

No. 811,614.

PATENTED FEB. 6, 1906.

C. BERNARD.
WINDING MECHANISM FOR COTTON LAPS.

APPLICATION FILED DEC. 27, 1904.

4 SHEETS—SHEET 1

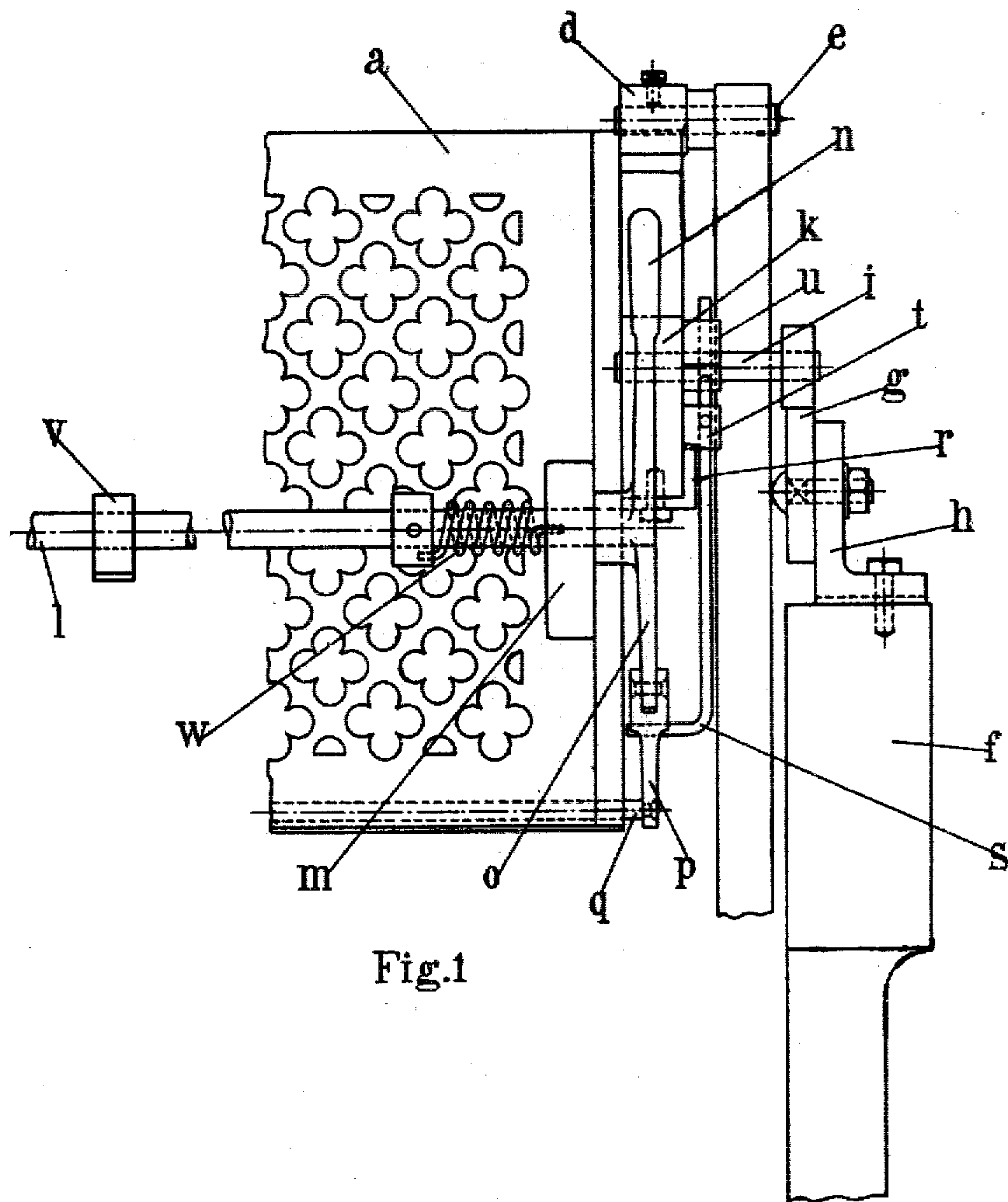


Fig. 1

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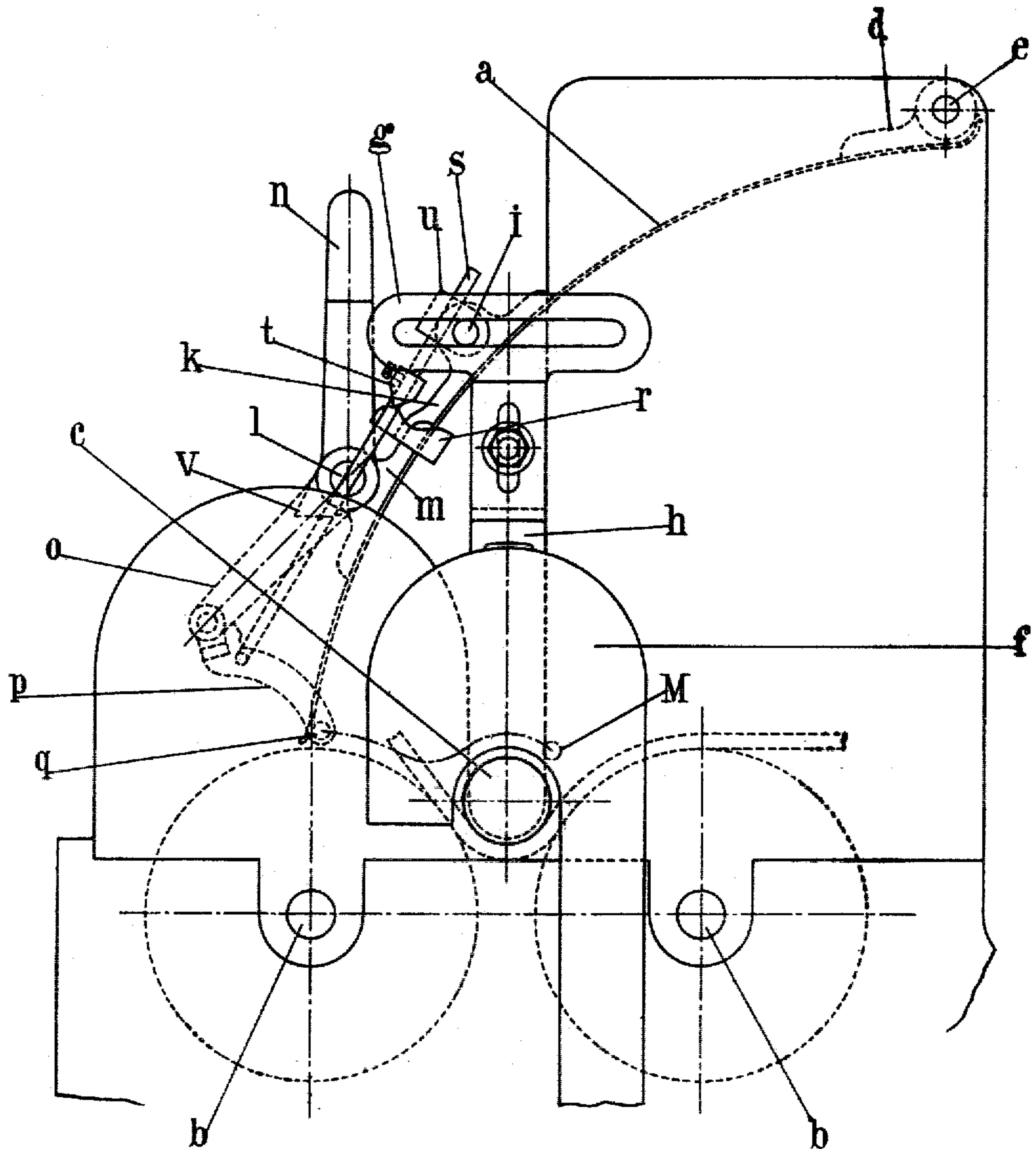


