

(No Model.)

E. ERICKSON.  
SOLE ROUNDING MACHINE.

No. 591,593.

Patented Oct. 12, 1897.

FIG. 1.

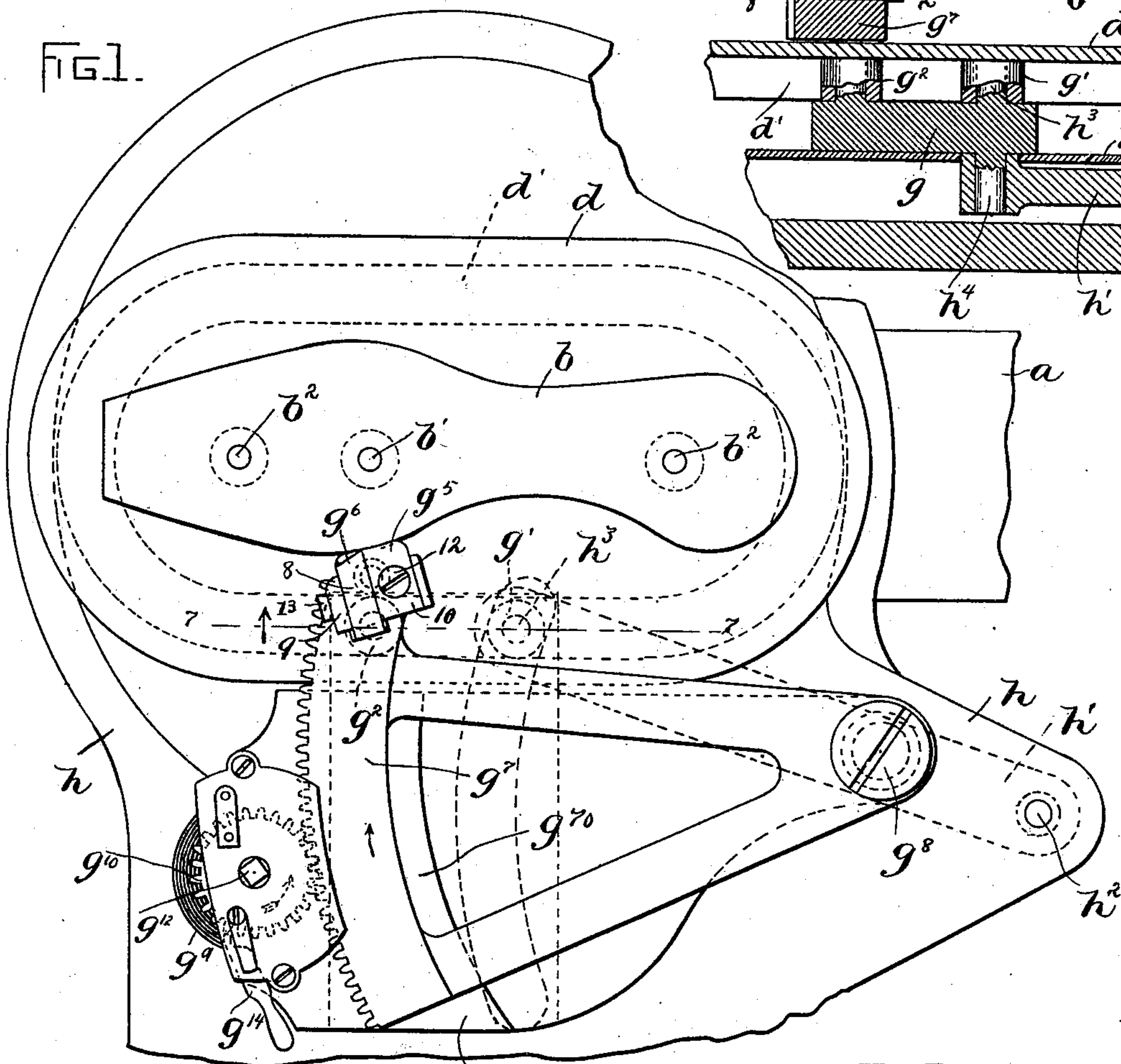


FIG. 7.

