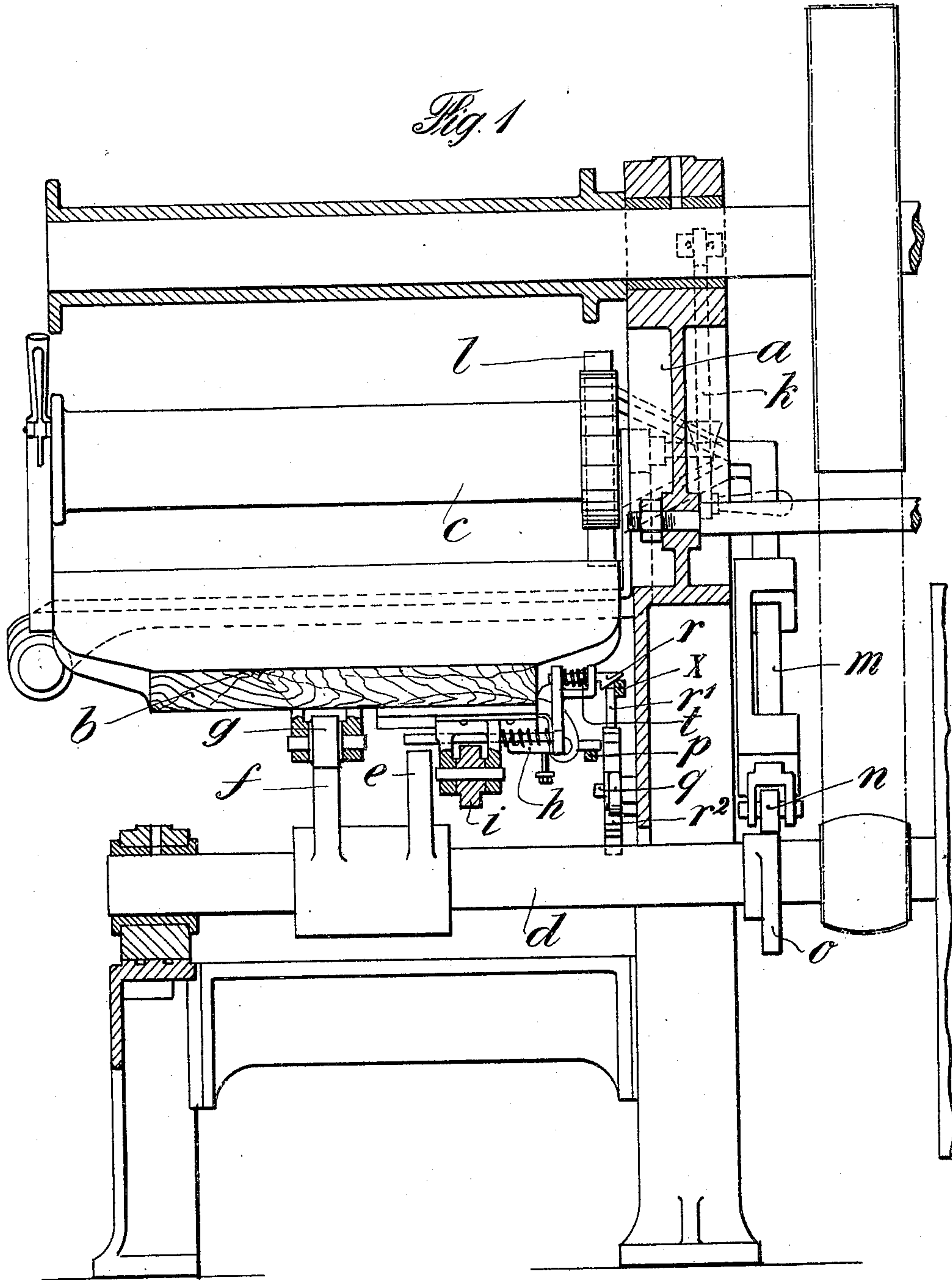


P. PIEPENBRINK.  
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APPLICATION FILED OCT. 7, 1907.

914,454.

Patented Mar. 9, 1909.

3 SHEETS—SHEET 1.



WITNESSES:

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H. R. Forster.

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3 SHEETS—SHEET 2.



