

No. 868,991.

PATENTED OCT. 22, 1907.

C. I. KING.
CARDING MACHINE.
APPLICATION FILED JULY 5, 1906.

Fig. 1.

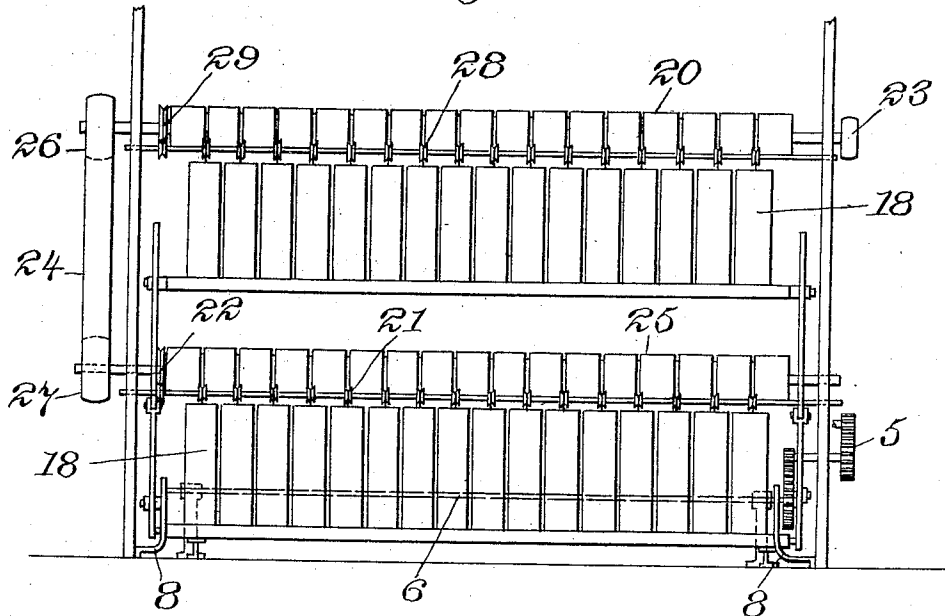
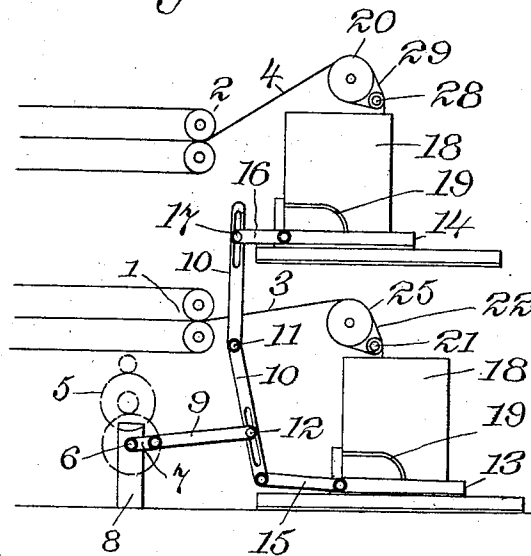


Fig. 2.



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CARDING-MACHINE.

No. 868,991.

Specification of Letters Patent.

Patented Oct. 22, 1907.

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To all whom it may concern:

Be it known that I, CHARLES I. KING, a citizen of the United States of America, and a resident of the borough of Brooklyn, county of Kings, city and State of New York, have invented certain new and useful improvements in Carding-Machines, of which the following is a specification.

My invention relates to the formation of slubbing from which yarn or thread is spun by machinery known as "mules" in the ordinary textile process. More specifically it consists of improved apparatus for receiving and holding such slubbing formed of asbestos fiber when delivered by the condensing or rub rollers of the well known form of perfecting card and serving as means of transferring the same to the mules. Heretofore it has been customary to wind up this slubbing upon a long spool which spool has been transferred to the mules and the slubbing unwound therefrom by the action of the mules in spinning the thread or yarn. The difficulty with this old form of apparatus is that if certain of the strands of slubbing are broken when partially wound on the spool, it is impossible to disengage the same from the other strands of slubbing on the spool and when the spool is transferred to the mule, the corresponding portion of the mule mechanism is left without any slubbing on which to work. Again, when the spool is nearly unwound in the operation of the mule, the strain upon the various strands of slubbing becomes greater and as this slubbing, especially when made of asbestos fiber, is apt to be weak, there is a tendency to rupture the same and leave a considerable portion of all the windings on the spool.

Attempts have been made to overcome these difficulties by substituting for the spool a series of individual tin cans or other receptacles each of which should receive and hold a strand of slubbing and which can be transferred to the mule and the strand uncoiled therefrom by the operation of the mule. Difficulties encountered here have been that the strand of slubbing delivered by the rub rollers could not coil itself evenly in the can or other receptacle, but would build itself up in a cone formation, the apex of which would topple over and thus produce a tangled condition of the strands which would prevent their feeding out again freely and without knots or breakages. Attempts have been made to solve this particular difficulty by giving the various receptacles a motion of rotation so that the slubbing will be regularly coiled in the same, but this has necessitated circular cans or receptacles and it has been impossible to crowd such sufficiently closely together to receive the numerous strands of slubbing delivered from a carding machine of standard width, and it has been equally impossible to crowd the same num-

ber of cans together in the space available on the mule which would consume the standard number of strands. I have invented an apparatus which avoids all these difficulties and combines the advantages of the various different systems used or suggested.

The preferred form of apparatus at present known to me embodying my invention is illustrated in the accompanying sheet of drawings in which:

Figure 1 is an end elevation of the delivery end of a carding machine with my invention attached thereto. Fig. 2 is a side elevation of the same.

Throughout the drawings, like reference figures indicate like parts.

