(No Model.) 2 Sheets—Sheet 1.

T. CRANEY.

CHAMFERING MACHINE.

No. 524,889. Patented Aug. 21, 1894.

Fig. 1.

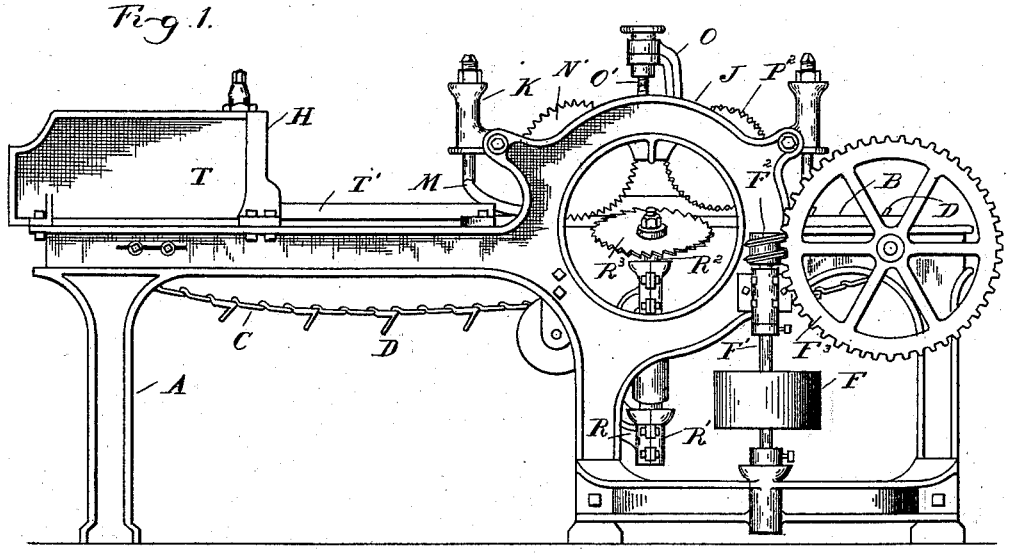


Fig. 4.

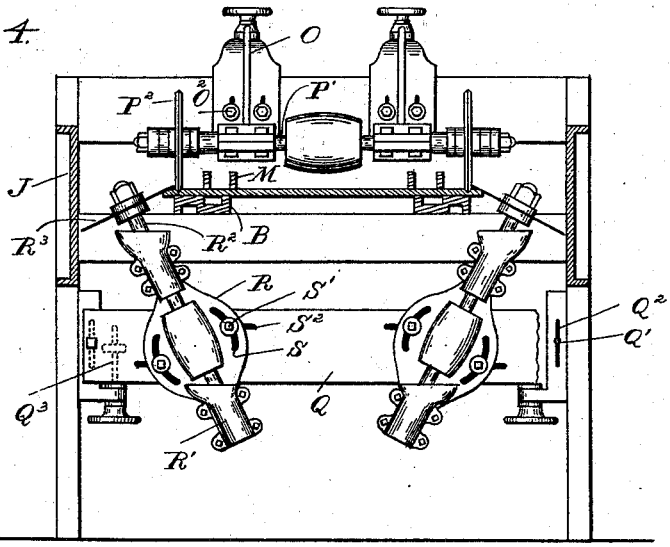


Fig. 5.

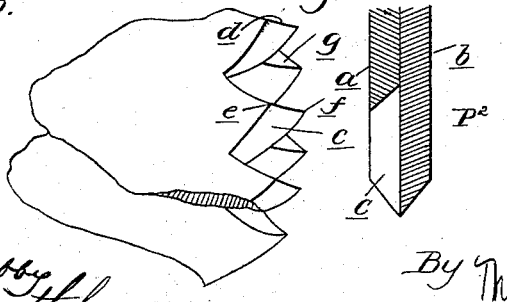


Fig. 6.

Witnesses
A. L. Abbey
A. F. Barthel.

