

No. 629,004.

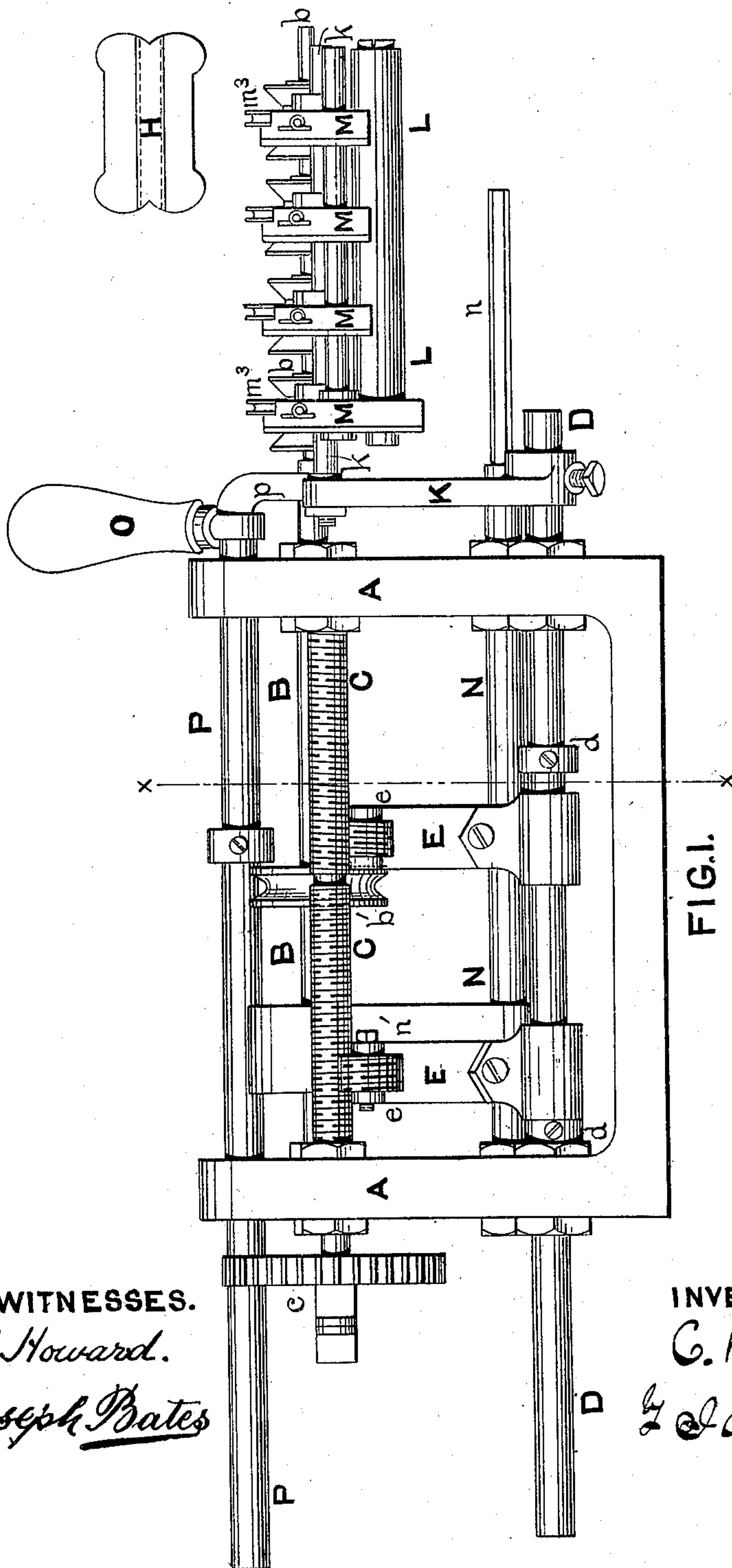
Patented July 18, 1899.

C. R. DANIELS.
SPOOLING MACHINE.

(Application filed Jan. 3, 1898.)

(No Model.)

