

(No Model.)

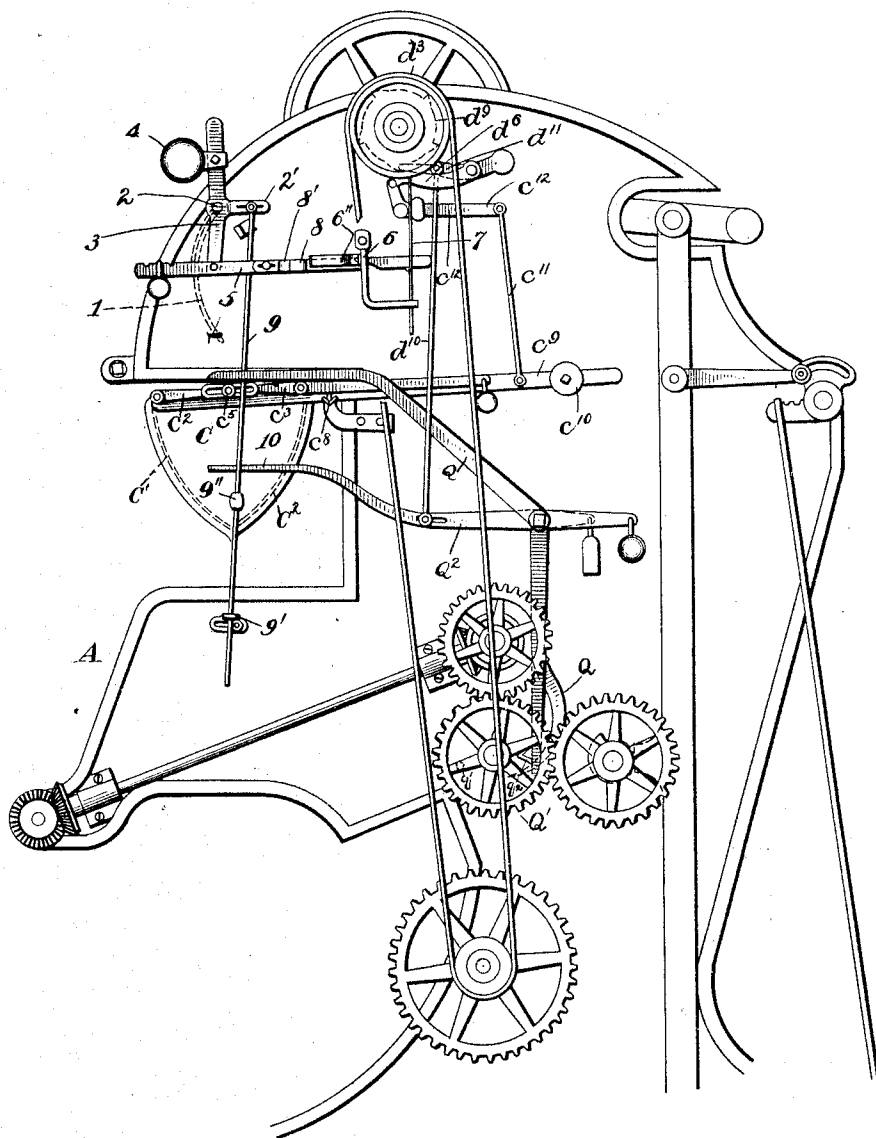
2 Sheets—Sheet 1.

G. D. SECOR.
FEEDER FOR CARDING MACHINES.

No. 586,458.

Patented July 13, 1897.

Fig. 1.



WITNESSES

Edw. D. Duwall Jr
James R. Mansfield.

INVENTOR

INVENTOR
George D. Secor.
By: Alexander T. Sowell
Attorneys

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Fig. 2.

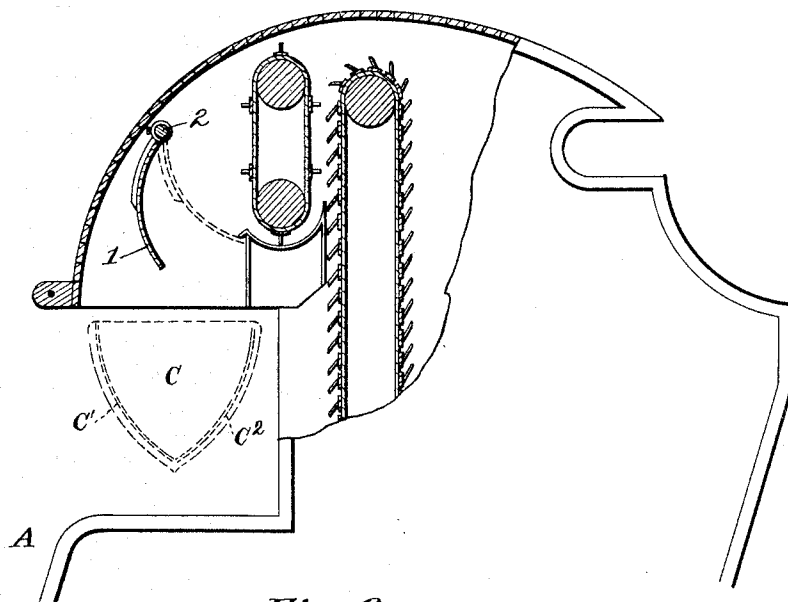


Fig. 3.

