

No. 747,503.

PATENTED DEC. 22, 1903.

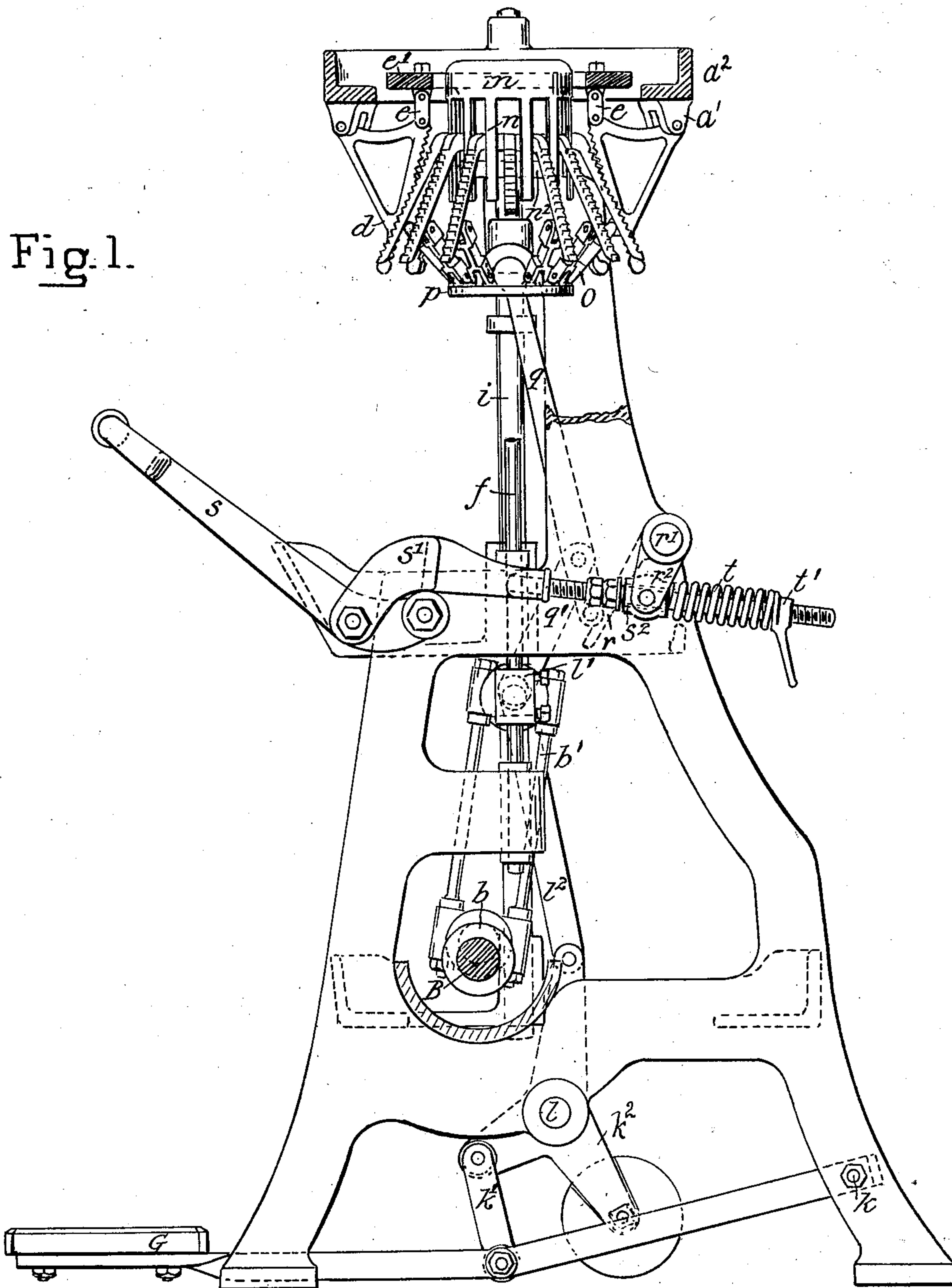
J. H. TARBELL.
HAT BRIM STRETCHING MACHINE.

APPLICATION FILED MAY 7, 1903.

NO MODEL.

3 SHEETS—SHEET 1.

Fig. 1.



Witnesses:

Samuel W. Balch
Richard S. Harvey

Inventor,
Joseph H. Tarbell,
by *Thomas Emig, Jr.,*
Attorney.