6 Sheets—Sheet 1.



WITNESSES.
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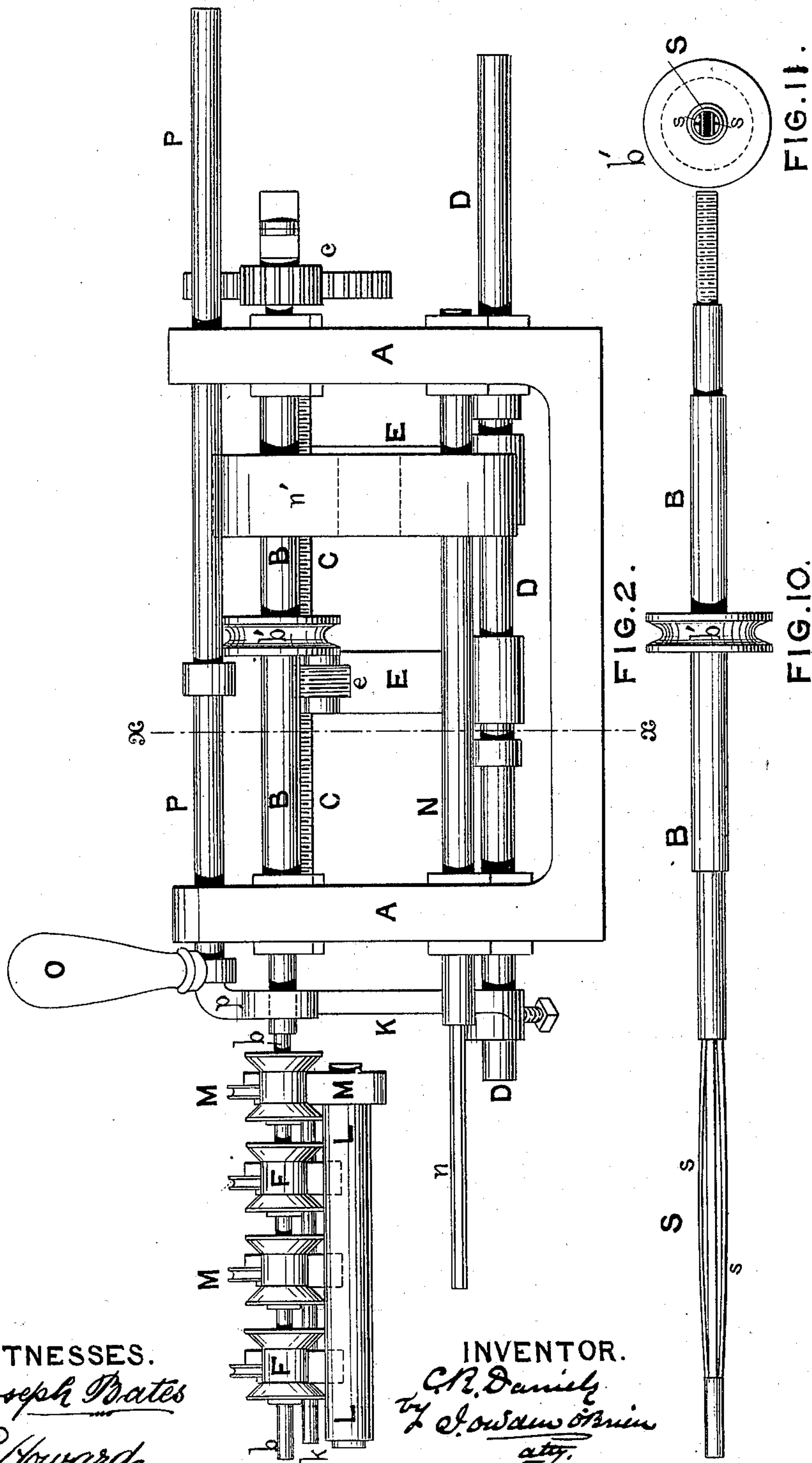
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6 Sheets—Sheet 2.