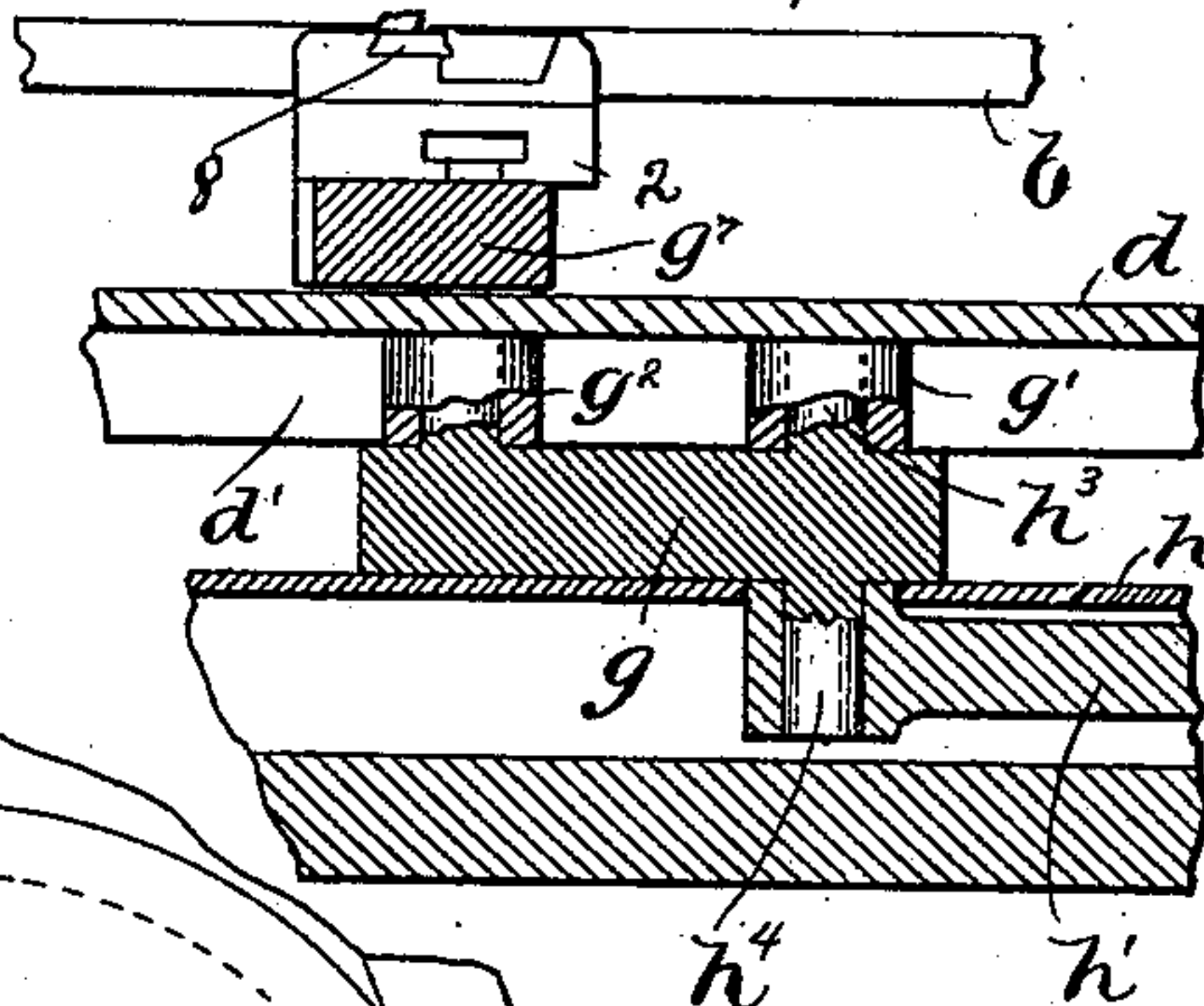


FIG. 2.

