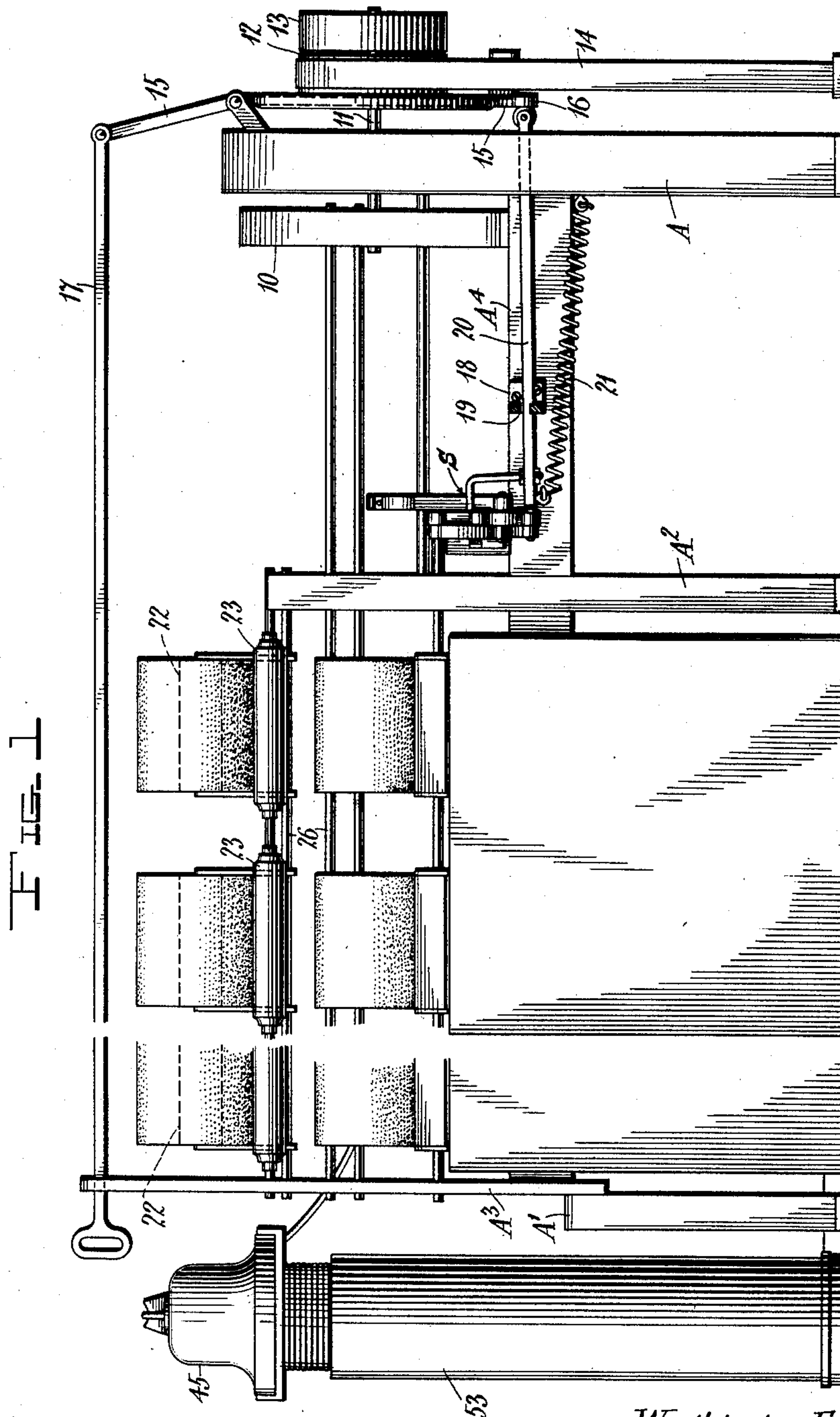


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2 SHEETS--SHEET 1.



