

No. 750,423.

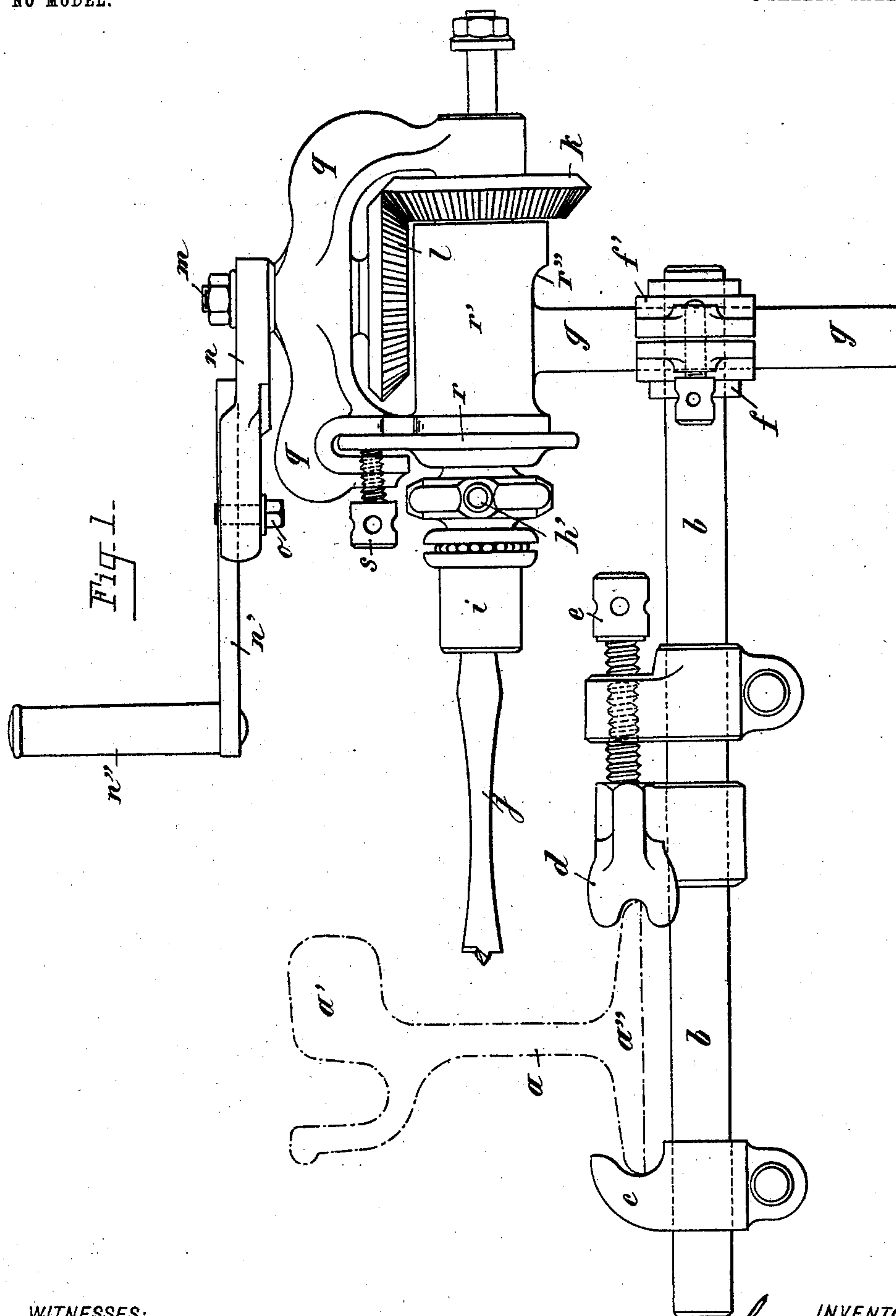
PATENTED JAN. 26, 1904.

H. BALLUET.
DRILLING MACHINE.

APPLICATION FILED JUNE 18, 1901.

NO MODEL.