Inventor
Thomas Craney
By Thos. S. Sprague & Son
Attys.

(No Model.) 2 Sheets—Sheet 2.

T. CRANEY.

CHAMFERING MACHINE.

No. 524,889. Patented Aug. 21, 1894.

Fig. 2.

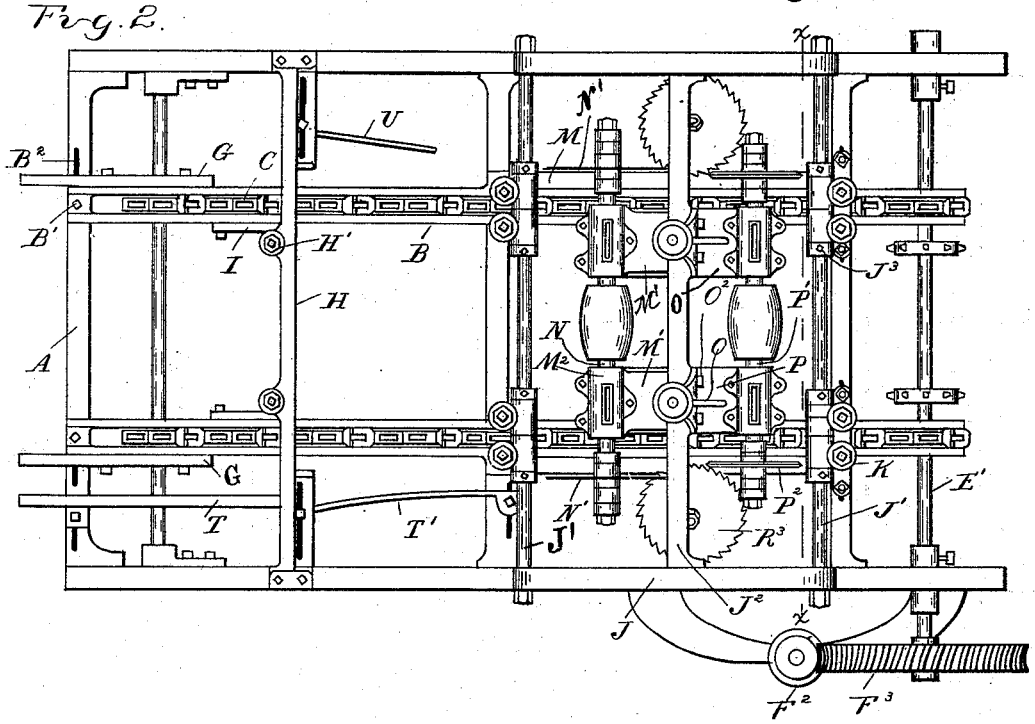
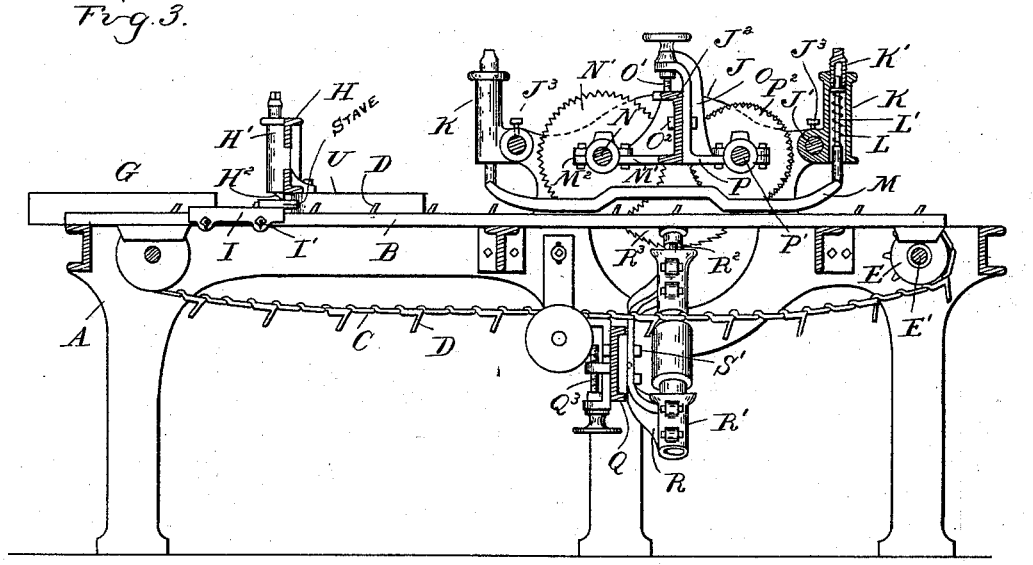