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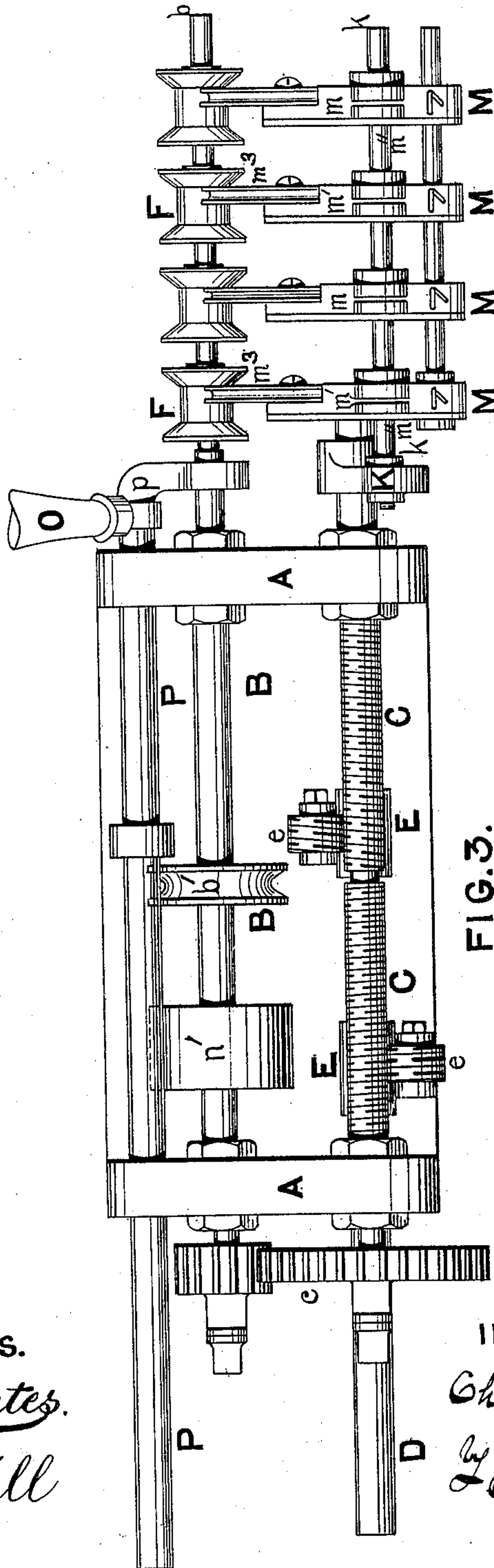
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6 Sheets—Sheet 3.



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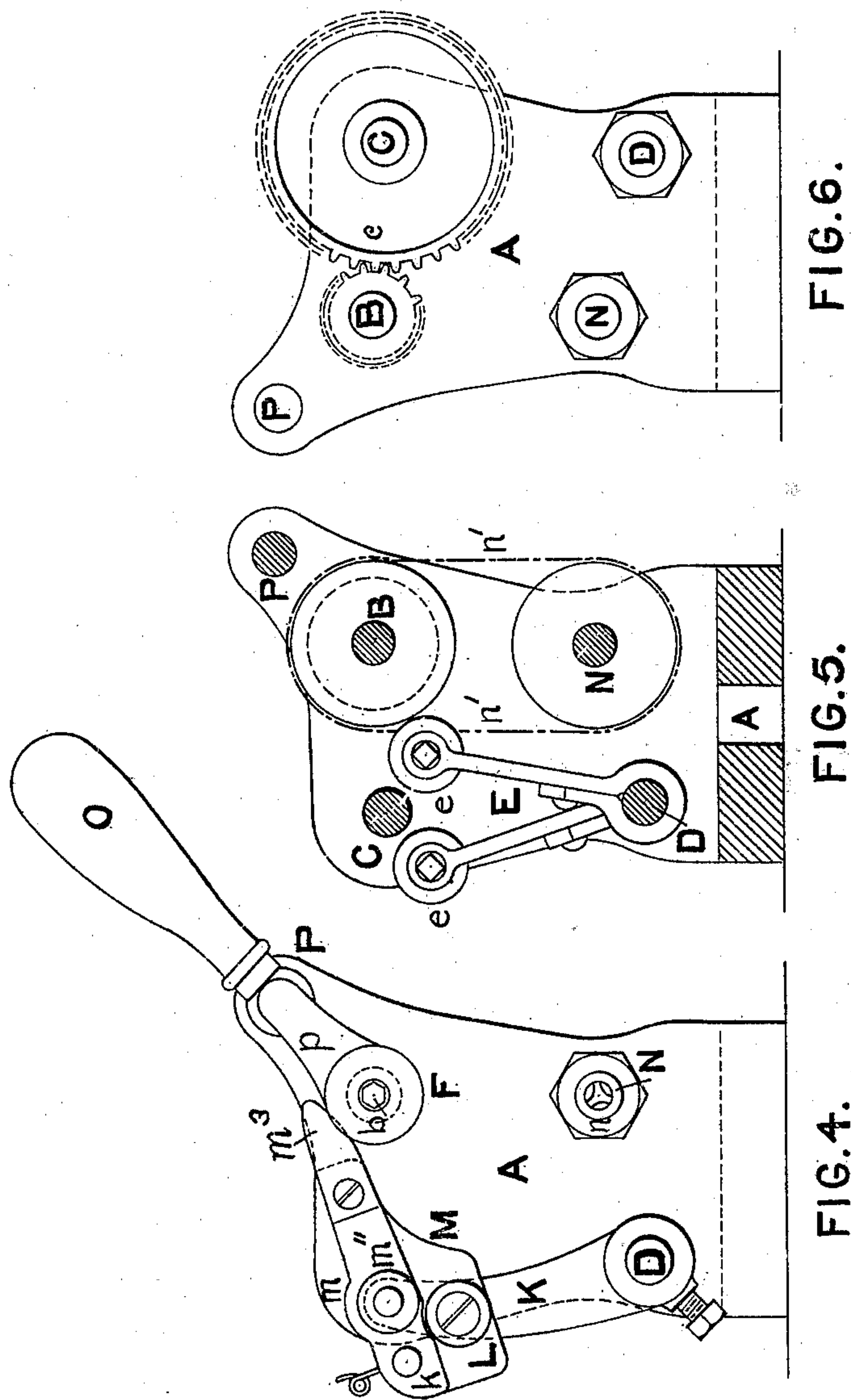
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6 Sheets—Sheet 5.