3 SHEETS—SHEET 1.



WITNESSES:
Isabella Waldron
Otto Munn

INVENTOR.
Henri Balluet
BY *Richard & Co*
ATTORNEYS.

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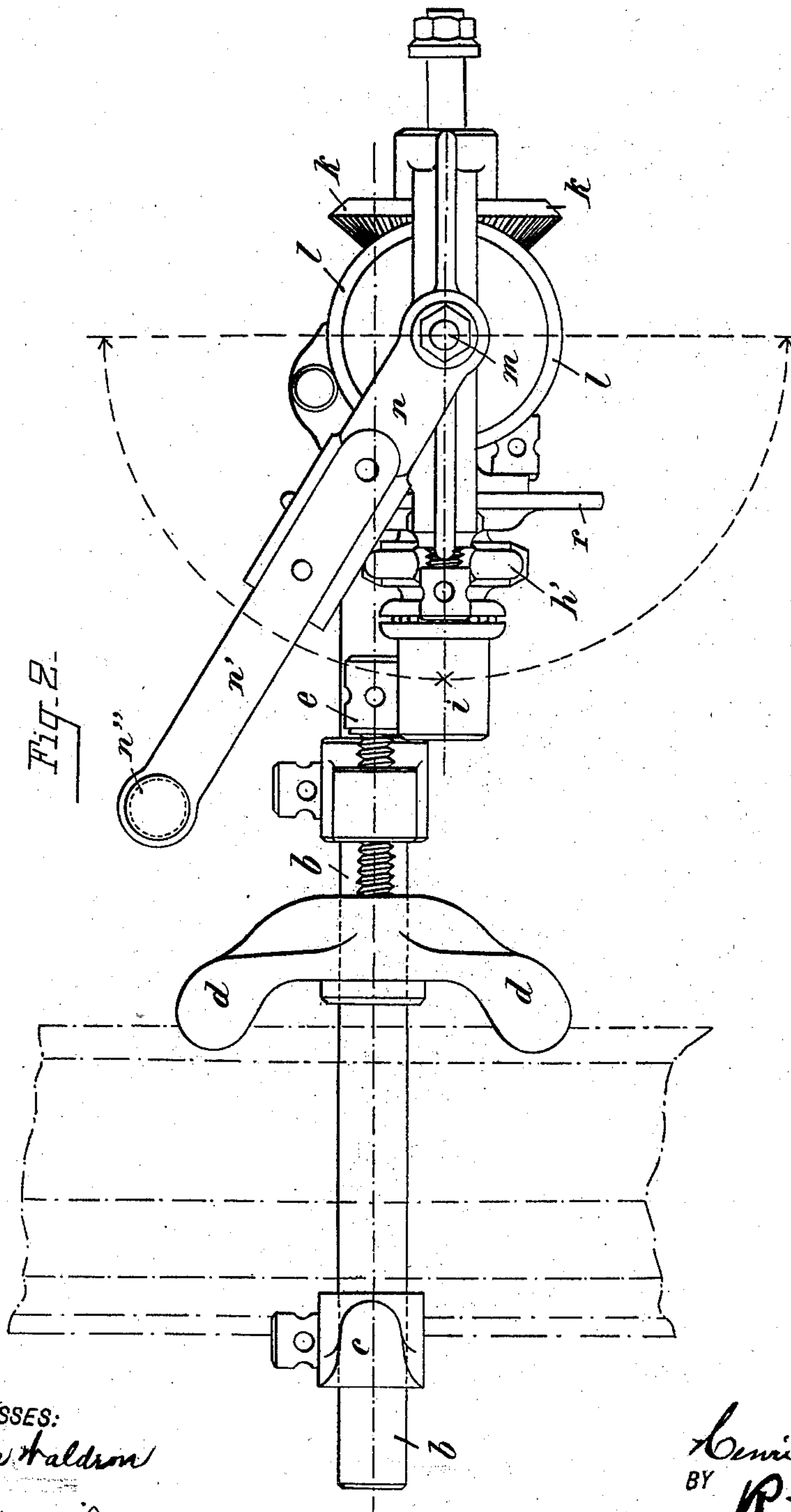
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3 SHEETS—SHEET 2.



