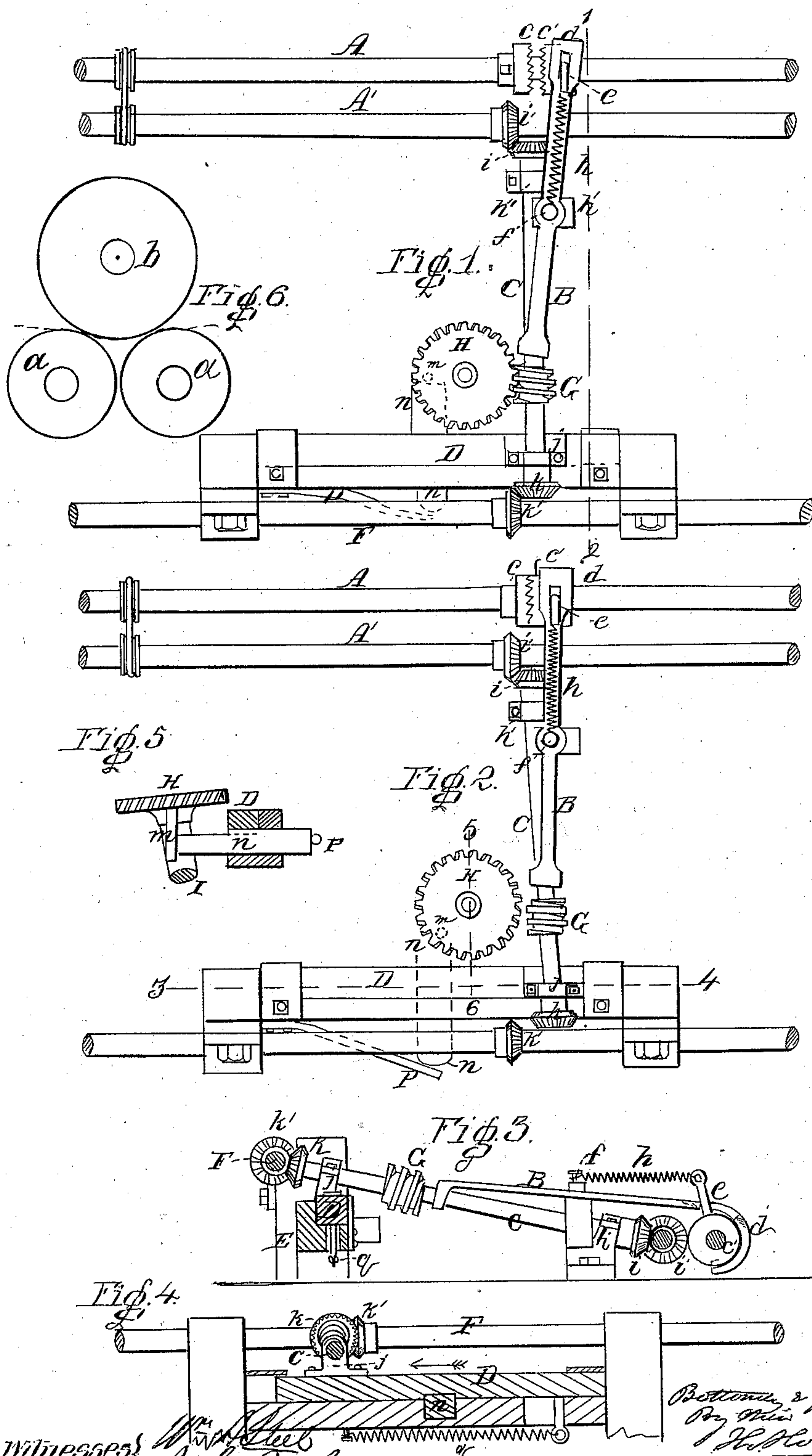


# Bottomley & Greenwood, Spinning Machine.

No. 98,549.

Patented Jan. 4, 1870.



Witnesses: *John Parker*  
*Bottomley & Greenwood*  
*By their Atty*  
*W. H. Brown*



# United States Patent Office.

HENRY BOTTOMLEY AND PETER GREENWOOD, OF CAMDEN, NEW JERSEY.

Letters Patent No. 98,549, dated January 4, 1870.

## IMPROVEMENT IN MECHANISM FOR STOPPING THE DELIVERY-ROLLERS OF SPINNING-MACHINES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that we, HENRY BOTTOMLEY and PETER GREENWOOD, of Camden, Camden county, State of New Jersey, have invented certain Improvements in Spinning-Machinery; and we do hereby declare the following to be a full, clear, and exact description of the same.

Our invention consists of certain mechanism, fully described hereafter, for counteracting the momentum of the delivery-rollers of spinning-machines, after they are thrown out of gear, thereby insuring the making of more uniform threads than can be produced when the delivery-rollers are uncontrolled.

In order to enable others skilled in the art to make and use our invention, we will now proceed to describe its construction and operation, reference being had to the accompanying drawing, which forms a part of this specification, and in which—

Figure 1 is a plan view of our mechanism for controlling the roping in a spinning-machine;

Figure 2, the same, with some of the parts in a different position;

Figure 3, a vertical section, on the line 1-2, fig. 1;

Figure 4, a vertical section, on the line 3-4, fig. 2;

Figure 5, a vertical section, on the line 5-6, fig. 2; and

Figure 6, a diagram, illustrating our invention.