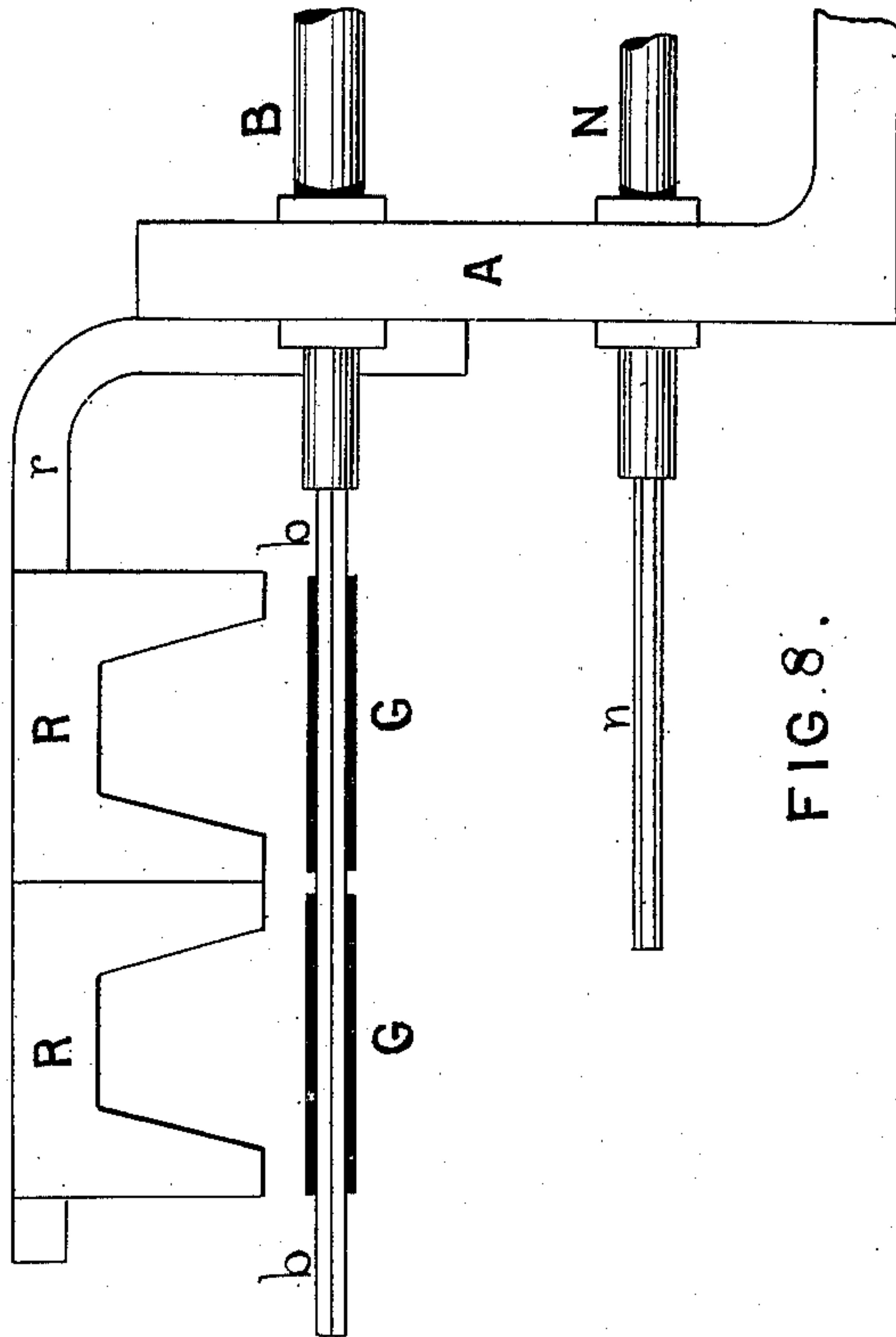


FIG. 8.