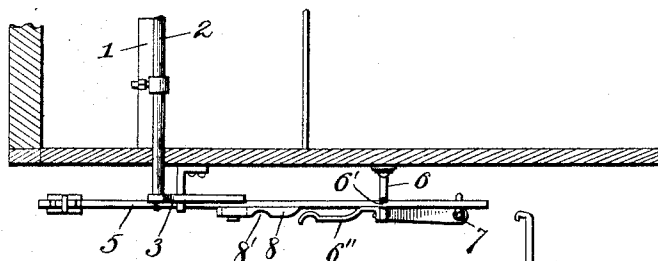
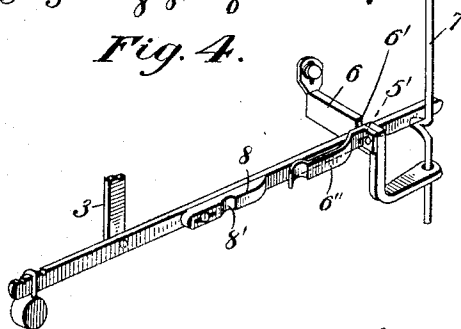


Fig. 4.



WITNESSES
Edw. D. Duval Jr.
James Mansfield.

INVENTOR
George D. Secor
By: Alexander & Fawell
Attorneys

UNITED STATES PATENT OFFICE.

GEORGE D. SECOR, OF SOUTH BEND, INDIANA.

FEEDER FOR CARDING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 586,458, dated July 13, 1897.

Application filed December 10, 1896. Serial No. 615,129. (No model.)

To all whom it may concern:

Be it known that I, GEORGE D. SECOR, of South Bend, in the county of St. Joseph and State of Indiana, have invented certain new and useful Improvements in Feeders for Carding-Machines; and I hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form part of this specification.

This invention is an improvement in Bramwell weighing and feeding machines for carding-engines; and its object is to provide means whereby a more exact and uniform action of the weighing mechanism is attained, and this I accomplish by means of a retaining-pan adapted and arranged to catch any and all wool or stock which is thrown toward the weighing-pan after the proper amount is supplied thereto, but before the stop mechanisms have fully operated.

In the operation of this class of machines there is an interval of time between the period when the given weight has accumulated in the weighing-pan and the discharge of the same, and through this interval a certain amount of material before the picker mechanism is stopped will be thrown over into the weighing-pan and thus make an overweight, the amount of which varies with the amount of stock that has been thrown into the machine to be operated upon. If this stock is abundant, or, in other words, if the machine is full of this raw material, a greater quantity of stock will be fed over within this waiting interval than if the amount has been reduced and but a small portion of stock remains to be operated upon. This irregularity in the weights introduces a corresponding irregularity in the thread, and as a result of the nicety with which the weaving-machines operate at the present day these variations in the weight of the thread makes a material difference in the operation of these machines and in the fabric which they produce, and my improvement has for its object the catching of such material as is fed over in this interval of time and retaining it until the load in the weighing-pan has been discharged and the weighing-pan has been returned to its position to receive a new weight of stock, when this retaining device

will discharge its accumulation into the center of the weighing-pan and the machine will begin to pick new material and fill up sufficient to produce a new weight, when the operation will be repeated.

The invention therefore consists in the novel combinations and constructions of parts hereinafter described and claimed.

I have illustrated the invention as applied to a machine constructed substantially in accordance with Letters Patent No. 456,212, and the letters of reference on the drawings correspond to the letters of reference in said patent and designate parts constructed and operated as in said patent, to which I would refer for a full description of their operation. The parts referred to and designated by numerals are peculiar to the present invention and embody the best form thereof now known to me. Obviously, however, the invention may be adapted to other constructions of such machines, and I do not limit myself to its use in connection with machines constructed as described in said patent.

In the drawings, Figure 1 is a left side elevation of the upper portion of the machine. Fig. 2 is a detail vertical section therethrough, showing the retaining-pan; and Fig. 3 is an enlarged view of the retaining-pan-latching devices. Fig. 4 is a detail perspective view of the latching devices.

In the drawings, A designates the frame of the machine; C, the scale-pan, having pivoted sides C' C², operated by levers c² c³, and hung on levers c⁹, fulcrumed at c⁸, and provided with counterbalancing and weighing weights c¹⁰.

