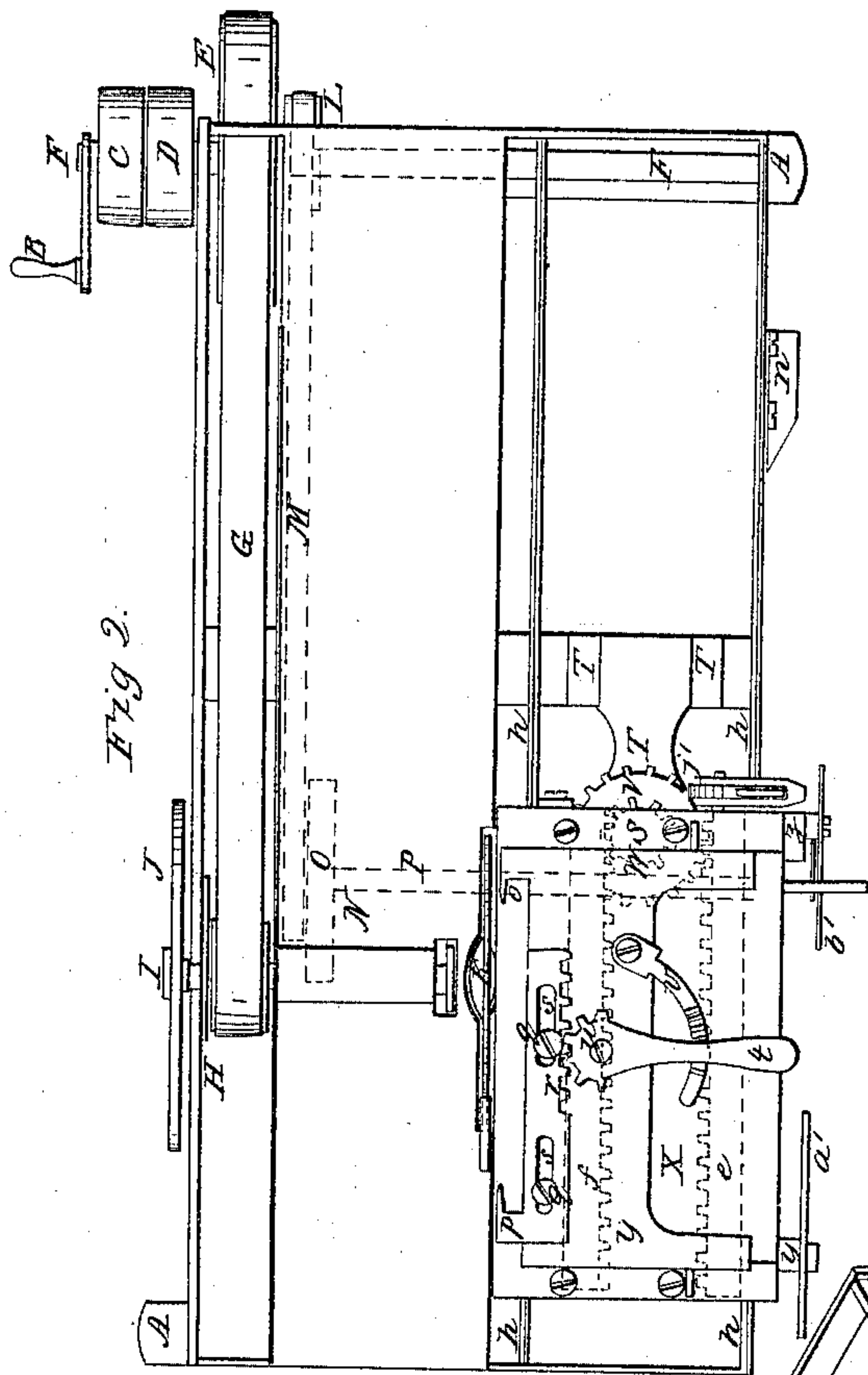


Fig 2.

