

(No Model.)

E. S. STIMPSON.

Machine for Setting Teeth in Temple Rollers.

No. 230,674.

Patented Aug. 3, 1880.

Fig: 1.

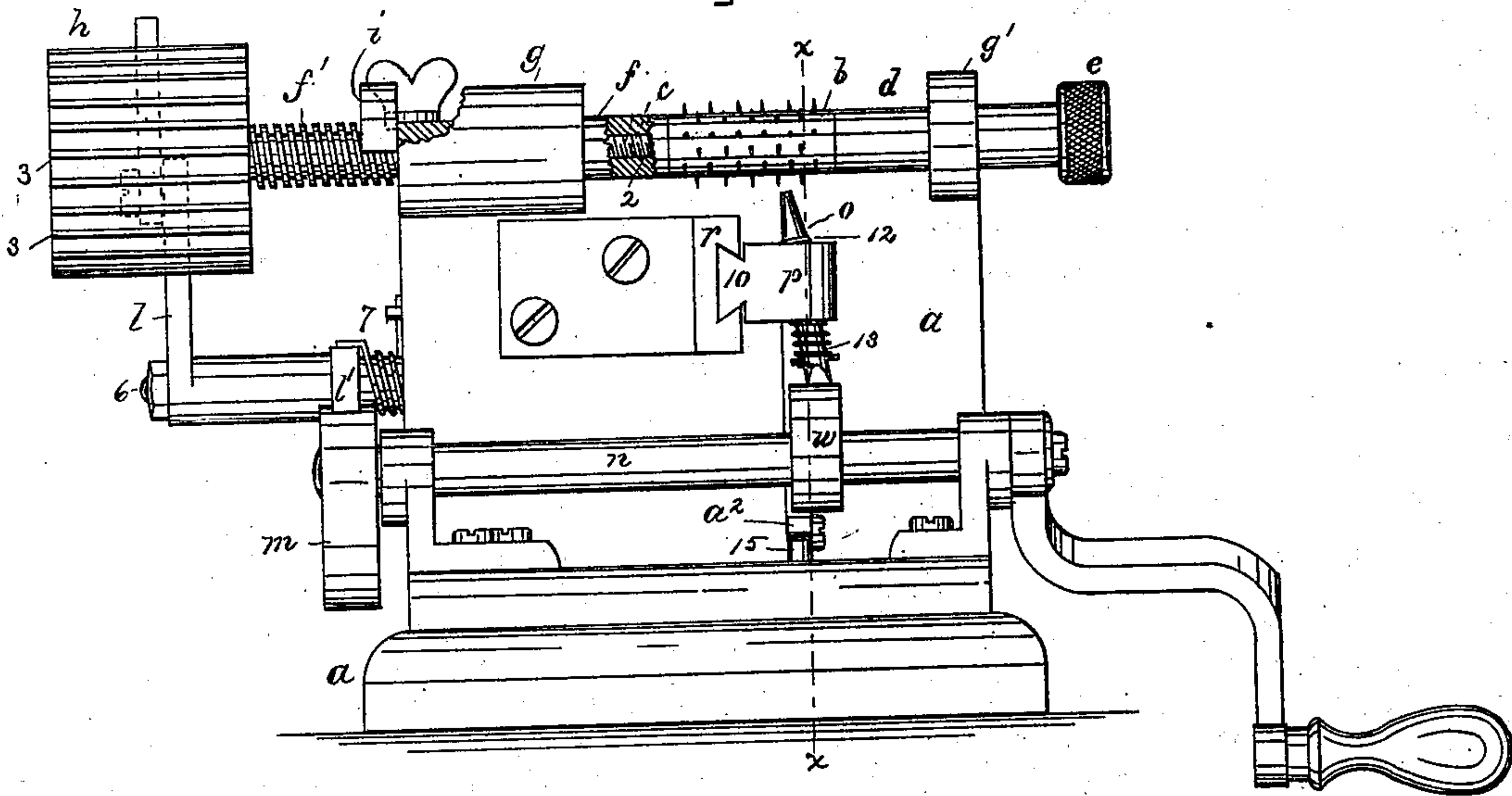


Fig: 2.

