No. 793,081. PATENTED JUNE 27, 1905.

J. MANION.

DRAWING FRAME STOP MOTION.

APPLICATION FILED FEB. 25, 1905.

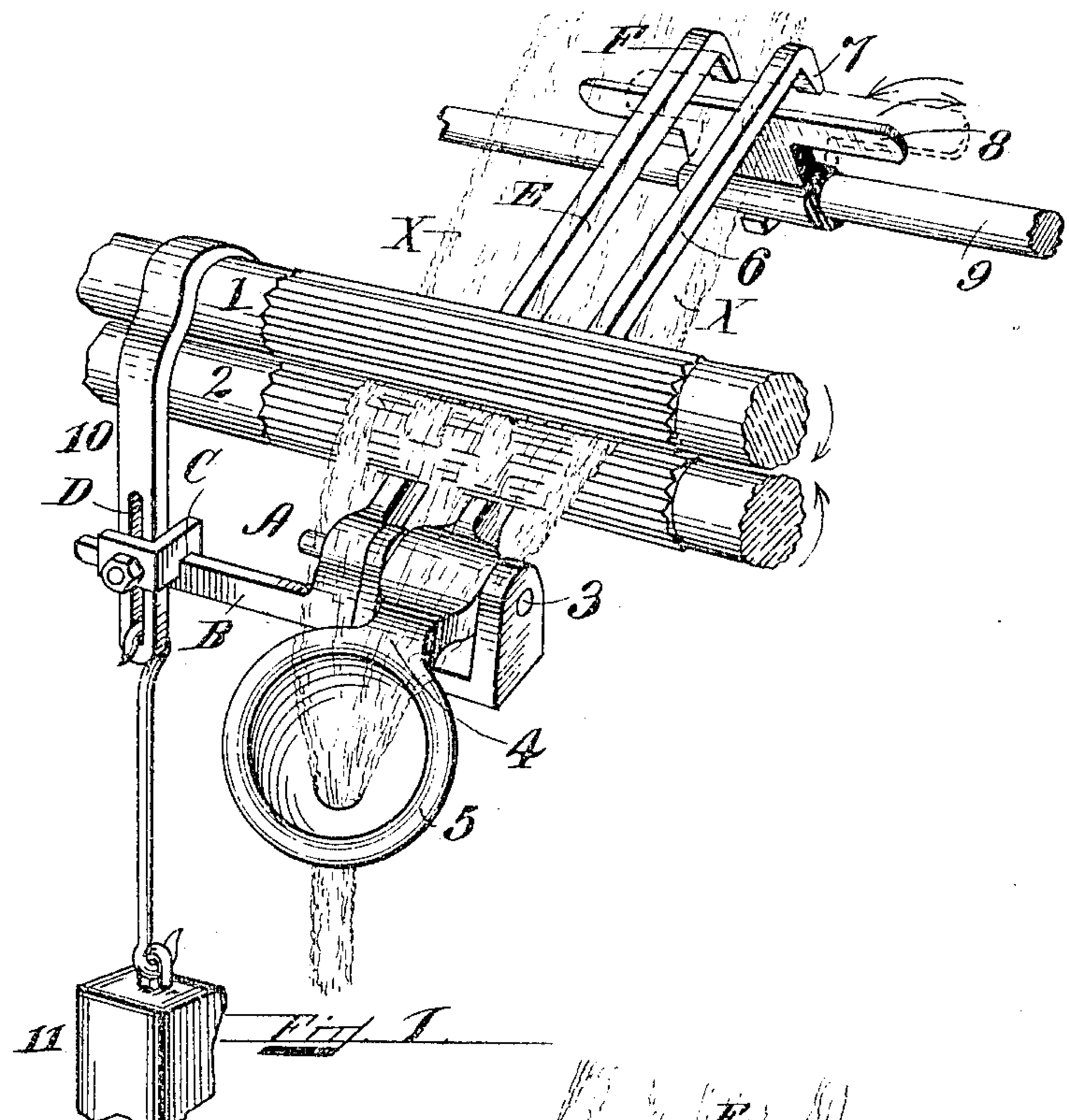

Fig. 1.

