

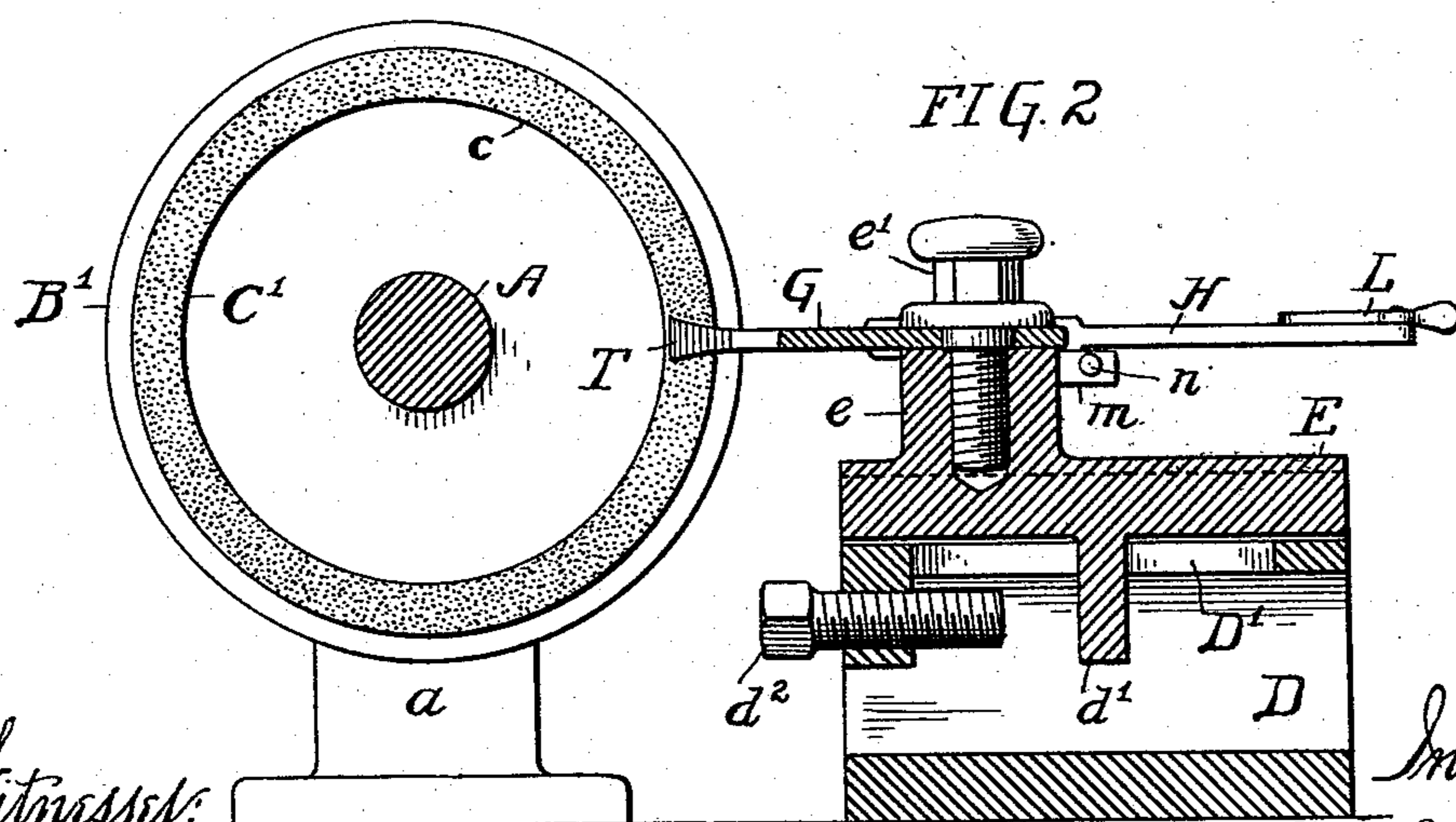
