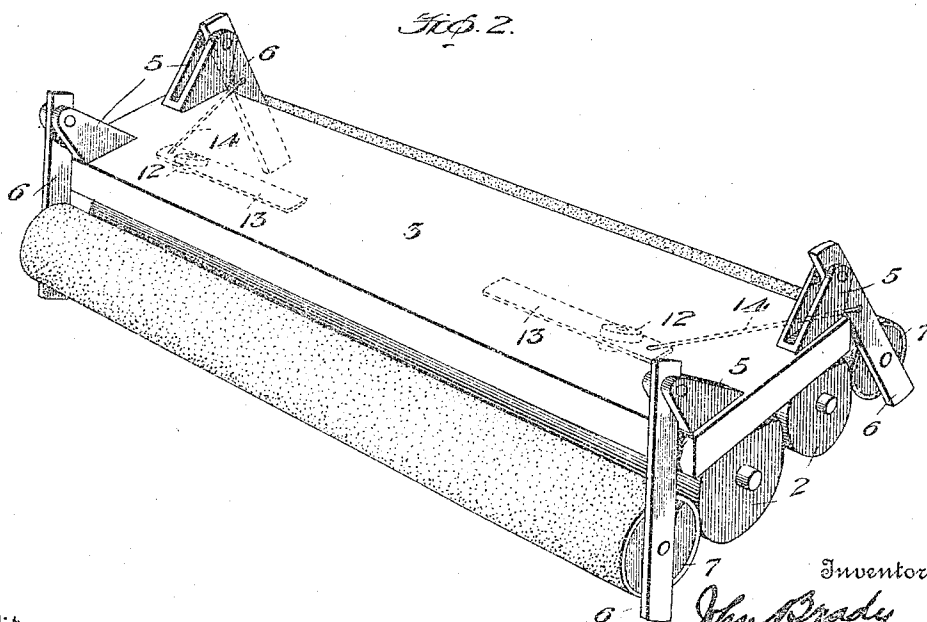
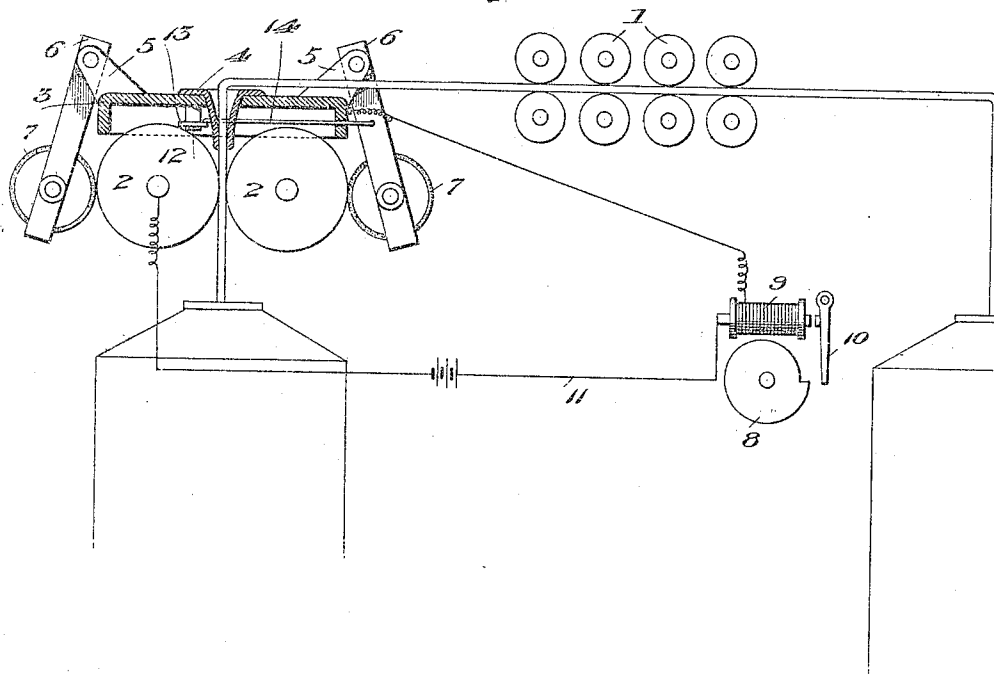


1,014,042.

Fig. 1.