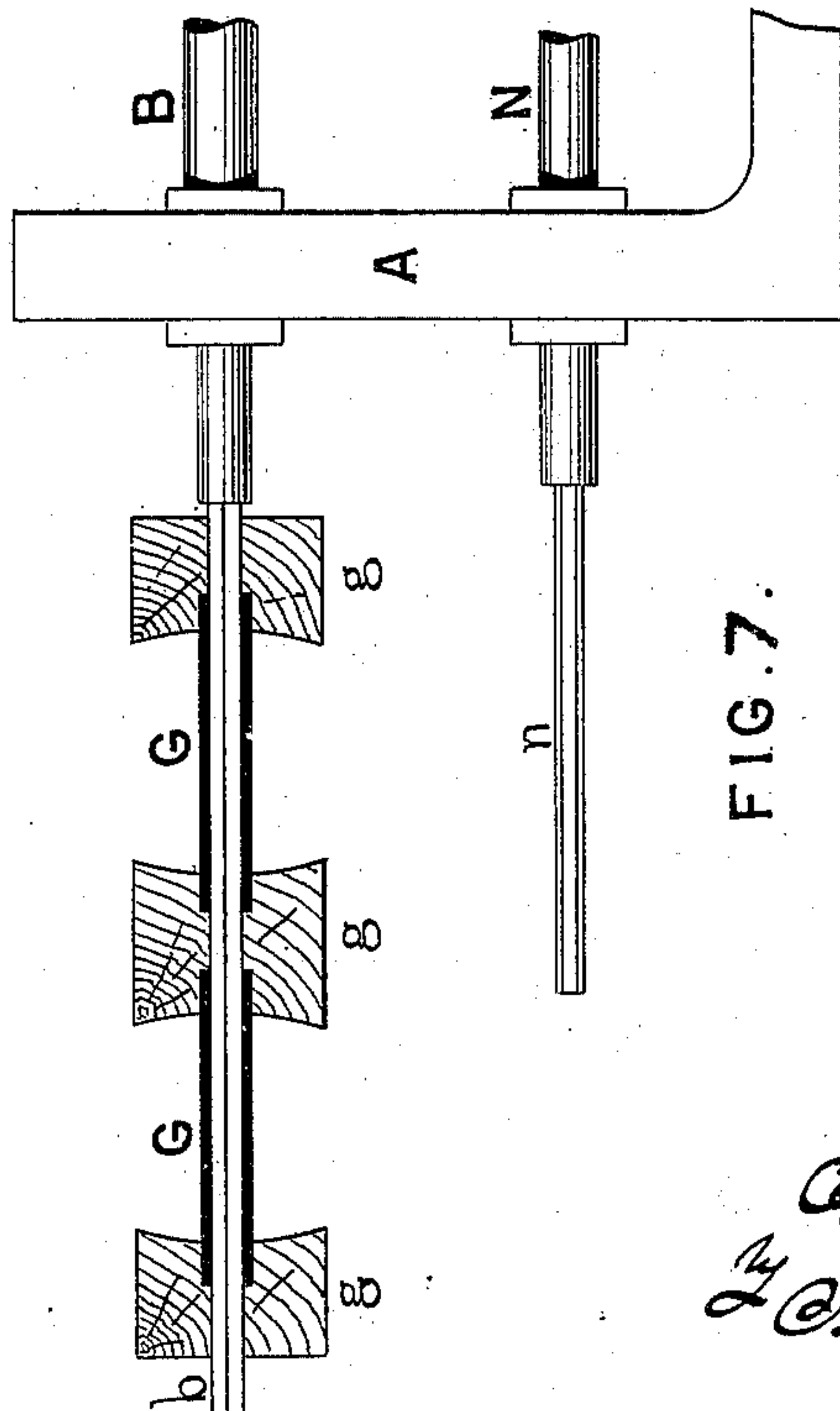


FIG. 7.

WITNESSES

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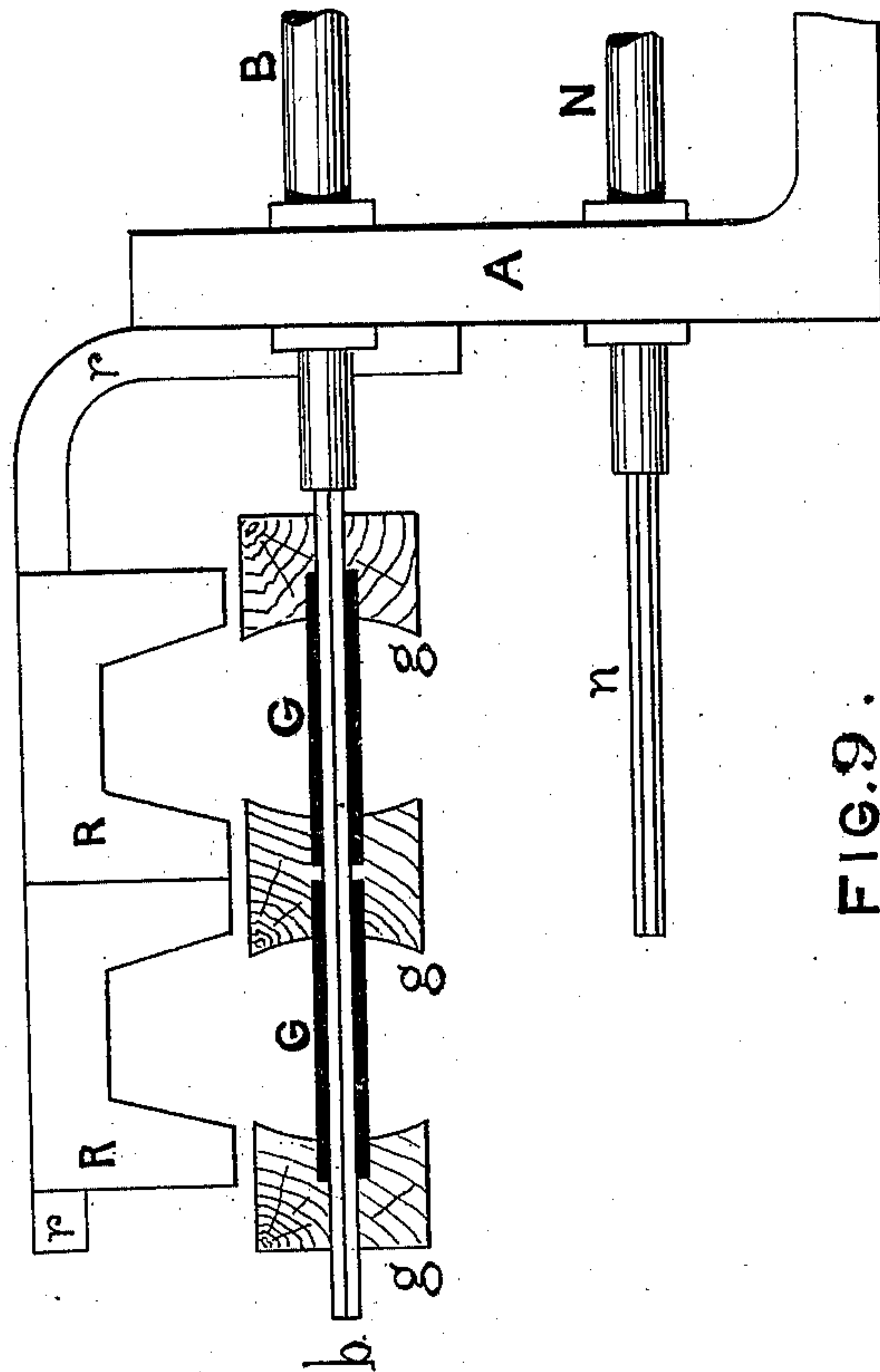
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C. R. DANIELS.
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(Application filed Jan. 3, 1898.)

