

(No Model.)

2 Sheets—Sheet 1.

D. KNOX.  
LEATHER SPLITTING MACHINE.

No. 388,419.

Patented Aug. 28, 1888.

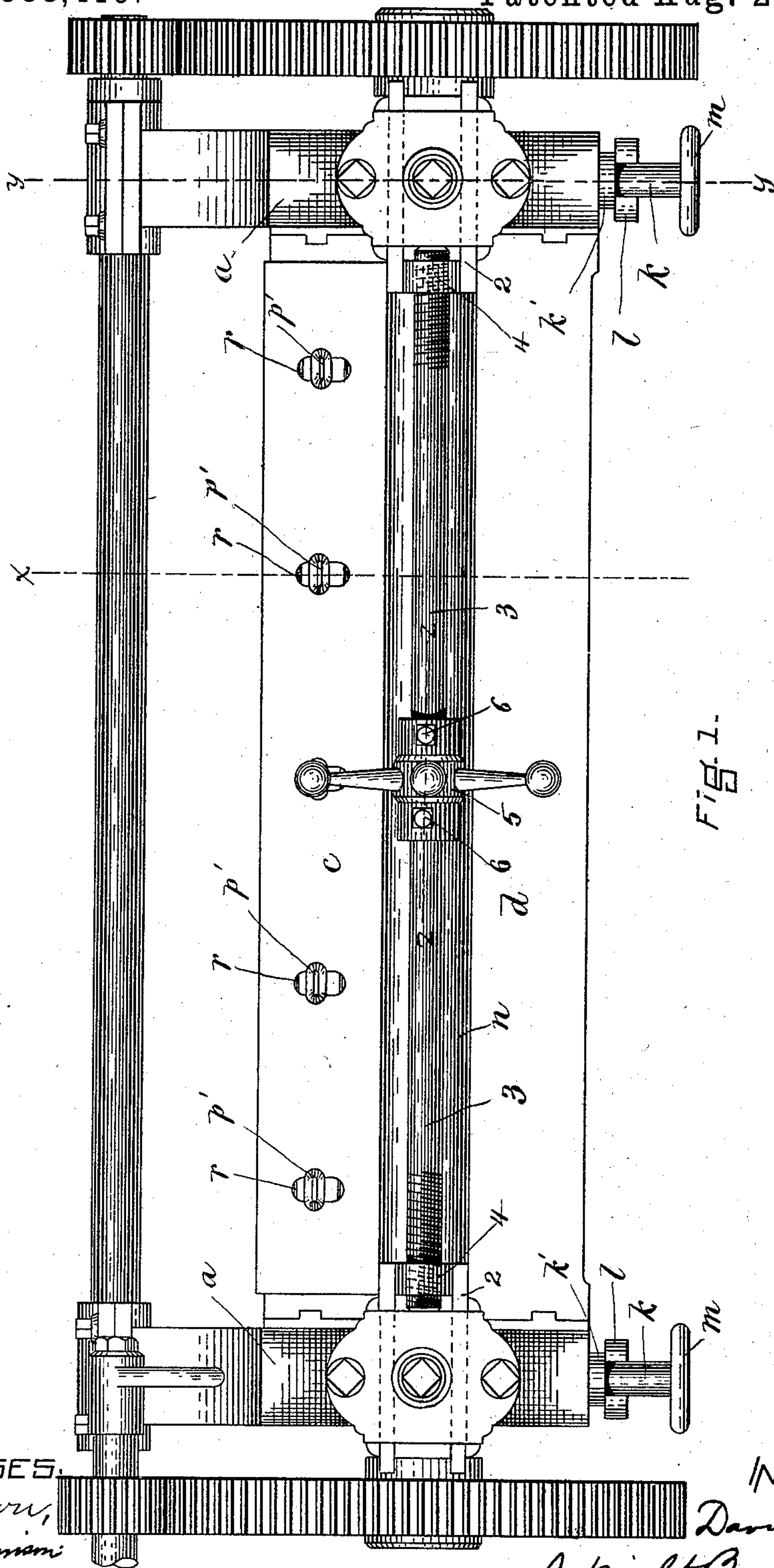


Fig. 1.

