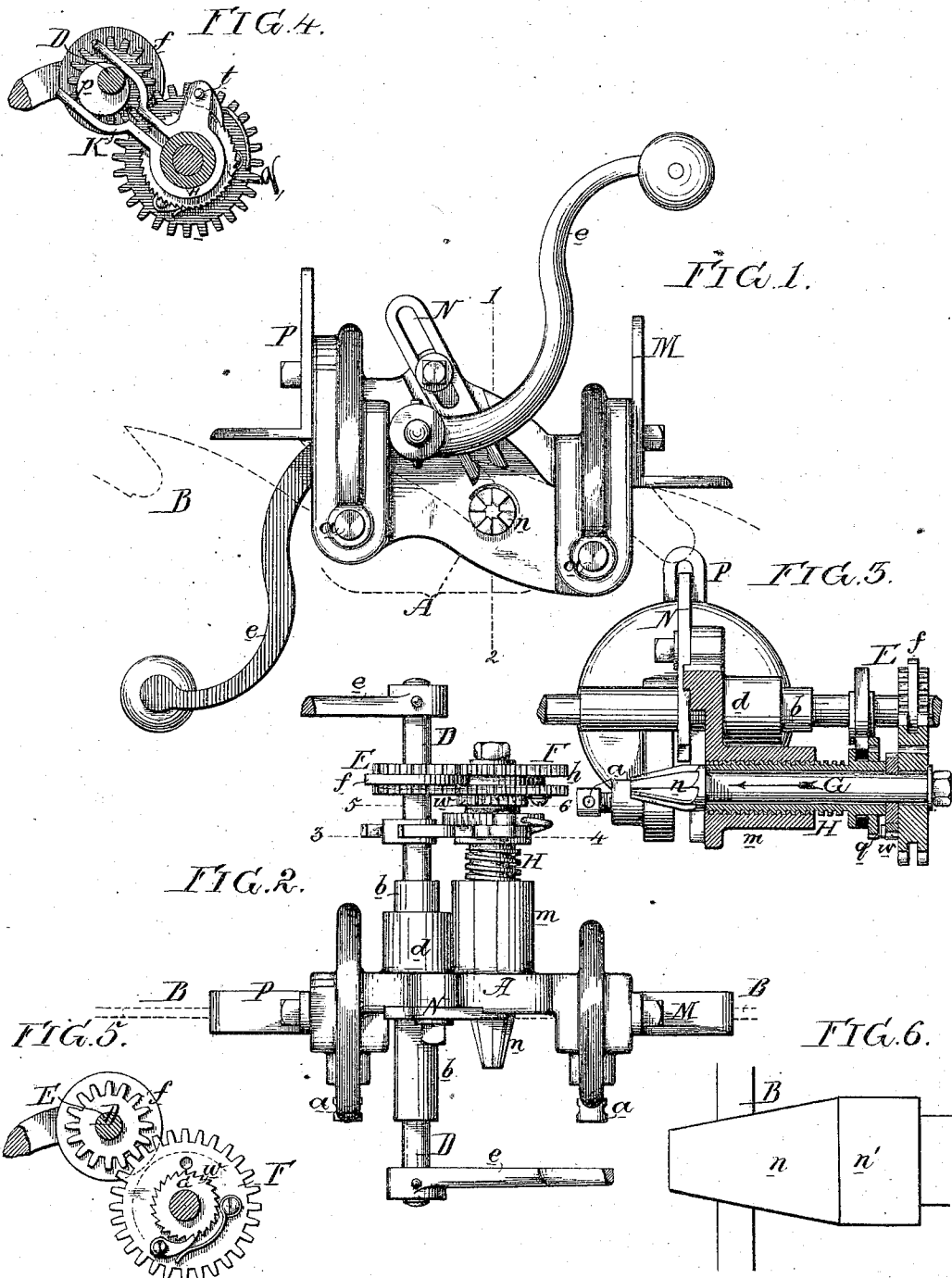


T. S. DISSTON.

Saw-Gummer.

No. 163,163.

Patented May 11, 1875.



Witnesses,

Harry Smith
Hubert Howson

Thomas S. Disston
by his Attyys.
Howson and Son.

UNITED STATES PATENT OFFICE.

THOMAS S. DISSTON, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO
HIMSELF AND HENRY DISSTON & SONS, OF SAME PLACE.

IMPROVEMENT IN SAW-GUMMERS.

Specification forming part of Letters Patent No. **163,163**, dated May 11, 1875; application filed
August 7, 1874.