(No Model.)

6 Sheets—Sheet 6.



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UNITED STATES PATENT OFFICE.

CHARLES R. DANIELS, OF SHARPLES, ENGLAND.

SPOOLING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 629,004, dated July 18, 1899.

Application filed January 3, 1898. Serial No. 665,584. (No model.)

To all whom it may concern:

Be it known that I, CHARLES RICHARD DANIELS, a subject of the Queen of Great Britain, residing at Sharples, near Bolton, in the county of Lancaster, England, have invented certain new and useful Improvements in Spooling-Machines, of which the following is a specification.

This invention relates to machines for spooling or winding threads of cotton, linen, silk, or other material onto bobbins, cards, tubes, or the like, and is designed with the object of increasing production, reducing cost of same, and avoiding waste of time and material. It will be fully described with reference to the accompanying drawings.

Figure 1 is a side elevation; Fig. 2, a side elevation from the other side of the machine; Fig. 3, a plan; Fig. 4, an end elevation of the front or working end of the machine; Fig. 5, a transverse section on line $x x$, Figs. 1 and 2; Fig. 6, an end elevation of the back end of the machine; Fig. 7, a side elevation of part of machine with appliance for spooling or winding thread on tubes; Fig. 8, a side elevation showing a modification of same; Fig. 9, a side elevation of another modification; Fig. 10, an elevation showing improved form of spindle; Fig. 11, a section through blade of same.

The frame A is constructed of metal or other material of suitable shape to carry the operative parts of the machine. In this frame, to one side, I mount a spindle B, free to rotate in its bearings, (and driven by band onto a wharve b' ,) with blade b , upon which the bobbins are placed, and at the other side a fine worm or threaded spindle C, and below this a sliding or traversing spindle D, to which are firmly attached two brackets E, one placed at each side of the threaded spindle C. The threaded spindle C is driven at the desired speed by spur-wheels c from the spindle B, and each bracket E carries at its end a bowl or runner e , chased in the periphery with fine grooves which engage alternately with the threads on the threaded spindle C. One-half of the spindle C has a right-hand thread and the other half a left-hand thread, so that by placing the runner e of the brackets E alternately in contact with the spindle C a to-and-fro movement is given to the traverse-spindle D.

The blade b of the bobbin-spindle B, which projects beyond the end of the frame A, I make of such a length as to carry two, three, four, or more spools, tubes, or cards, upon which the thread is to be wound, preferably of a length to receive four bobbins F, two tubes G, or two cards H.

To the end of the traverse-spindle D is affixed a bracket or arm K, carrying at its upper end a spindle k and a handle L, which project beyond the frame A, parallel with the blade b of the spindle B. On the spindle k are placed a number of guides M, the number corresponding with the number of spools, bobbins, tubes, or cards on the spindle B, by which the thread is laid upon the spool, bobbin, tube, or card. The guides are adjustable on the spindles k and secured by small set-screws or otherwise. Each guide M is preferably made with an enlargement m on the upper side, in which a groove m' is cut, through which the thread passes, so that the operative can apply the thumb or finger to the upper side of the guide without coming in contact with the thread to give the desired amount of pressure to the guide. The handle L serves to change the position of the traverse-spindle D to place either one or other of the runners e in contact with the worm C to give the desired traverse either backward or forward to the guide M.