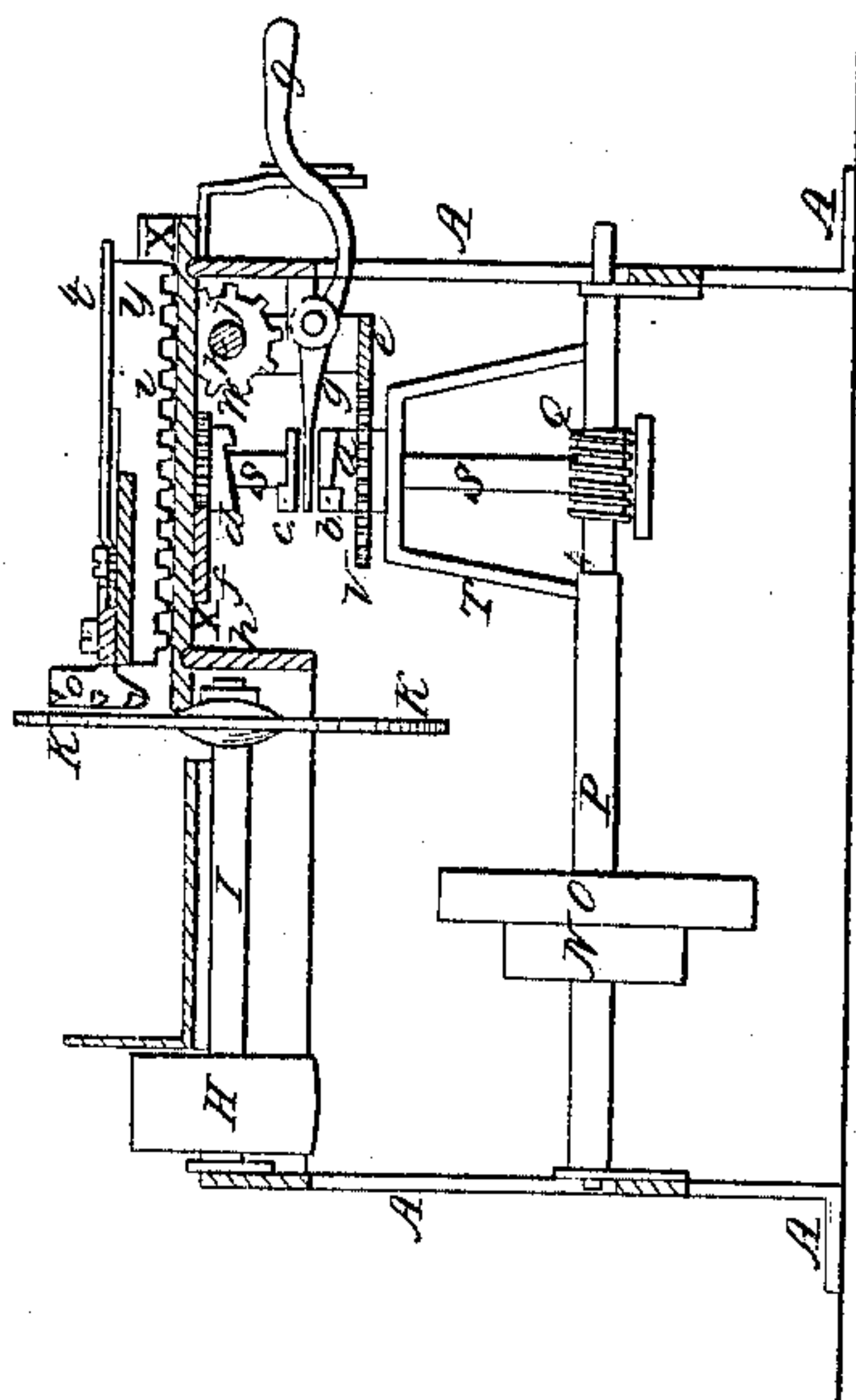


Fig 3.

