S. F. MAXWELL.

MACHINES FOR CROZING, CHAMFERING AND EQUALIZING STAVES.

No. 192,122. Patented June 19, 1877.

Fig. 1.

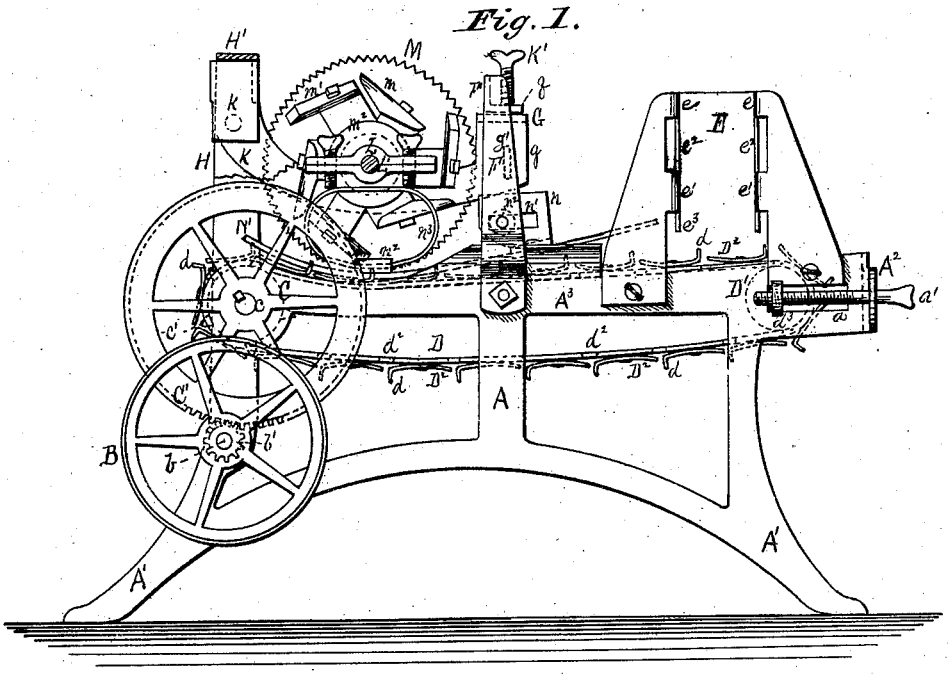
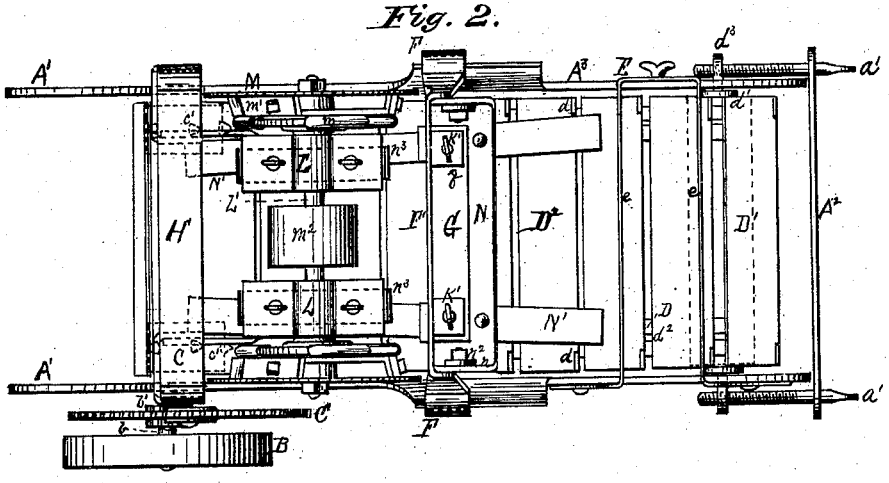


Fig. 2.



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UNITED STATES PATENT OFFICE.

SAMUEL F. MAXWELL, OF CLIFTON, WEST VIRGINIA.

IMPROVEMENT IN MACHINES FOR CROZING, CHAMFERING, AND EQUALIZING STAVES.

Specification forming part of Letters Patent No. **192,122**, dated June 19, 1877; application filed November 25, 1876.

To all whom it may concern:

Be it known that I, SAMUEL F. MAXWELL, of Clifton, in the county of Mason and State of West Virgina, have invented an Improvement in Machines for Crozing, Chamfering, and Equalizing Staves, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, and the letters of reference marked thereon, making part of this specification, in which—

Figure 1 is a side view, parts being broken away. Fig. 2 is a top plan view.

The nature of my invention consists in the construction and arrangement, in a machine, of the crozing and chamfering tools and equalizing-saws, so that they may readily operate upon the staves which are fed to them by means of an endless belt, carrying plates, all as hereinafter more fully described.