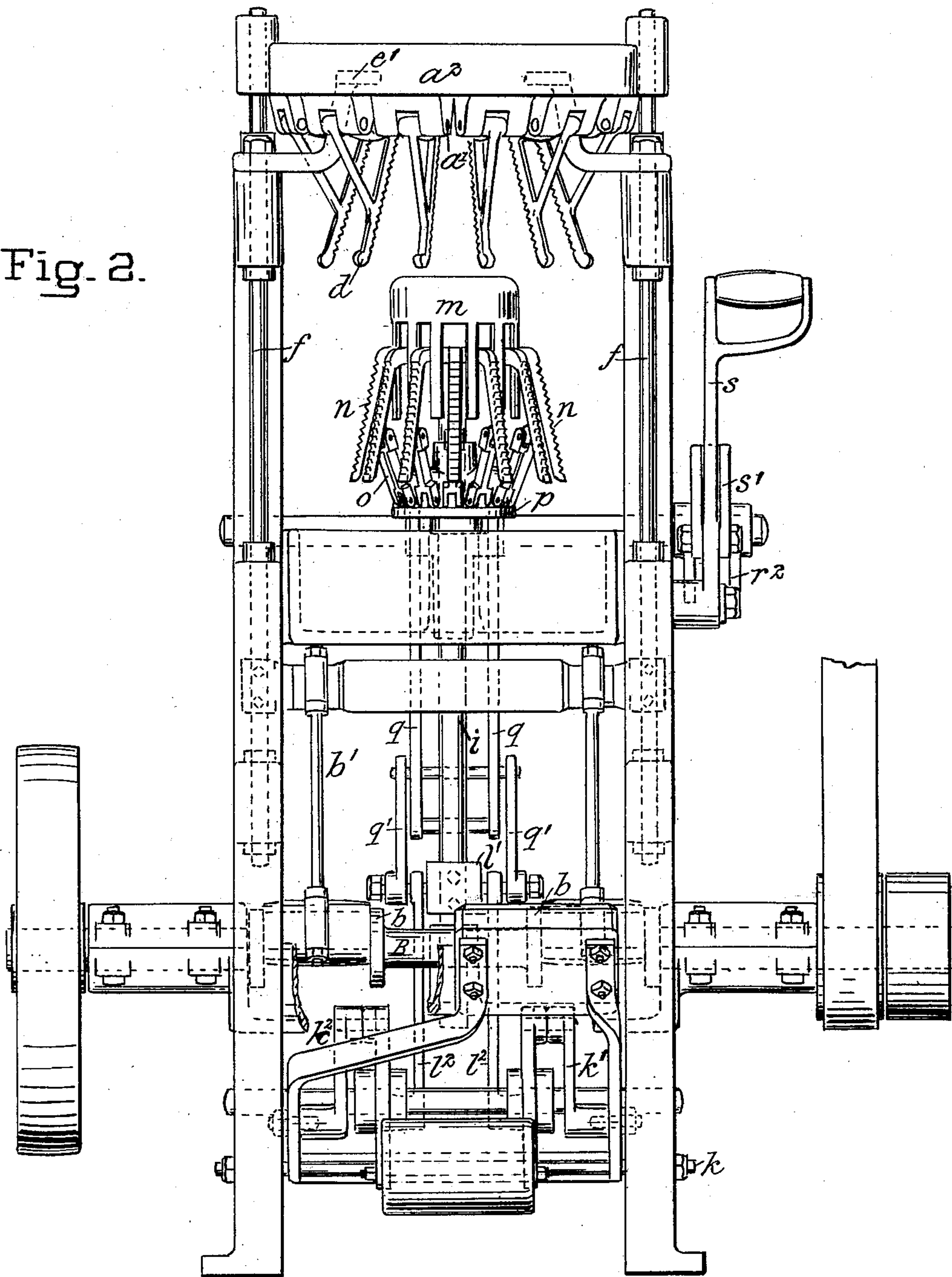
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3 SHEETS—SHEET 2.

Fig. 2.



Witnesses:

Samuel W. Balch
Richard S. Harvey

Inventor,

Joseph H. Tarbell,
by *Thomas Ewing, Jr.,*
Attorney.

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3 SHEETS—SHEET 3.