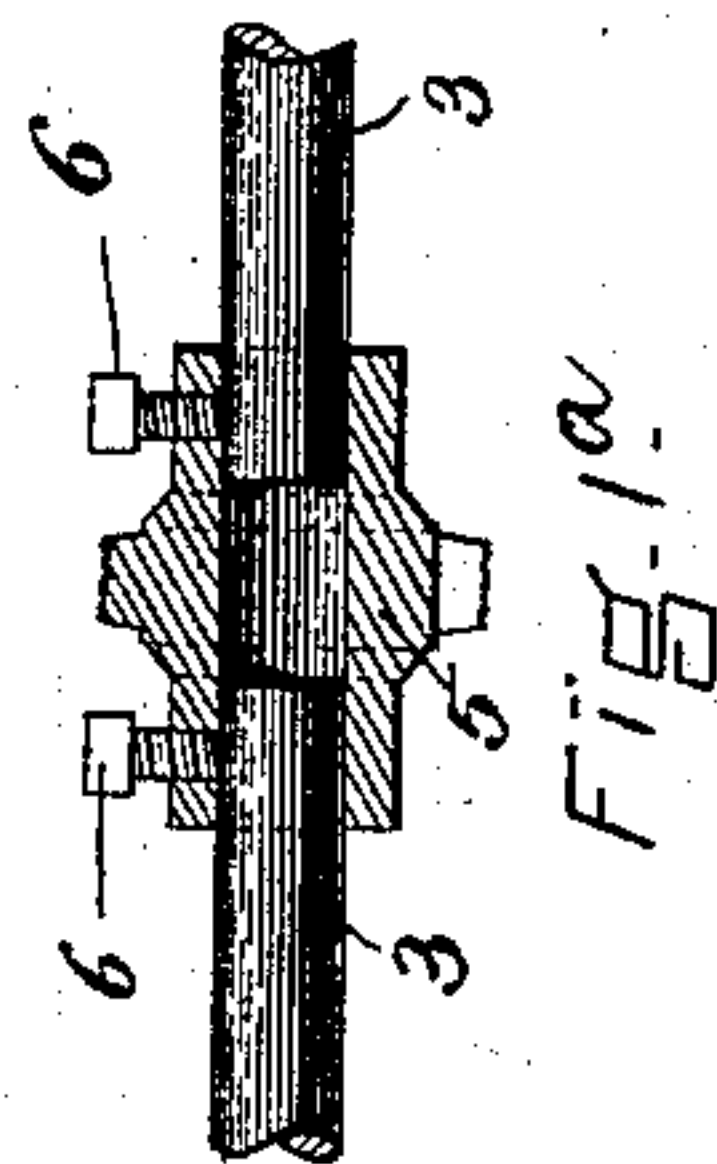


Fig. 1a.

WITNESSES.

H. Brown,  
A. D. Hamman

INVENTOR.

David Knox,  
By Wright & Brown, Attys.