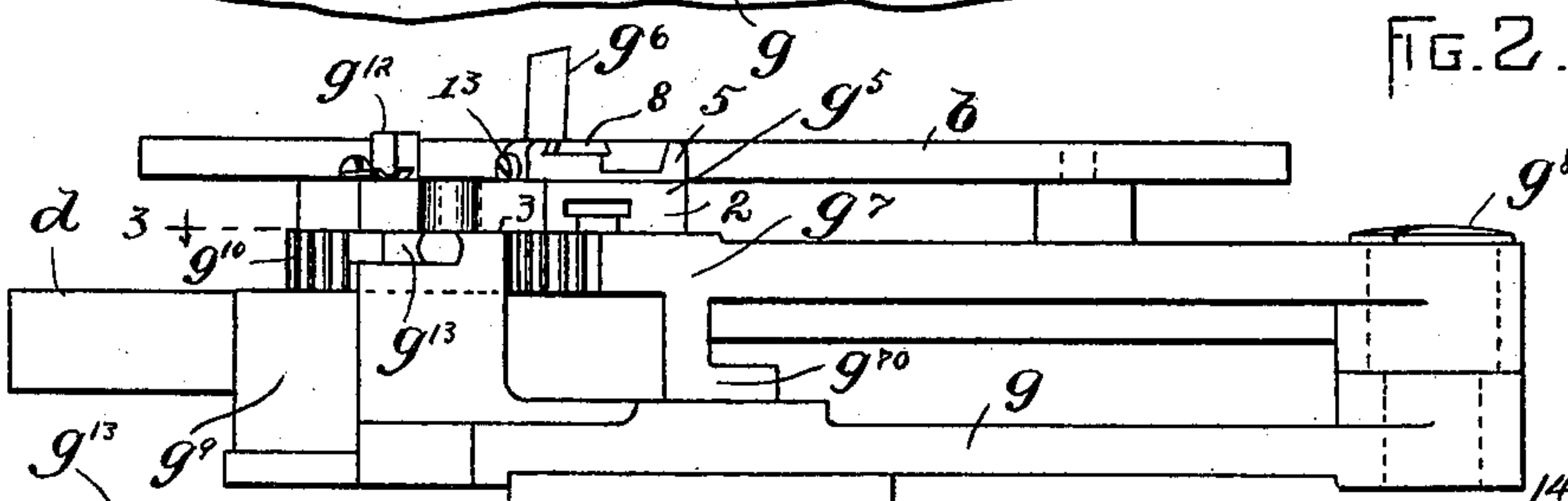
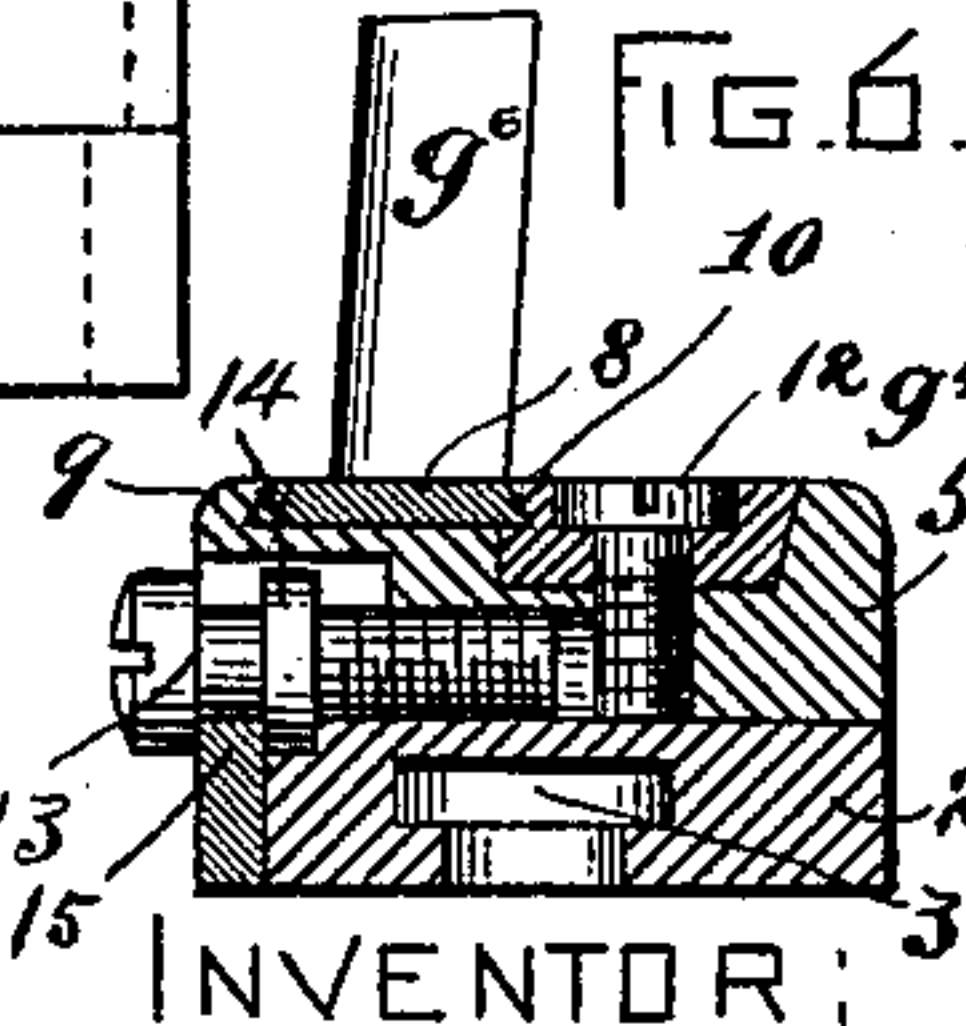