WITNESSES:
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3 SHEETS—SHEET 3.

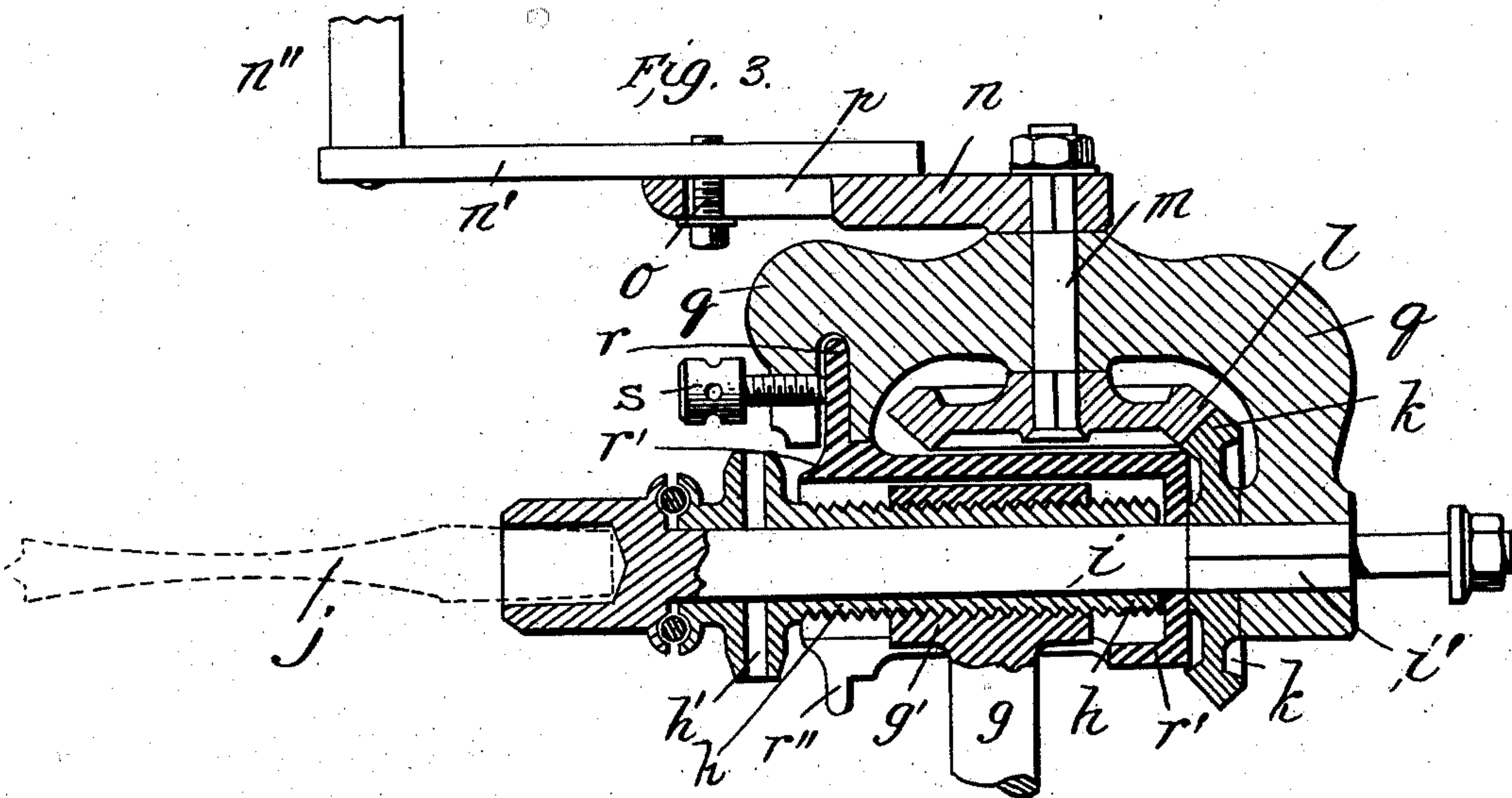


Fig. 5.

