

No. 765,596.

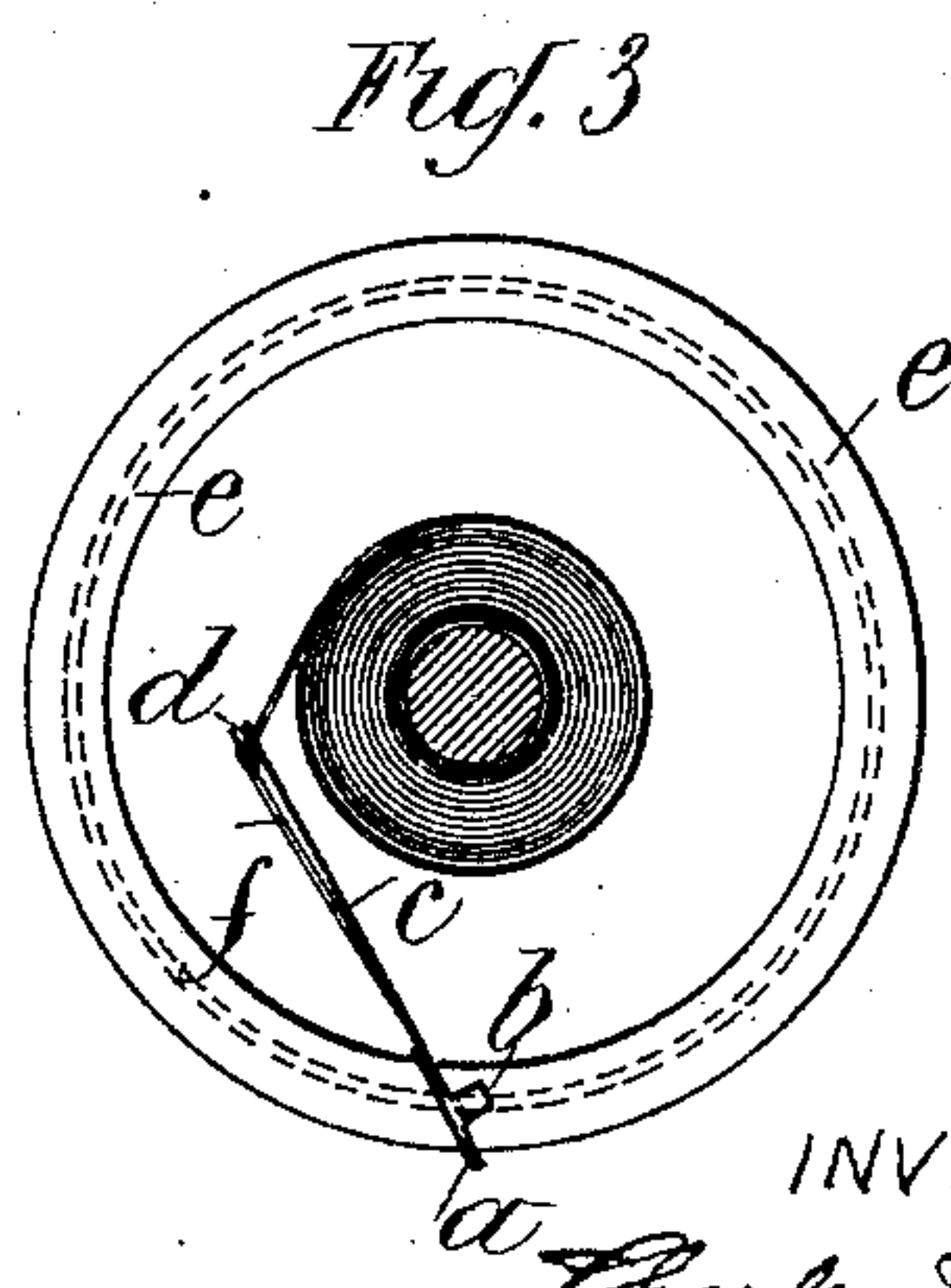
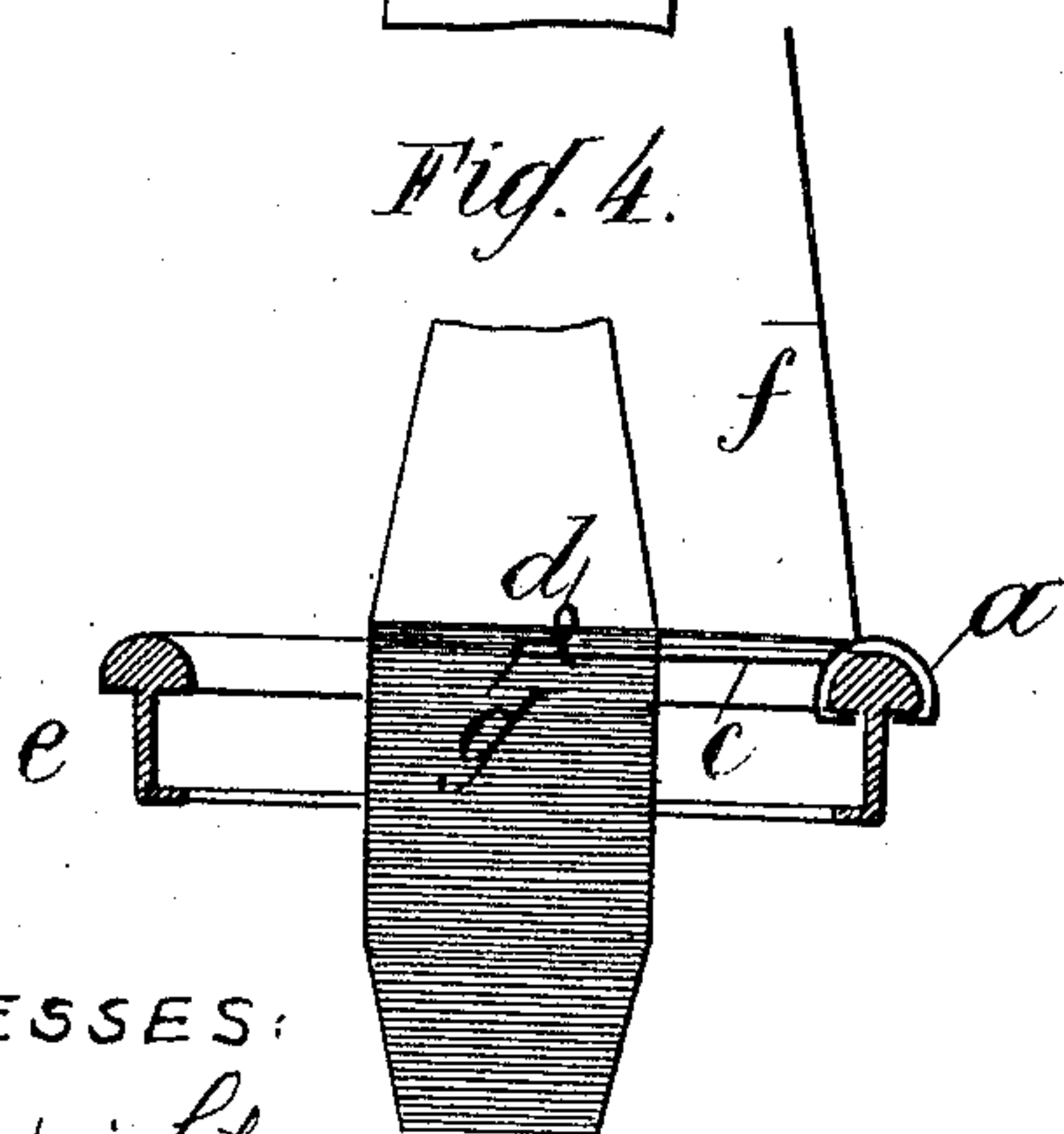