FIG. 6.



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FIG. 3.



FIG. 4.

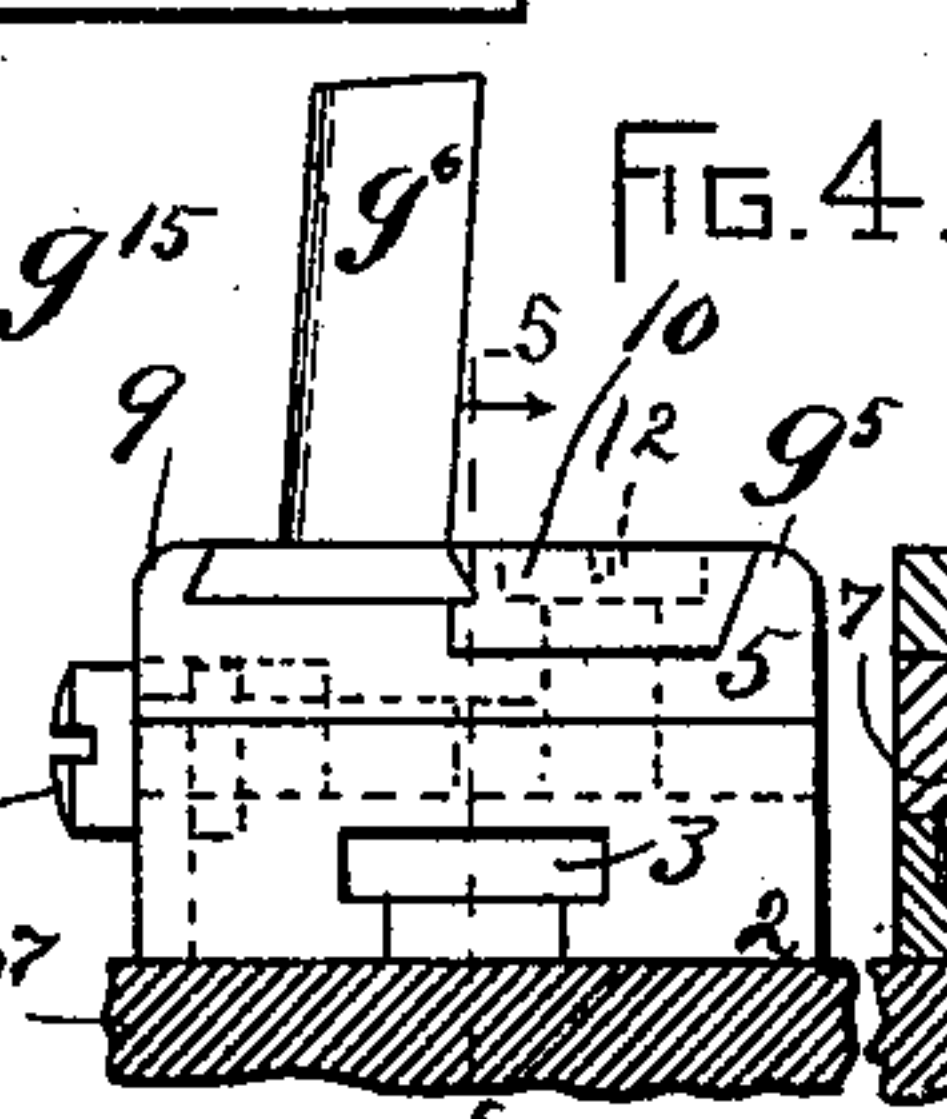
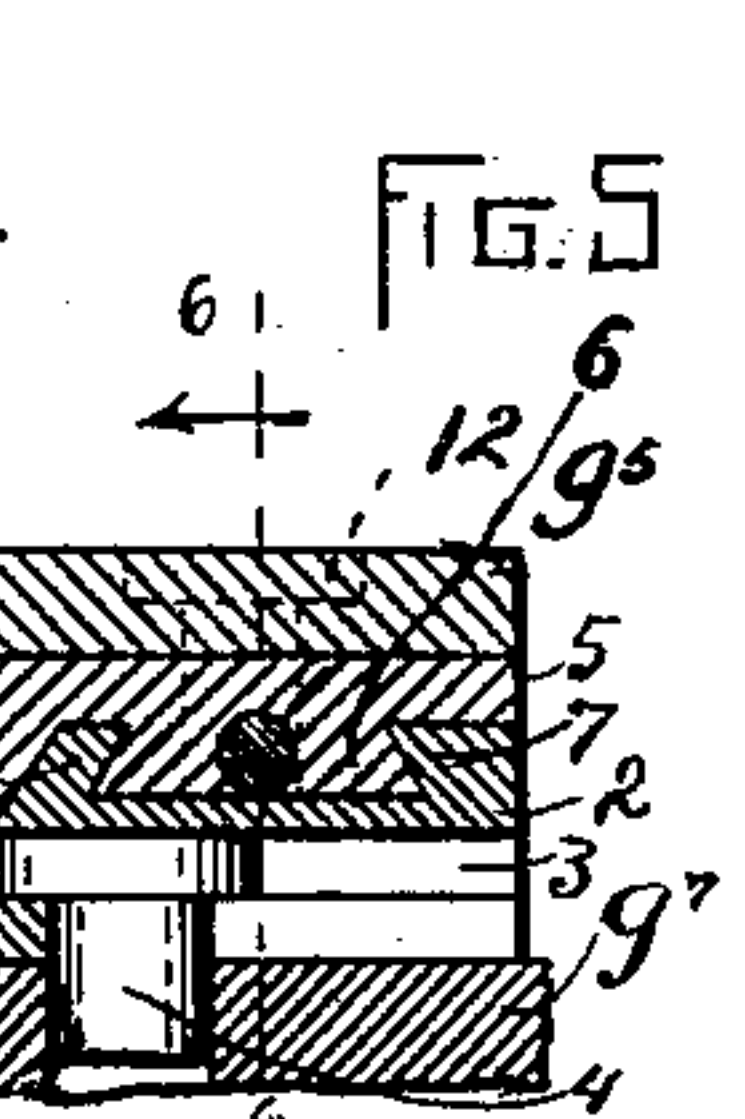