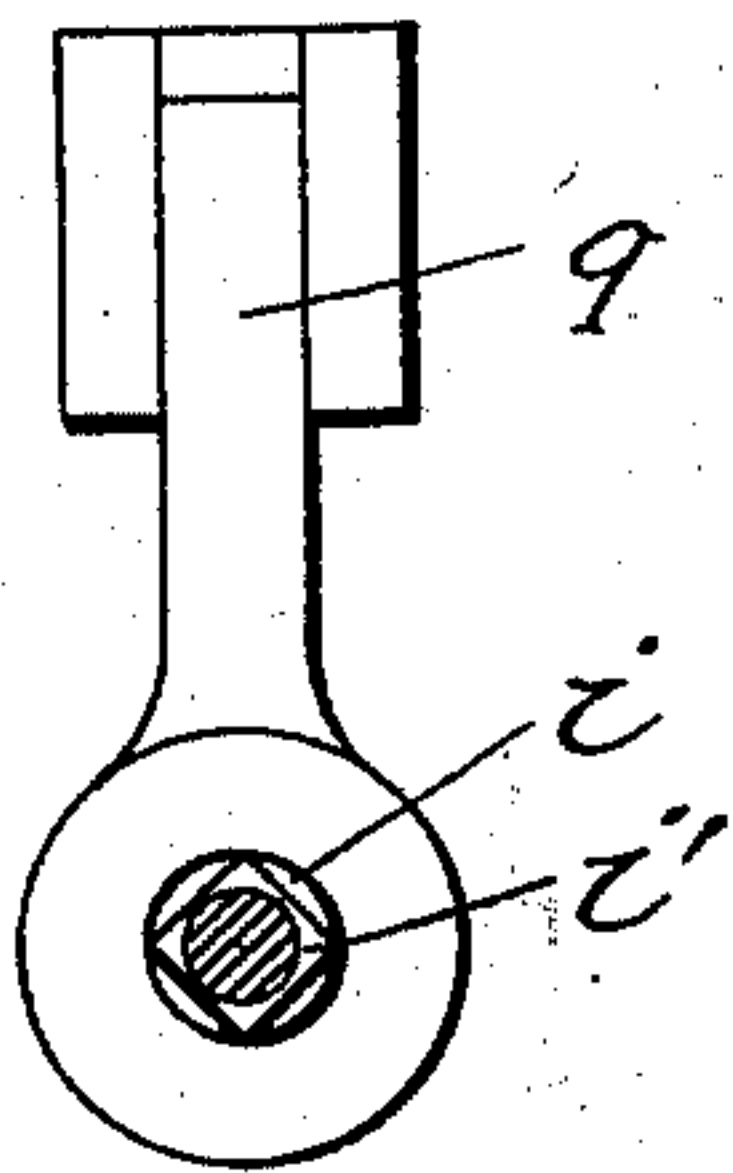
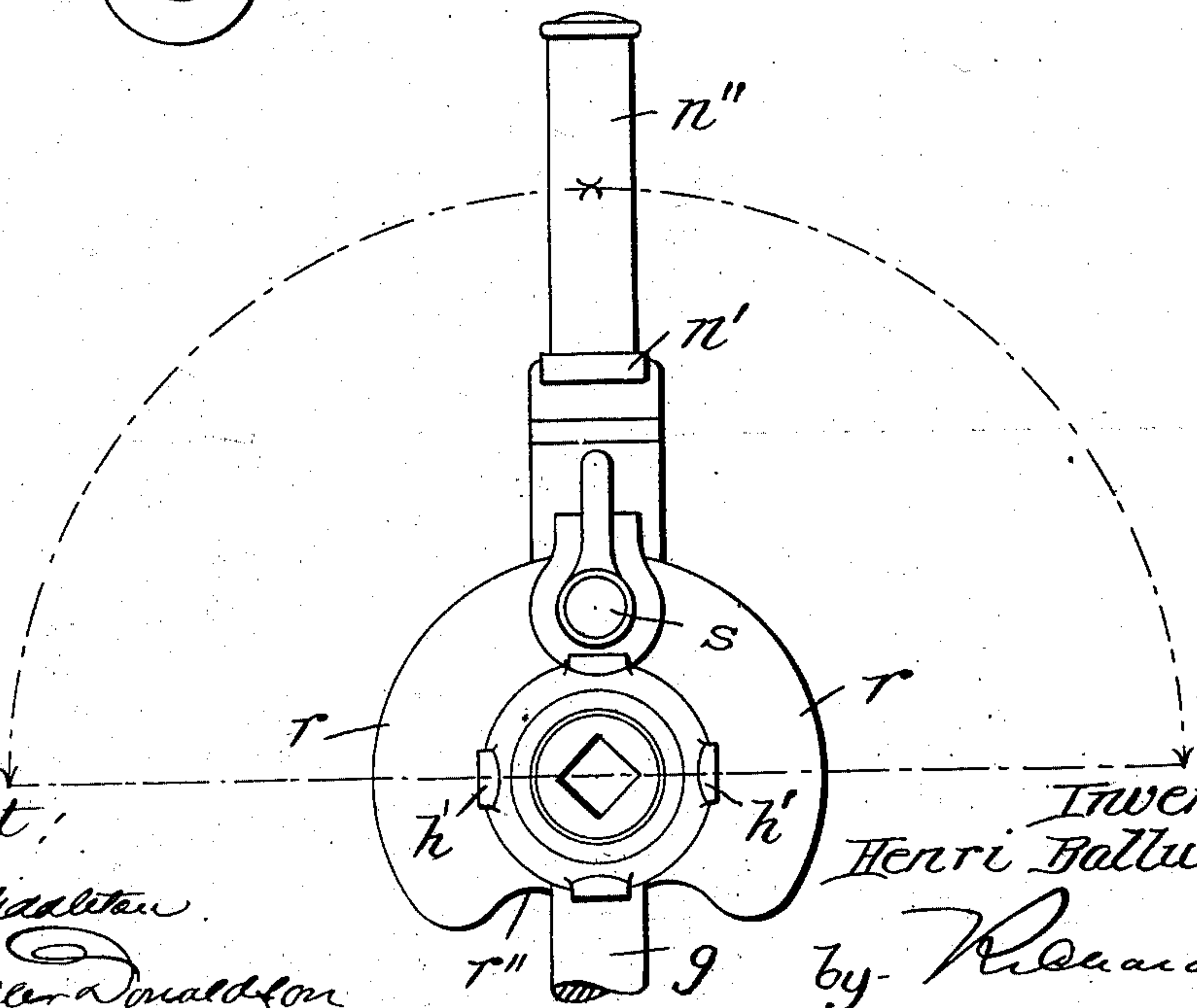