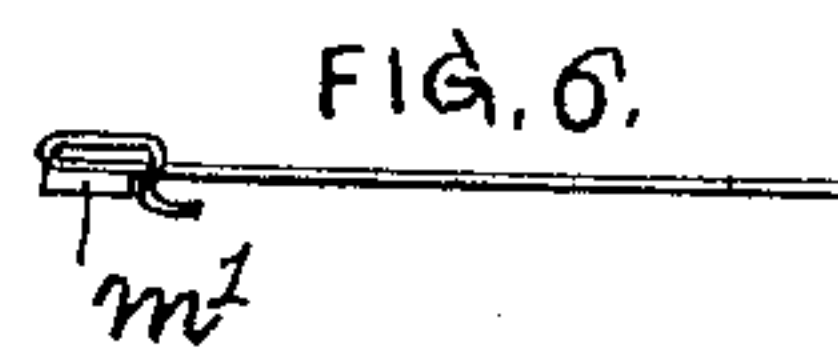
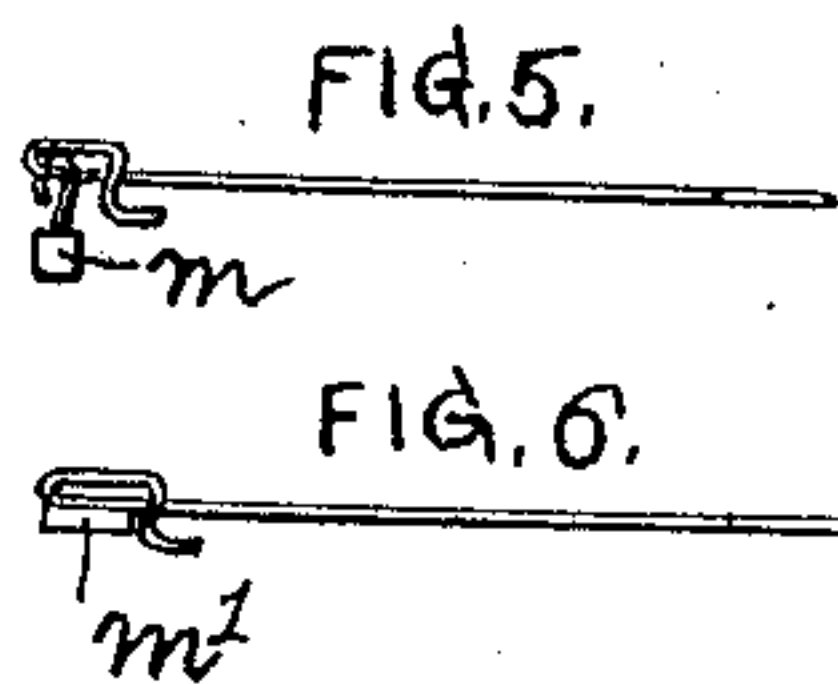