FIG. 5.





# UNITED STATES PATENT OFFICE.

EDWARD ERICKSON, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO THE  
FLAGG MANUFACTURING COMPANY, OF SAME PLACE.

## SOLE-ROUNDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 591,593, dated October 12, 1897.

Application filed March 12, 1896. Serial No. 582,902. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD ERICKSON, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Sole-Rounding Machines, of which the following is a specification.

This invention relates to a sole-rounding machine of the character shown in Letters Patent of the United States No. 527,676, dated October 16, 1894. Said machine comprises a fixed pattern, a fixed cam-plate having an approximately elliptical cam-groove, a knife-carrier guided by said groove around the pattern, a rotating driver which is coupled to the knife-carrier and moves the latter, and a knife-holder which is movable independently on the knife-carrier and is held by spring-pressure against the pattern.

The present invention consists in certain improvements, hereinafter described and claimed, relating to the knife-holder-supporting slide on the carrier and to the knife-holder.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a top plan view of portions of a sole-rounding machine embodying my improvements. Fig. 2 represents a side view of the knife-holder. Fig. 3 represents a top view of a part of the machine. Fig. 4 represents a rear view of the knife-holder. Fig. 5 represents a section on line 5 5 of Fig. 4. Fig. 6 represents a section on line 6 6 of Fig. 5. Fig. 7 represents a section on line 7 7 of Fig. 1.

The same letters and numerals of reference indicate the same parts in all the figures.

In the drawings, *a* represents a part of the supporting-frame.

*b* represents the fixed pattern, which is secured to the supporting-frame.

*d* represents the fixed cam-plate, which is secured to the frame immediately under the pattern and has an elliptical cam-groove *d'*.

*h* represents the driver, which rotates upon the supporting-frame and imparts motion to the knife-carrier to move the same about the pattern in a path determined by the shape of the groove *d'*.

*g* represents the knife-carrier, which is adapted to slide on the upper surface of the

driver and is provided with two rolls *g'* *g''*, which run in the cam-groove *d'*. The carrier is connected with the driver by a link or coupling *h'*, (shown in dotted lines in Fig. 1,) said link being connected at one end with the carrier *g* by a stud *h''*, Fig. 7, and at the other end with the driver *h* by a stud *h'*, Fig. 1. The parts above mentioned are or may be constructed to operate like the parts similarly designated in the patent above mentioned, to which reference may be had for a fuller description.

The rounding or trimming knife *g''* is secured to a knife block or holder *g'''*, which is pivotally connected with the swinging end of an oscillating slide *g''*. Said slide is pivoted at *g''* to an arm or extension on the carrier *g*, the pivotal point *g''* being arranged to permit a movement of the knife-holder and knife in the arc of a circle toward and from the pattern *b*. The slide *g''* has on its under side a segmental foot or shoe *g''*, which slides on the upper surface of the carrier *g*. The slide *g''* is pressed yieldingly inward to hold the knife in yielding contact with the pattern by a spring *g''*, acting on the slide through a gear or pinion *g''*, the shaft *g''* of which is journaled in bearings on the carrier *g*, and a gear-segment *g''*, formed on the slide *g''* and meshing with the said pinion. One end of the spring *g''* is affixed to the carrier *g* and the other end to the pinion *g''*, the spring being arranged to rotate the pinion and move the slide *g''* in the direction indicated by the arrows in Fig. 1. The pinion *g''* may be locked to hold the slide and knife away from the pattern when it is so desired by means of a dog *g''*, pivoted at *g''* and formed to engage the teeth of the pinion and lock the latter, so that the operator may first pull back the slide *g''* until the knife is separated from the pattern and then lock the slide to hold the knife in its retracted position.