Similar letters refer to similar parts throughout the several views.

A and A' are two spindles, to each end of which are connected the delivery-rollers of a spinning-machine, that is, the rollers *a a*, shown in the diagram, fig. 6, on and between which rest the cylindrical weights or upper roller *b*, and between the latter and the lower rollers passes the roping to the spindles on the jack.

It should be understood that the mechanism which we are about to describe is situated midway, or thereabout, between the opposite ends of the jack, the permanent parts of the mechanism being secured to the frame of what is known as the driving-head of the spinning-machine.

To the spindle A is secured a clutch, *c*, adapted to a similar clutch, *c'*, which is arranged to slide and turn freely, independent of the said spindle.

A lever, B, is hung to a permanent part of the frame, and the bent arm *d*, fig. 3, of this lever, passes over and beneath the clutch *c'*, a pin on the extreme end of this arm entering a groove in the said clutch.

An arm is secured to the clutch *c'*, and this arm passes through a slot in the lever B, the upper end of the arm being connected to a permanent pin, *f*, by a spiral or other suitable spring, *h*, the tendency of which is to maintain the arm *e* in the position shown in fig. 3.

The other arm of the lever B is forked at the end, so as to embrace but not impede the movements of a shaft, C, which turns in a bearing, *k*, on the frame of a machine, and which has a bevel-wheel, *i*, gearing into a similar bevel-wheel, *i'*, on the spindle A'.

The shaft C turns near its opposite end, in a bearing, *j*, secured to a bar, D, arranged to slide in a stationary bar, E, secured to the frame-work of the machine, the outer end of the shaft having a bevel-wheel, *k*, which, under the circumstances described hereafter, gears into a similar wheel, *k'*, on a shaft, F, which turns in the frame-work, and which may be driven by a belt or otherwise from the driving-shaft of the machine.

On the shaft C is a worm, G, adapted to the teeth of a worm-wheel, H, which is arranged to turn freely on a stationary spindle, I, and from the under side of this wheel project two pins, *m*, one of which, under the circumstances described hereafter, comes in contact with and operates the trigger *n*, the latter, when undisturbed, being maintained by a spring, *p*, in the position shown in fig. 1, where it serves to maintain the sliding bar D in the position shown in fig. 1, and the bevel-wheel *k* in gear with the bevel-wheel *k'*, until by the rotation of the wheel H, the trigger is actuated and caused to release the sliding bar D, which by a spring, *q*, moves the sliding bar in the direction of the arrow, fig. 4, and the bevel-wheel *k* out of gear with the bevel-wheel *k'*.

The mechanism which we have last described is common to other spinning-machines; a more minute description, therefore, will be unnecessary.

As the carriage, on which are the numerous spindles, approaches the limit of its inward movement, it is caused to so move the shaft C, as in other spinning-machines, that when the carriage reaches its destination, the wheel *k* is in gear with the wheel *k'*, and consequently the spindles A and A' are put in motion, for it should be here understood that the spindle A' communicates with the spindle A.

The rollers connected to the spindles A A' at once commence to deliver the ropings to the spindles, and the carriage commences its outward movement.

After the proper amount of roping has been delivered, the pin *m*, on the wheel H, operates the trigger *n*, and consequently the shaft C is so moved that its wheel *k* is out of gear with the wheel *k'*, and consequently the motion of the said shaft C ceases, or rather should instantly cease, for the momentum acquired by the delivery-rollers induces them to continue their movement after the shaft C is thrown out of gear, and it is to counteract this momentum which is the special object of our invention.

When the shaft C is moved out of gear, the lever B is so operated that it will move the clutch *c'* into



gear with the clutch *c*. This, however, does not instantly stop the further rotation of the delivery-rollers, for too sudden stoppage might have an injurious effect on the machine.

When the clutch *c'* is moved into gear with the clutch *c*, the former will be carried round by the latter, but only to the limited extent permitted by the spring-rod *e*, traversing the slot in the arm *d* of the lever *B*; as soon as the arm reaches the end of the slot, however, the stoppage of the delivery-rollers takes place.

After this stoppage the carriage continues its outward movement and returns, preparatory to a repetition of the above-described movements.

It will be seen, without further description, that by the above-described mechanism, the delivery-rollers are effectually controlled as regards the stoppage at the proper time, the result of this being the making

of a more uniform thread than can be produced by the aid of uncontrolled delivery-rollers.

We claim as our invention and desire to secure by Letters Patent—

The combination of the clutch *c*, on the spindle *A*, the clutch *c'*, spring-rod *e*, or its equivalent, and the lever *B*, arranged for operating the said clutch *c'*, and controlled by the shaft *C*, all substantially as and for the purpose herein set forth.

In testimony whereof, we have signed our names to this specification, in the presence of two subscribing witnesses.

HENRY BOTTOMLEY.  
PETER GREENWOOD.

Witnesses:

JOHN WHITE,  
LOUIS BOSWELL,  
JOHN D. HARDING.