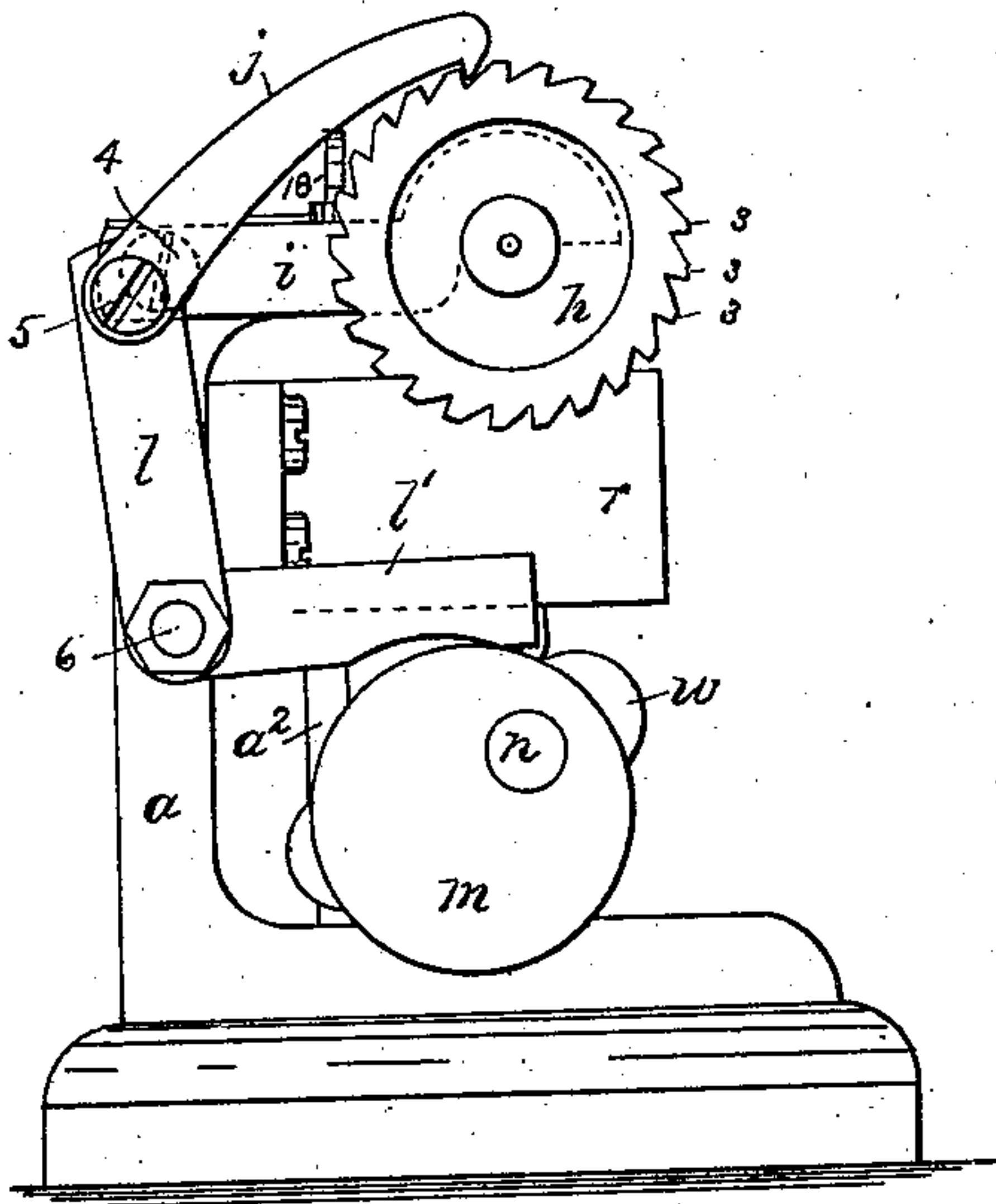
