

(No Model.)

2 Sheets—Sheet 1.

J. H. RYDER.
SOLE BUFFING MACHINE.

No. 464,232.

Patented Dec. 1, 1891.

FIG. 2.

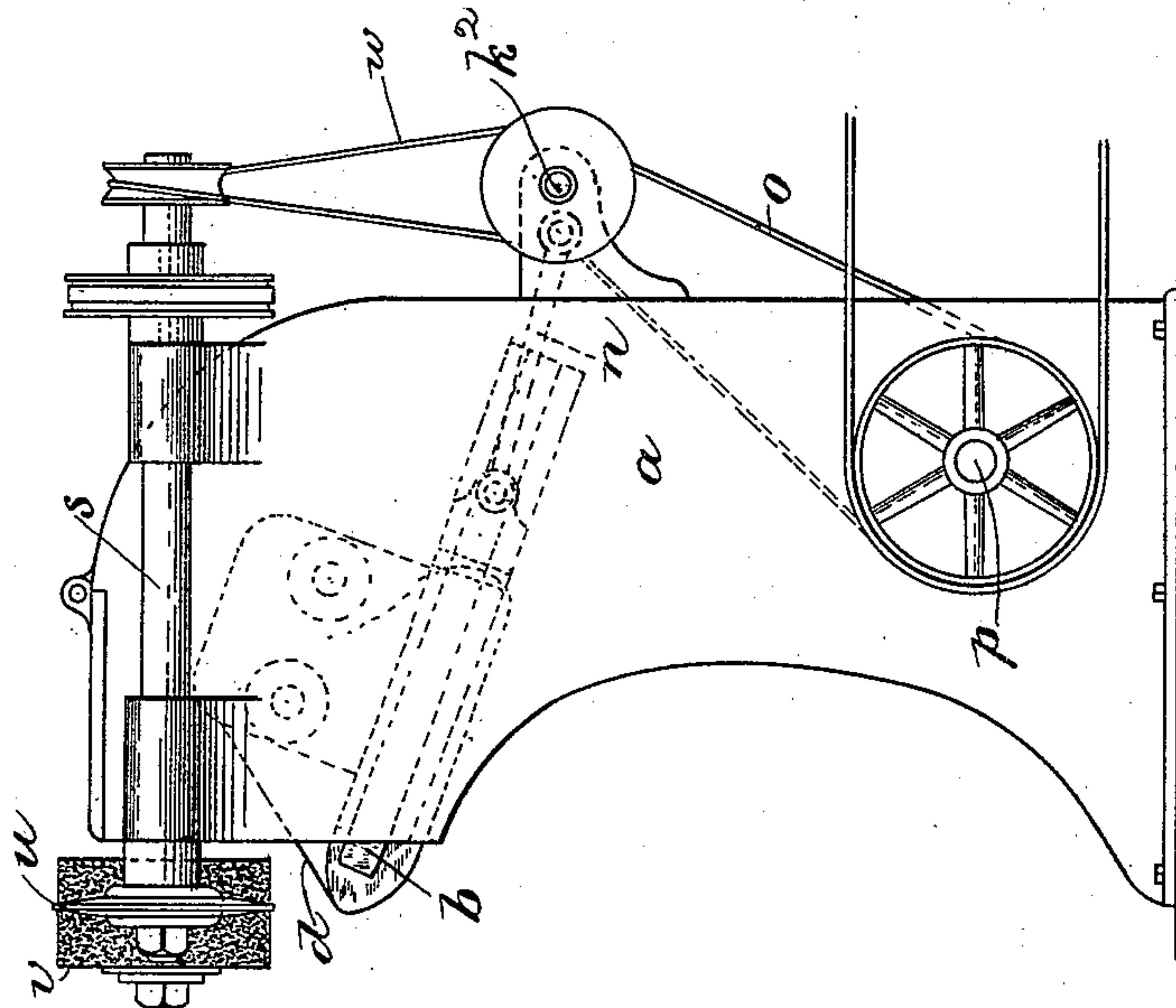
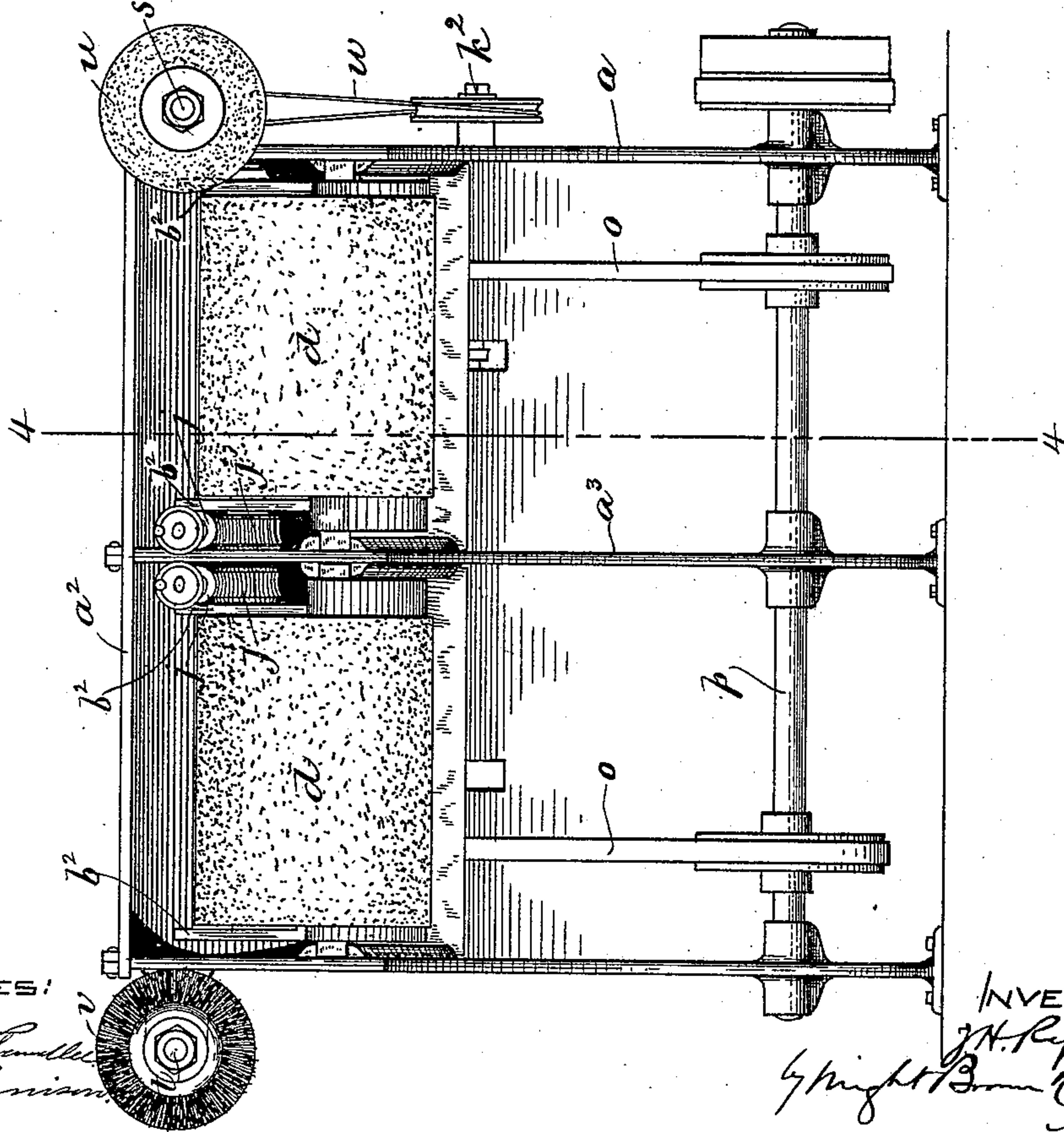