The knife block or holder *g'''* has a flat bottom surface adapted to move upon the flat top surface of the slide *g''* and a slot 3, formed to receive a headed stud 4, affixed to said slide, one end of the slot being closed and forming a bearing-surface adapted to rock on the stud to give the knife-holder the freedom of movement required to enable the knife to follow



the curves of the pattern, the stud and the closed end of the slot constituting a pivotal connection between the slide  $g^7$  and the knife-holder. At the same time the slot, which is  
 5 open at the rear side of the knife-holder, enables the knife-holder to be readily removed from the slide by first moving the latter away from the pattern and then slipping the knife-  
 10 toward the pattern, there being no positive connection between the knife-holder and the slide.

The knife-holder comprises a bottom section or base 2, in which the slot 3 is formed,  
 15 and an adjustable top section 5, having a dovetail projection 6, movable between guides 7 7 on the section 2, said top section being movable in the direction required to adjust the cutting edge of the knife forward and  
 20 compensate for its wear, it being desirable that the cutting edge be kept as close as possible to the center of the independent swinging motion of the knife-holder on the slide  $g^7$ . The knife  $g^6$  is formed on or affixed to a shank  
 25 8, which is secured to the adjustable section by gibs 9 10 on said section, the gib 10 being movable and secured by a screw 12. 13 represents an adjusting-screw having a screw-thread connection with the adjustable section  
 30 5 and engaged with the section 2 by means of a collar 14 on the screw and a shoulder 15 on said section, so that rotation of the screw adjusts the section 5 and the knife. It will be seen that the rotation of the driver  $h$  moves  
 35 the tool-carrier  $g$  about the pattern, the cam-groove  $d'$  guiding the tool-carrier in its course. The pivotal connection of the tool-holder-supporting slide to the tool-carrier enables said slide to move in and out as required by the  
 40 curves of the pattern with but little frictional resistance as compared with a slide having a rectilinear movement between straight guides

on the carrier. The connection between the spring and the swinging end of the slide  $g^7$  through the pinion  $g^{10}$  and rack-segment  $g^{13}$  45 enables the spring to be compactly arranged in spiral form and at the same time to exert its force advantageously on the slide  $g^7$ .

I claim—

1. In a sole-rounding machine of the character specified, the combination with the fixed pattern, the fixed cam-plate, and the rotary driver, of the knife-carrier engaged as described with the cam-plate and driver, a slide pivoted at one end to the carrier and having 50 a rack-segment at its swinging end, a pinion journaled on the carrier and meshing with the said segment, a spring arranged to impel the pinion, a locking device on the carrier adapted to lock said pinion, and a knife- 60 holder engaged with the swinging end of the slide.

2. In a sole-rounding machine, the combination with the spring-pressed slide having a stud, of a knife-holder having a slot which is 65 open at the rear side of the holder to receive said stud and has a closed end within the holder forming a bearing for the stud.

3. In a sole-rounding machine, the combination with the spring-pressed slide having a 70 stud, of a knife-holder having a slot which is open at the rear side of the holder to receive said stud and has a closed end within the holder forming a bearing for the stud, a knife secured to said holder, and means for adjust- 75 ing the knife relatively to the said bearing.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 10th day of March, A. D. 1896.

EDWARD ERICKSON.

Witnesses:

C. F. BROWN,

A. D. HARRISON.