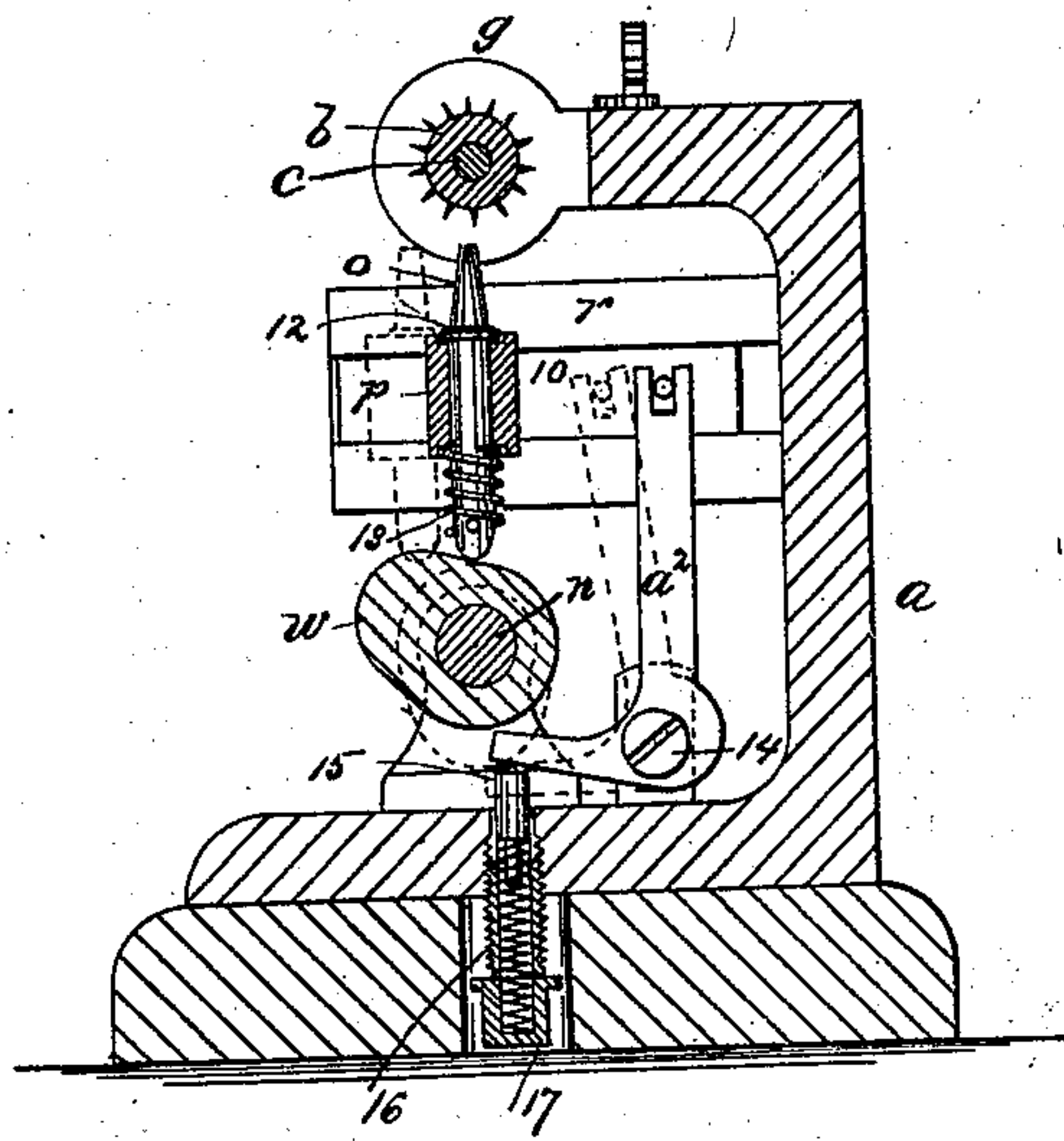