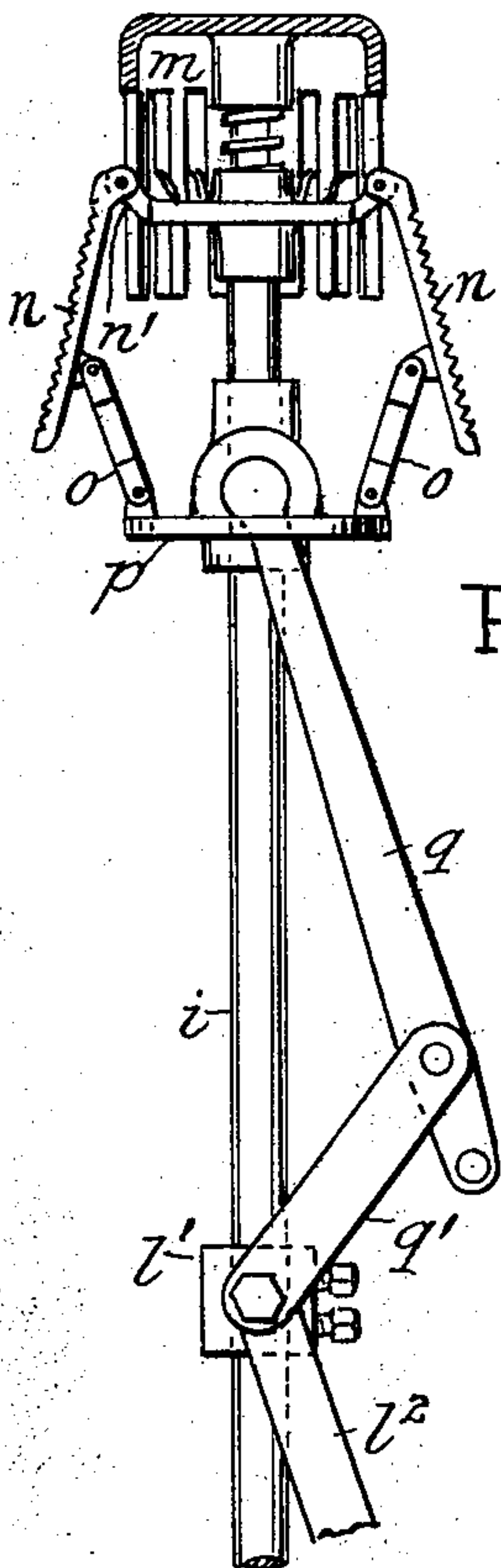


Fig. 3.