FIG. 1.



WITNESSES:

Geo. H. Hammett
A. D. Harrison

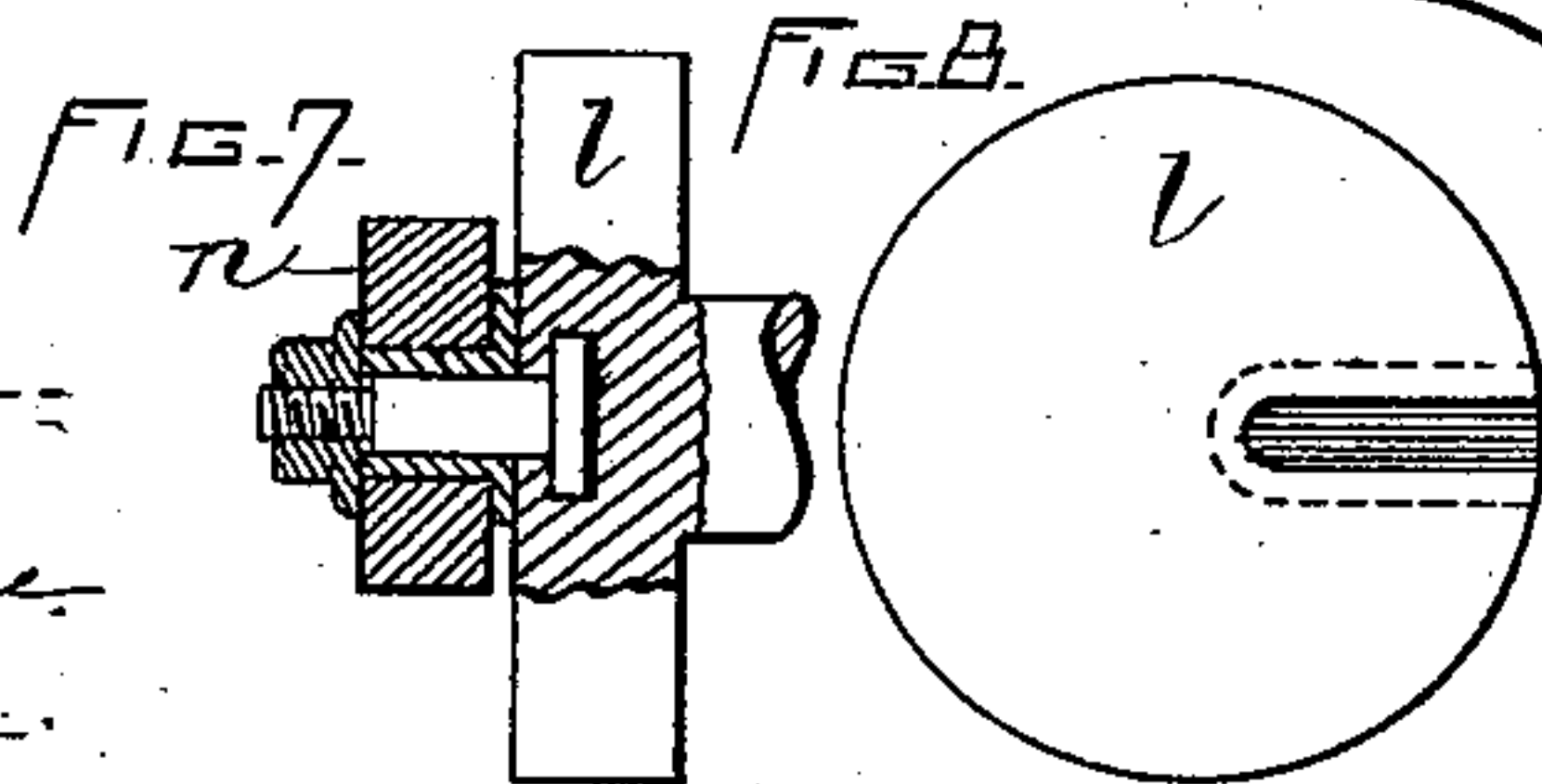
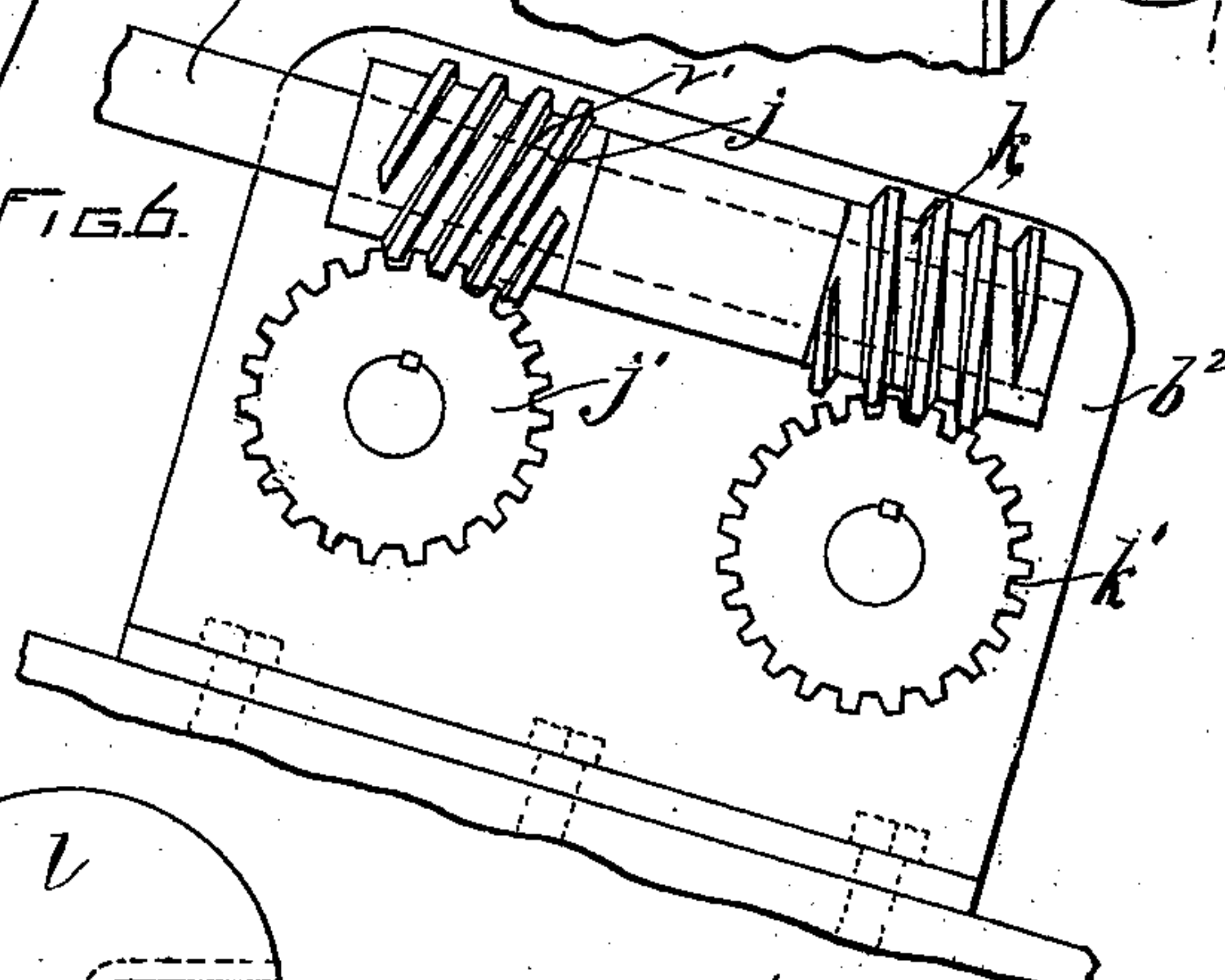