The construction and operation of my invention are as follows:

A is the main frame of the machine, which is constructed out of any suitable material, and rests upon legs A^1 A^1. On an axle-shaft, *b*, that extends out from the front of the machine, and on one side thereof, is secured the driving-wheel B, which has attached to it the pinion-wheel *b'*. In the front of the main frame A, and to the sides A^3 thereof, is journaled a shaft, *c*, which carries the pulleys C C. These pulleys are provided with studs *c' c'*, secured at certain distances apart around their periphery. To the end of the shaft *c* is secured the cog-wheel C', which meshes with the pinion-wheel *b'*. D are the endless belts, and are parallel with each other, having a horizontal position in the framing. They pass around the pulleys C C and the shaft *b'*, which is journaled in bearings d^1, which are located at the rear of the main frame A and between the sides A^3 thereof. These endless belts D are provided with slots d^2 between each two of the plates D^2. Attached to the endless belts D are plates D^2, which carry the staves to be fed to the saws. Each one of these plates D^2 is provided, at its rear and both ends, with flanges *d*. The ends of the shaft D^1 are secured in bearings d^1, as shown in Fig. 2, which have a projecting plate, d^3, with screw-threads cut in an opening therein. These plates d^3 work in slots *a* cut in the sides A^3 of the main frame A. — is the cross-bar that connects the rear ends of the sides A^3, and extends on each side beyond the main frame A. In this extension are holes through which pass the tightening-screws *a'*, the screw-threads of which mesh with the screw-threads cut in the plates d^3. By means of these screws *a'* the shaft D^1 is moved forward or backward, and the endless belt D thus tightened or loosened as occasion requires. To the upper longitudinal bars and near the rear of the machine is secured a pen or receptacle, E, open at one end, and in which the staves are placed. The sides of this receptacle are formed of an upper and lower cross-bar, *e* e^1, and two vertical bars, e^2, near the ends. These vertical bars e^2 extend down sufficiently far to allow only one stave to be carried forward by the plate D^2, which is immediately under the receptacle. By this arrangement the machine becomes a self-feeder. About midway of the machine, and securely bolted to the sides A^3, are two uprights, F, connected at their tops by a cross-bar, F'. To this cross-bar F' is bolted a plate, G, provided with flanges *g* at each end. To the cross-bar F' and at the ends of the plate G are secured ears *f*. To the front of the machine and on the sides thereof are bolted uprights H, connected at their top by a cross-bar, H'. To flanges secured to the under side of this cross-bar H' is pivoted, at *k*, curved plates K. The other end of the plates K rest against the inside of the flanges *g* of the plate G, and are provided with flanges, in which are holes with screw-threads cut therein. To the center of these plates K are secured suitable boxes L, in which is journaled the shaft L'. To this shaft L' is secured the equalizing-saws M, the crozing-tools *m*, the chamfering-tools m^1, and the pulley m^2; through the latter, motion is imparted to the saws. K' are screws, which pass through the ears *f* and cross-bars F', and by means of which the plates K, containing the saws, are lowered or elevated, the screw-threads of the screws K' meshing and working in the screw-threads cut in the holes in the flanges of the plates K. These screws K' may be provided with a button at their ends, in which case the holes in the flanges of the curved plates K need not have screw-threads cut therein, as the buttons

would raise or lower the plates when the screws K′ were turned. N is a plate, provided with flanges *n* at each end. In these flanges are cut slots n^1, through which pass the bolts n^2, by means of which the plate N is attached to the uprights F. To the plate N is secured the spring-pressers N′, whose functions are to keep the staves firm in the plates D^2 when being equalized, crozed, and chamfered. By means of the slots n^1 these pressers can be moved backward or forward as occasion requires. To a plate secured to the pressers N′, and immediately under the boxes L, is attached elliptical springs n^3, to assist in keeping the pressers down. These pressers rest on the staves between the flanges *d* of the plates D^2. In the flanges *g* of the plates G are cut vertical slots *g′*, to allow the ends of the curved plates K to be bolted to the plate G, while at the same time the slots *g′* allow of the free up-and-down motion of the plates K.

The operation is as follows: The staves are placed in the receptacle E and the screws *a′* K′ tightened or loosened as occasion requires. Motion is then imparted to the endless belt D through the wheel B, causing the spurs on the pulleys C, as they revolve, to engage in the slots d^3 of the belt D, and to the saws through the pulleys m^2. As the endless belt moves along the flanges *d* of the plates D^2 strike against the edge of the stave and carry it along with it to be acted on by the saws, the projecting ends e^3 of the vertical bars e^2 preventing more than one stave being carried on each plate.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a stave-machine, the combination of the frame A, endless belt D, provided with slots d^2, plates D^2, provided with flanges *d*, pulleys C, provided with studs *c′*, shaft *b*, shaft D^1, pressers N′, springs n^3, pulley m^2, shaft L′, saws M, and tools *m* m^1, substantially as described.

2. In a stave-machine, the combination of the frame A, endless belt D, plates D^2, pulleys C m^2, shaft *b*, shafts D^1 L′, pressers N′, springs n^3, saws M, tools *m* m^1, screws *a′* K′, and receptacle E, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

SAMUEL F. MAXWELL.

Witnesses:
THEOPHILUS PUGH,
JOHN G. LANING.