The apparatus shown is designed to cooperate with a condensing or perfecting card having two sets of rub rollers, the lower one of which is marked 1, and the upper one marked 2.

3 and 4 represent the strands of asbestos slubbing delivered from rub rollers 1 and 2 respectively.

5 represents any convenient train of gears connected to the mechanism of the card transmitting motion to the shaft 6 on which is the crank 7, the shaft being journaled in any suitable bracket 8. To the crank 7 is connected the pitman 9, which is pivoted to the two-armed lever 10, which is pivoted to the main frame of the card or other fixed bearing at 11.

12 represents a pin and slot connection of the pitman 9 to the lever 10 whereby the throw of said lever may be varied.

13 is a slide of any convenient construction mounted on any suitable guide or way and connected to the lower end of the lever 11 by the link 15.

14 is a similar slide connected to the upper end of the lever 10 by the link 16. If desired, the link 16 may be connected to the lever by a pin and slot connection 17. On these two slides are arranged a series of cans or other receptacles 18, 18. Preferably these cans are made of narrow width and considerable depth and length which produces a narrow rectangular can adapted to be closely packed together with others, as shown in Fig. 1. These cans are retained in place upon the respective slides by any convenient form of guards such as the wires 19, 19.

20 is a grooved roll rotated from the carding mechanism by means of the pulley 23 and a belt, not shown. This grooved roll receives the slubbing from the upper set of rubbing rolls 2. A similar roll 25 receives the slubbing from the lower set of rubbing rolls 1. These two grooved rolls 20 and 25 are caused to rotate in unison by the belt 24 running over the pulleys 26 and 27 (see Fig. 1). 21 is a relief roll operated at the same circumferential speed as the grooved roll 20 by means of the belt 22 and 28 is a relief roll operated at the same speed as the grooved roll 25 by means of the belt 29.

The operation of my invention is as follows: The receiving cans being arranged as shown in the drawings and the various strands of slubbing led over their respective grooves in the grooved rolls and relief rolls, their ends will be deposited in the various cans located beneath. The cards being operated, the said slubbing will be fed down into the cans and the cans will be given a reciprocating motion so graduated as to cause the strands of slubbing to be deposited in even coils extending the length of the cans and piled up in regular layers until the said cans are full. The cans will then be transferred to the mules where they will pack in the narrow space available and the slubbing being connected up with the proper portions of the mule mechanism, the same is easily and regularly fed out to the mule when in operation without breakage.

The advantages of my invention comprise the saving of slubbing in enabling the entire contents of the can to be used, thus avoiding the wastage occurring with the use of spools and the ease with which a broken strand when delivered from the card can be removed without becoming entangled with the other strands, and the facility with which the can containing such broken strands can be set aside for splicing or other repairing of the strand and a battery of cans containing only perfect strands made up for use on the mule. The particular form of apparatus shown in the drawings comprising the two series of cans adapted to oscillate in opposite directions also has the advantage of producing a balanced mechanism which will not produce any excessive strains on the framework of the machine even if oscillated at a relatively high speed.

It is evident, of course, that various changes could be made in the details of construction shown in the drawings and described in the specification without departing from the spirit and scope of my invention.

Other forms of receiving cans or receptacles might be employed in certain cases and other forms of mechanism designed for giving them their necessary movements of translation about the point of delivery of the slubbing.

While a motion of oscillation in a horizontal plane such as is provided for in the apparatus shown in the drawings is most easily adaptable to the apparatus of my invention, motion might be given to the cans in other directions to produce the same result of the even deposition of the slubbing in the receptacles. These

and other changes would serve to produce a modification of my invention which might be of service in special instances.

Having, therefore, described my invention, I claim:—

1. In combination with a condensing card, a series of receiving cans located adjacent to the delivery end of the rub rollers, and mechanism operated simultaneously with the card machinery for giving said cans motion of translation about the points of delivery of the slubbing.

2. In combination with a condensing card, a series of cans located adjacent to the delivery end of the rub rollers, and mechanism operated by the carding mechanism for reciprocating said cans along lines parallel to the line of travel of the slubbing between the condensing rolls, along lines parallel to the line of travel of the slubbing between the condensing rolls.

3. In combination with a condensing card, a series of narrow rectangular receiving cans located adjacent to the delivery end of the rub rollers, and mechanism for reciprocating said cans along lines parallel to the line of travel of the slubbing between the condensing rolls.

4. In combination with a condensing card, a grooved roll for receiving the slubbing, a relief roll below the same, a series of receiving cans located below the relief roll, and mechanism for giving the cans a motion of translation to facilitate the even deposition of the slubbing therein.

5. In combination with a condensing card having two series of rub rollers, a series of receiving cans located adjacent to the delivery end of each series of rub rollers, and mechanism operated simultaneously with the card for reciprocating the two series of cans in opposite directions.

6. In combination with a condensing card having two series of rub rollers, a series of receiving cans located adjacent to the delivery end of each series of rub rollers, and mechanism operated simultaneously with the card for reciprocating the two series of cans in opposite directions, said mechanism comprising two sliding shelves, a centrally pivoted rocking lever having its ends connected to the respective shelves, and a connecting rod pivoted to an intermediate point.

7. In combination with a condensing card having two series of rub rollers, a series of receiving cans located adjacent to the delivery end of each series of rub rollers, and mechanism operated simultaneously with the card for reciprocating the two series of cans in opposite directions, said mechanism comprising two sliding shelves, a centrally pivoted rocking lever having its ends connected to the respective shelves, and a connecting rod pivoted to an intermediate point, the connecting rod fastening being adjustable lengthwise of the lever.

Signed at Brooklyn, N. Y. this 8th day of June 1906.

CHARLES I. KING.

Witnesses:

HERMAN HAIGH,
C. J. WOODWARD, Jr.