Fig: 4.



Fig: 3.



WITNESSES.

U. F. Connor
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INVENTOR -
Edward S. Stimpson,
by Crosby & Gregory Attys

UNITED STATES PATENT OFFICE.

EDWARD S. STIMPSON, OF HOPEDALE, MASSACHUSETTS, ASSIGNOR TO
DUTCHER TEMPLE COMPANY, OF SAME PLACE.

MACHINE FOR SETTING TEETH IN TEMPLE-ROLLERS.

SPECIFICATION forming part of Letters Patent No. 230,674, dated August 3, 1880.

Application filed May 12, 1880. (No model.)

To all whom it may concern:

Be it known that I, EDWARD S. STIMPSON, of Hopedale, county of Worcester, State of Massachusetts, have invented an Improvement in Mechanism for Setting Teeth in Temple-Rollers, of which the following description, in connection with the accompanying drawings, is a specification.

This invention relates to mechanism for setting teeth in temple-rollers; and it consists, essentially, in a tooth-carrying setting-punch provided with a tooth-receiving opening, a reciprocating carriage, in which the said punch is mounted and is free to slide, and means to reciprocate the said punch and carriage, combined with a rotating roller-carrying spindle and means to change the relative positions of the temple-roller and punch, to enable the punch to set the teeth in the roller in desired position from end to end of the roller.

In a patent of the United States heretofore granted to N. Chapman, No. 168,719, and re-issued No. 7,477, to which reference may be had, a transferrer made as a pair of forceps and having a reciprocating and oscillating motion received a tooth from a tooth-carrier and presented it in position opposite the temple-roller shell, after which a driver struck the said tooth and drove it into the said shell. So, also, I am aware that a magnetized punch has been employed to set the teeth in wooden temple-roller shells.

The object of my invention is the production of an efficient mechanism, which shall be less complicated and expensive than the machine described in the patent first referred to, which shall be certain and positive in its operation, and which shall be substantially an automatic machine, except as to feeding the punch with teeth.

In this my machine the roller-shell is clamped by an intermittingly and longitudinally reciprocating spindle, which, during its movements, rotates the roller-shell step by step, and moves it in the direction of its length at the proper speed to insure placing the holes drilled separately in the roller-shell in proper position above the tooth-carrying setting-punch, the same being made to rise and fall in its carriage, which is moved longitudinally at the proper times to

place the punch in position to receive a tooth from the hand of the operator, and then to move the punch backward to a position substantially under the roller-shell and below the center line of the said shell, in order that the said punch, as it next rises, may set the tooth carried by it into the said shell.

The punch herein shown has a tapering opening properly shaped to receive the tapering or conical part of the sharp end of the tooth, the said opening being shaped substantially as in hand-operated punches for this business, so as to avoid dulling the points of the teeth to be set by the punch.

Figure 1 represents, in front elevation, a temple-roller tooth-setting machine containing my invention; Fig. 2, a left-hand end view of Fig. 1; Fig. 3, a section of the temple-roller or shell-carriage and some other parts on the dotted line *xx*, Fig. 1, the punch being shown in elevation; and Fig. 4 is an enlarged longitudinal section of the tooth-carrying setting-punch removed from the machine.

In the drawings, *a* represents the framework of the machine, which may be of any suitable shape to properly sustain the working parts. The temple-roller or shell *b*, bored centrally, is placed upon the reduced part *c* (see Fig. 3) of the spindle, the said reduced part being fixed to the half *d* of the spindle, provided with a milled head, *e*, by which to turn it and enable the screw-threaded outer free end of the reduced part *c*, extended through the said roller, to be entered into a corresponding screw-threaded opening in the end 2 of the other part, *f*, of the spindle. (See Fig. 1.) In this way the roller or shell may be held securely between the shoulders of the said compound spindle *d f c*. This compound spindle is placed loosely in the bearings *g g'*, so as to be slid therein, as hereinafter described. Before the roller is so mounted upon the said spindle it is drilled with holes in the proper places. The outer end of the part *f* of the spindle outside the bearing *g* is screw-threaded, as at *f'*, and has fixed to it a pattern-wheel or ratchet, *h*, in length substantially as long as the roller or shell *b*, and provided with a series of teeth in number corresponding with the number of temple-teeth to be set in