Fig. 2

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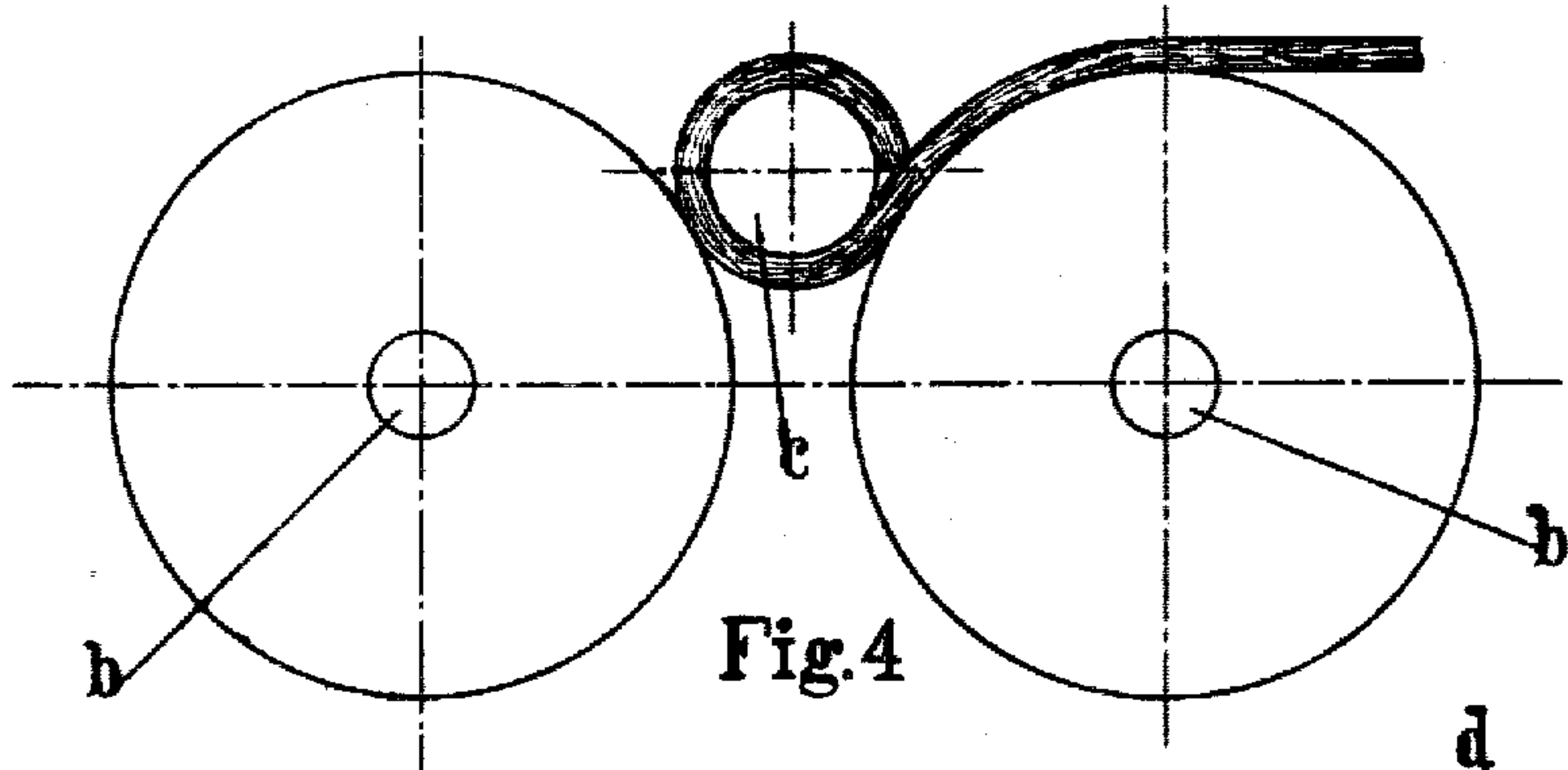