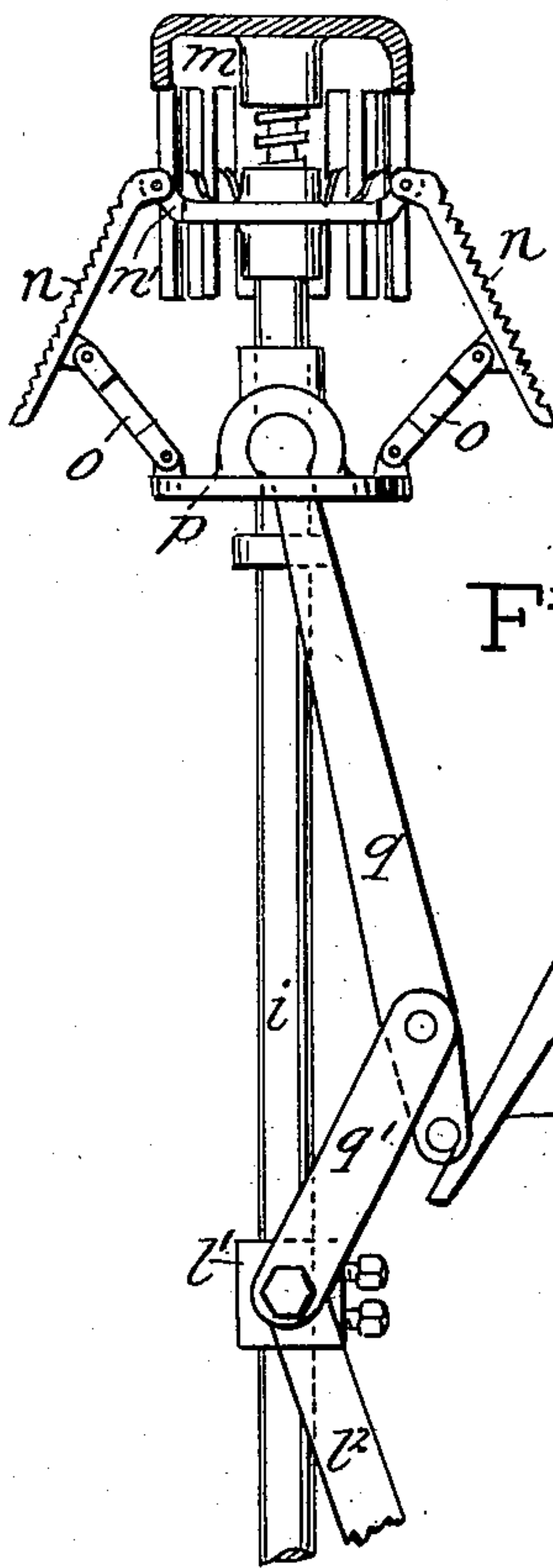


Fig. 4.