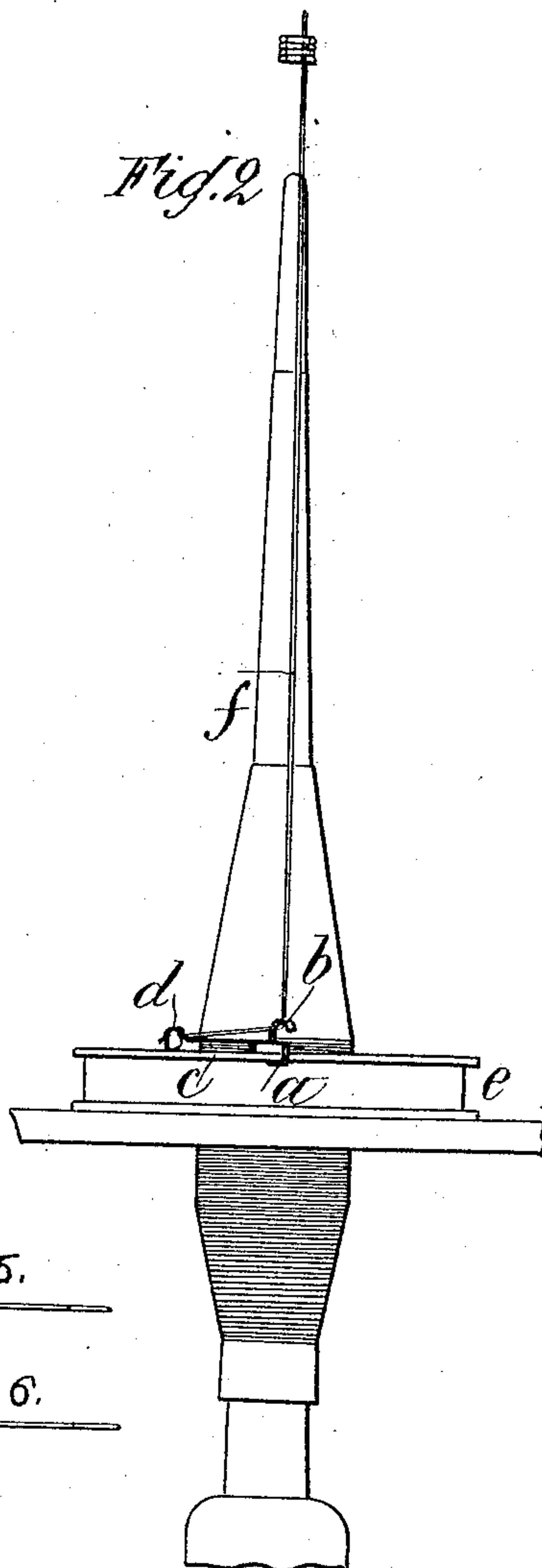
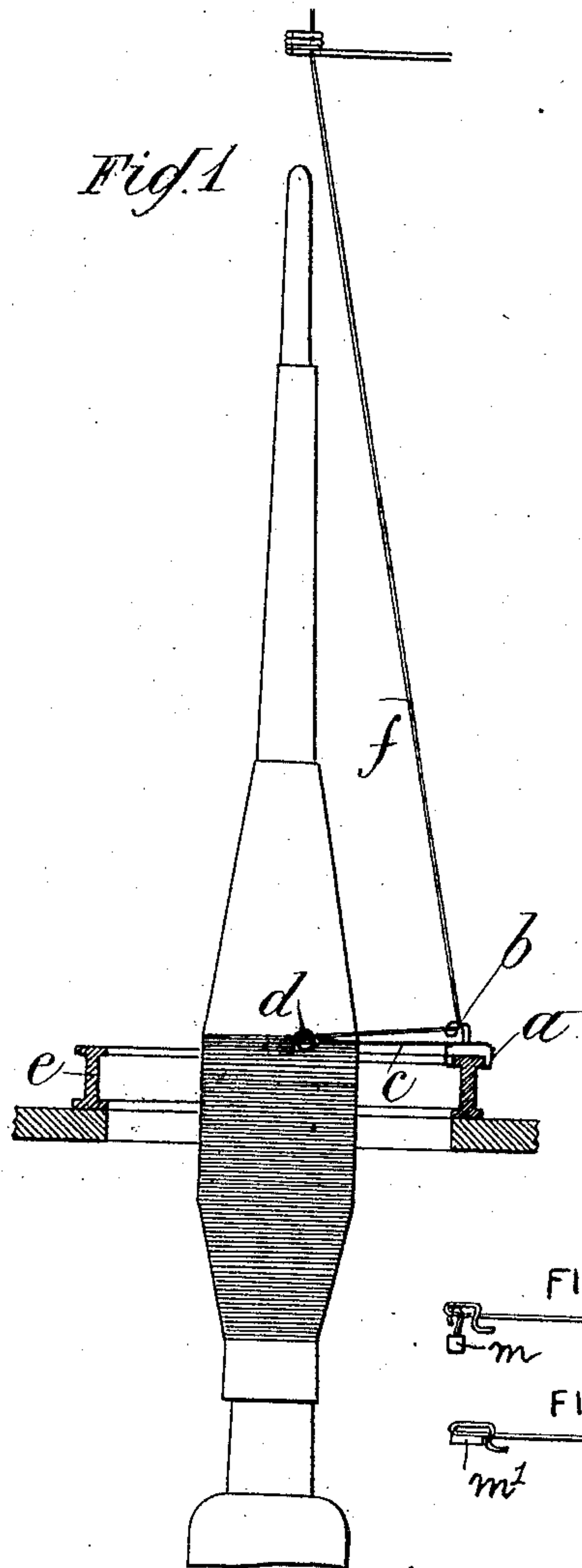
PATENTED JULY 19, 1904.