Fig. 4

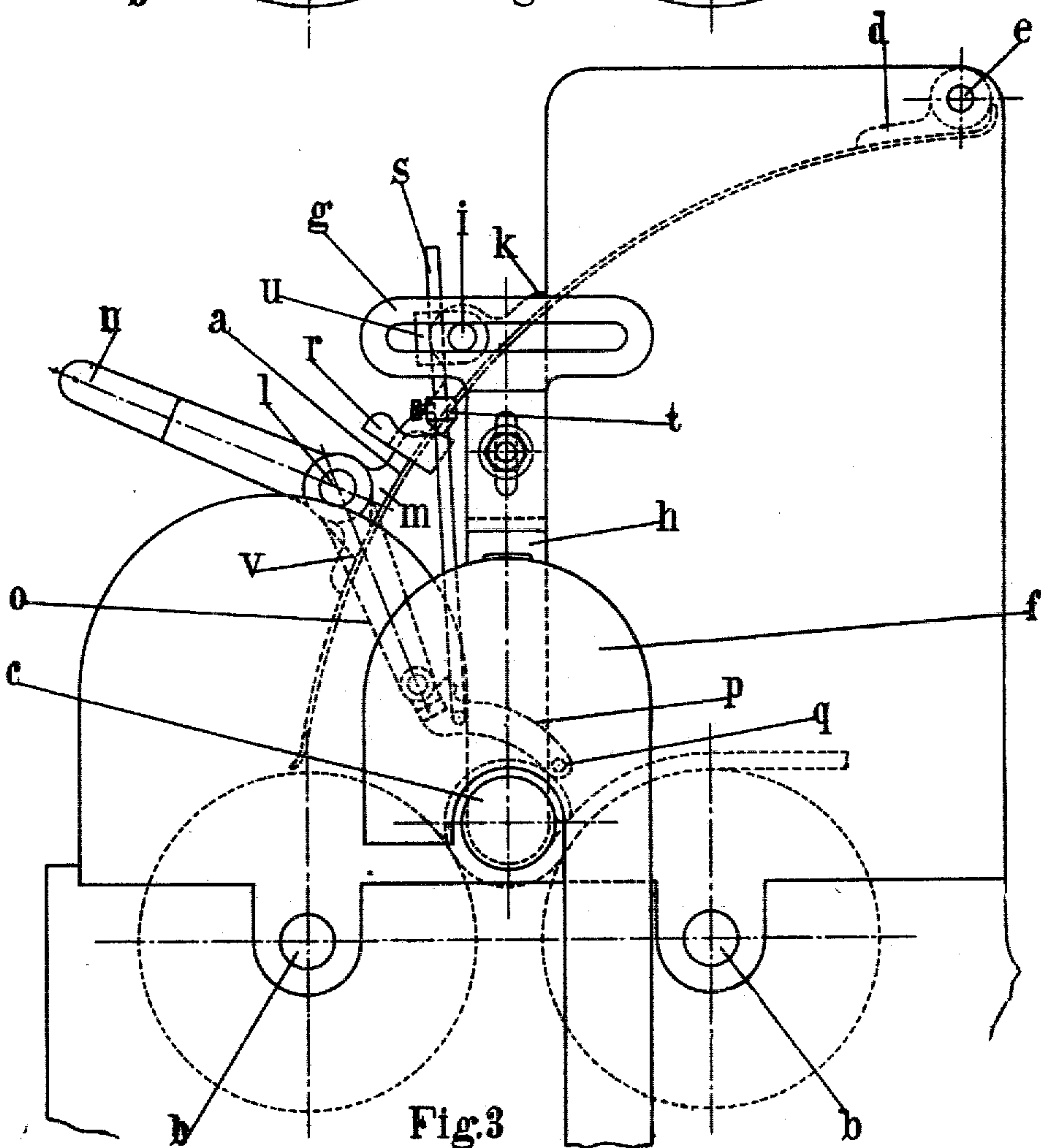


Fig. 3

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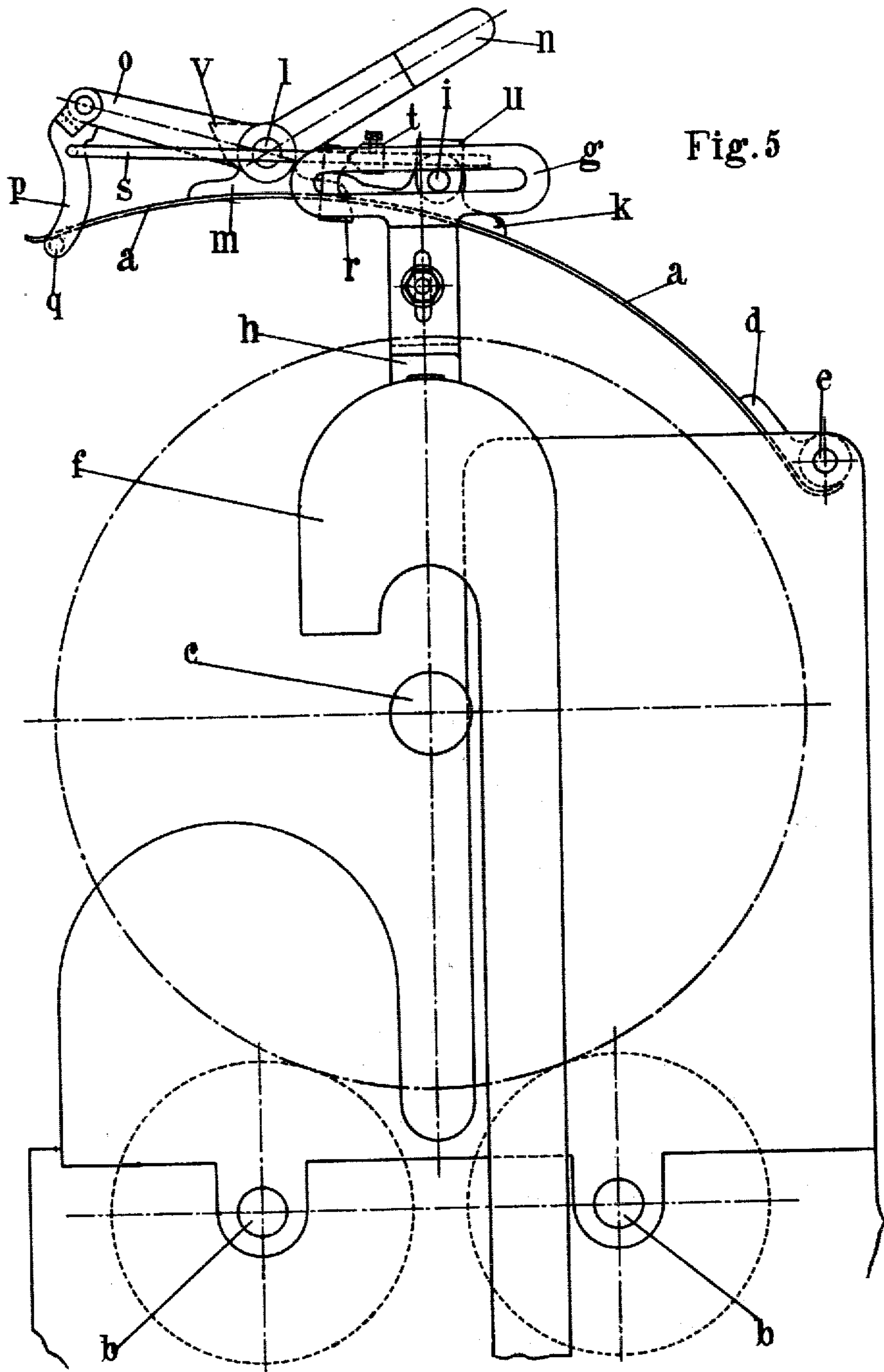


Fig. 5

Witnesses
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UNITED STATES PATENT OFFICE.

CHARLES BERNARD, OF HERICOURT, FRANCE.

WINDING MECHANISM FOR COTTON-LAPS.

No. 811,614.

Specification of Letters Patent.

Patented Feb. 6, 1906.

Application filed December 27, 1904. Serial No. 238,521.

To all whom it may concern:

Be it known that I, CHARLES BERNARD, a citizen of the Republic of France, residing at Hericourt, in the Department of Haute-Saône, Republic of France, have invented a new and useful Improvement in Winding Mechanisms for Cotton-Laps, of which the following is a specification.

The present invention relates to a device for catching the end of a cotton-wool lap passing from a scutcher. In machines of this kind the winding up of the lap is usually effected by an arrangement wherein the workman has to spread out his hands over the lap-roller in order to effect the insertion of the commencement of the coil. By this process the workman runs great risk of having his hands caught by the roller. This accident frequently happens and has very serious results.

The object of the present invention is to obviate these dangers. The arrangement hereinafter described effects the regular coiling of the lap and prevents the workman from touching the lap-roller with his hands.

Referring to the accompanying drawings, Figure 1 shows a front elevation of the device; Fig. 2, a side elevation thereof in the position of rest with the lap just inserted beneath the lap-roller, but not yet wound round. Fig. 3 shows the device in side elevation in that position in which the end of the lap is coiled around the lap-roller. Fig. 4 shows the inserted commencement of the lap in the position of Fig. 3. In this case the remaining mechanism has been omitted for greater clearness. Fig. 5 shows the mechanism in the position of rest when the lap has been completely wound up and is ready for taking off.