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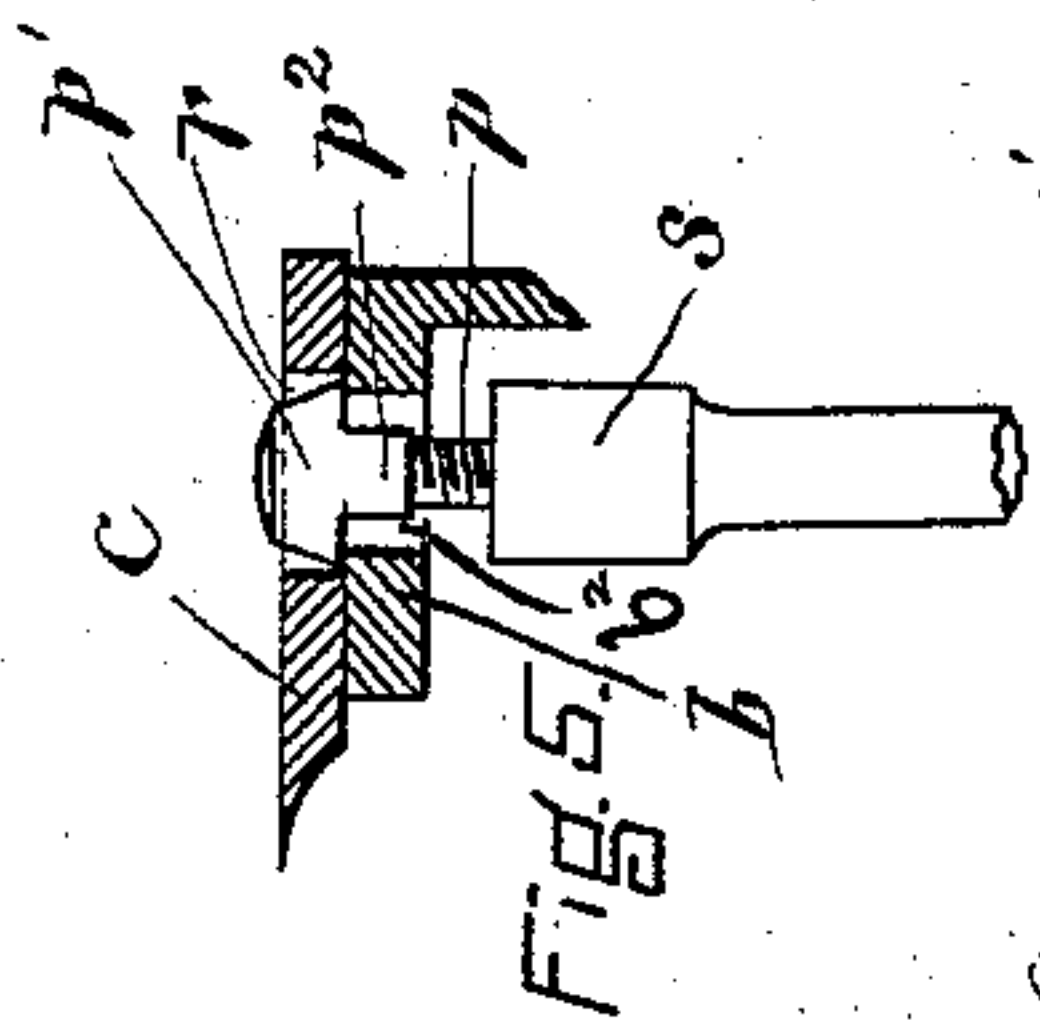
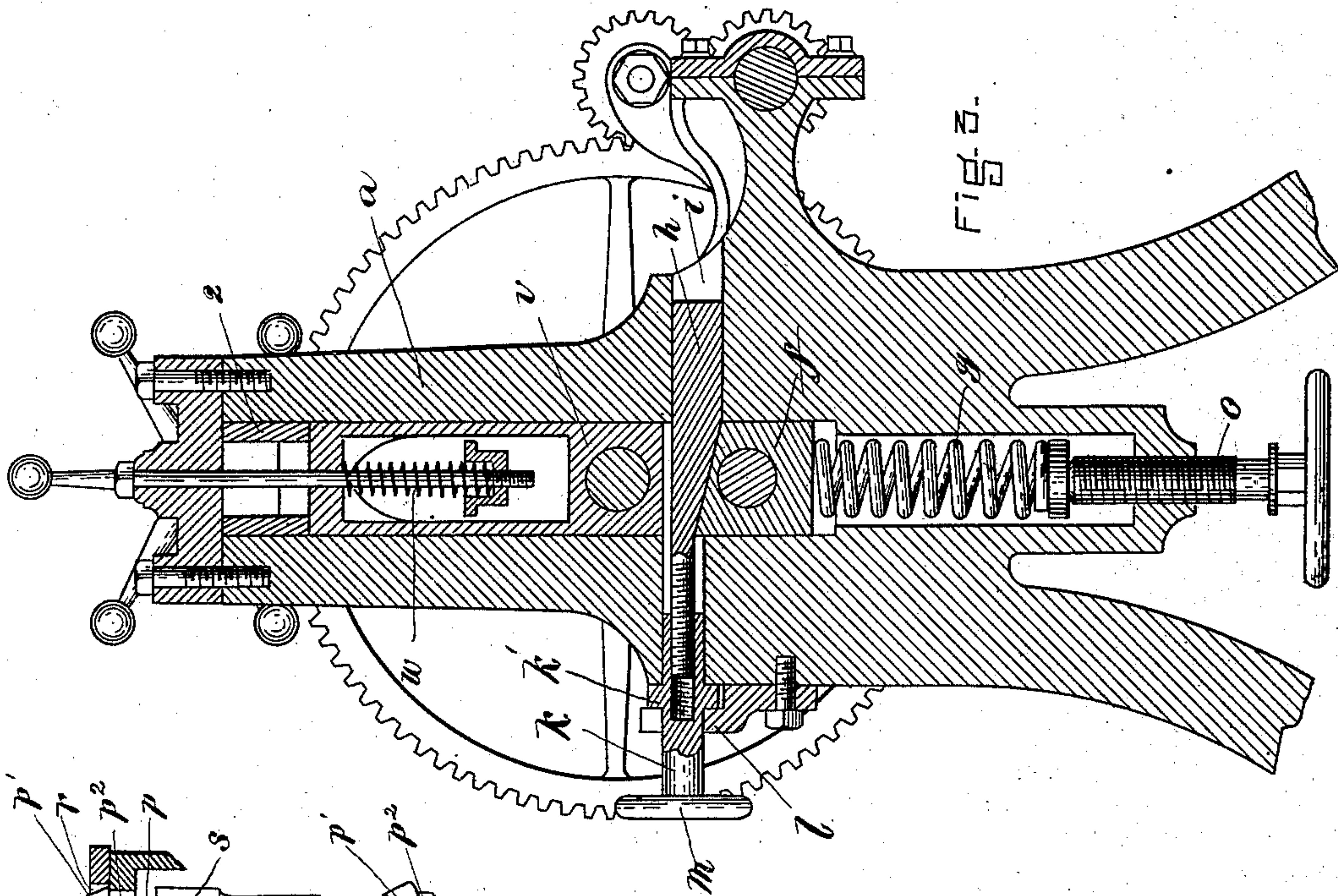