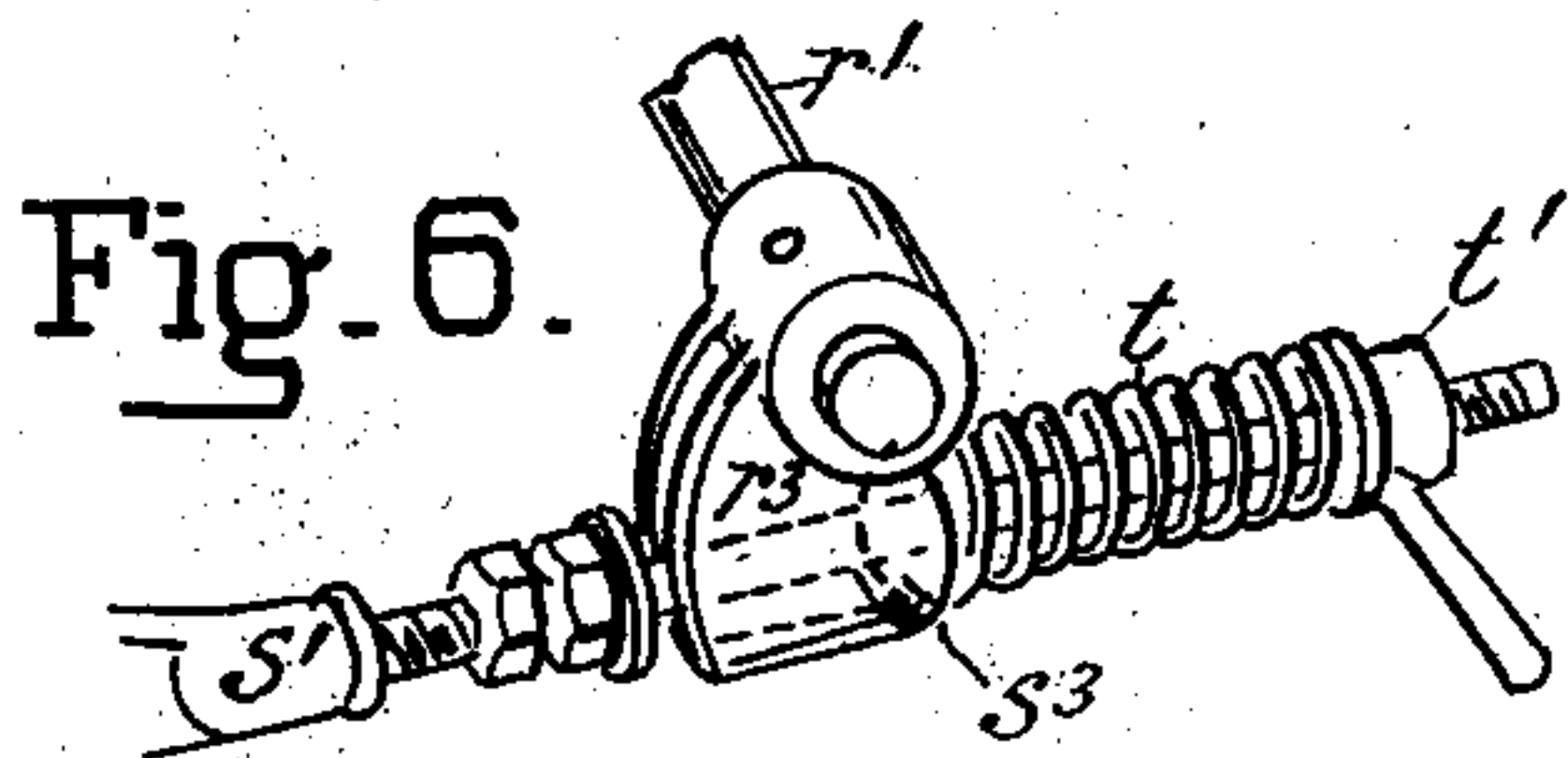
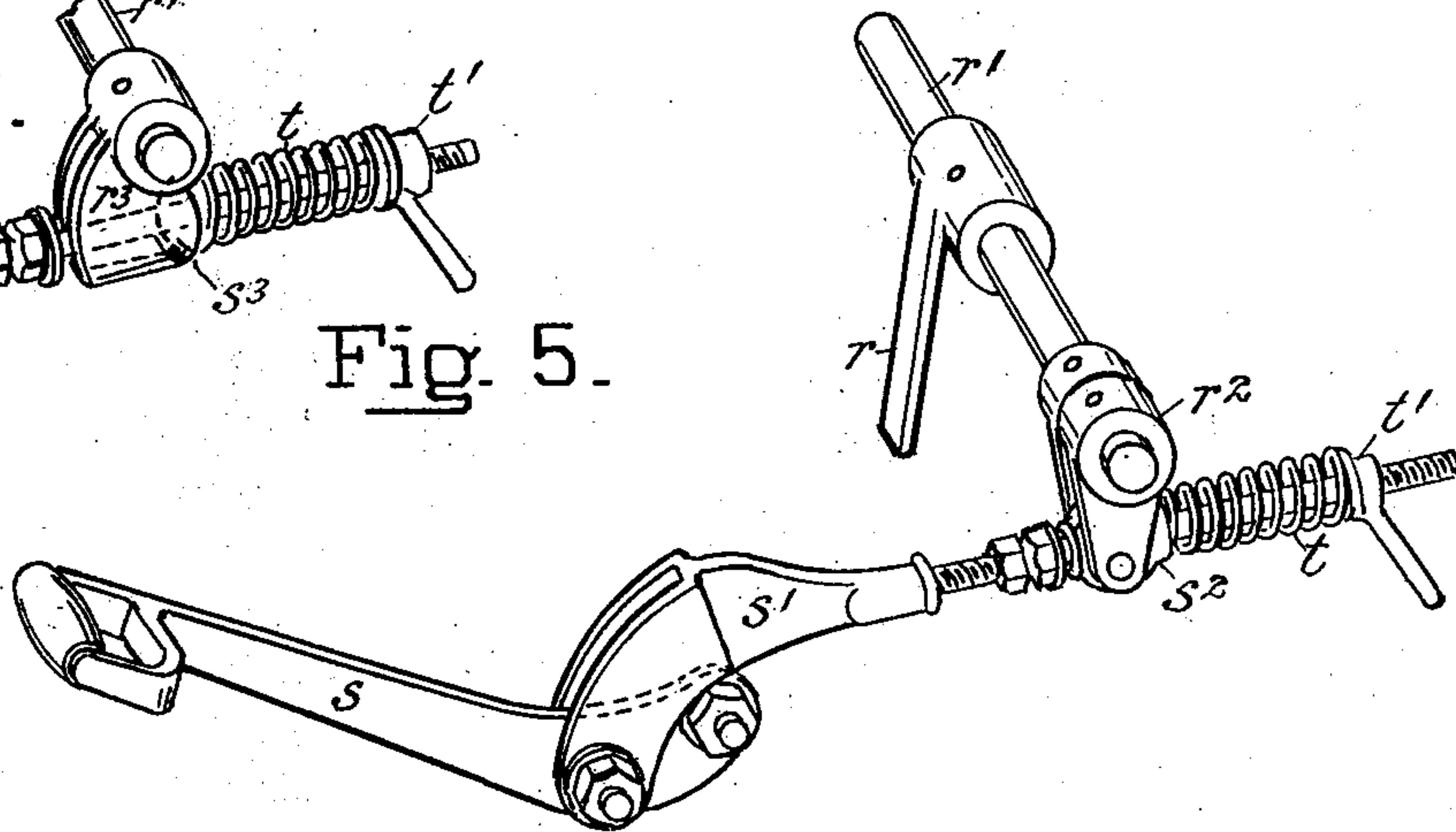


Fig. 6.