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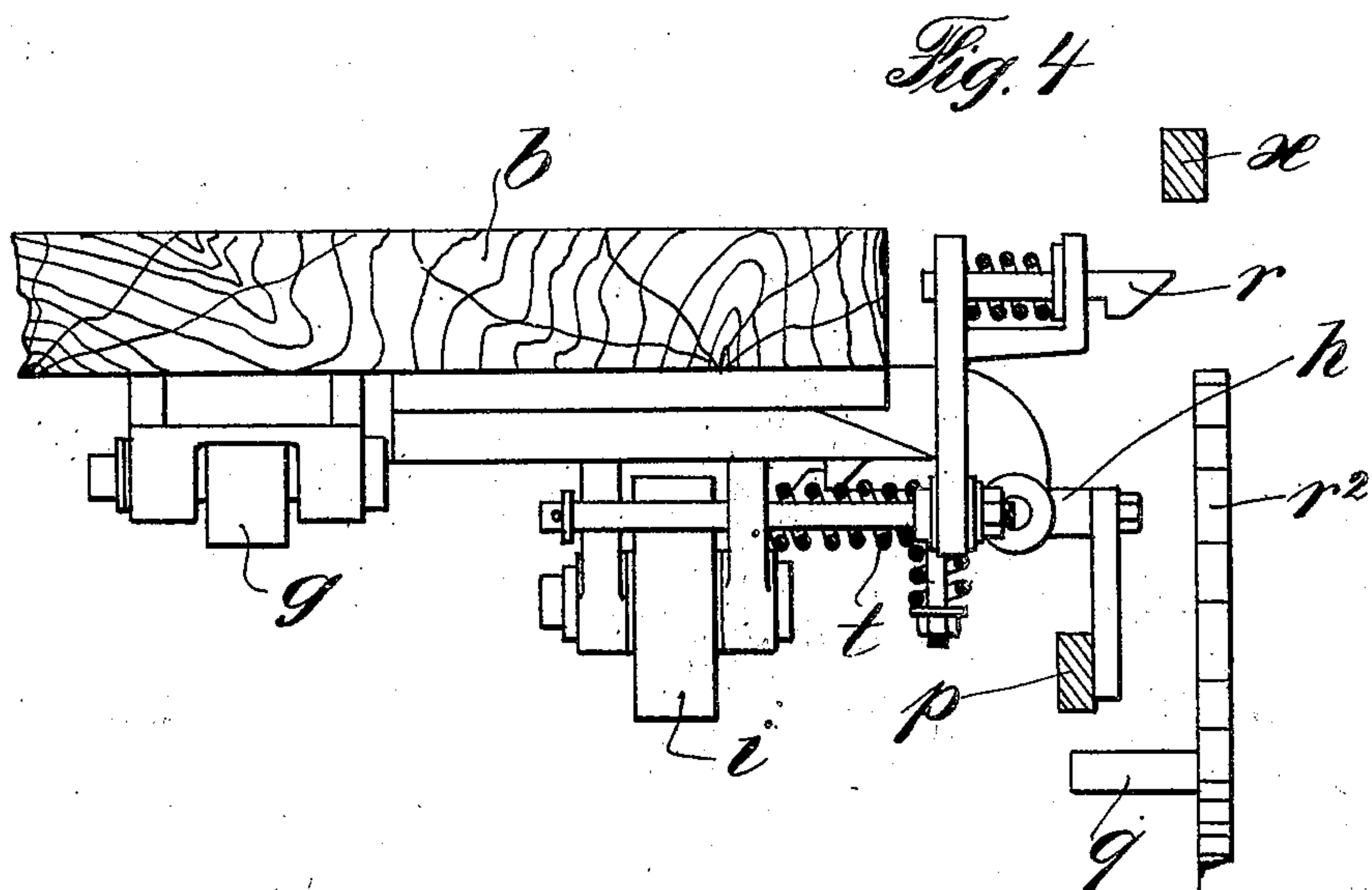
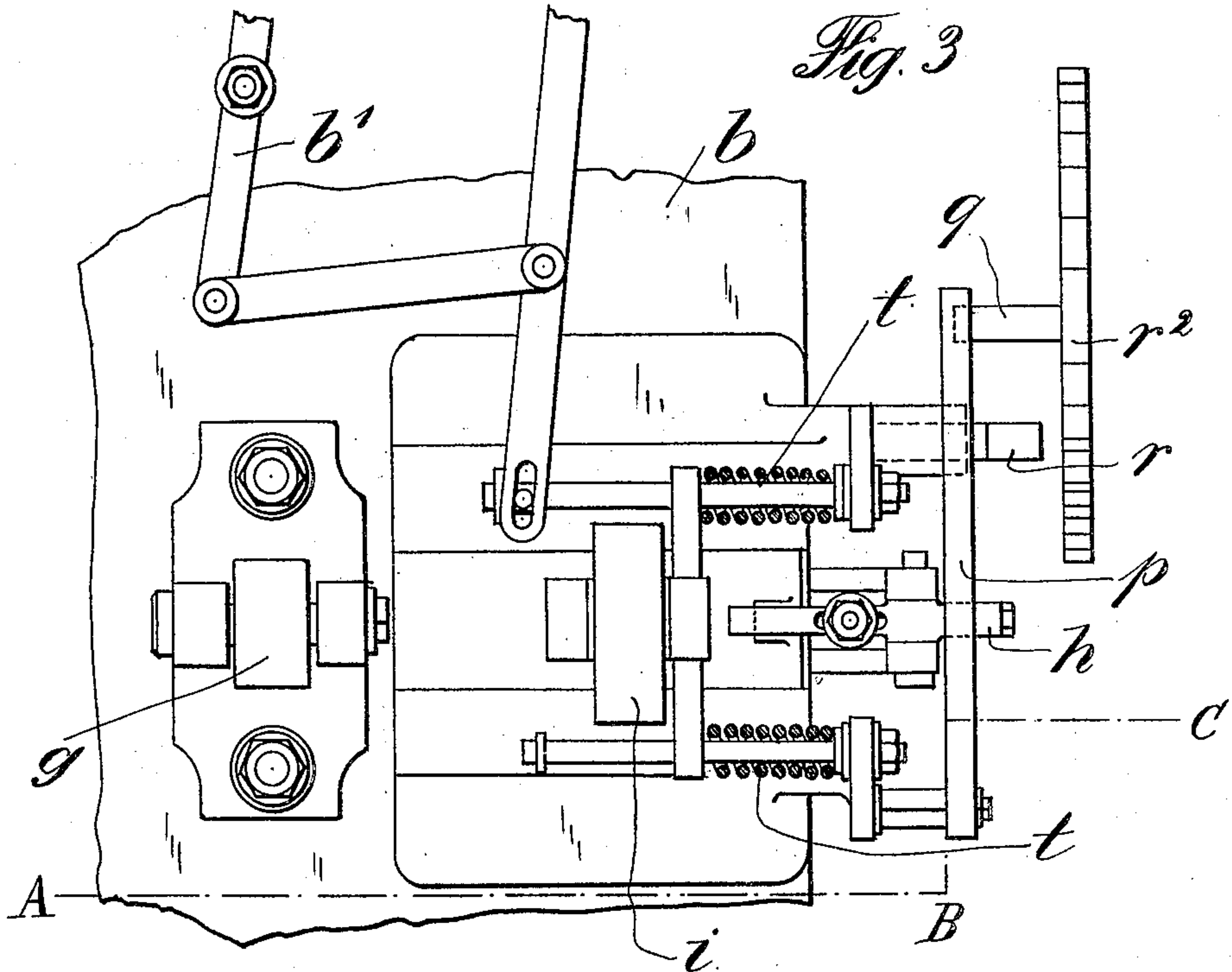
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# UNITED STATES PATENT OFFICE