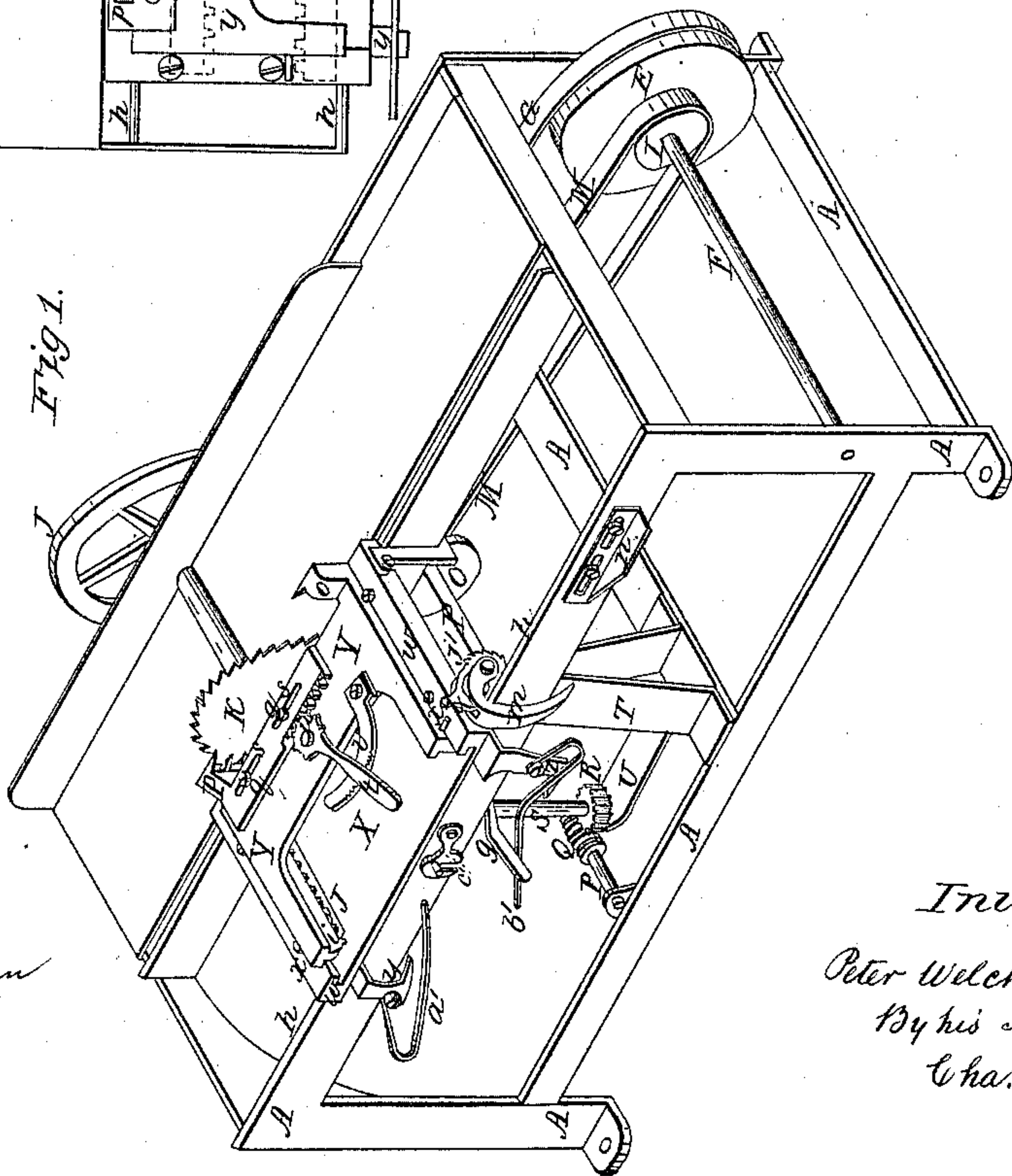


Fig 1.

Witnesses:

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UNITED STATES PATENT OFFICE.

PETER WELCH, OF OSWEGO, NEW YORK.

IMPROVEMENT IN MACHINES FOR SAWING HEADINGS FOR BARRELS.

Specification forming part of Letters Patent No. 42,244, dated April 5, 1864.

To all whom it may concern:

Be it known that I, PETER WELCH, of Oswego, in the county of Oswego and State of New York, have invented certain new and useful Improvements in Machines for Cutting Barrel-Headings; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of the machine complete. Fig. 2 is a top view of the same. Fig. 3 is a transverse vertical section, through the line *x x* of Fig. 2.

The same part is indicated by the same letter of reference wherever it occurs.

The purpose of my improved machine is to cut from the block the headings or blanks from which barrel-heads are afterward made; and the nature of the invention consists in certain improvements in the feed mechanism of the sliding carriage, both as regard that which moves the carriage up to and away from its work and that which holds the block and feeds it to the saw. In the former I have introduced a sliding clutch, which allows both racks and pinions to remain constantly in gear, while the alternate motions of the carriage are either performed automatically or controlled by hand, and in the latter I have simplified the devices for holding and feeding up the block, giving a direct action to the holding-jaws and efficiency and strength to the feeding mechanism, all as hereinafter more particularly set forth.

To enable others skilled in the art to make and use my improved heading-cutter, I will proceed to describe its construction and operation, referring to the drawings, wherein—

A marks the frame of the machine; B, a winch, which indicates the point at which the power is applied to the machine; C, the loose pulley; D, the fast pulley, and E the large driving-pulley, all on the main shaft F. The pulley E, by means of band G, drives pulley H on the saw-shaft I. This shaft has a fly-wheel, J, on its outer end, and supports the saw K on its inner end. There is another pulley, L, on main shaft F, which by band M drives pulley N on the worm-shaft P. Worm Q on this shaft gears into a worm-pinion, R, on the clutch-shaft S, and drives that shaft, which is supported by bracket T and its arm U. On the shaft S are two spur-pinions, V