Fig. 5.



Witnesses:

Samuel W. Balch
Richard S. Berney

Inventor,

Joseph H. Tarbell
by *Thomas Emig, Jr.*
Attorney.

UNITED STATES PATENT OFFICE.

JOSEPH H. TARBELL, OF YONKERS, NEW YORK, ASSIGNOR TO THE
EICKEMEYER & OSTERHELD M'FG CO., OF YONKERS, NEW YORK,
A CORPORATION OF NEW YORK.

HAT-BRIM-STRETCHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 747,503, dated December 22, 1903.

Application filed May 7, 1903. Serial No. 156,099. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH H. TARBELL, a citizen of the United States of America, and a resident of Yonkers, county of Westchester, and State of New York, have invented certain new and useful Improvements in Hat-Brim-Stretching Machines, of which the following is a specification.

This improvement is particularly designed for use in connection with a power brim-stretching machine similar to that illustrated in United States Letters Patent to Rudolph Eickemeyer, No. 175,953, dated April 11, 1876, wherein the brim of the hat is supported by a ribbed former and stretched by a series of brim-stretching fingers, which are reciprocated by power and act on the upper side of the hat-brim while the brim is supported from below by the expanded ribs of the ribbed former. The ribs of the former are expanded by means of a hand-lever to press the brim against the stretching-fingers.

One feature of my invention consists in the provision of a suitable elastic cushion, preferably in the form of a coil-spring, which is interposed in the connections between the hand-lever and the expanding mechanism for the ribs of the former, the object being to limit the force with which the ribs are expanded, and the hat-brim is pressed against the reciprocating brim-stretching fingers, thereby avoiding the danger of tearing the hat-brim.

A further feature of my invention consists in the provision of means for locking the hand-lever in its operated position, so that the spring may be relied upon wholly to determine the force with which the hat-brim is supported against the action of the reciprocating brim-stretching fingers and the hand of the operator is relieved from the strain of holding the lever in proper adjustment and is relieved from the jarring action due to the impact of the brim-stretching fingers with the hat-brim, which is transmitted through the hat-brim to the expanded ribs and the connections to the interposed spring, which acts as a suitable buffer.

In further explanation of the invention reference will be made to the accompanying

three sheets of drawings, which form a part of this specification, in which—

Figure 1 is a side elevation of a brim-stretching machine with my invention, one of the bearings and the driving pulleys of the power-shaft being broken away and the upper part of one of the side frames being also broken away and the annular top plate and cross-head for supporting the brim-stretching fingers being in section on a plane through the axis of the machine. The ribbed former is shown in its raised and expanded position. Fig. 2 is a front elevation of the machine, part of the cross-framing being broken away to show the power-shaft, and the ribbed former is shown in its lowered position. Fig. 3 shows the ribbed former in its raised position, but not expanded, together with the toggle-levers for expanding the ribs, and the lever which impacts against and operates the toggles. Fig. 4 is a view of the same parts, showing the ribbed former in its expanded position. Fig. 5 is a perspective view of the hand-lever, rock-shaft, lever mounted on the rock-shaft for operating the toggle, and the interposed spring, which constitute a portion of the connections for expanding the ribbed former. Fig. 6 is a perspective view showing a modified form of the outside lever-arm on the rock-shaft for operating the toggle with a ball-and-socket seat for the spring.

Near the top of the machine are twelve brim-stretching fingers *d*, circularly arranged around a vertical axis. Each of these is braced, so that it has the form of a pendent triangle. The triangles are pivoted at their upper and outer corners in bearings *a'*, which are attached to the under side of an annular top plate *a*², and at their upper and inner corners they are connected by links *e* to the central annular portion of a cross-head *e'*. This cross-head is secured to the upper ends of vertically-sliding rods *f*, which are located and suitably guided one on each side of the machine. These rods are reciprocated vertically from a power-shaft *B*, which is journaled in the lower part of the framework of the machine, and a rapid vibratory motion is communicated from cranks *b* on the power-shaft through pitmen *b'* to the side rods *f*.

This motion is in turn communicated to the cross-head, and the lower ends of the stretching-fingers are thereby rocked to and from the vertical axis about which they are arranged.