Fig. 4.



attest:
Attestation
Miller Donaldson

Inventor,
Henri Balluet
by *Reaards & Co.*
attys

UNITED STATES PATENT OFFICE.

HENRI BALLUET, OF NOUZON, FRANCE, ASSIGNOR TO JULIEN EMILE THOMÉ, OF NOUZON, FRANCE.

DRILLING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 750,423, dated January 26, 1904.

Application filed June 18, 1901. Serial No. 65,044. (No model.)

To all whom it may concern:

Be it known that I, HENRI BALLUET, mechanic, of Nouzon, Ardennes, Republic of France, have invented a Drilling-Machine, of which the following is a full, clear, and exact description.

This invention relates to a new kind of hand-operated drilling-machine, characterized by the arrangement of a device enabling the rest or support of the operating-crank to turn one hundred and eighty degrees around the drill-holder and to keep this rest at the required rate of inclination in order to facilitate certain works and to allow the tramways to pass when the machine is used for drilling tramway-rails.

My invention will be better understood by the following specification with reference to the accompanying drawings, in which—

Figure 1 is an elevation of the machine. Fig. 2 is a corresponding plan, and Fig. 3 a vertical section, thereof. Fig. 4 shows the same machine in end view. Fig. 5 is an end view of the bracket *g* with part of the drill-holder in section.

