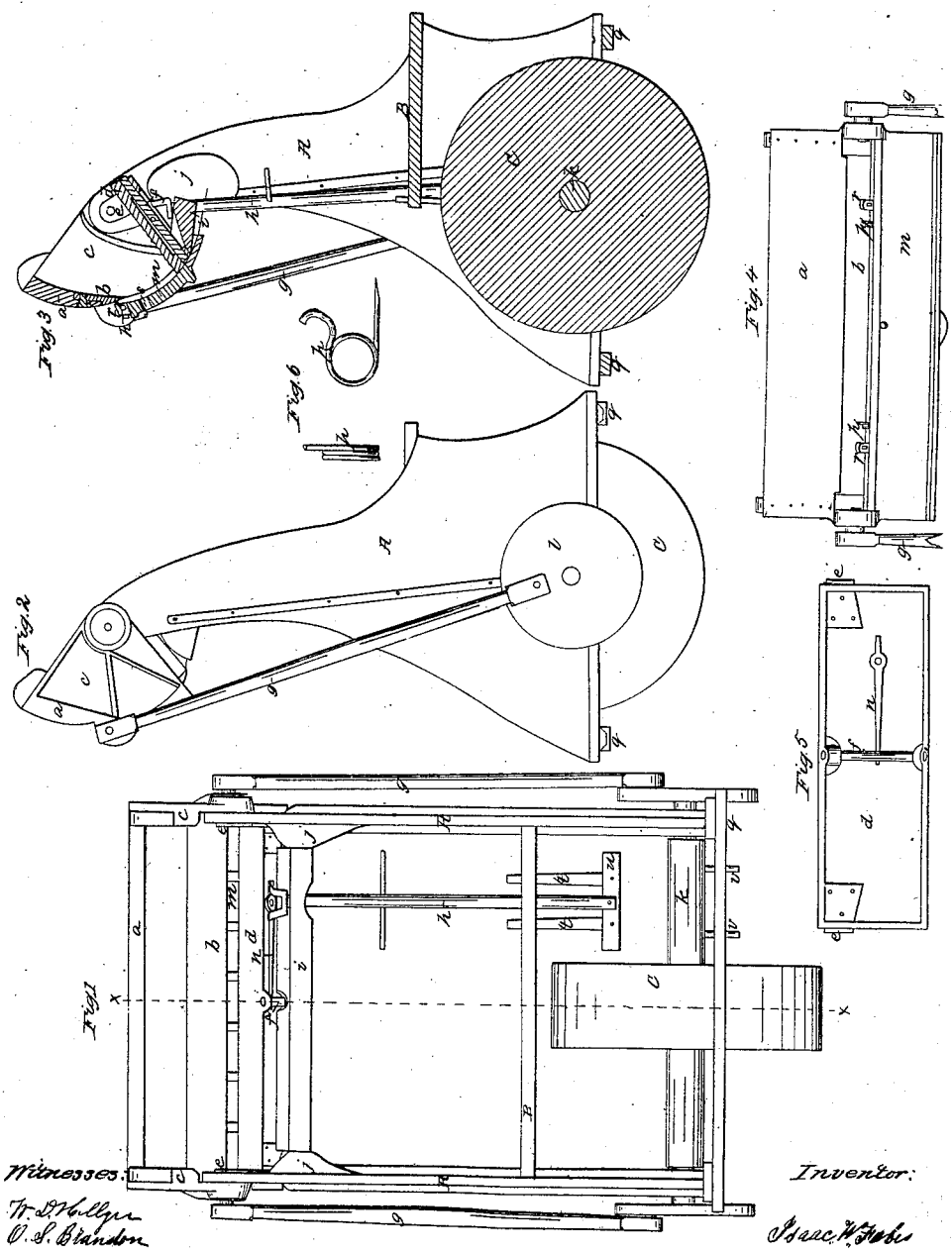
I. W. FORBES.

STAVE CUTTING MACHINE.

No. 22,231. Patented Dec. 7, 1858.



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ISAAC W. FORBES, OF JEFFERSON, WISCONSIN.

MACHINE FOR CUTTING STAVES FROM THE BOLT.

Specification of Letters Patent No. 22,231, dated December 7, 1858.

To all whom it may concern:

Be it known that I, ISAAC W. FORBES, of Jefferson, in the county of Jefferson and State of Wisconsin, have invented a new and Improved Stave-Cutting Machine; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings making a part of this specification, Figure 1 being a front elevation of said machine; Fig. 2, a view of one side of the same; Fig. 3, a vertical section in the line *x x* of Fig. 1; Fig. 4, a rear view of a detached portion of the head of the machine, and Figs. 5 and 6 are representations of other detached portions of the machine.

Similar letters indicate like parts in each drawing.

The vertical sides A, A, of the frame of my improved stave-cutting machine are connected to each other by means of the base cross-pieces *q*, *q*, the platform B, and the head cross-bar *i*;—or the said parallel sides of the frame of my improved stave-cutting machine may be connected to each other by any other suitable means.