C. DE ROSSETTI.

TENSION REGULATING TRAVELER FOR SPINNING MACHINES.

APPLICATION FILED JAN. 20, 1903.

NO MODEL.



WITNESSES:

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UNITED STATES PATENT OFFICE.

CHARLES DE ROSSETTI, OF ROUBAIX, FRANCE.

TENSION-REGULATING TRAVELER FOR SPINNING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 765,596, dated July 19, 1904.

Application filed January 20, 1903. Serial No. 139,788. (No model.)

To all whom it may concern:

Be it known that I, CHARLES DE ROSSETTI, engineer, a subject of the King of Italy, residing at 40 Boulevard de Cambrai, Roubaix, France, have invented a certain new and useful Traveler Regulating the Tension of Yarn, of which the following is a full, clear, and exact description, and for which I have applied for Letters Patent in France, dated June 24, 1902.

This invention relates to the spindle apparatus of continuous spinning and twisting machines; and it consists of a traveler for regulating the tension of the yarn.

The apparatus which forms the subject of the present invention is based upon the utilization of centrifugal force exerted at the end of a lever-arm in order to effect the regulating of the tension of the thread which is wound upon bobbins or spindles of continuous spinning and twisting frames.

The invention is illustrated by way of example upon the accompanying drawings, in which—

Figure 1 is an elevation of a spindle of a continuous loom fitted with the traveler. Fig. 2 is another elevation seen at right angles to Fig. 1. Fig. 3 is a horizontal section, and Fig. 4 shows a modification in the construction of the apparatus. Fig. 5 is a plan view showing a weight hooked to the lever, and Fig. 6 is a view of a weight integral with the lever.