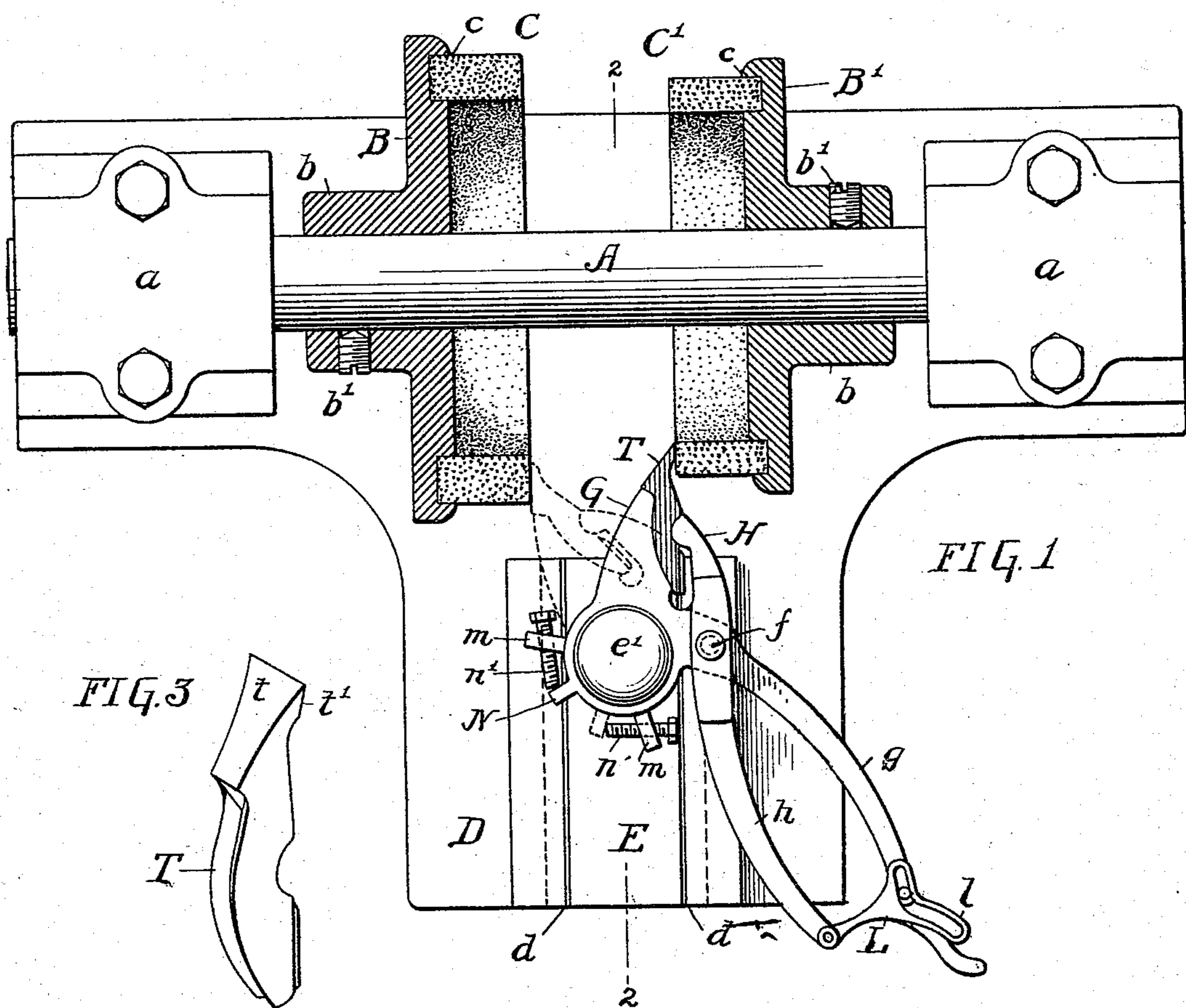
(No Model.)