Witnesses
J. L. Johnson
Henry T. Bright

Worthington E. Morton

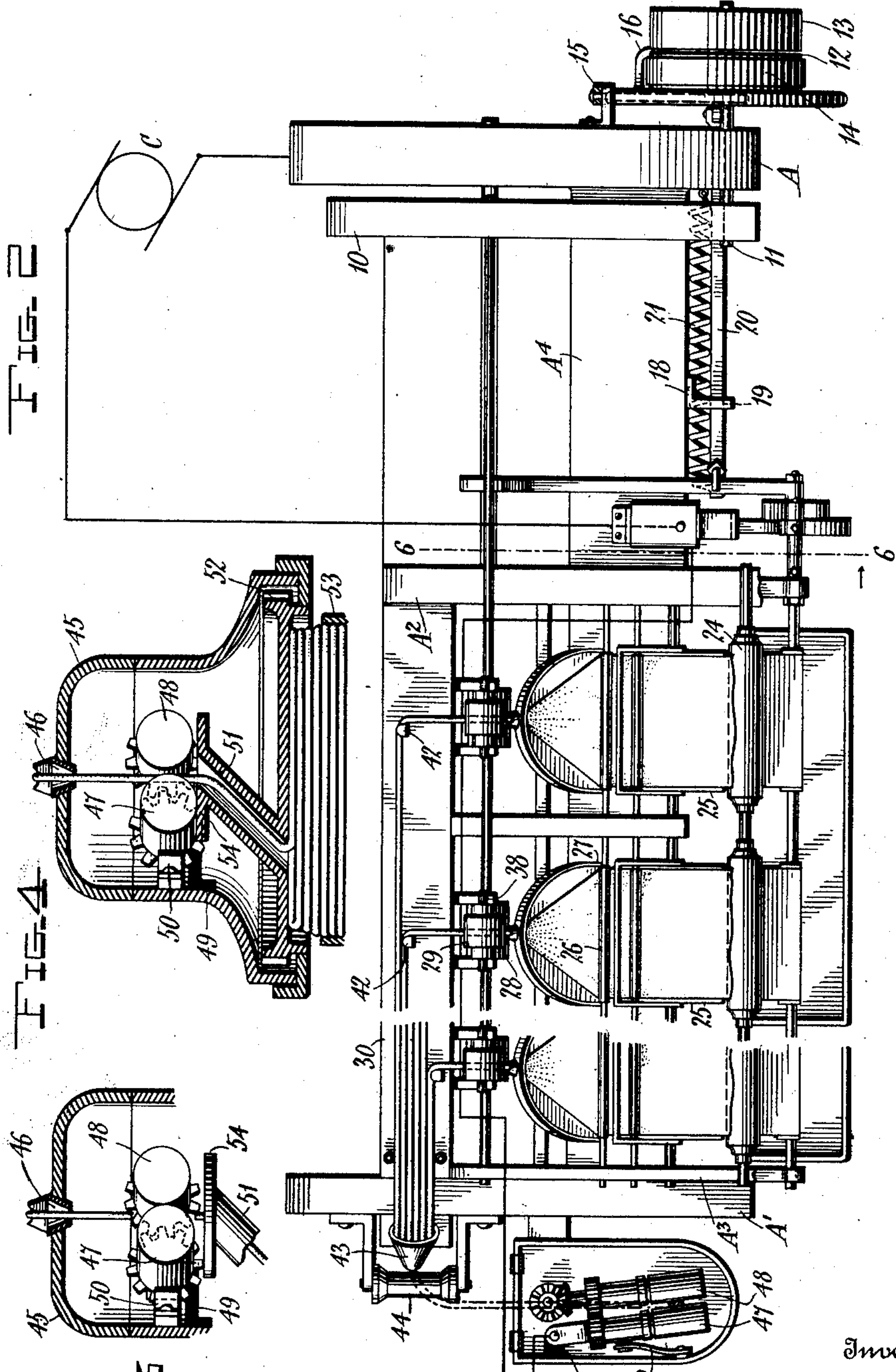
By *[Signature]* *[Signature]* Attorneys

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W. E. MORTON.
COMBER AND STOP MOTION THEREFOR.
APPLICATION FILED OCT. 11, 1909.

Patented July 18, 1911.

2 SHEETS—SHEET 2.



Witnesses
H. J. B. B. B.
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FIG. 2

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UNITED STATES PATENT OFFICE.