PETER PIEPENBRINK, OF ELBERFELD, GERMANY.

## MACHINE FOR STRETCHING YARN OR TEXTILE THREADS.

No. 914,454.

Specification of Letters Patent.

Patented March 9, 1909.

Application filed October 7, 1907. Serial No. 396,226.

*To all whom it may concern:*

Be it known that I, PETER PIEPENBRINK, a subject of the German Emperor, residing at Elberfeld, Germany, have invented certain new and useful improvements in Machines for Stretching Yarn or Textile Threads, of which the following is a specification.

The subject of the present invention is a machine for stretching yarns in hank form, which differs in particular from the usual arrangements in the following respects.

By means of an ingenious device the machine stops automatically after the completion of a given number of blows. The number of blows may be regulated at will according to the fineness of the yarn and the degree of the required treatment. In addition to this the beating rollers are caused to revolve at each ascent, in order to obviate the defect of other yarn-stretching machines generally known, that the threads or parts of the yarn lying on the inside of the roller *i. e.* those which lie nearest the body thereof, become tangled and twisted and thereby made shorter, in consequence of which they are liable to be torn during the further treatment. In consequence of the automatic stoppage of the stretching roller the present machine requires also less attention, than the machines generally employed, so that it can be attended to by a boy or a girl without further assistance.

The subject of the invention is illustrated by way of example in the accompanying drawing, of which—

Figure 1 is a front elevation partly in section, and Fig. 2 is an end view, while Figs. 3 and 4 represent details of construction on a larger scale, Fig. 3 being an underside view or inverted plan of the mechanism fixed to the underside of the beating table, and Fig. 4 a section of the same along line A—B—C of Fig. 3.