FIG. 5 1/2.

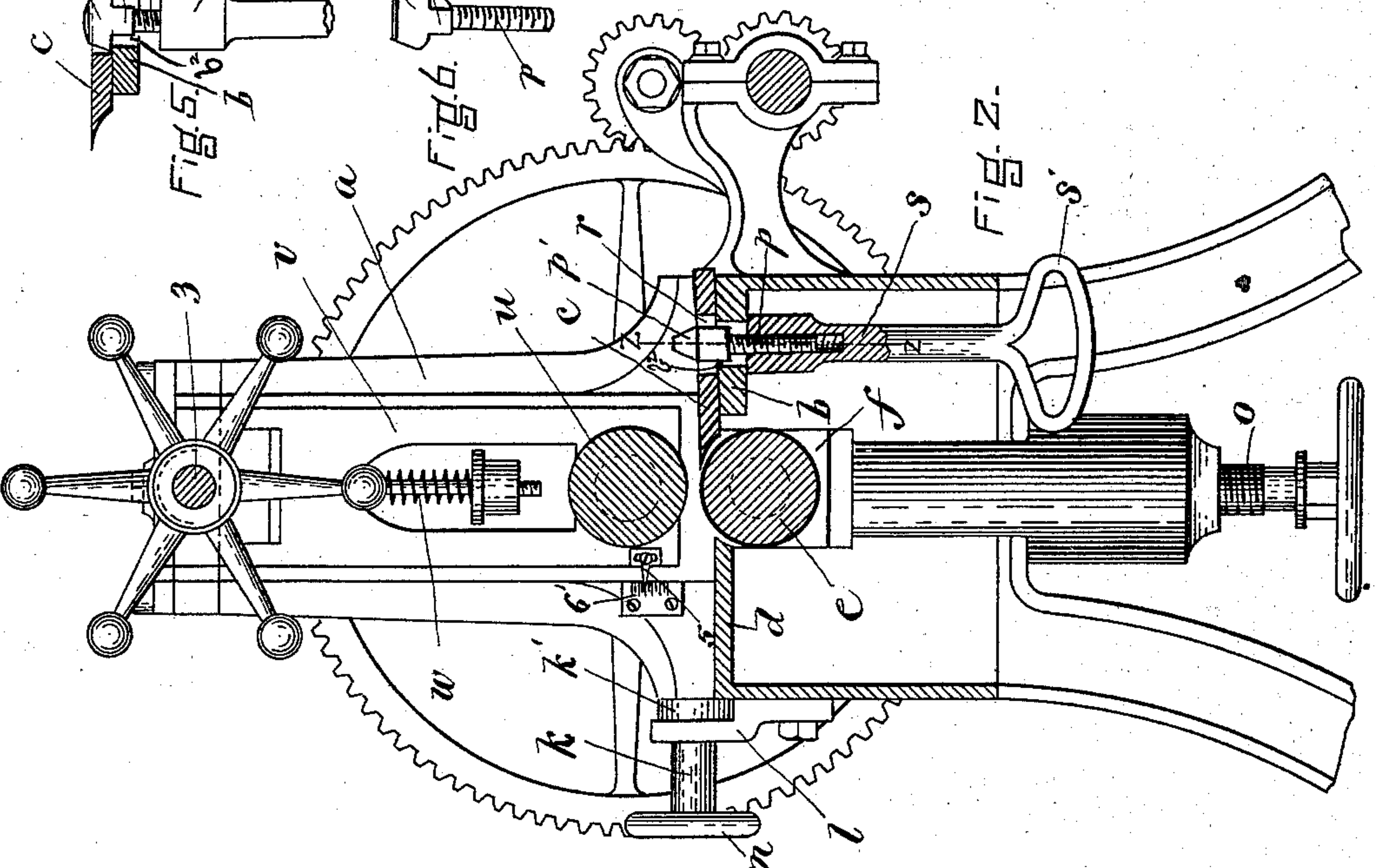


FIG. 2.

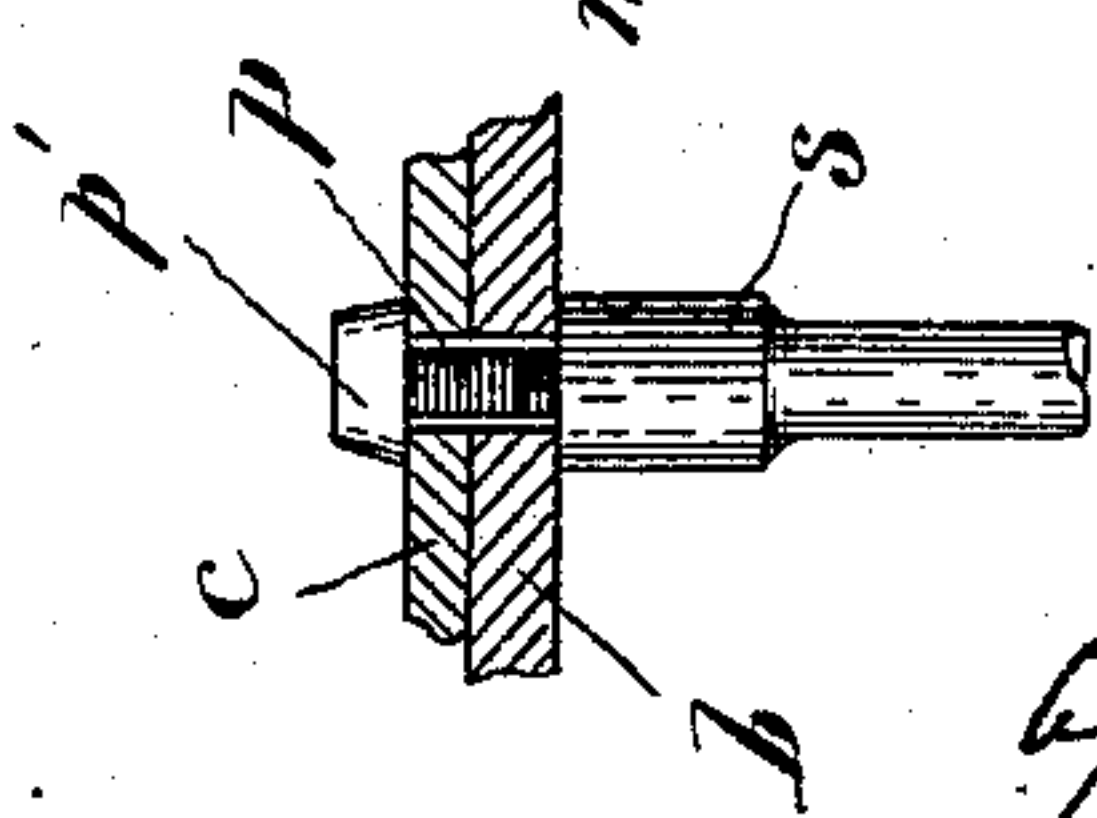


FIG. 4.

WITNESSES.  
H. Brown.  
A. D. Harrison.

INVENTOR.  
David Knox.  
by Knight Brown & Son  
Attys.



# UNITED STATES PATENT OFFICE.

DAVID KNOX, OF LYNN, MASSACHUSETTS.

## LEATHER-SPLITTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 388,419, dated August 28, 1888.

Application filed January 7, 1888. Serial No. 260,042. (No model.)

