

No. 619,142.

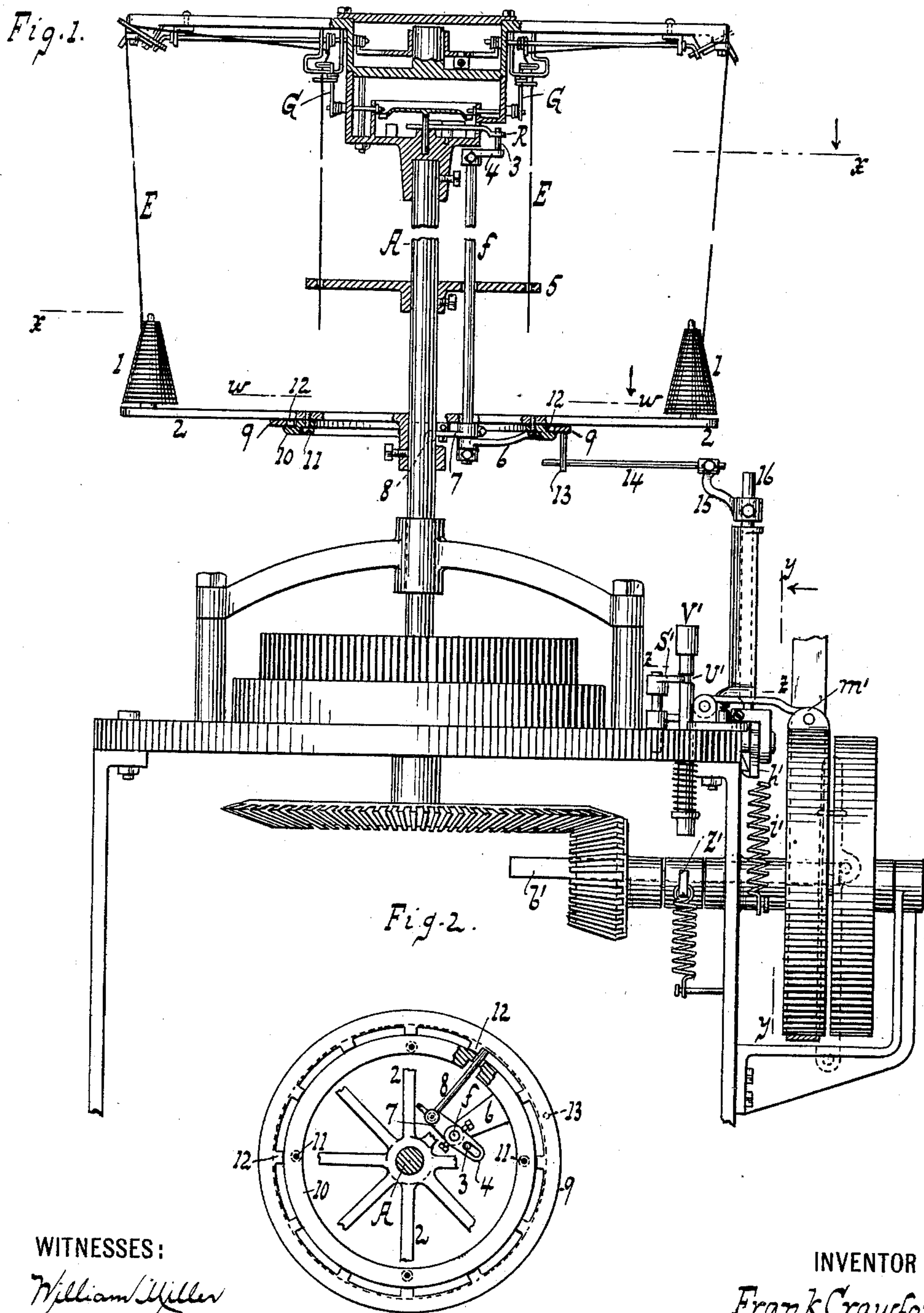
Patented Feb. 7, 1899.