J. BERRY.

MACHINE FOR SHARPENING INSERTIBLE SAW TEETH.

No. 543,458.

Patented July 30, 1895.



Witnessed: _____
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UNITED STATES PATENT OFFICE.

JOSEPH BERRY, OF PHILADELPHIA, PENNSYLVANIA.

MACHINE FOR SHARPENING INSERTIBLE SAW-TEETH.

SPECIFICATION forming part of Letters Patent No. 543,458, dated July 30, 1895.

Application filed September 21, 1894. Serial No. 523,705. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH BERRY, a citizen of the United States, and a resident of the city of Philadelphia and State of Pennsylvania, have invented a certain new and Improved Machine for Sharpening Insertible Saw-Teeth, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

The object of my invention is to provide an improved machine for sharpening insertible saw-teeth, the teeth being separately held between clutching-jaws and their opposite faces brought into contact with moving emery-wheels or other grinding-surfaces, as more fully set forth hereinafter.

In the accompanying drawings, Figure 1 is a plan view, partially in section, illustrating a machine constructed in accordance with my invention. Fig. 2 is a transverse sectional elevation of the same on the line 2 2, Fig. 1; and Fig. 3 is a perspective view of one form of insertible saw-teeth which may be sharpened upon the machine.

Referring to the drawings, A represents a rotated shaft mounted in suitable bearings *a* and provided with disks B B', the hubs *b* of which are provided with set-screws *b'* as a means of securing the hubs to the shaft A, so that on loosening the screws the disks may be adjusted lengthwise of the shaft and secured in any suitable position thereon. The adjacent faces of the disks B B' are each provided with annular grooves *c*, in which are held grinding-rings C C', molded of emery or other abrasive material into ring-like form, and the grinding-surfaces being upon the edges of the ring, so that as the grinding-surfaces wear away the adjustment of their carrying-disks upon the shaft will enable the operator to keep the grinding-surfaces or edges at all times in the same position.

In front of the grinding-ring is a block D, the upper surface of which is provided with dovetailed guideways *d*, extending at a right angle to the axis of the shaft A. In the guideways *d* is a slide E, from which depends a lug *d'*, extending through a slot D' in the block and at one limit of movement of the slide coming into contact with the end of the slot, while at the opposite end the lug comes into con-

tact with an adjustable screw *d''*, carried by the block D.

On the upper surface of the slide E is a post *e*, forming a support for the tooth-carrying jaws G H. The jaw G is somewhat larger than its fellow and is pivotally mounted upon the post *e* by a pin *e'* screwing into the post, while the jaw H is pivoted at *f* to the jaw G, so that the two jaws may swing upon the pin *e'* to present the tooth T which they carry to the opposite grinding-rings C C'.

The jaws G H are of a contour corresponding to the shape of the tooth to be ground, and as the outlines of the teeth vary somewhat the shape of the jaws is made to correspond, and if necessary entirely new jaws may be employed for teeth of different shape and size, the securing of the two jaws by means of the pin *e'* permitting the ready removal of one set of jaws and the substitution of a second set of different shape or size, while the manner of securing the emery-rings to the shaft A permits the adjustment of the rings to correspond to the size and shape of the tooth to be sharpened.

Beyond the pivot-point *f* of the two jaws are handles *g h*, which for convenience in holding the tooth during the sharpening process are held together by a link L, pivoted to one handle and carrying a handled cam *l* to engage with the opposite handle and lock the two jaws firmly upon the tooth which they carry, or the two handles may be connected by a tension-spring, if desired.

Projecting radially from the post *e* are lugs *m*, through which extend set-screws *n n'*, forming adjustable stops which engage with a radially-extending block N, carried by the jaw G, to limit the swinging or rotative movement of the jaws upon the pivot-pin *e'* and so prevent any excessive grinding of the teeth, the stop-screws *n n'* being first set in such manner that the swinging movement of the jaws upon the pivot *e'* until the block N engages with the stop-screw will be sufficient to give the requisite amount of grinding to the tooth.