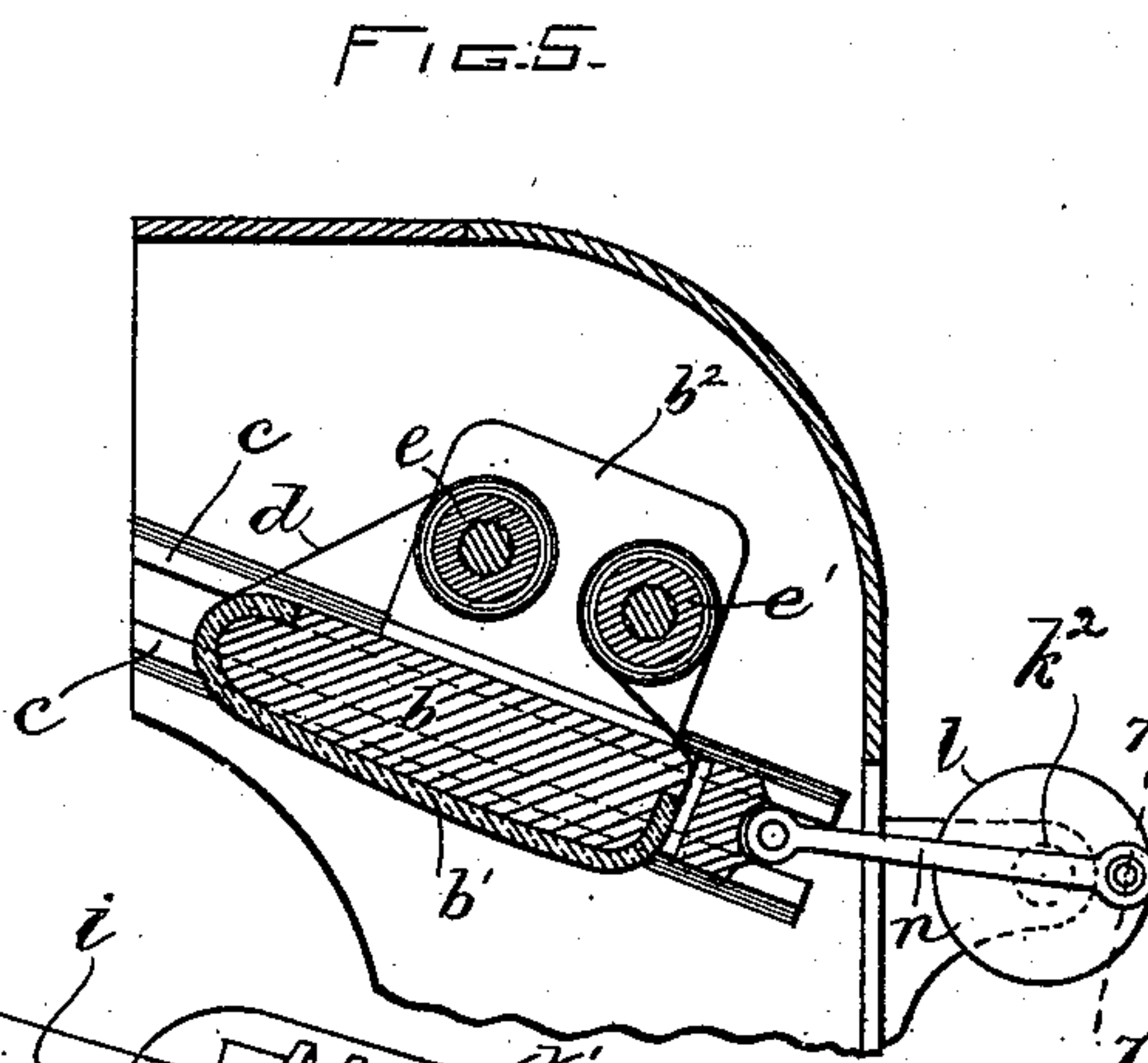
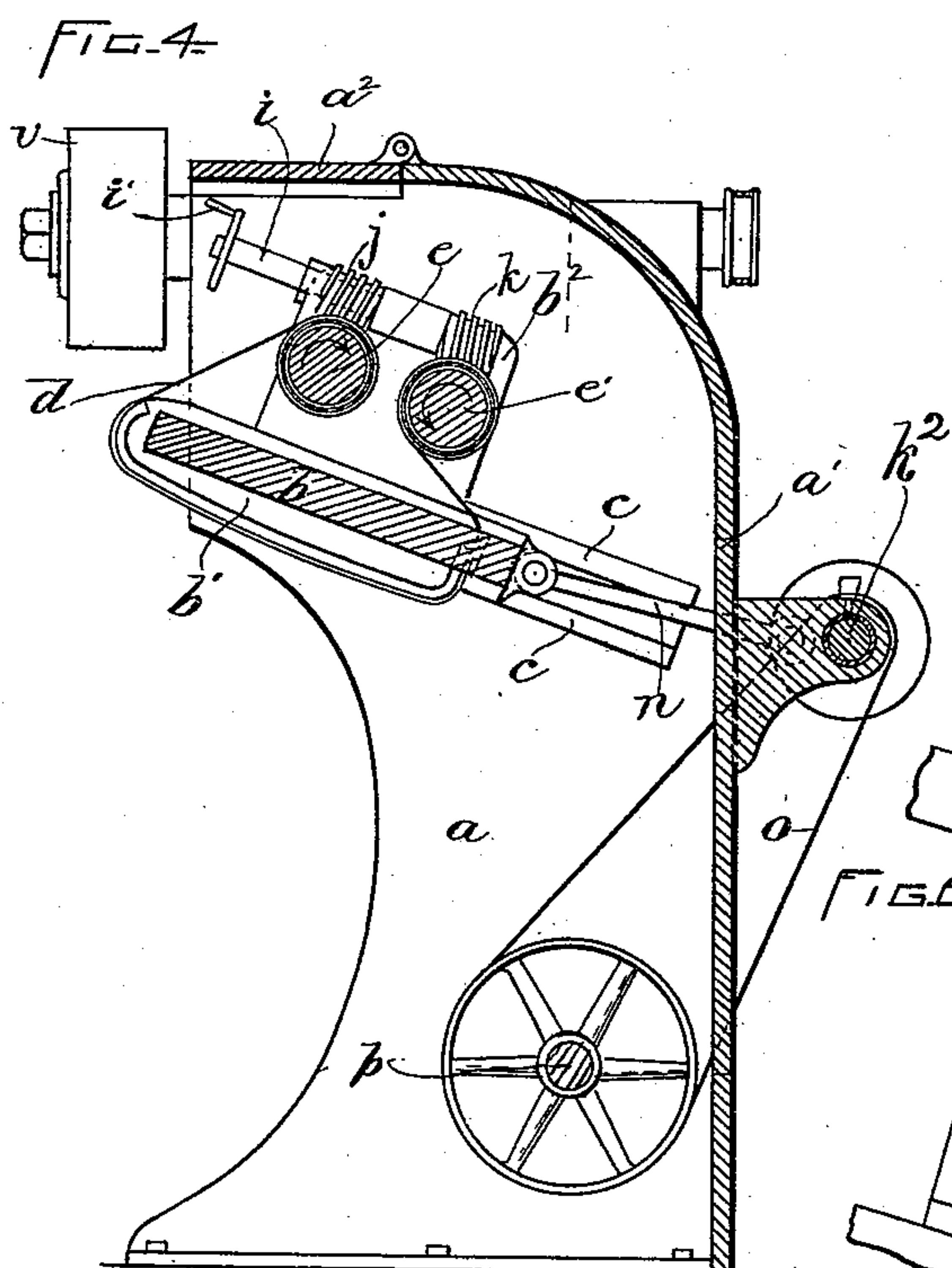