Fig. 3.



Witnesses
A. L. Hobby
O. F. Bartlett.

Inventor
Thomas Craney
By Thos. S. Sprague & Co
Attys.

UNITED STATES PATENT OFFICE.

THOMAS CRANEY, OF BAY CITY, MICHIGAN.

CHAMFERING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 524,889, dated August 21, 1894.

Application filed November 4, 1893. Serial No. 490,025. (No model.)

To all whom it may concern:

Be it known that I, THOMAS CRANEY, a citizen of the United States, residing at Bay City, in the county of Bay and State of Michigan, have invented certain new and useful Improvements in Chamfering-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention consists in the peculiar construction of the feeding devices, the construction and arrangement of the chamfering saws and their supports, the construction of the crozing saws, and further in the peculiar construction, arrangement and combination of the various parts, all as more fully hereinafter described.

In the drawings, Figure 1 is a side elevation of my improved machine. Fig. 2 is a plan thereof. Fig. 3 is a vertical, central, longitudinal section. Fig. 4 is a cross section on line *x x*, Fig. 2. Fig. 5 is a perspective view of a portion of the cutting edge of one of the crozing cutters. Fig. 6 is a section therethrough.

A is the frame of suitable construction to support the operating parts.

B are channel bars supported on top of the frame and forming the support for the work as it is fed through the machine. These bars are laterally adjustable upon the cross bars by means of clamping bolts B′ engaging the slots B^2 therein (Fig. 2).

C are carrier chains running in the grooves of the bars B and having upwardly projecting lugs D extending above the top of the bars adapted to engage behind the staves and feed them through the machine. These chains at their ends run over sprocket wheels E adjustably secured on suitable transverse shafts E′, and are driven through the pulley F on the shaft F′, the worm F^2 thereon engaging the worm wheel F^3 on the shaft of one pair of sprocket wheels, Fig. 1.

At the front end of the machine is a work table or work support, preferably formed by the bars G secured one at each side of the bars B.

H is a cross-bar having barrels H′ in which are secured the spring latches H^2 having front beveled faces with which the front edge of the stave is adapted to engage as it is fed forward by the carrier.

I are gage bars slightly lower than the table G and preferably formed by strips secured to one side of the bars B. The rear vertical edge of these bars is arranged substantially in line with the rear edge of the latch H^2, the two together forming a gate, preventing more than one stave being fed through at a time. These gage bars are vertically adjustable by means of suitable slots and clamping bolts, for work of varying thickness (see I′, Fig. 3).

J are side standards on the frame connected by the cross-bars J′ at each end and centrally by the cross-bar J^2. On the cross bars J′ are barrels K having screw-threaded plugs K′ at their upper ends adapted to bear upon springs L which are sleeved about the pins or standards L′ at the ends of presser bars M, one presser bar on each side of each carrier chain, as shown in Fig. 4, extending beneath the cross bar J^2. These presser bars are laterally adjustable upon the cross-bars J′ and are secured in their adjusted positions by set screws J^3.