The extremities of the head cross-bar *i*, are secured in apertures in the inwardly projecting ears *j*, *j*, which are secured to the inner surfaces of the sides A, A, of the frame of the machine, and the said bar must be of sufficient stiffness and strength to afford the requisite support to the hinged platform *d*, which receives the bolt of wood that is to be cut into staves by the reciprocating cutting blade *b*. The pivots which secure the stationary edge of the aforesaid platform *d*, in its proper position, pass outwardly through a pair of upwardly projecting strong ears *e*, *e*, which are secured to said platform; and the same pivots—after passing through the sides A, A, of the frame of the machine—also pass through the axes of the heads *c*, *c*, of the knife-head *a*, *c*, *c*, *m*. The heads *c*, *c*, the segment *a*, and the ribbed segment *m*, which form the oscillating knife-head, or cutter-head, of the machine, may be combined with each other in any suitable manner.

The knife *b*, is secured to the lower edge of the segment *a*, by means of countersunk screws, or other suitable means, which will enable the knife to pass smoothly through a bolt of wood. Sufficient space is left between the outer surface of the knife and the inner surface of the ribbed segment *m*, for the passage of a stave between the two, and by varying the width of said space the thickness of the stave, cut by the knife, can be adjusted to any desired degree.

The necessary oscillatory motion is imparted to the knife-head by means of the two pitmen *g*, *g*, which connect the said knife-head with the crank-wheels *l*, *l*, on the extremities of the driving shaft *k*.

The operator stands upon the platform B, which may form a portion of the floor of the apartment in which the machine is operated. Before placing the bolt of wood which is to be converted into staves, upon the platform *d*, the operator connects the vibrating edge of said platform with the ribbed segment *m*, by throwing the latch bolt *f*, (on the under side of the platform,) forward into the aperture *s*, in said segment, which keeps the edge of the knife in contact with the platform *d*, and prevents all danger of accidents while the operator is placing a block of wood in its proper position upon said platform. The aforesaid latch-bolt *f*, is connected to the lever *n*, which is pivoted to the under surface of the platform *d*, and the said latch-bolt is operated in the following manner, viz:—The vertical shaft *h*, which passes through apertures in the cross-bar *i*, and the platform B, is forked at its upper end, and the legs of the said fork are in such a position that by turning the shaft *h*, in one direction one of its legs will strike the lever *n*, on the left hand side of its pivot and throw the latch bolt forward, and by turning the said shaft in an opposite direction, the other leg of its forked end will strike the lever *n*, on the right hand side of its pivot and draw the latch-bolt outward entirely free and clear from the segment *m*, of the cutter-head. The shaft *h*, may be turned by the operator by taking hold of suitable projecting arms therefrom; or the said shaft may be operated in the following manner, viz:—Let a cross-head *u*, be jointed to the lower extremity of the shaft *h*, and a couple of jointed arms *t*, *t*, project upward from the extremities of the said cross-head through apertures in the platform B, as shown in Fig. 1,—then let a couple of arms *v*, *v*, project from the driving shaft *k*, in proper positions, so that by the operator's placing his foot upon the upper extremity of either of the arms *t*, *t*, and pressing it downward to a level with the platform B, he

will bring the end of the cross-bar *u*, thus depressed, within reach of one of the arms *v*, on the driving shaft, and thereby enable it to impart a degree of motion to the shaft *h*, which will cause it to so operate the latch bolt *f*, as to either connect or disconnect the oscillating edge of the platform *d*, with the ribbed segment *m*, of the knife-head, as circumstances may require. After each movement of the cutting knife, the operator must press forward the bolt of wood until he brings its forward edge in contact with the inner side of the ribbed segment *m*.

To insure the free and clear discharge of each stave from the machine, a couple of springs *p*, *p*, are so combined with the upper edge of the segment *m*, that there is no possibility of the stave being drawn back into the machine, after it has been entirely severed from the block of wood which is being operated upon. And in case any accident should occur to the knife or its fastenings, the vibrating edge of the platform *d*, can instantly be connected with the ribbed concave *m*, of the knife-head, which will prevent the possibility of wasting the wood or of doing injury to the operator or to the machine. Spur knives *r*, *r*, may also be combined with the upper edge of the ribbed segment *m*, for the purpose of trimming off the ends of the staves to bring them all to the same length. Crossing cutters may also be combined with the upper edge of the segment *m*, of the knife-head for the purpose of performing their proper functions.

Having thus fully described my improved stave-cutting machine, what I claim therein as new and desire to secure by Letters Patent, is—

The arrangement of the hinged platform *d*, and its latch-bolt *f*, in such a manner with relation to the concaves *a* and *m*, and the knife *b*, of the cutter-head that the said parts can be operated substantially in the manner and for the purpose herein set forth.

The above specification of my improvement in machinery for cutting staves, signed and witnessed the tenth day of September 1858.

ISAAC W. FORBES.

Witnesses:
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