The traveler consists of a claw *a*, fitted above with a hook *b* and furnished with a rod or lever-arm *c* ending in a spiral *d*. The claw engages the rail *e* of a traveler-ring, as in ordinary travelers. The thread or yarn *f* coming from the feed-rollers passes through the apparatus by the hook *b* on top of the claw and passes out from the spiral *d*, arranged at the end of the lever *c*. This arrangement enables the lever-arm when pivoting on the claw by reason of the action of the vertical length of yarn which maintains the claw upright to move freely in both directions between the spindle and the traveler-ring. Thus situated the lever-arm of the movable part is subject to, first, centrifugal force, which tends to separate the end *d* from the center, and, secondly,

to the force of the yarn being wound on the bobbin or spool, which tends to bring it back thereto. Further, the magnitude of the centrifugal force in the same traveler may be varied by hooking to the extremity of the lever *c* beyond the spiral *d*—at *g*, for example, Fig. 4—additional weights of different degree. As shown in Fig. 5, this weight *m* may be hooked to the lever and remain horizontally placed when in operation by centrifugal force, or it may be integral with the lever, as shown in Fig. 6, in which case a file may be used to properly reduce its weight to properly proportion it to the strength of the thread and the desired tension.

It will easily be understood that if the mass of the movable whole, and that mass more particularly of the end of the lever-arm, are in proportion to the strain which the yarn can support without breaking a regular motion and a practically constant tension ought to be maintained.

At starting the yarn draws the lever-arm toward the center, connects it to the spindle, and thus causes the movable whole to start at the same speed as the spindle, whatever be its diameter and the diameter of the traveler-ring. After starting the lever-arm under the action of centrifugal force which tends to separate it from the center, but held by the attraction of the yarn, assumes almost horizontally (in spite of the up-and-down movements) the various positions due to successive variations of the opposing forces which act on its extremity and that during the whole of the formation of the cop or spool.

By utilizing centrifugal force, so that the extremity of the lever-arm is almost always (under the action of the yarn) in the space comprised between the traveler-ring and the spindle, I have succeeded in keeping the length of yarn acting between the movable part and the bobbin always very short and much less than the annular distance which separates the bobbins from the traveler-ring, which facilitates the drawing of the traveler and enables an empty bobbin to be spooled or wound by a large traveler-ring. Further, I effect a difference in tension between the two limbs horizontal and vertical of the yarn, be-

cause each has a separate attachment, one at each end of the lever, and it will be understood that the attachment at *d* is subject to a greater strain than the attachment at *b*, and therefore the greater tension is on the yarn over the very short distance which separates the bobbins from the point *d* and the lesser tension on the yarn from the point *b* to the feed-rollers. Lastly, the present arrangement enables these traveler apparatus to be made very light.

The practical advantages of this arrangement are the following: It is possible to spool or wind empty bobbins with energetic tightening, so as to obtain bobbins very heavily wound with yarn. It is practicable to wind numbers or counts of thread finer than those now obtained on traveler-looms without modifying any part of such existing continuous machines. It is possible to make use of a single thickness of metal for a very extended series of apparatus by limiting the changes for the different counts of yarn to be spooled to the mass to be placed at the extremity of the lever-arm beyond the spiral *d* that renders this apparatus quite adjustable proportionally to the strain which each count of yarn can support, because the variations of the load at the end of the lever can follow an ascending or descending scale of weights of infinitesimal values.

It is to be understood that I do not limit myself to the shapes, the dimensions, and the constructional details indicated in the drawings by way of example. Thus the hook *b*,

surmounting the claw *a*, can be dispensed with, Fig. 4, so as to simplify the construction and lighten the traveler. The yarn is then simply passed through the claw *a*. Further, the upper portion of the traveler-ring may be rounded to a mushroom shape, Fig. 4, and a corresponding form be given to the claw *a* for the purpose of diminishing friction and to avoid the wedging of the claw upon the ring.

I claim as my invention—

1. A traveler-ring and a spindle for spinning machinery, in combination with a lever freely mounted on the ring so as to be adapted to tilt downwardly and inwardly when not actuated, and adapted to be maintained in a horizontal position by centrifugal force, and a hook at its inner end for the passage of the tensioned thread, whereby said tensioned thread is caused to hold the lever in against the spindle, substantially as described.

2. A traveler-ring and a spindle for spinning machinery, in combination with a lever, a claw at one end freely fitting the ring and a hook at the other end for the passage of the tensioned thread, said lever being maintained in horizontal position by centrifugal force, and a weight on said lever, substantially as described.

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

CHARLES DE ROSSETTI.

Witnesses:

GUSTAVE DUMONT,
AUGUSTUS E. INGRAM.