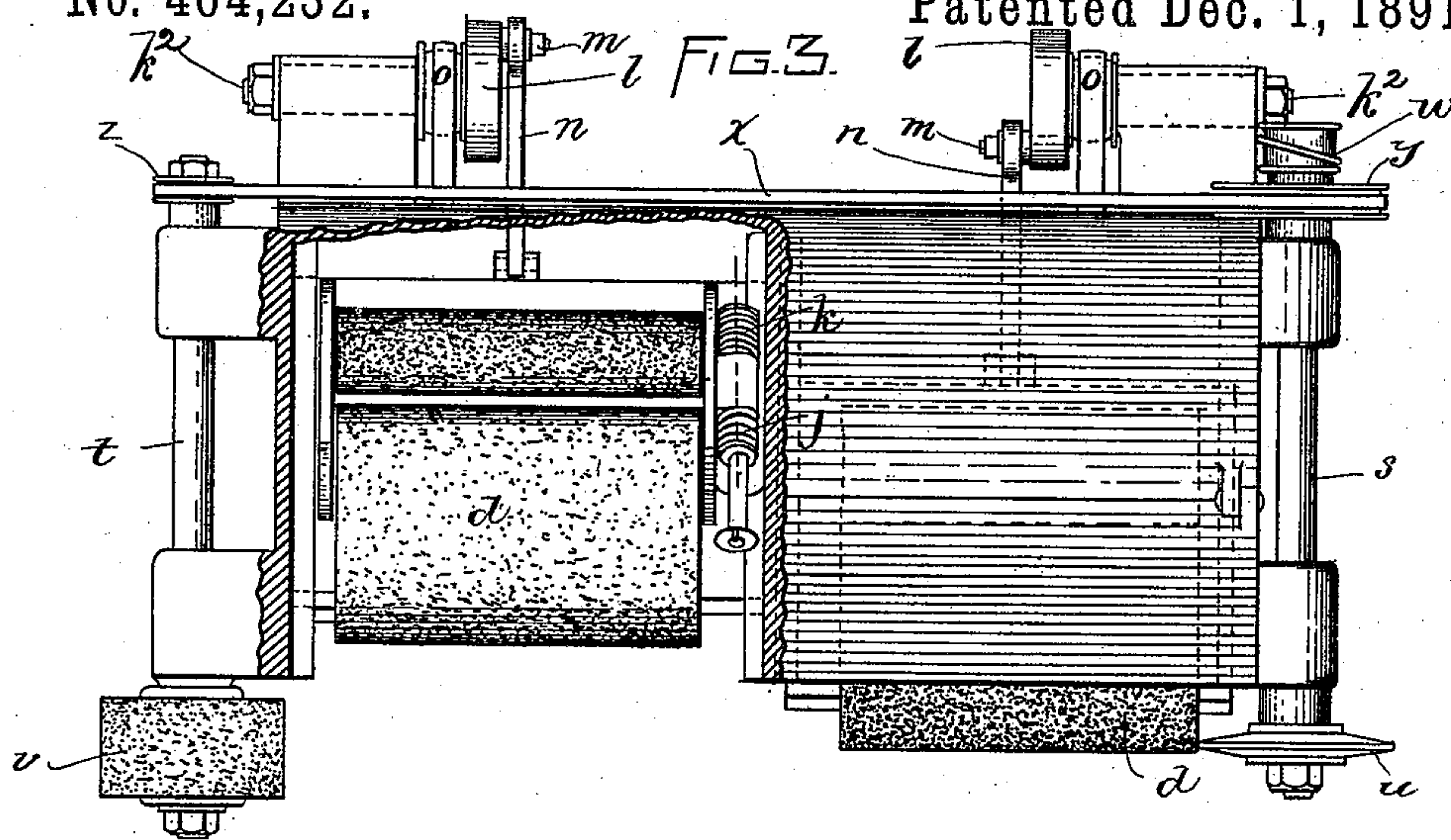
INVENTORS