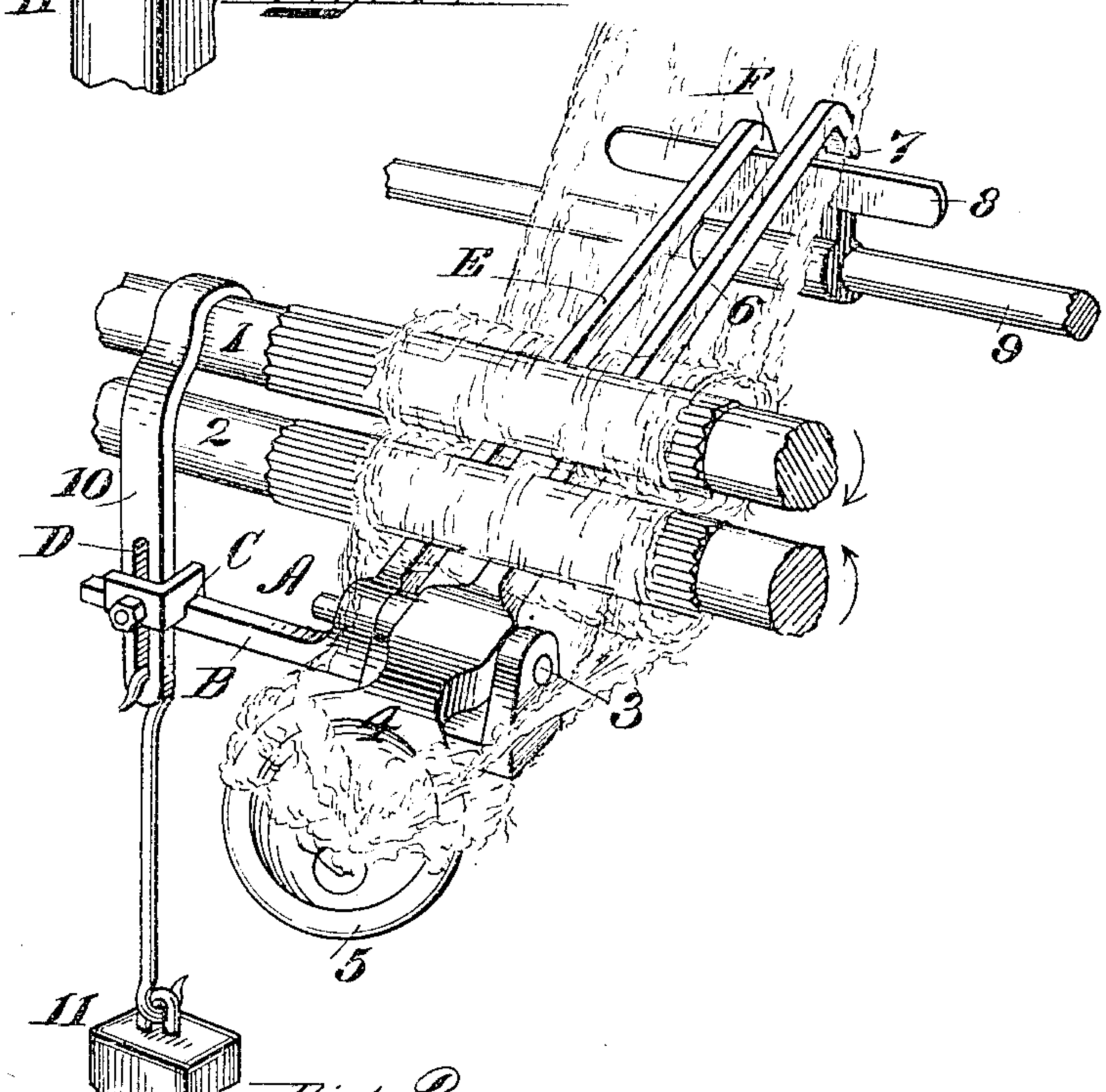

Fig. 2.

Witnesses:

Inventor:
John Manion
by his attorney
Charles F. Richardson

No. 793,081. Patented June 27, 1905.

UNITED STATES PATENT OFFICE.

JOHN MANION, OF FALL RIVER, MASSACHUSETTS.

DRAWING-FRAME STOP-MOTION.

SPECIFICATION forming part of Letters Patent No. 793,081, dated June 27, 1905.

Application filed February 25, 1905. Serial No. 247,257.

To all whom it may concern:

Be it known that I, JOHN MANION, a citizen of the United States, residing at Fall River, in the county of Bristol and State of Massachusetts, have invented a certain new and useful Stop-Motion for Drawing-Frames, Railway-Heads, or the Like, of which the following is a specification.

My invention relates to stop-motions, and is applicable to apparatus employing two or more moving bodies or rolls for the delivery of the sliver of cotton, wool, flax, or the like or of cloth or the like—in fine, of matter of any kind.