To all whom it may concern:

Be it known that I, THOMAS S. DISSTON, of Philadelphia, Pennsylvania, have invented an Improved Saw-Gumming Machine, of which the following is a specification:

The object of my invention is to simplify and improve that class of saw-gumming machines in which a tapering rotary cutter is caused to traverse longitudinally across the edge of the blade in a direction parallel to the axis of the saw; and this object I accomplish in the following manner, reference being had to the accompanying drawing, in which—

Figure 1 is a side view of the saw-gumming machine; Fig. 2, a plan view; Fig. 3, a section on the line 1 2; Fig. 4, a section on the line 3 4, and Fig. 5 a section on the line 5 6.

The frame of the machine consists of a saddle, A, so constructed that it will fit freely over the blade of a circular saw, B, part of which is shown by dotted lines in Figs. 1 and 2, the saddle being secured to the blade by set-screws *a a*. In a sleeve or bush, *b b*, fitted to a projection, *d*, on the saddle, turns the driving-shaft D, furnished at each end with a suitable handle, *e*; and on this shaft is a pinion, E, gearing into a cog-wheel, F, on the tool-spindle, the pinion having a central collar or rib, *f*, adapted to a groove, *h*, in the wheel F, so that the pinion and wheel must always retain the same relative position. The tool-spindle G is arranged to turn freely in, but to have no longitudinal movement independent of, a tubular screw, H, the thread of which is adapted to an internal thread in a projection, *m*, on the saddle, as shown in Fig. 3.

The cutting-tool *n* at the end of the spindle G is of the tapering form represented throughout the greater portion of its length; but it assumes a cylindrical form where it is largest in diameter, (see diagram, Fig. 6,) the teeth of the cutter being similar to those of ordinary cutters—that is, inclined on one side and abrupt on the other.

On the driving-shaft D is an eccentric, *p*, adapted to the long arm of the forked bell-crank lever K, as shown in Fig. 4, the said

lever being hung loosely on the tubular screw H, to which is secured a ratchet-wheel, *q*; and to the teeth of the latter is adapted the spring-pawl *t*, so that on turning the driving-shaft D the tool-spindle G must also be turned, and must at the same time, owing to the turning of the tubular screw by the pawl and ratchet, be slowly fed forward in the direction of the arrow, Fig. 3, the driving-shaft D being carried in the same direction, owing to the character of the wheels E and F. If the feed should be too fast, and undue resistance be offered, therefore, to the passage of the cutter through the gullet of the saw-tooth, the forked portion of the lever K, which is made purposely elastic, will yield sufficiently to permit the rotation of the eccentric *p* without vibrating the said lever upon its fulcrum, and without, therefore, operating the pawl, so that the feed will cease for an instant until the resistance has decreased sufficiently to again permit a forward feed of the cutter through the medium of the devices described. If the cutter *n* be turned in the wrong direction the teeth are very liable to be broken or stripped; hence I secure to the tool-spindle G a ratchet-wheel, *w*, adapted to a pawl on the side of the wheel F, so that if the latter be turned in the wrong direction by a reverse movement of the handles the pawl will slip over the teeth of the ratchet-wheel without turning the latter or the cutter.

The machine is placed over the edge of a circular saw, B, as shown in Figs. 1 and 2, and is so adjusted that the rotating cutter will be opposite to the gullet of one of the teeth in a position determined by the amount of metal to be removed, after which the saddle is secured to the blade by the set-screws *a a*, and the operator turns the handles *e*, thereby turning the cutter and at the same time feeding it forward.

The tapering portion of the cutter *n* will first act on the blade, gradually removing the metal as it is fed forward (see diagram, Fig. 6) until the cylindrical portion *n'* of the cutter occupies a position opposite the blade and reduces the beveled cut to a straight cut.

The proper amount of metal having been

removed from the gullet of one tooth care should be taken while the machine is still in its place to so adjust the slotted bar M that its forked end will fit against the point of the tooth, the gullet of which has just been operated upon, the plate N being also so adjusted that it will rest on the point of another tooth, and the plate P may be adjusted to rest on the back of a third tooth. After these plates have been properly adjusted and secured after adjustment they will serve as positive guides for adjusting the machine to a proper position for removing from the gullet of another tooth an amount of metal similar to, and in the same position, as that removed from the gullet of the tooth first operated upon.

I claim—

1. The combination, in a saw-gummer, of the saddle A, provided with set-screws *a*, the driving-shaft D, tubular screw H, spindle G,

carrying the conical cutter *n*, turning in the tubular screw, and moving longitudinally with, but rotating independently of, the latter, and appliances, substantially as described, for communicating a rotary motion from the driving-shaft to the spindle, and a longitudinal motion from the latter to the driving-shaft, all as set forth.

2. The combination of the saddle A, its driving-shaft D, spindle G, and tubular screw H, the ratchet *q*, eccentric *p*, and the lever K, carrying a pawl, *t*, and having an elastic arm, as and for the purpose set forth.

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

THOS. S. DISSTON.

Witnesses:

WM. A. STEEL,
HUBERT HOWSON.