and W, so loosely attached as to be capable of free rotation on the shaft. The lower one, V, is larger than the upper one, and they gear respectively into racks *e* and *f*, attached to the under side of the carriage X. To the upper side of pinion V is attached the clutch-jaw *a*, and to the under side of pinion W is attached the clutch-jaw *d*. These clutch-jaws correspond with the lower and upper clutch-jaws, *b* and *c*, which form the movable clutch which slides on the shaft S. The clutch *b c* moves on a feather on shaft S, and turns with it, and is controlled by a forked lever, *g*, by which it is raised or lowered, so as to be thrown into gear with either the clutch-jaw *a* on pinion V or clutch-jaw *d* on pinion W, according as the carriage X is to be moved forward or back on its rails *h*. The lever *g* may be controlled by hand, when desired, but usually its movements are automatic, being effected by the hooks *y* and *z*, aided by the springs *a'* and *b'*, which raise and lower it alternately as the carriage reciprocates on its ways. The latch *c'* holds the lever *g* in a middle position between the upper and lower limits of its movement, so that neither jaw of the clutch *b c* will be engaged with the corresponding clutch-jaw *a* or *d* on their respective pinions V or W. The shaft S is then free to revolve without affecting the carriage X. The carriage X is moved forward by the action of pinion W on rack *f*, and backward with increased velocity, by the action of the larger pinion V upon rack *e*.

Upon the carriage X is placed the block-holding carriage Y, which slides transversely on carriage X in ways *w*, toward and from the saw K. On the bottom of carriage Y are racks *i*, which receive and gear with pinions *j* on shaft *k*. (See Fig. 3.) The carriage Y is moved back and forth in its ways by the action of these pinions *j* on the racks *i*. The pinion-shaft *k* has a ratchet-wheel, *j'*, on its rear end, which receives and is actuated by a pawl, *l*, attached to the bent arm *m*, which, by rising, impels the pawl *l*, and is itself raised by coming into contact with the adjustable inclined guide *n*, attached to the frame of the machine, when the carriage X is drawn back to the end of its rearward course. Thus, at each reciprocation of the carriage X, the carriage Y is moved laterally toward the saw a distance equal to the thickness of a heading-

blank. On one end of sliding carriage Y is a fixed dog, *o*, for holding one end of the block from which the headings are to be sawed. On the other end is a sliding dog, *p*, which moves longitudinally on pins *q*, which project up through slots *s s*. There is a rack, *r*, on the side of the dog *p*, which gears with a segmental pinion-lever, *t*, turning on pivot *u*. A notched arc, *v*, holds the lever in any desired position. By means of the rack *r* and pinion *t* the dog *p* is moved toward or away from the dog *o*, and made to hold fast or release the block of timber. Stops *x* check the movement of the carriage Y toward the saw by coming in contact with the projecting bolt-heads, *d'*.

The operation of the machine is as follows: The carriage X being drawn back, the block to be sawed into headings is placed on the carriage Y and firmly fixed by the dogs *o* and *p*. Power being applied to the machine, the carriage X is driven forward by reason of the clutch *b c* being thrown into gear by its jaw *c* with the upper pinion, W, on the shaft S. The clutches are held by hook in this position until the carriage gets to the end of its forward course, when, by the action of spring *a'*, the clutch *b c* is thrown by its jaw *b* into gear with pinion V, when the carriage X is driven back to its starting-point, ready for a repetition of the movement. When the carriage X reaches its starting-point, the lower end of arm *m* is driven out by the guide *n*, and causes the pawl *l* to operate the ratchet-wheel *j'* and set the slide Y one tooth nearer to the saw, being the thickness of the heading to be cut

from the block. The clutch *b c* is again thrown into gear with pinion W, and the carriage X again advances, and the operation is repeated until the block is sawed up.

To arrest the carriage without stopping the machine, it is only necessary to place the lever *g* in the latch *c'*, when both pinions V and W will be out of gear with the clutch *b c* and will impart no motion to their respective racks.

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

1. The combination of the shaft S, pinions V and W, (with their clutch-jaws *a* and *d*), double clutch *b c*, fork-lever *g*, and racks *e* and *f*, substantially in the manner and for the purpose described.

2. The feed mechanism of the carriage Y, consisting of the racks *i*, pinions *j*, ratchet-wheel *j'*, pawl *l*, arm *m*, and guide *n*, arranged for conjoint operation in the manner specified.

3. In combination with the carriage Y, the dogs *o* and *p*, lever *t*, and arc *v*, arranged and operating substantially as set forth.

4. In combination with the lever *g*, the hooks *y* and *z*, and the springs *a'* and *b'*, arranged and operating substantially in the manner described.

The above specification of my said invention signed and witnessed, at Washington, this 8th day of February, A. D. 1864.

PETER WELCH.

Witnesses:

CHAS. F. STANSBURY,
EDM. F. BROWN.