I have found my invention of great value when applied particularly to drawing-frames, where, as is well known, the front rolls become lapped with cotton sliver. This serious and objectionable fact may be due to any one of numerous causes. It may be because of the accumulating of the cotton-seeds in the flutes of the rolls. It may be because lumps of sliver clog the trumpet of the trumpet stop-motion, and consequently hold it down and render the trumpet stop-motion inoperative; but as the sliver fails to pass through the trumpet it collects in a rapidly-increasing mass in close proximity to the operating front rolls, is drawn in between and laps around the rolls, and causes the upper roll to be raised away from the lower roll an objectionable distance.

Now the object of my invention is to provide means to stop the operation of drawing-rolls when their axes become separated from each other by more than a predetermined distance whatever may be the cause of such separation; and it consists of means whereby a movement of the axis of one of the delivery-rolls relatively to that of the other stops the mechanism driving said rolls should said movement exceed that previously determined.

Figure 1 is a perspective view of my invention embodied in a drawing-frame in successful operation, the usual stopping and driving mechanisms being well understood and omitted for the sake of clearness. Fig. 2 is a similar view of my invention, showing the lapped rolls resulting from the clogging of the trumpet by sliver and how such lapping forces the rolls apart and operates suitable mechanism to stop the operation of the rolls.

In the drawings illustrating the principle of my invention and the best mode now known to me of applying that principle two delivery-rolls 1 2 of a drawing-frame, one superimposed on the other, are shown and understood to be operated in the usual manner. Beneath these rolls is a trumpet stop-motion consisting of a lever pivoted, as upon a pin 3, one arm 4 of which is provided with a trumpet 5 and the other arm 6 of said lever with a hook 7, designed to engage a vibrating lug 8, fast to a shaft 9, operating well-understood mechanism to stop the operation of the drawing-rolls. Suspended from the top roll 1 is a stirrup 10, sustaining a weight whereby the pressure desired between the rolls may be maintained. Such an apparatus as has been now described is old. The new feature shown and embodying my invention consists of a lever A, conveniently pivoted, as on the pin 3 of the trumpet-lever. One arm B of said lever is operatively connected to the stirrup 10, as by engaging a shoulder C formed thereon. This shoulder may be formed on the stirrup or it may be on a piece adjustable in a slot D in the stirrup 10, this latter construction being obviously preferable to the former. The other arm E has a hook F thereon and is held near the arm B, so that the lever A is always in operative engagement with the stirrup 10. This hook F is so located upon the lever E that the lug 8 vibrates to and fro under the hook F.

In operation (see Fig. 1) the sliver X passes between the rolls 1 2 and then down through the trumpet 5, there being enough sliver to hold the trumpet 5 in its depressed position, and hence to hold the hooked end 7 of the lever up and out of the path of the vibrating lug 8. Should the sliver clog the trumpet 5 and be unable to pass through the same, then (see Fig. 2) it would collect upon the trumpet 5, mass next to the rolls 1 2, be caught thereon, lap around one or both of the rolls, and consequently cause the upper roll 1 to rise, thereby lifting the stirrup 10 and permitting the hooked end E of the lever A to drop into

the path of the vibrating lug 8, engage and stop the same, and consequently operate any suitable stopping mechanism operatively connected with the shaft 9. As stated above, any other cause—cotton-seeds, for instance—whereby the rolls are separated more than a predetermined distance will enable my invention to stop operation of the machine whenever that contingency happens.

Having now described the construction and operation of my invention and being well aware that its principle of operation may be embodied in many different forms without departing from the spirit thereof, I desire to protect my invention in the broadest manner legally possible.

What I claim is—

1. Two drawing-rolls, one superimposed upon the other; a weighted stirrup suspended from the superimposed drawing-roll; mechanism for driving said rolls; vibrating mechanism controlling the driving stop mechanism; a lug upon the stirrup; a lever of the first order, one arm being adapted to engage and stop the vibrating mechanism, whereby the mechanism driving the rolls is stopped, and the other arm of said lever, engaging the lug on the stirrup.

2. Two drawing-rolls, one superimposed upon the other; a weighted stirrup suspended from the superimposed drawing-roll; mechanism for driving said rolls; vibrating mechanism controlling the driving stop mechanism; an adjustable lug upon the stirrup; a lever of the first order, one arm being adapted to engage and stop the vibrating mechanism, whereby the mechanism driving the rolls is stopped, and the other arm of said lever, engaging the lug on the stirrup.

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

JOHN MANION.

Witnesses:
DAVID F. SLADE,
ROBERT C. DAVIS.