*To all whom it may concern:*

Be it known that I, DAVID KNOX, of Lynn, in the county of Essex and State of Massachusetts, have invented certain new and useful  
5 Improvements in Leather-Splitting Machines, of which the following is a specification.

This invention relates to machines which are used to split or even soles or other pieces of leather.

10 It is the object of my invention to provide a machine of the class named in which all the devices for adjusting and regulating the machine for splitting the leather shall be separate and distinct from each other and of the simplest possible construction; also, to so construct the slots in the knife and the bolt-heads  
15 which hold the knife that the knife can be much more conveniently released from the frame of the machine and reattached thereto; also, to provide a scale graduated and marked  
20 to all the thicknesses of edge desired to make on the soles, and a pointer on the bearing which holds the upper roll so that the operator can adjust the upper roll which gages the  
25 thickness of the sole or other piece of leather to be split at once and very exactly, and thus avoid waste of time and leather.

To the foregoing ends my invention consists in the several improvements which I will now  
30 proceed to describe, and subsequently point out in the claims.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a top view of a machine having my improvements. Figs. 2 and 3 represent, respectively,  
35 views on lines *x x* and *y y*, Fig. 1, looking toward the left. Fig. 4 represents a section on line *z z*, Fig. 2. Fig. 5 represents a transverse section of the knife and its supporting-bed, showing the bolt turned and its head  
40 dropped into the slot of the knife and resting on the knife-bed. Fig. 6 represents a perspective view of one of the bolts. Fig. 1<sup>a</sup> represents a section on line *z z*, Fig. 1.

45 In the drawings, *a a* represent the ends of the frame of the machine. *b* represents the bed which supports the splitting-knife *c*, and *d* represents the bed which supports the leather in front of the lower roll, *e*, the beds *b d* being  
50 suitably attached to the end pieces of the frame and separated by the space in which the lower roll, *e*, is located. The lower roller

is journaled in boxes *f f*, which are adapted to slide in vertical guides in the frame ends *a a*, and are pressed upwardly by springs *g g* 55 against wedge-bars *h h*, which are movable in horizontal slots *i* in the frame ends *a*. The wedge-bars *h* terminate in screw-threaded bolts which are engaged with swiveled nuts *k*, said nuts being secured to the frame of the 60 machine by recessed lugs *l*, attached to the end pieces *a a*, and fitting shoulders or enlargements *k'* on the nuts *k k*. By rotating the nuts *k k*, by means of hand-wheels *m* thereon, the wedge-bars are moved forward or back- 65 ward and are thus caused to either depress the boxes *f f* or permit the upward movement of said boxes. There are two of the wedge-bars *h*, one for each box *f*, and said bars are independently adjustable, so that the roll *e* 70 can be raised or lowered at either end independently. In practice the adjustments of the lower roll are always very slight, and are only such as may be required by the slight differences in thickness which may exist be- 75 tween a new knife and the old one for which it is substituted, or any slight variation between the thickness of the knife at one end and its thickness at the other end.

It is very important that the cutting-edge of 80 the knife be close to and exactly parallel with the upper portion of the lower roll, and as the differences in thickness above mentioned in the knife are in practice unavoidable the importance of independent adjusting devices for 85 both ends of the lower roll, which devices are independent of all other adjustments, not easily disarranged and on which there is practically no wear, will be apparent.

The springs *g g*, which press the boxes *f f* 90 upwardly against the wedge-bars *h h*, are adjusted by means of screws *o o*, working in tapped sockets in the frame ends *a a*.

The knife *c* is secured to the bed *b* by means of headed bolts *p*, passing through oblong slots 95 *r* in the knife, and nuts *s*, engaged with said bolts and bearing against the under side of the bed *b*. The heads *p'* of the bolts *p* are oblong, and are formed so that when turned at right angles with the slots *r* they will extend across 100 said slots, as shown in Figs. 1 and 4; but when turned in line with the slots they will drop into the same, as shown in Fig. 5, and rest on the bed *b*, the slots *b'* in which are not large



enough to permit the heads  $p'$  to pass through them. It will be seen, therefore, that when the knife is to be removed the nuts  $s$  are unscrewed sufficiently to loosen the heads  $p'$ , and the bolts are then turned until their heads  $p'$  drop into the slots  $r$ , whereupon the knife may be removed, the bolts and nuts remaining in place on the bed  $b$ , ready to be again engaged with the knife; hence there is no liability of misplacement of parts, as there would be if the knife-securing devices were separated from the machine.