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SOLE BUFFING MACHINE.

No. 464,232.

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WITNESSES:

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UNITED STATES PATENT OFFICE.

JOSHUA H. RYDER, OF BROCKTON, MASSACHUSETTS, ASSIGNOR OF ONE-HALF
TO STEPHEN M. LITTLETON, OF SAME PLACE.

SOLE-BUFFING MACHINE.

SPECIFICATION forming part of Letters Patent No. 464,232, dated December 1, 1891.

Application filed February 27, 1891. Serial No. 383,117. (No model.)

To all whom it may concern:

Be it known that I, JOSHUA H. RYDER, of Brockton, in the county of Plymouth and State of Massachusetts, have invented certain new and useful Improvements in Sole-Buffing Machines, of which the following is a specification.

This invention relates to machines for buffing the bottoms of boot or shoe soles; and it has for its object to provide a machine adapted to perform this operation in a manner nearly resembling that of hand-buffing and much more rapidly.

The invention consists in the improved machine hereinafter described, involving a reciprocating carriage or holder provided with a pad or cushion of yielding material—such as felt—and a strip of sand-paper or other abrading material of indefinite length, supported by two rolls or pulleys on said carriage, said rolls being arranged to support the sand-paper, so that a portion of the strip will extend across the yielding pad and may be moved along from time to time as it becomes worn by the rotation of said rolls, the strip being wound upon one roll and unwound from the other. The machine also preferably involves two of said carriages arranged side by side and means for reciprocating said carriages simultaneously in opposite directions, so that the jar or shake caused by the reciprocating movement of one carriage is neutralized by that of the other, the machine being thus enabled to run more steadily than if but one carriage or reciprocating buffing device were employed.

Figure 1 represents a front elevation of a buffing-machine embodying my invention. Fig. 2 represents an end elevation of the same. Fig. 3 represents a top view of the same, a portion of the casing being broken away and parts of the machine shown in section. Fig. 4 represents a section on line 4 4 of Fig. 1. Fig. 5 represents a section similar to Fig. 4, showing the buffing device in a different position. Fig. 6 represents an enlarged section on line 6 6 of Fig. 3. Fig. 7 represents an enlarged section on line 7 7 of Fig. 5. Fig. 8 represents a side view of the disk shown in Fig. 7.

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

In the drawings, *a* represents a supporting-frame, which may be of any suitable construction, and is open at one side and preferably closed at its rear side and top by a back piece *a'* and a top piece or cover *a''*, said back piece and top piece being preferably formed, as shown in Fig. 4, so that they constitute a hood or covering for the operative parts hereinafter described, the general construction of the frame being such that the boot or shoe sole to be buffed can be presented to the buffing devices from the front or open side of the frame.

The machine is provided with two reciprocating slides *b b*, each of which is fitted at its ends in guides *c c*, affixed to the supporting-frame, there being two pairs of guides for each slide. The guides are preferably inclined, as shown in Figs. 1, 2, 4, and 5, and the guides at the inner ends of the two slides are formed on a vertical partition *a''*, forming a part of the supporting frame or casing. Each slide is composed of any suitable rigid material, and has upon its under surface a pad *b'*, of felt or other suitable yielding material, suitably affixed to the slide.

d represents a strip of sand-paper or other flexible abrasive material, which is suitably affixed at its ends to two rolls *e e'*, the shafts of which are journaled in ears or brackets *b'' b''* on the carriage *b*, the strip passing from the roll *e'* downwardly around one end of the slide *b*, thence along the under surface of the pad *b'*, and upwardly around the other end of the slide to the roll *e*. It will be seen, therefore, that the portion of the strip *d* that rests on the pad *b'* constitutes an abrasive face for the slide *b*, which face may be renewed when it becomes worn by rotating the rolls *e e'* so as to unwind a portion of the strip from one roll and wind it upon the other. Means are provided for simultaneously rotating said rolls in opposite directions in order to effect the described adjustment of the strip, said means being in the present instance a shaft *i*, journaled in bearings in one of the ears *b''*, and provided with a worm *j*, engaging a worm-wheel *j'* on the shaft of one of the rolls, and with a worm *k*, engaging a worm-wheel *k'* on the shaft of the other roll, one of said worms being of opposite pitch from that of the other, as shown in Fig. 6, so that the rotation of the

shaft *i* will rotate the two rolls in opposite directions. As one roll will require to rotate faster or slower than the other when the material wound upon the rolls *e e'* is not equal in quantity, I prefer to connect each roll to its shaft by friction, so that the rolls can slide sufficiently to compensate for the difference between the diameters of the accumulations of the strip wound upon said rolls. The outer end of the shaft *i* is preferably provided with a hand-wheel or handle *i'*, by which the shaft may be conveniently rotated to adjust the strip *d*.