F. CRAWFORD.  
STOP MECHANISM FOR KNITTING MACHINES.

(Application filed June 6, 1898.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES:  
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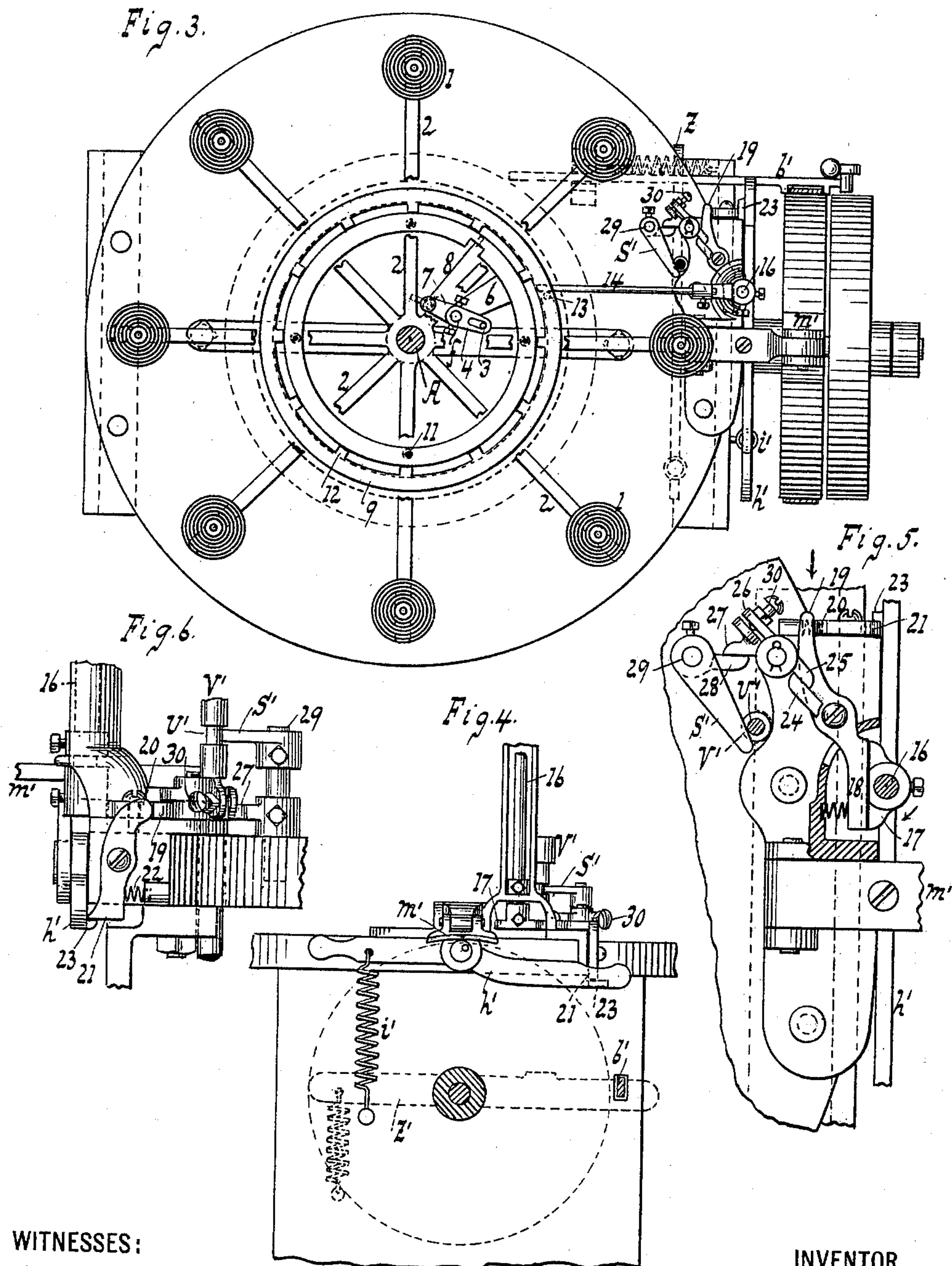
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WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## STOP MECHANISM FOR KNITTING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 619,142, dated February 7, 1899.