The bolts  $p$  have square portions  $p^2$  just under their heads, which fill the width of the slots  $r$  and prevent the bolts from turning with the nuts  $s$  when the latter are being turned to tighten or loosen the bolts  $p$ . The nuts  $s$  have handles  $s'$ , whereby they may be conveniently grasped and rotated.

The upper roll,  $u$ , is journaled in boxes  $v v$ , which are adapted to slide in guides in the frame ends  $a a$ , and are pressed upwardly by springs  $w$  against wedges 2, which are adjusted in unison by a shaft having at one end right-hand screw-threads engaged with a tapped lug, 4, on one of the wedges 2, and at the other end a left-hand screw-thread engaged with a tapped lug, 4, on the other wedge 2. Said shaft is composed of two sections, 3 3, which sections are detachably secured to the socketed hub of a hand-wheel, 5, by set-screws 6 6. When the sections 3 3 are secured to the said hub, they are rotated in unison by the rotation of the hand-wheel, and are thus caused to simultaneously adjust the wedges 2 2. Either section 3 may be adjusted lengthwise independently of the other section by releasing its set-screw and turning the hand-wheel, which will then rotate only the section 3 to which it remains attached, and moves only the wedge engaged with the attached section. In this way I am enabled to adjust the top roll to the edge of the knife, in order that the piece of leather split may be of exactly the same thickness at each end.

To one of the upper roll-boxes I attach a pointer or index, 5, which projects over a graduated scale-plate, 6', attached to the end piece  $a$  in which said box is located. By means of the pointer and scale-plate the exact distance between the upper and lower roll is clearly indicated, so that the operator can determine in advance the exact thickness which will be given the leather by any adjustment of the upper roll without being obliged to experiment, and thus waste time and material.

I claim—

1. In a leather-splitting machine, the combination of the supporting-frame, the splitting-knife thereon, the adjustable upper roll,  $u$ , the lower roll mounted in spring-supported boxes, and the independently adjustable wedge-bars arranged above the boxes and supporting the same against the upward pressure of their springs, whereby said boxes may be adjusted independently.

2. The combination, with the knife and the lower roll and its boxes, of the springs  $g g$ , whereby said boxes are pressed upwardly, the wedge-bars  $h h$ , located above said boxes in slots extending across the end pieces of the frame and terminating in threaded bolts, and the adjusting-nuts  $k k$ , engaged with said bolts and with the frame of the machine, said wedge-bars supporting the boxes against the upward pressure of their springs and enabling the boxes to be independently adjusted, as set forth.

3. The combination, with the knife and the lower roll and its boxes, of the springs  $g g$ , whereby said boxes are pressed upwardly, the wedge-bars  $h h$ , located above said boxes in slots extending across the end pieces of the frame and terminating in threaded bolts, the adjusting-nuts  $k k$ , engaged with said bolts and with the frame of the machine, said wedge-bars supporting the boxes against the upward pressure of their springs and enabling the boxes to be independently adjusted, and the screws  $o$ , whereby the tension of the springs  $g$  may be adjusted to correspond with adjustments of the wedge-bars, as set forth.

4. The combination of the knife-bed having slots or apertures  $b^2$ , the knife having slots  $r$ , made longer than the slots  $b^2$ , the bolts  $p$ , having oblong heads formed to enter said slots  $r$ , but of greater length than the slots  $b^2$ , whereby, when said heads are in the slots  $r$ , they will be supported by the bed, and the nuts  $s$ , engaged with said bolts and adapted to bear on the under side of the bed, as set forth.

5. The combination of the knife-bed, the knife having oblong slots, the bolts having oblong heads adapted to fit said slots, and the square portions which prevent the bolt from turning in the slots, and the nuts adapted to engage said bolts and having handles, all arranged and operating substantially as described.

6. In a leather-splitting machine, the combination, with the knife, the lower roll, and the adjustable upper roll, of a pointer or index movable with the upper roll, and a fixed scale or graduated plate on the frame of the machine, as set forth.

7. In a leather-splitting machine, the combination, with the knife, the upper roll, and the wedges whereby the upper roll is adjusted, of the two-part screw-threaded rod engaged, as described, with said wedges, and the connecting device or hub to which the parts or sections of the screw-threaded rod are detachably secured, whereby the said wedges may be independently adjusted, as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 3d day of January, 1888.

DAVID KNOX.

Witnesses:

C. F. BROWN,  
A. D. HARRISON.