M′ are forwardly extending horizontal arms formed integral with the cross-bar J^2 having boxes M^2 at their outer ends in which is journaled the mandrel N of the cutting off saws N′ one at each end thereof. Upon the opposite side of the cross-head J^2 are the brackets O having a vertical adjustment by means of the screw shafts O′ which engage screw-threaded bearings in the top of the cross-bar J^2 and are provided with suitable hand wheels for actuating the same.

O^2 are clamping bolts engaging slots in the brackets and passing through the cross-bar for clamping the brackets in their adjusted position. These brackets are provided with horizontally extending arms P in the outer ends of which are boxes in which is journaled the mandrel P′ which at its outer ends carry the crozing saws P^2. These crozing saws are made of two saw disks *a b* provided with a series of teeth *c*, the teeth of one saw being arranged opposite the interdental spaces of the other saw and each tooth having the chamfered cutting edge *d*, which cuts a shearing

cut by arranging the outer point *e* in advance of the inner point *f* forming the rearwardly inclined face *g* which throws the saw-dust between the teeth, thereby maintaining them clear and free at all times.

Q is a cross-bar beneath the table, vertically, adjustably supported upon the frame, by means of the clamping bolts Q′ engaged in vertical slots Q^2 and adapted to be moved by means of the adjusting screws Q^3.

R are yoke shaped frames having boxes R′ at the ends in which are journaled the mandrels R^2 on which are secured the chamfering saws R^3. These yokes are centrally provided with segmental slots S with which clamping bolts S′ engage, these clamping bolts passing through horizontal slots S^2 in the cross-bar Q. This construction of parts enables me to adjust the chamfering saws to the proper height, by adjusting the cross-bar Q vertically, and to adjust these saws in and out for different lengths of staves by adjusting the yokes upon the cross bars by means of the clamping bolts S′ in the slots S^2, and to adjust the yokes to bring the saws to the proper angularity by means of the segmental slots S.

The parts being thus constructed their operation is as follows: The operator places a number of slats on the table G with their ends abutting against the gage board T and feeds them over the edge of the table upon the gage bars I where each successive projection D of the carrier chain will engage on the rear edge of a single stave, forcing it beneath the spring latch H^2. After passing which it will rest upon the top of the channel bars. The stave is brought in proper relation to the saws by engagement of its end against the inclined adjustable guide bar T′, against which it is forced by means of the adjustable spring arm U which bears against the opposite end. Motion is communicated to the saw mandrel by means of belts driven from any suitable source of power, and as the blank passes through the machine beneath the presser feet it is first cut off to length by the cutting saws N′, next chamfered by the chamfering saws and finally grooved by the crozing saws and delivered from the machine by the carrier.

What I claim as my invention is—

1. The combination of the frame, longitudinal bars laterally adjustably secured thereon, carrier chains running in the grooves therein, a work table formed of bars secured to the channel bars, gage strips vertically adjustably secured to said channel bars at the end of the table, and spring latches above said gage strips, substantially as described.

2. The combination of the frame, the table having end board or fence T, the carrier, the adjustable inclined gage bar T′ at one side of the carrier and the adjustable spring presser arm U at the opposite side, substantially as described.

3. The combination with the frame and the endless carriers, of the side standards, the connecting bars J′ at opposite ends of the standards, the laterally adjustable barrels K having screw plugs K′ at their upper ends, the presser bars M, the standards L′ on the bars M extending into the barrels, the springs L on the standards L′ their upper edges engaging the plugs K′, and the set screws J^3 on the barrels engaging the connecting bars J′ for retaining the barrels in their adjusted positions, substantially as described.

4. In a stave machine, the combination of a frame, a carrier, side standards on the frame, a cross bar connecting said standard centrally above the carrier, rigid forwardly extending brackets having boxes at their outer ends, a mandrel journaled therein, having cutting off saws at the ends, brackets extending rearwardly from said cross bar, means for vertically adjusting the rear brackets, a mandrel journaled in boxes at the outer ends of said brackets, and crozing saws on said mandrels, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

THOMAS CRANEY.

Witnesses:
M. B. O'DOGHERTY,
O. F. BARTHEL.