Application filed June 6, 1898. Serial No. 682,702. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK CRAWFORD, a citizen of the United States, residing at New Brunswick, in the county of Middlesex and State of New Jersey, have invented new and useful Improvements in Stop Mechanism for Knitting-Machines, of which the following is a specification.

This invention resides in the novel features of construction set forth in the following specification and claims, and illustrated in the annexed drawings, in which—

Figure 1 is an elevation, partly in section, of the mechanism. Fig. 2 is a section along *ww*, Fig. 1. Fig. 3 is a section along *xx*, Fig. 1. Fig. 4 is a section along *yy*, Fig. 1. Fig. 5 is a section along *zz*, Fig. 1. Fig. 6 is a side elevation of Fig. 5.

In the drawings the letter G, Fig. 1, indicates the releasing-finger. This thread feeler or finger G while held up by thread E will be out of action; but when said finger drops by the slacking or breaking of the thread the slide R is actuated in manner similar to that set forth in United States Letters Patent No. 510,839, granted on my application filed December 12, 1893. The thread or threads come from bobbins 1 on bobbin rack or carrier 2, secured to shaft A, said shaft, with the bobbin-rack, being made to rotate. The slide R by a pin and crank-arm connection 3 and 4 engages the rock-shaft *f*, having suitable bearings or supports, such as the guide or plate 5, rotating with shaft A, and the arm or support 6, secured to or rotating with the bobbin-rack. It is thus seen that the shaft A, bobbin-carrier 2, with its bobbin, feelers G, slide R, and rock-shaft *f* and its bearings 5 6 all rotate together.

From shaft *f* extends a crank or arm 7, engaging a lock or latch-rod 8, Figs. 2 and 3. A ring 9 rests on a flange or support 10, Fig. 1, suitably secured, as by screws or fastenings 11, to rotary bobbin-rack 2. The ring 9 rests loose on its bearing or support 10, so as to be normally at rest or not to partake of the rotation of rack 2. Should, however, a thread break or slacken, the slide R, as explained in said Patent No. 510,839, will move longitudinally or spring inward and will rock or give a

suitable or partial rotation to shaft *f*, so that the arm 7 will slide latch or finger 8 outward or to engaging position to strike one of the teeth 12, Fig. 2, on ring 9. The ring is shown with twelve such teeth; but of course this number can be varied, if seen fit.

When the lock 8 is withdrawn, as seen in Fig. 3—that is to say, when the parts are in working order and the slide or actuator R held in or back—the lock 8, rotating with the bobbin-rack, clears the teeth 12 and the ring 9 rests stationary on its support 10. When, however, the latch 8 is moved to locking position, Fig. 2, or strikes a tooth 12, the ring 9 is actuated, so that its finger or stud 13, Fig. 1, engages the arm or finger 14, which, with its bracket or carrier 15, is suitably secured or adjusted on shaft 16. This shaft 16 being suitably actuated or rocked can bring the brake or stopping mechanism into action in suitable manner.

In the drawings is shown a stop and brake mechanism similar to that of said Patent No. 510,839, the arm *S'*, Figs. 5 and 6, when withdrawn from notch *U'* allowing rod *V'* to descend to swing lever *Z'*, Fig. 4, to release shifter-rod *b'*, which shipper *b'* engages the belt.

The lever *h'* when free to be actuated by its spring *i'* will put the shoe or brake *m* into action.

The rod *V'*, as seen in Fig. 1, is not connected to lever *Z'*; but, as explained in said Patent No. 510,839, the rod *V'* in its fall lands on lever *Z'* to swing the latter, as stated.

The shaft 16, as seen in Fig. 5, has a foot or lug 17, which when the shaft 16 is rocked will swing lever 18 19, so that arm 19 swings lever 20 21, Fig. 6, against the action of spring 22, so as to withdraw arm 21 from the lug 23 on lever *h'*, rendering its spring *i'* free to move lever *h'* into braking position.