Witnesses

~~Wm. Franklin~~
Wm. Franklin

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Inventor
John Brady
G. W. Nutting
his Attorney

J. BRADY.
 CLEARER AND STOP MOTION FOR DRAWING FRAMES.
 APPLICATION FILED SEPT. 30, 1910.

1,014,042.

Patented Jan. 9, 1912.

2 SHEETS—SHEET 2.

Fig. 3.

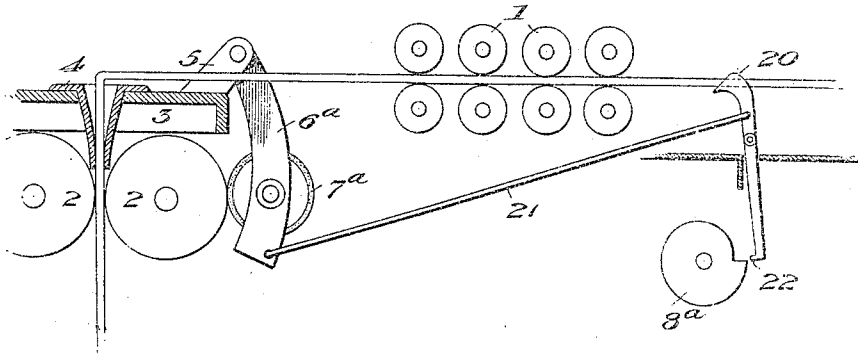


Fig. 4.

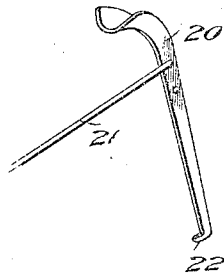
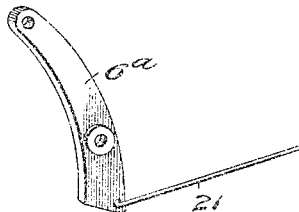


Fig. 5.



Witnesses

[Signature]
[Signature]

Inventor

John Brady

By

[Signature]
 His Attorney

UNITED STATES PATENT OFFICE.

JOHN BRADY, OF FALL RIVER, MASSACHUSETTS.

CLEARER AND STOP-MOTION FOR DRAWING-FRAMES.

1,014,042.

Specification of Letters Patent.

Patented Jan. 9, 1912.

Application filed September 30, 1910. Serial No. 584,720.

To all whom it may concern:

Be it known that I, JOHN BRADY, a citizen of the United States, residing at Fall River, in the county of Bristol and State of Massachusetts, have invented new and useful Improvements in Clearers and Stop-Motions for Drawing-Frames, of which the following is a specification.

This invention relates to clearers and stop motions for drawing frames.

The sliver of cotton passing from the drawing rolls through the trumpets to the calender rolls in cotton drawing machinery, if larger than will conveniently go through the trumpets or bunched or if it does not readily pass, tends to split in such a way as to drop upon the calender rolls on which it continues to wind and thereby prevents the operation of the ordinary electric or mechanical stop motion, resulting in great waste of cotton, much loss of time, and sometimes considerable damage to the machine. Owing to the winding of the broken sliver around the calender rolls and the failure of the usual stop motion to act in consequence, the pressure sometimes becomes so great that parts of the machine are broken and the sliver winds in such manner that the operative has to consume much time to clean out the frame and condition it for running.

The present invention has for its object the provision of a clearer roll and stop motion of novel and simple construction which can be applied to any drawing frame and will so operate that if the sliver breaks, it will wind upon the clearer roll and immediately operate the stop motion and, further, will be so disposed and constructed that the broken sliver and wound parts thereof may be very easily removed at small loss of time and all danger of clogging or breaking of the parts will be obviated, beside permitting cleaning of the drawing frame while it is in operation.

In the following description I have set forth mechanical and electrical stop motions with which the present invention is adapted for use and peculiar coöperation, but its use is not restricted to coöperation with these particular stop motions, except as particularly specified in the claim.

In the accompanying drawings—Figure 1 is a partially sectional and partially diagrammatic view showing the invention used

in connection with an electric stop motion; Fig. 2, an enlarged perspective view of the clearer roll as combined with the switch arms and the calender rolls; Fig. 3, a partially diagrammatic view showing the invention used with a mechanical stop motion; Fig. 4, a detail of the spoon of Fig. 3; and Fig. 5, a detail of one of the arms for supporting the clearer rolls of the device of Fig. 3.