In the several figures the same letters of reference denote like parts.

As shown in the drawings, when, for instance, it is desired to bore or drill a hole through the web *a* of a rail *a'* I arrange the round stem *b* under the foot *a''* of the rail in order to clamp this foot between a jaw *c* and another jaw *d*, such clamping being obtained by means of the screw *e*. The stem *b* is provided at its other end with a ring *f*, having a socket *f'*, in which I thread the rod *g*, that can be lifted or lowered at will. The rod *g* is provided with a threaded socket *g'*, receiving a tapped head *h*, in which the drill-holder *i* can turn freely.

The drill-holder *i* carries at the opposite side of the drill *j* a square *i'*, with which a pinion *k* is engaged. The pinion *k* gears with a pinion *l*, fastened upon a rod *m*, which also carries the crank *n*, whose part *n'* enables to bring the handle *n''* near to or away from the rod *m* by means of a screw *o*, that can be moved in a slot *p*. This arrangement also enables to bring down the handle *n''*.

A bridge *q*, bearing at one side upon the end

of the drill-holder *i* and at the other side upon a collar *r*, made in one with the socket *r'*, maintains the pinion *l* and the rod *m*. For this purpose a binding-screw *s* fastens the bridge *q* on the collar *r*. The socket *r'* is provided at its lower part with a slot *r''*, allowing the socket *g'* to pass.

On going on with the drilling it is only sufficient to carry forward the head *h* of the drill-holder *i*. For this purpose the head *h* is provided with a certain number of holes *h'*, in which any spindle is engaged to shift the head *h* in the threaded socket *g'*. When it is required to let a tram-car pass, for instance, the workman loosens the screw *s* and can incline at the right or at the left of the vertical the whole of the crank, so that the tram can pass.

The shifting of the axis *m*, arranged at right angles to the drill-holder *i*, can reach one hundred and eighty degrees. Furthermore, this arrangement enables to bring the crank to a more or less inclined position, according to the requirements of the work, as shown in Fig. 4 of the drawings.

The mobility of the rod *g* within the socket *f'* of the ring *f* allows the drill to move in such and such a direction, as shown in Fig. 2 of the drawings. The same arrangement also enables to vary the height of the drill *j* relatively to the axis of the rod *b*.

The forms, details, accessories, materials, and sizes of my drilling-machine may of course vary without departing from the principle of my invention.

The way in which the drill comes forward as the same advances in the part to be drilled is as follows: The apparatus is first brought close to the work by sliding the same on the stem *b* until the point of the drill enters the hole made with the punch and that shows the place where the hole is to be bored in the part—a rail, for example. Then you operate the drill that pierces the work. As drilling is going on you act upon the tapped head *h* by means of a spindle introduced into one of the holes *h'* of the head *h*, so that the said head will come outside the threaded socket *g'*, with the drill *j* abutting against the part to be drilled when drilling is going on. During this

rectilinear motion of the drill-holder i the square part i'' of the same slides within the hub of pinion k , so that the pinion can always operate the drill notwithstanding the displacements of the latter. However, such forward motion is not very great, as the parts to be drilled are not very thick.

I claim—

1. In combination with the drill-holder, a gear-wheel thereon a sleeve or socket also supported on the drill-holder, a second gear meshing therewith, a crank connected with the said second gear, a crank-rest supported on the drill-holder at one end, a sleeve supported on the drill-holder between which and the crank-rest the first-mentioned gear is supported, said sleeve having a collar engaging the crank-rest and means for holding the

crank-rest and collar together, substantially as described.

2. In combination, the drill-holder, a supporting-rod g having a socket g' through which the drill-holder extends, a socket-piece r' within which the socket g' is located, the gearing, a crank, a crank-rest connected with the drill-holder and with the socket r' , said socket r' having a slot r'' to permit a relative movement between the supporting-rod g with its socket and the socket r' .

The foregoing specification of my drilling-machine signed by me this 3d day of June, 1901.

HENRI BALLUET.

Witnesses:

CUNISSE LUCIEN,
MAURICE H. PIGNET.