The slides *b b*, each of which has a strip *d* and adjusting devices, substantially as above described, may be reciprocated simultaneously in opposite directions by any suitable means. I have here shown as the means for reciprocating said slides two shafts *k² k²*, journaled in bearings on the supporting-frame and provided with disks *ll*, said disks having eccentric wrist-pins *m m*, which are connected by connecting-rods or pitmen *n n* with the slides *b b*. Said shafts *k² k²* are rotated by bolts *o o*, running on pulleys on said shafts from pulleys on a driving-shaft *p*. It will be seen that by arranging the wrist-pins *m m* so that one will be diametrically opposite the axial line of the shafts *k² k²* from the other the two slides *b b* will be reciprocated simultaneously in opposite directions by the rotation of the shafts *k² k²*, so that the shake or jar caused by the rapid reciprocating movement of each slide will be neutralized by the opposite movement of the other.

In the operation of the machine the operator, holding the boot or shoe bottom up, presents the sole to the portion of the abrading-strip *d* resting on the pad *b'* and holds it there until the bottom of the sole is sufficiently buffed. The reciprocating motion of the slide *b* makes the buffing action similar to that of a piece of sand-paper manipulated by the hand of the operator and imparts a finish that is more desirable than any that can be produced by a rotating buffing-roll. It will be observed that a reciprocating buffing-surface is enabled to buff the bottom of the shank up to the breast of the heel, the reciprocating movement enabling the buffing-surface to be brought into the angle formed by the bottom of the shank and the breast of the heel—a result that cannot be accomplished by a buffing-roll, for obvious reasons. If desired, one of the slides *b* may be provided with abrading material of a different grade from that of the other, so that one step of the buffing operation may be performed by one slide and the succeeding step by the other slide.

I do not limit myself, however, to the joint use of the two slides, as a machine having one slide with the movable abrading-strip and its adjusting devices will be no departure from the spirit of my invention.

My invention is not limited to the details of mechanism for reciprocating the slides, as they may be reciprocated simultaneously in

opposite directions by any other suitable mechanism.

s and *t* represent shafts extending transversely of the machine at opposite ends thereof, the shaft *s* having at one end a circular buffing pad or disk *u*, while the shaft *t* has a circular brush *v*. Said shafts are rotated by power communicated from the driving-shaft in any suitable way, as by belt *w*, connecting a pulley on one of the shafts *k²* with a pulley on the shaft *s*, and a belt *x*, connecting a pulley *y* on the shaft *s* with a pulley *z* on the shaft *t*. Said buffing-pad and brush perform different parts of the operation of finishing a boot or shoe bottom, as will be readily seen. The inclination of the guides *c c* causes the slides *b b* to occupy inclined positions, so that the operator is enabled to present the work more conveniently than he could if the guides were horizontal.

It will be observed that the form of the supporting-frame is such that an unobstructed space is afforded for the presentation of the work to the portion of the abrading-strip that bears on the pad *b'*.

I claim—

1. In a sole-buffing machine, the combination of a supporting-frame, a slide fitted to reciprocate on guides on said frame and provided on its under side with a pad, rolls mounted in bearings on the slide above the same, means for preventing the loose or free rotation of said rolls, and a band of abrasive material secured to said rolls and passing across the pad, said supporting-frame being formed to permit the unobstructed presentation of a boot or shoe sole to the portion of the abrasive material on the pad, as set forth.

2. In a sole-buffing machine, the combination of a supporting-frame, a slide fitted to reciprocate on guides on said frame and provided on its under side with a pad, rolls mounted in bearings on the slide above the same, means for preventing the loose or free rotation of said rolls, a band of abrasive material secured to said rolls and passing across the pad, and means, substantially as described, for simultaneously rotating said rolls to unwind the strip from one roll and wind it upon the other, as set forth.

3. The combination of a supporting-frame, a slide fitted to reciprocate in guides thereon and provided with a pad on its under side, two rolls mounted in bearings above said slide and provided with worm-wheels *j' k'*, and an operating-shaft having oppositely-pitched worms *j k*, meshing with said worm-wheels, as said forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 14th day of February, A. D. 1891.

JOSHUA H. RYDER.

Witnesses:

HERBERT H. CHASE,
PATRICK HENDERSEN.