A perforated and curved sheet-iron plate *a* is arranged over the winding-rolls *b* and the lap-roller *c*. This sheet-iron plate makes it possible to observe the winding of the lap, while it prevents any touching thereof by the hand of the workman. At both sides of the plate *a* there is fixed a support *d* for the said plate. Each support possesses a pivot *e*, which is supported in a hole bored in the machine-frame in such a manner that the plate *a* can oscillate about the median axis of the pivots *e*. This oscillation is effected automatically as the diameter of the lap increases. Actual contact of the cotton-lap with the protecting-plate *a* must, however,

not take place at any moment. The oscillation is therefore effected by the upward motion of the bars *f*. The supports *g*, attached to the bars by means of the adjustable angle-pieces *h*, have at their upper ends, respectively, a horizontal slot. These slots effect the oscillation of the guard-plate by means of the pivots *i* engaging in them, which pivots are secured to the supports *k*, firmly attached to the protective plate. The mechanism which effects the insertion of the lap is attached to the protective plate *a*. It is composed of the following parts: The shaft *l* revolves in two bearings *m*, fixed to the edges of the protective plate *a*, parallel to the axes of the winding-rolls, as well as of the lap-roller *c*. The shaft *l* can oscillate about its axis. The motion is effected by hand by means of the hand-lever *n*, keyed upon the shaft *l*. To each end of the shaft *l* is attached a lever *o*. Each lever *o* has attached to it a lever *p*, Figs. 1 and 2. This pair of levers *p* is attached to the cross-bar *q*. This cross-bar directly acts upon the lap and serves to push the same in by a motion which is indicated in Fig. 2 by the dot-and-dash curve. The outermost point of the stroke of the cross-bar *q* is supposed to be at M. Upon the oscillation of the shaft *l* the cross-bar *q* moves in the path indicated, being guided by the bars *s*, attached to the levers *p*. These bars *s* carry the adjustable followers *t*, which move in contact with the cams *r*. The bars *s* slide in guiding-sleeves oscillating upon the pivots *i*.

The apparatus operates as follows: As soon as the lap has been caught and its end appears beneath the lap-roller *c*, as shown in Fig. 2, the operative presses down the lever *n* smartly. This effects a turning of the shaft *l*, as well as a motion of the two levers *o*. The cross-bar *q* now effects the motion indicated in Fig. 2. Hereupon the followers *t* slide upon the cams *r*, and the rods *s* move in the sleeves *u*, because an oscillation thereof takes place about the pivots *i*. If now the cross-bar *q* moves into the terminal position indicated at M, Fig. 2, then the ring *v*, placed adjustably upon the shaft *l*, strikes with its projection against the protective plate *a*, whereby the turning of the shaft *l* and the motion of the lever system connected therewith are limited. As soon as the lap has been inserted by the cross-bar *q* the operative releases again the handle *n*. All the movable

parts then immediately return into their original position in consequence of the action of the spring *w*, while the winding up of the lap proceeds further unhindered. It is obvious that the profile of the cams *r* is so chosen that the displacement of the cross-bar is effected as suitably as possible. The most advantageous course for this cross-bar is a combination of the curve drawn about the center of the winding-roll *b* and of another curve which has for its center the center of the lap-roller at its lowermost point. Both curves are connected by means of a third curve of very small radius. During its displacement the cross-bar should keep a regular but small distance from the outside of the winding-rolls, as well as from that of the lap-roller. Moreover, the said cross-bar in its outermost position must not approach too near to the second winding-roll.

What I claim is—

1. In a winding mechanism for cotton-laps, a protective device for the lap-roller comprising an adjustable metal guard over said lap-roller, an axle connected to said guard, a handle on said axle, lever mechanism at each end of said axle and a cross-bar attached to the ends of said lever mechanism, said device so arranged as to effect mechan-

ically the insertion of the end of the lap under the lap-roller, substantially as set forth. 30

2. In a winding mechanism for cotton-laps, a pair of winding-rolls, a lap-roller adjacent to and between said rolls, a curved metallic perforated shield over said lap-roller, means for raising the shield concurrently with the lap-roller, and means for inserting mechanically the end of the lap underneath the lap-roller. 35

3. In a winding mechanism for cotton-laps, winding-rolls, a lap-roller, a shield above said lap-roller, a revoluble shaft on said shield, hand mechanism adapted to turn said shaft, jointed levers at the ends of said shaft, a cross-bar attached to the ends of said levers guide-bars attached to the lower parts of said levers adjustable followers on said guide-bars, and curved cams adapted to guide the said cross-bar in a definite curved course and parallel to the lap-roller. 40 45 50

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES BERNARD.

Witnesses:

GEO. GIFFORD,

HERMANN KESTNER.