The machine is, as usual, made double sided. On the rocking tables *b* supported by the frame *a* are mounted the beating rollers *c*. The lifting of the latter is not performed now, as formerly, by one eccentric mounted on the driving shaft *d*, but on the contrary by two cams, *e* and *f* of different height or throw. The small cam *f* serves for the ordinary working and runs forward under a guide roller *g*, thereby causing each time a rise of the table together with the beating roller.

Connected to the table is a lever *h*, which

holds a second guide roller *i* in its position of rest, the said roller *i* being secured to the table *b* in such a manner, that it is capable of sliding laterally under the influence of a spring. By its up and down motion the table causes a ratchet wheel *r*<sup>2</sup> (Figs. 1 and 4) or the like to turn step by step by means of a pawl *r*<sup>1</sup> in the following manner: The said pawl *r*<sup>1</sup> is pivoted to one end of a lever *x* (Figs. 1, 2 and 4) which has its fulcrum on a suitable part of the machine frame. The opposite end of the lever *x* is placed in proximity to a bolt *r* secured to the table *b* at right angles to the lever *x*.

As shown by Figs. 1 and 4, the bolt *r* has an inclined face and is held by a spring, which allows the said bolt to pass the lever *x* during the downward motion of the table.

To the ratchet wheel is fixed a stud *q*, which, when brought into a certain position by the intermittent turning of the ratchet wheel, is operated upon by the lever *h* (secured to the table) through the intermediary of another lever *p*, and the pressure thus produced on the lever *h* causes the latter to turn in a plane parallel with the axis of the lever *h*, so that the opposite end of the lever *h*, which holds the sliding plate carrying the roller axle, releases the same, and allows the roller *i* to move sidewise under the influence of the springs *t*, so as to come within the path of the cam *e*. By this means the table has a higher lift imparted to it. In the highest position of the roller during this lift a spring-actuated arm or hook *k* catches under the axle of the beating roller *c*, which is prolonged toward the center of the machine. The roller is thereby automatically secured in its raised position. By pushing aside a lever *b*<sup>1</sup> suitably attached to the table *b*, the guide-roller *i* can then again be brought into its locking position with the lever *h*. The hook *k* can then, when the machine is started again and after the yarn has been changed, be pressed against the frame *a*, whereby the beating roller *c* is free to act afresh until, by the release of the lever *h* after completion of a definite number of strokes, it is lifted by the cam *e* and caught by the hook *k*. The subsequent releasing of the roller takes place, in contradistinction to other machines, as is obvious, without any special tool.

The beating roller *c* may be caused to rotate, as it rises, by guiding it for example along a rail *l* provided with a suitable facing.



The rail is arranged upon a bar *m* which is suitably guided in its length on the frame *a* of the machine and rests upon a cam *o* at its end, which is fitted with a guide roller *n*.  
 5 The cam is placed upon the driving shaft *d* of the machine. Its purpose is to bring the bar *l* periodically into contact with the beating roller *c*. By the rotation of the roller *c* all the skeins of yarn are always  
 10 again brought into a taut uniform position over their whole breadth, in case they hang loose, whereby tearing or damaging of the threads is completely avoided.

What I claim is:—

15 1. A yarn-stretching machine comprising in its construction a rocking table carrying at one end the bearings of a beating roller, a revolving shaft provided with mechanism for lifting the said table for a given height at  
 20 every revolution and then allowing it to drop, mechanism adapted to be operated by the said shaft periodically, so as to lift the said table a greater height whenever the said shaft has made a predetermined number  
 25 of revolutions, and mechanism for stopping and holding the roller, when it has reached its highest level, substantially as described.

2. In a yarn-stretching machine the combination of the machine frame with a lifting  
 30 shaft having a pair of cams of different

throws, a rocking table adapted to be lifted by the said cams and carrying at one end the bearings of a beating roller, a spring device adapted to hold the beating roller after it has reached the highest level due to the operation of the large cam, the normal lifting of the table being performed by the small cam, and the table being provided with a guide roller normally out of reach of the large cam and adapted to be placed within the reach  
 40 of the same after the lifting shaft has made a given number of revolutions, substantially as described.

3. A yarn-stretching machine having a beating roller with horizontal axle, means  
 45 for periodically lifting and lowering the said roller, and a rail placed at an angle to the roller axis and adapted to periodically approach the same, so as to cause the roller to pass along the rail during its upward motion  
 50 and thereby to be turned by the same, substantially as described.

In testimony whereof I have set my hand hereunto in the presence of two subscribing witnesses.

PETER PIEPENBRINK. [L. s.]

Witnesses:

OTTO KÖNIG,

WILHELM FRIEDERICH.