any one annular row of teeth. This pattern-wheel or ratchet *h* rests close to the threaded half-nut *i*, pivoted to the frame by the screw 4. (See dotted lines, Fig. 2.) When the first 5 tooth is to be set in the roller, and just after setting each tooth, a pawl, *j*, pivoted at 5 upon a rocking lever, *l*, having its fulcrum at 6 and having its arm *l'* depressed by the spring 7, is acted upon by the cam *m* on the rotating shaft 10 *n* and made to turn the said ratchet, spindle, and roller for one step, it at the same time moving longitudinally in its bearings *g g'* by the action of the half-nut on the screw *f'*, as it is obvious to one conversant with the usual 15 plan of setting teeth in temple-rollers is necessary.

The punch *o*, provided at its upper end with an opening, 8, (see Fig. 4,) to receive the pointed end of the tooth (placed therein by 20 the operator) to be set by the said punch into one of the series of holes in the said roller, is held in a diagonal passage made for it in a carriage, *p*, having at one side of it a tongue or rabbet, 10, to enter a corresponding groove 25 or way in the projection or guideway *r*. The tooth carrying and setting punch has a shoulder, 12, which comes to a seat upon the said carriage as the punch is lowered by the spring 13 upon its shank. The punch is raised when 30 in the position Fig. 3 by means of the cam *w* on the shaft *n*. The carriage is moved outward to bring the punch to the front, as in dotted lines, Fig. 3, to be supplied with a tooth by means of the lever *a*², pivoted at 14, it being herein shown as having its short arm acted 35 upon for such purpose by the cam *w*.

The lever and carriage are moved in the opposite direction, to return the carriage, by the stud or pin 15 and spring 16, made adjustable 40 as to its force by the recessed nut 17, that supports the foot of the said spring.

The thumb-nut 18 is employed to hold the half-nut down in place as the spindle is being rotated and moved longitudinally. After a 45 roller has been set with teeth the set-nut 18 is moved aside, so as to permit the half-nut to be lifted, which leaves the spindle free to be drawn

back toward the right to its starting-point, when the roller may be removed by separating the spindle, a new roller supplied, and the half- 50 nut again engaged with and locked to the screw *f'*.

In this apparatus the punch is inclined at such angle with relation to the axis of the temple-roller and is so placed as to hold the temple-tooth by reason of gravity while the tooth 55 actuated from below the roller is being set.

I claim—

1. In a temple-roller tooth-setting machine, the guided carriage, combined with the tooth- 60 carrying and tooth-setting punch held in the said carriage, and with means, substantially as described, to operate the said punch and reciprocate the said carriage, whereby a tooth placed in the tooth-receiving opening in the 65 end of the said punch may be set by the said punch into the roller, substantially as described.

2. The spindle to sustain and hold the roller or shell firmly, and screw-threaded at *f'*, as 70 described, the pattern-wheel or ratchet fixed to the said spindle, and means, substantially as described, to both intermittingly rotate and progressively move forward the said spindle and roller, combined with a reciprocating 75 tooth carrying and setting punch to set the teeth carried by it into the temple-roller or shell, substantially as described.

3. The spindle to hold the temple-roller while it is being rotated, combined with a temple- 80 roller tooth-setting punch placed below the axis of the roller, the punch retaining the tooth to be set by the gravitation of the latter, and means, substantially as described, to reciprocate the punch to force the tooth held by 85 it into the roller, 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.

EDWARD S. STIMPSON.

Witnesses:

F. J. DUTCHER,
E. D. BANCROFT.