WORTHINGTON E. MORTON, OF SHELBY, NORTH CAROLINA.

COMBER AND STOP-MOTION THEREFOR.

998,375.

Specification of Letters Patent.

Patented July 18, 1911.

Application filed October 11, 1909. Serial No. 522,010.

To all whom it may concern:

Be it known that I, WORTHINGTON E. MORTON, a citizen of the United States, residing at Shelby, in the county of Cleveland, State of North Carolina, have invented certain new and useful Improvements in Combers and Stop-Motions Therefor; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to the stop motions of sliver delivering machines and particularly to stop motions of combers which are utilized in the treatment of cotton product.

In machines of the type named it is highly important in order to avoid injury to the machine and maintain a proper condition of the product that only a given bulk thereof be deposited in the receiving element.

To this end the object of the invention resides in providing a machine of the character named with means for automatically instituting the actuation of its stop motion under the influence of the following conditions:—*a*. When the passage of sliver between the calender rolls of the coiler ceases, and, *b*, when the can of the coiler is full.

With these objects in view the invention consists in the details of construction and in the arrangement and combination of parts to be hereinafter more fully described and claimed.

In describing the invention in detail reference will be had to the accompanying drawings wherein like characters of reference denote corresponding parts in the several views and in which,

Figure 1 is a rear elevation of a standard combing machine with the invention incorporated; certain details of the machine being omitted for the sake of clearness; Fig. 2, a top plan view of same with the cover of the coiler head removed; Fig. 3, a fragmental detail of the coiler head with the hood in section showing the sliver broken and the stop motion circuit closed by contact of the calender rolls of the coiler; and, Fig. 4, a section of the coiler head showing the position assumed by the

parts under the influence of the pressure of accumulated sliver in the coiler can, the stop motion circuit being closed.

For the sake of clearness and an easy understanding of the invention only those elements of a standard combing machine which are associated directly with the transfer of the sliver from the supply to the coiler are illustrated.

Referring to the drawings A and A' represent the sampsons of a standard combing machine which form the foundation upon which the machine as a whole is built and sustained. Intermediate of the sampsons A and A' is an upright A², while another upright A³ is secured to the sampson A'; said uprights being utilized as supporting elements for certain parts of the comber.

Journaled in the sampson A and in the gear casing 10 is the main drive shaft 11 of the comber. A fixed pulley 12 and a loose pulley 13 are mounted on said drive shaft and a power transmitting belt 14 is adapted to shift one pulley to another to start and stop the machine as may be desired. The shifting of this belt from the pulley 12 to the pulley 13 and vice versa is accomplished through the medium of the belt shifting mechanism which comprises a pivoted arm 15 having one end provided with a strap fork 16 to receive the belt 14 and its other end pivotally connected with an operating handle 17 which is mounted for a sliding movement through the upright A³.

Mounted between the sampson A and the upright A² is a cross beam A⁴. Secured to said cross beam is a guide bracket 18 which is provided with a slot 19 in which one end of the normally restrained thrust rod 20 of the stop motion is adapted to travel, the other end of said thrust rod passing through the sampson and engaging the pivoted arm 15 of the belt shifting mechanism. A spring 21 having one end secured to said thrust rod and the other end to the sampson A constantly imparts a tendency to move said thrust rod outwardly so as to shift the belt 14 from the fixed pulley 12 to the loose pulley 13 and thus stop the comber. Said thrust rod 20 is normally held against such movement by engagement with the guide bracket 18 and is

adapted to be automatically released from such engagement under certain predetermined conditions by the operation of certain mechanically operated parts typically shown at S in Fig. 1, which receive their motion from the machine, the operation of said mechanical parts to release said thrust rod being in turn controlled by an electrically operated apparatus.

As the construction and operation of the mechanical elements which effect the release of the thrust rod 20 to stop the machine is fully described in my co-pending application, executed the 10th day of September, 1910, and serially numbered 522,009, a detail reference thereto will be omitted herein, it being sufficient to say, that when conditions throughout the comber are normal the circuit which controls the actuation of the operation of the mechanical elements for automatically releasing the thrust rod 20 is open and the movements of said elements will fail to effect a release of the thrust rod, while on the other hand when a predetermined abnormal condition arises in the comber said circuit is automatically closed and the movements of the mechanical elements of the stop motion so altered that the thrust-rod is immediately released and the comber stopped.