The spindle k and handle L may be made in sections, fitting or screwing onto one another to provide a spindle or handle of any length required.

On the traverse-spindle D are placed two adjustable collars d , by which the length of traverse can be regulated.

The guides M are preferably made of hard wood and bushed with metal bushes m'' to receive the spindle k and also provided with metal tips m^3 at their ends.

Below the spindle B, I insert in suitable bearing in the frame A a further spindle N with a reamer n projecting to the front end of the machine, by means of which should the bobbin-bore be too small or crooked to fit the spooling-spindle I can enlarge or straighten it sufficiently to enable it to fit. This spindle is driven from the main spooling-spindle by means of a cord or band n' on pulleys or by friction-wheels, chain or toothed

wheels, or combination of same either in the interior or exterior of the frame or may be driven from the main pulley direct.

Above the rod B, I place a sliding rod P, provided at the front end with a handle O and bracket *p*, which embraces the blade *b* of the rod B, by which the bobbins when full can be removed from the blade *b* of the spindle B. This rod and handle are placed, as shown, to be out of the way of the operative.

For winding or spooling the thread onto tubes G without flanges I may employ loose collars or flanges *g*, which are fitted onto the blade *b* of the spindle B (see Fig. 8) to prevent one layer of thread being carried at the ends beyond the preceding layer and give the desired form to the end of the roll of thread. The collars or flanges *g* may be recessed in the center to allow a small space of empty tube at each end. Instead of or in addition to the loose flanges or collars *g* I may attach shapers R, fitted on a bracket *r* on the end of the frame A (see Fig. 9) or in any other suitable position. The shapers R are tapered or inclined along their inner edges to give a slightly-conical shape to the end of the roll of thread, and the ends of the guides M project into and work between the sides of the shapers which stop or determine the traverse at each end. The shapers R may be formed with inclined or straight edges to give a tapered or straight end to the roll of thread, as may be required. The thread is laid onto the tubes by gage, as onto wooden spools, the face of the guide M which rests upon the tube being cut in the ordinary way according to thickness of thread spooled.

The spooling-spindle B for wooden bobbins may be constructed with a spring S on one or both sides provided with a knife-edge *s* to cut into the bore of the bobbin, (see Figs. 10 and 11,) whereby should the bore of the bobbin be too large or slightly larger than the blade *b* of the spindle B the bobbin will be held firm for winding. Cards may be spooled in a similar manner, the cards being provided with a hole through the center to fit onto the blade *b* of the spindle B.

What I claim as my invention, and desire to protect by Letters Patent, is—

1. In a spooling-machine the combination

with the threaded spindle C provided with right and left hand threads rotating in bearings in the framing A the traversing spindle D capable of moving longitudinally in bearings in the said framing provided with stop-collars *d* to determine the maximum distance of traverse-brackets E and runners *e* which engage alternately with the threaded spindle C and are moved to and fro thereby, the bracket K affixed to traversing spindle and spindle *k* carried thereby, of the winding-spindle D with long extended blade *b* forming part thereof and free at one end capable of receiving a number of bobbins a number of guides M mounted on the spindle *k* by which the thread is delivered to the bobbins and a corresponding number of loose collars *g* fitted on the blade *b* of the spindle B to prevent one layer of thread being carried at the ends beyond the preceding layer, substantially as described.

2. In a spooling-machine the combination with the threaded spindle C provided with right and left hand threads rotating in bearings in the framing A the traversing spindle D capable of moving longitudinally in bearings in the said framing provided with stop-collars *d* to determine the maximum distance of traverse-brackets E and runners *e* which engage alternately with the threaded spindle C and are moved to and fro thereby, the bracket K affixed to traversing spindle and spindle *k* carried thereby, of the winding-spindle B with long extended blade *b* forming part thereof and free at one end capable of receiving a number of bobbins a number of guides M mounted on the spindle *k* by which the thread is delivered to the bobbins of the shaper R placed above the guides M and a corresponding number of loose collars *g* fitted on the blade *b* of the spindle B to prevent one layer of thread being carried at the ends beyond the preceding layer, substantially as described.

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

C. R. DANIELS.

Witnesses:

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R. OVENDALE.