Referring first to Fig. 1, the drawing rolls through which the cotton passes are shown at 1 and the usual calender rolls at 2. The calender rolls are suitably journaled, in ordinary practice, in pillars at the end of a box-like frame having a cover 3 provided with the trumpets 4, said cover being removable to permit access to the rolls 2. On the cover 3 are brackets 5 to which are pivoted or hinged sets of arms 6 at both the front and rear. In each pair of arms 6 is journaled a clearer roll 7 which is preferably covered with cloth so that it will readily take up or catch the cotton sliver when it breaks. The arms 6 and rolls 7 hang by gravity so that the rolls 7 are always in frictional engagement or contact with the calender rolls 2 and are revolved thereby. The parts are so constructed and arranged that a sufficient frictional engagement between the rolls 2 and 7 will normally exist.

The stop motion used in connection with my clearer rolls may be either electric or mechanical.

The electric stop motion is shown in Figs. 1 and 2. On a controlling shaft of the machine is a stop wheel 8 and disposed suitably adjacent thereto are an electro-magnet 9 and a detent 10, the detent 10 being provided with or serving as an armature for the electro-magnet 9 and when attracted by the energization of the latter is moved from its normal clear position to a position where it will engage the stop wheel 8 and operate the belt shifter or other controlling device of the driving mechanism of the drawing frame, thereby causing the machine to stop. Such controlling mechanisms being old and well known, no further reference thereto is considered necessary in this connection. The electro-magnet 9 is embraced in a circuit 11 including a battery or other generator and has one of its terminals connected to the cover 3 and its other terminal electri-

cally connected to the front calender roll 2, which latter is suitably electrically insulated from the remainder of the drawing frame so that the circuit at that point is normally open. Pivoted at 12 to the under side of the cover 3 is a switch arm 13 which normally lies above the space between the calender rolls 2 so as not to contact with the front calender roll. This switch arm is connected by rods 14 to the respective arms 6 of the clearer roll so that if said roll moves outwardly from the calender rolls, the switch arm will be turned on its pivot and make contact with the front calender roll, thereby completing the circuit and causing energization of the electro-magnet 9 and stoppage of the machine.

It is a very common occurrence for a part of the sliver of cotton to drop off, disengage from the sheet in passing to the calender roll and wind around the calender roll, thus preventing the ordinary electric stop motion from acting because the circuit cannot be completed and the frame keeps running until it is clogged and damaged. At other times the trumpet will become plugged in such a way that the cotton will not break off between the calender rolls but will hang between them, and in this event the frame will not stop because the cotton will pile up between the rolls until caught, thus causing much waste. These defects are obviated by the present invention. When the cotton breaks between the drawing and the calender rolls, it will wind around the clearer roll 7 of the present invention, thus increasing the circumference of said roll temporarily and causing the roll to move outwardly from the calender roll, which results in movement of the switch arm and completes the circuit, resulting in stoppage of the frame. However the sliver may clog or break, the clearer roll on the rear side of thereon with the resultant quick stoppage of the machine. The operative can, without stopping the frame, remove the obstruction and again properly feed the sliver

through the trumpet to the calender rolls and permit the frame to resume operations.

In Figs. 3, 4, and 5, I have shown the invention used as a mechanical stop motion. Here the pivoted spoons 20 which support the respective slivers are disposed to engage the stop wheel 8^a and the spoons are connected to the respective depending arms 6^a by rods 21. The winding of the sliver on the clearer roll 7^a journaled in the arms 6^a causes temporary increase in the diameter of said roll and consequent outward movement of the arms 6^a which carry it, whereupon the rod 21 is shifted rearwardly and the spoon 20 is moved to cause its toe 22 to engage the stop wheel 8^a.

It is not necessary for the stop motion to be connected to the front clearer roll as that roll is simply to clear the dirt from the calender roll and it never becomes sufficiently clogged to require the use of the present stop motion.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:—

In a revolving clearer and stop motion for drawing frames, the combination with calender rolls lying in a horizontal plane, of pivoted arms adjacent thereto, a clearer roll mounted in said arms in such position that the split, broken or bunched sliver will wind thereon and cause shifting thereof, a pivoted switch arm positioned to be shifted into electrical contact with one of the calender rolls, a link pivoted at one end to said switch arm and at the other to an arm carrying the clearer roll, an electric stop motion, and a circuit for controlling said stop motion by the movement of the switch arm due to the shifting of the clearer roll.

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

JOHN BRADY.

Witnesses:

ARBA N. LINCOLN,
FRANK S. LAKE.