As a standard combing machine consists of a plurality of heads each of which is similar in construction and operation it is only necessary for a proper understanding of this invention that the elements of one head of the machine which have to do with the transfer of the sliver from the supply to the coiler be herein described. For this purpose reference will be had to Figs. 1 and 2 of the drawings wherein is shown a lap spool 22 which carries a supply and a pair of lap rolls 23 and 24 which support said spool during the run out of the supply. Forward of the supply mechanism just named is an apron 25 over which the sliver passes. When the sliver leaves said apron it is engaged by the feed rolls 26, and carried into the sliver pan 27, thence from said pan to the calender rolls 28 and 29 from which it is delivered to the table and from there passes on to the coiler.

In its passage to the coiler from the calender rolls 28 and 29 the sliver is directed in a longitudinal direction with respect to the table 30 by the guide 42 and passes through the trumpet 43 located at the end of said table and thence between the calender rolls 44 which serve to condense the sliver from the various heads of the machine for unitary delivery into the hood 45 of the coiler. The sliver in its entrance to the coiler passes through an opening 46 in the top thereof and is carried downwardly by a pair of calender rolls 47 and 48 between which it passes. The rolls 47 and 48

receive their motion through the medium of suitable connections with the machine. The roller 47 is insulated from the coiler hood and is pivoted at one end to the lug 49 so as to be capable of a limited movement toward and away from the roller 48. A spring 50 has one end secured to the coiler hood and its other end provided with a lug of insulating material which engages the roller 47 and thereby constantly tends to force said roller 47 into engagement with the roller 48. It will be seen that when the roller 47 is electrically connected with one pole of the generator C, and roller 48 electrically connected with the other pole and the passage of sliver between said rollers ceases the roll 47 will be forced into engagement with the roll 48 by the spring 50, the circuit closed, and the stop motion actuated.

From between the rolls 47 and 48 the sliver passes into the inclined conduit 51 of the coiler gear 52 and is thence deposited in the coiler can 53. The calender roll 47 is insulated from the coiler hood and the machine is disposed so that its extreme lower edge lies slightly beneath the extreme lower edge of the calender roll 48, while the coiler gear 52 is adapted for a limited up and down movement and lies normally out of engagement with the calender roll 47 when said gear is not subjected to the pressure of accumulated sliver in the can 53. As the coiler gear 52 is in electrical connection with the machine and constitutes a terminal of the circuit in the same manner as the calender roll 48; it will be obvious that when said gear is subjected to the pressure of accumulated sliver in the can 53 it will be raised so that the upper flanged end 54 of the wall of the conduit 51 will engage the calendar roll 47 and close the circuit; thus instituting the actuation of the stop motion and preventing the sliver from becoming entangled and damaged in the can 53 when said can has been supplied to its full capacity.

It will be noted that as soon as any of the abnormal conditions in the coiler heretofore described have been removed, the circuit is broken and when the belt is shifted on the fixed pulley by hand the stop motion is again ready for automatic actuation upon a recurrence of any of said conditions.

What is claimed is:

In a sliver machine, the combination with a coil receiving can, having a cover plate forming part of a coiler gear mounted for rotatable movement in position to deliver to the can and movable axially under the influence of accumulated sliver in the can, a pair of calender rolls rotatably mounted in position to deliver to the coiler gear, one of said rolls being in position for contact with the coiler gear by the axial movement

of the latter and being movable into contact with the second roll independent of its engagement with the coiler gear, the second roll being out of position for contact by
5 the coiler gear, an electrically controlled stop motion, and an electric circuit controlling the stop motion, of which the movable roll forms one terminal, and of which the

second roll and the coiler gear form the opposite terminal in multiple.

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In testimony whereof, I affix my signature, in presence of two witnesses.

WORTHINGTON E. MORTON.

Witnesses:

THOMAS L. JENKINS,

HENRY T. BRIGHT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