In operation the shaft A with its emery-rings is revolved at a suitable speed, and the slide E having been drawn out to its fullest extent the jaws G H are opened and a tooth T inserted between them. The oper-

ator then grasps the handles *g h* and swings the jaws upon the pivot-pin *e'* until the block *N* comes into contact with the stop-pin *n'*. Then by means of the handles the slide *E*, carrying the jaws, is pushed in until the edge of the saw-tooth has passed completely over the face of the ring *C'*, the slide being moved to present the face *t'* of the tooth to be ground one or more times, as may be necessary, and after the grinding of the face *t'* the operator, still retaining his grasp upon the handles *g h*, turns the jaws until the block *N* comes into contact with the screw *n*, when the opposite face *t* of the tooth will be moved across the grinding-face of the emery-ring *C* and will be sharpened. In this manner the teeth may be rapidly sharpened, and as the opposite faces of the teeth are presented to a grinding-surface which at all times is kept level the faces of the teeth are ground perfectly flat and need no retouching or finishing upon other grinding or sharpening surfaces, as is the case where the teeth are ground upon a round or uneven surface. In passing the faces of the teeth across the faces of the rings *C C'* the grinding-surfaces are for their entire area given precisely the same amount of work and always maintain an even and level surface, while as they wear the adjustment of the disks upon the shaft *A* will enable the operator to keep the grinding-surfaces in substantially the same position.

The stops *n n'*, by engaging with the block *N*, will insure the even grinding of all of the teeth, as the distance from the center of the pivot-pin *e'* from the point of contact between the tooth and the grinding-surface of the emery-wheel cannot vary, and when all of the sharpened teeth are properly assembled in the saw-disk all of the teeth will have precisely the same radial projection and their cutting-edges at the junction of the faces *t t'* will be at the same distance from the center of the saw.

Having thus described my invention, what

I claim, and desire to secure by Letters Patent, is—

1. In a machine for sharpening insertible saw teeth, the combination of two grinding rings having edge grinding surfaces, a shaft carrying such grinding rings, a supporting frame, guideways therein, a slide, *E*, adapted to such guideways, a post on said slide, handled tooth carrying jaws pivoted to said post, a locking clamp for holding said jaws together, and adjustable stops for limiting the swinging movement of the jaws on said post, substantially as specified.

2. In a machine for sharpening insertible saw teeth the combination of the shaft, *A*, the adjustable grinding rings, *C, C'*, mounted upon said shaft, means for locking said grinding rings in position on the shaft, the block, *D*, guideways, *d*, formed therein, a slide, *E*, adapted to said guideways, stops for limiting the longitudinal movement of said slide, *E*, a post, *e*, on said slide, a pivot pin, *e'*, in said post, lugs, *m*, adjustable stop screws, *n, n'*, carried by said lugs, a handled jaw, *G*, pivotally secured to the post, *e*, by the pin, *e'*, a block, *N*, carried by the jaw, *G*, and adapted to engage with the stop screws, and a second jaw, *H*, having a handle, *h*, pivoted to the jaw, *G*, and a link, *L*, for securing the said jaws on the tooth to be ground.

3. The combination of the two grinding rings, a guided slide, *E*, movable toward and from said rings, a post, *e*, on said slide, lugs, *m*, adjustable stop screws, *n, n'*, carried by said lugs, a jaw, *G*, pivoted to said post, a block, *N*, carried by said jaw, *G*, and adapted to engage with the stop screws, and a second jaw, *H*, pivoted to the jaw, *G*, substantially as specified.

In witness whereof I have hereunto set my hand this 15th day of September, A. D. 1894.

JOSEPH BERRY.

Witnesses:

JNO. E. PARKER,
ALFRED LEGGAE.