5 Below the stretching-fingers is a ribbed former, consisting of a shell or hollow block *m*, with longitudinal slots through which ribs *n* project. The ribbed former is mounted on a vertically-sliding rod *i* and can be elevated

10 to a position between the stretching-fingers by depressing a treadle *G*. The treadle has two side pieces fulcrumed at the rear of the machine to a shaft *k* and connected between the pad of the treadle and the fulcrum by

15 links *k'* to rock-shaft levers *k*², mounted on a horizontal rock-shaft *l*. Two rods *l*² connect arms of the rock-shaft lever with a cross-head *l'*, which is attached to the rod *i*. The ribs *n* correspond in number with the stretch-

20 ing-fingers and are staggered in relation thereto. They are inclined downwardly and outwardly from the block and form the expanding portion of the ribbed former. They are hinged at their upper ends to the rim of

25 a central rib-block *n'*, which is secured to the upper end of the rod *i*. The ribs are spread by means of links *o*, one of which connects each rib with the rim of a circular rib-plate *p*, arranged to slide vertically on the

30 rod *i*. When the rib-plate is pushed upwardly on the rod *i*, the ribs are pushed upwardly and outwardly, thereby expanding the ribbed portion of the ribbed former. The upper ends of two parallel lifting-levers *q*

35 pass through slots in the circular rib-plate and are seated in sockets in the sides of the hub of the rib-plate. The lifting-levers *q* are jointed at their lower ends to the upper ends of two other levers *q'*, and these other

40 levers are pivoted at their lower ends to the block *l'*, which is fixed on the rod *i*. The two sets of levers form a toggle which when pressed at or near its joint to straighten it pushes the rib-plate upwardly and ex-

45 pands the ribbed former. This toggle is pressed by a lever *r* on a rock-shaft *r'*, which is journaled in the framework of the machine. At one end of the rock-shaft is a forked lever *r*², which is preferably made in two parts, each of

50 which is pinned to the rock-shaft. The forked lever is operated from a hand-lever *s*, the connections being from the hand-lever through a forked rod *s'*, which is pivoted to the hand-lever and has a stem which passes through

55 a sleeve *s*². The sleeve is provided with trunnions, which are engaged by the forks of the lever *r*². A spring *t* is interposed between the sleeve *s*² and the nut *t'*, which is threaded to the end of the stem of the forked

rod *s'*. When the lever is operated, the force 60 transmitted to the rock-shaft, and therefore which is expended in expanding the ribbed former, is limited by the tension of the spring. The nut *t'* serves to adjust the tension of the spring. The forked end of the forked rod 65 is curved, and the hand-lever is also curved, and the parts are so mounted that when the lever is fully drawn forward the point of connection between the hand-lever and the forked rod will be brought in front of the 70 fulcrum of the hand-lever and into line with the fulcrum and point of connection with the forked lever of the rock-shaft. The hand-lever will consequently be on a dead-center when operated and, in effect, locked 75 in this position, so that the hand can be removed and the lever will not be retracted either by the action of the spring or any power exerted against the expanded ribs of the ribbed former. 80

In the modified form shown in Fig. 6 the forked lever of the rock-shaft is of slightly-different form. The forks *r*³ are brought together at their lower ends, thereby forming an elongated eye, through which the shank of 85 the rod *s'* is passed. A spherical socket is formed in the rear edges of the forks, and a ball-faced washer *s*³ sets therein. The spring presses against the ball-faced washer.

What I claim as new, and desire to secure 90 by Letters Patent of the United States, is—

1. In a brim-stretching machine, the combination with a series of brim-stretching fingers, power mechanism for reciprocating the fingers, a ribbed former, expanding mechanism 95 for the ribbed former, a hand-lever, and connections for operating the expanding mechanism from the hand-lever, and an elastic cushion interposed in the connections between the hand-lever and the expanding 100 mechanism, substantially as described.

2. In a brim-stretching machine, the combination with a series of brim-stretching fingers, power mechanism for reciprocating the fingers, a ribbed former, expanding mechanism 105 for the ribbed former, a hand-lever arranged to lock in its operated position, connections for operating the expanding mechanism from the hand-lever, and an elastic cushion interposed in the connections between the hand-lever and the expanding 110 mechanism, substantially as described.

Signed by me at Yonkers, New York, this 6th day of May, 1903.

JOSEPH H. TARBELL.

Witnesses:

SAMUEL W. BALCH,
GEO. EICKEMEYER.