The lever-arm 19 carries a shoulder 24, Fig. 5, engaging lever 25 26, having a piece 27 engaging arm 28 on shaft 29, carrying arm *S'*. This piece 27 can be properly set or adjusted by screw 30. When the shaft 16 is rocked, the lever 18 19 by shoulder 24 swings lever 25 26, so that arm 26 or piece 27 swings arm 28 and shaft 29 to withdraw arm *S'* from rod *V'*.



The shaft 16, as stated, is rocked by its finger 14, Fig. 1, being pressed or engaged by the finger 13 of ring 9 when the latter is locked to or moved by the rotary bobbin-holder 2. The rock-shaft *f* is located and is carried about within the ring 9, the internal or inwardly-projecting teeth 12 being adapted for engagement by the latch 8 of shaft *f*. In speaking of teeth 12, one such tooth could of course answer; but a series of teeth 12 is of advantage, as thereby a tooth is always in proximity to the latch 8 to be promptly caught by such latch when sprung. When the latch 8 is clear or withdrawn, Fig. 3, the finger 13, resting against finger 14, holds the ring 9 stationary, so that it will normally not partake of the rotation of bobbin-rack 2. The ring-holder or flange 10 is shown secured close to or in direct contact with the bobbin-holder, but of course could be caused to depend therefrom, or said ring could be applied away from the bobbin-rack a greater or less distance at any suitable point, if seen fit.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination with a rotary bobbin-rack, a toothed ring mounted in contact with the rack, and belt-shifting or brake mechanism engaged by the ring, of a latch-rod carried by the rack and adapted to engage the teeth on said ring, a rock-shaft having a crank-arm thereon engaging said latch-rod, a thread-feeler supported by the thread, and means actuated by the descent of said feeler, for rocking said shaft, substantially as described.

2. A stop mechanism comprising a rock-shaft, a slide or actuator for the shaft, a rotary bobbin-rack on which the shaft is mounted, a lock actuated by the shaft, a belt-shifting or brake mechanism, and a connecting or transmitting mechanism between the lock and shifting mechanism substantially as described.

3. A stop mechanism comprising a rock-shaft, a slide or actuator for the shaft, a rotary bobbin-rack for carrying the shaft, a latch or finger actuated by the shaft, a toothed ring engaged by the latch, and a shifter or

brake mechanism engaged by the ring substantially as described.

4. A stop mechanism comprising a rock-shaft, a slide or actuator for the shaft, a latch or finger actuated by the shaft, and a toothed ring within which the rock-shaft is located and provided with internal teeth adapted to be engaged by the latch and a shifter or brake mechanism substantially as described.

5. A rotary bobbin-rack, a toothed ring supported on the rack, a rock-shaft, a thread-finger and actuator for the shaft, and a latch actuated by the shaft for engaging the teeth of the ring and a shifter or brake mechanism engaged by the ring substantially as described.

6. A rotary bobbin-rack, a toothed ring supported on the rack, a rock-shaft, a thread-finger and actuator for the shaft, a latch actuated by the shaft for engaging the teeth of the ring, and a shipper or brake-actuating mechanism substantially as described, said mechanism and ring being in engagement so that the ring is held stationary or non-rotating when the latch is unlocked or clear substantially as described.

7. A rotary bobbin-rack having a supporting-flange, a ring loosely mounted or supported on the flange, a rock-shaft carried by the bobbin-rack, a thread-finger and actuator for the shaft, a lock actuated by the shaft for engaging the ring, and a shipper or brake-actuating mechanism substantially as described engaged by the ring.

8. A rotary shaft provided with a bobbin-rack, a thread-feeler and a rock-shaft carried by the rotary shaft, a shipper or brake-actuating mechanism substantially as described, a ring normally held stationary by said mechanism, and a lock actuated by the rock-shaft for imparting motion from the rotary shaft to the shipper mechanism substantially as described.

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

FRANK CRAWFORD.

Witnesses:

W. C. HAUFF,

E. F. KASTENHUBER.