Q is the pivoted lever by which the sides of the pan are opened at the proper time.

d³ is a pulley on the upper spike-apron roll, provided with ratchet d⁹, adapted to be engaged by dog d⁶, which is controlled by catch-lever c¹², that is released at the proper time upon the dropping of pan C by a rod c¹¹, attached to lever c⁹, and when released engages ratchet d⁹ and stops the action of the spike-apron until the pan C is emptied and returned to normal position, whereupon the dog d⁶ is released by means of the arm d¹¹ and rod d¹⁰, which is connected to the T-lever Q², all these parts being constructed and operated substantially as shown and de-

scribed in Letters Patent No. 456,212 aforesaid.

Proceeding now to describe the present invention, 1 designates a retaining-pan hung on a horizontal shaft 2, just above the weighing-pan, as shown. On the outer end of shaft 2 is a T-shaped lever 3, on the upper arm of which is a weight 4, by which the retaining-pan would be normally thrown in position to catch the stock. To the lower arm of lever 3 is pivoted a latch 5, which extends forward and rests upon a guide-bracket 6, attached to the frame below the lever c^{12} , the front end of latch 5 being notched at 5', so as to catch on the bottom edge of a notch 6' in the bracket 6 and hold the pan in normally open position, as indicated in Fig. 1. Suspended from dog d^6 is a trip-rod 7, which is bent so as to engage and lift the front end of latch 5 when dog d^6 rises, thereby disengaging notch 5' from the bracket 6 and allowing weight 4 to throw the retaining-pan into position to catch any stock fed forward by the spike-apron. The lower end of rod 7 may be guided in an eye in the lower end of bracket 6, as shown.

In order to prevent rebound of the retaining-pan when the latch is raised, the following devices are employed: On the side of latch 5 is secured a friction-piece 8, containing a notch 8', and attached to the bracket 6 is a spring 6'', the end of which is bent so as to engage the notch 8' as the latch 5 is moved to the right. This friction-piece will strike the spring and gradually retard the drop of weight 4, and it is so adjusted that the end of spring 6'' reaches notch 8' when the weight has arrived at its lowest point, and the retaining-pan is thrown into position to close the throat of the machine, and the bent end of the spring falling into the notch engages it and retains the latch, so that there will be no recoil. This friction-piece and spring are adjustable with relation to each other to produce the desired result.

To the horizontal arm 2' of lever 3 is attached a rod 9, which depends beside the scale-pan and its lower end is guided on an eye 9', attached to the frame. On this rod is a lug 9'', which underlies a finger 10, attached to or forming a continuation of the rear arm of the T-lever Q^2 . These parts are so constructed and adjusted that simultaneously with the closing of the sides of the scale-pan and its return to normal position, ready to receive another quota of stock, and just as dog d^6 is disengaged from ratchet d^9 , thus allowing the spike-apron to commence feeding again, finger 10 depresses rod 9, thereby dropping the retaining-pan and allowing it to discharge its contents into the scale-pan and drawing latch 5 back, so that its notch 5' engages the notch 6' in bracket 6, and thus the retaining-pan is held open until the proper amount of stock is fed into the scale-pan, when the latch 5 is released and the retaining-pan catches all superfluous stock

dropped by the spike-apron before its stoppage.

The operation is, briefly, as follows: Assuming that the scale-pan has received its load, it is evident it will drop and thus raise its counterweight at c^{10} . As this counterweight rises it pushes rod c^{11} and releases the dog d^6 , which is then raised by counterweight d^7 and thrown into engagement with the ratchet d^8 of the driving-pulley d^3 and thus stops the operation of the machine; but as the dog d^6 is raised it lifts the rod 7, which lifts latch 5 out of notch 6' and thus allows weight 4 to throw the retaining-pan forward, thus closing up the throat of the machine and catching all of the material that may be thrown over during the stopping of the machine. In the meantime cog-wheel q' is revolving, and when its pin q' strikes the boss on the depending arm of lever Q and whose upper arm is depressed and catches a pin c^5 on the weighing-pan pulls it down, opens the sides of the weighing-pan, and allows its load to fall into the conveying portion of the machine below. In the meantime the pin passes the boss on lever Q and the counterweight c^{10} will return the empty pan to position. The pin q' , after leaving the boss on q , next engages the boss on the depending arm of lever Q^2 , thus depressing finger 10 and by means of the lug 9'' pulls rod 9 down, which restores the retaining-pan to its normal position and allows its accumulations to fall into the scale-pan below. On account of the location and shape of this retaining-pan it directs all of the materials which fall from it or which come in contact with it as they pass over the upper spike-apron roll directly into the center of the scale-pan. This feature also contributes to securing a more accurate weight of the material, for the reason that if the material should pass beyond this center, say to the left as you are looking at Fig. 1, it will have an increased leverage and will weigh light—that is, it will set the weighing mechanism in operation before an exact weight has been deposited in the pan. If it should fall to the right of the center, then it will accumulate nearer the fulcrum, and hence will require more material to set the weighing mechanism in operation; but this retaining-pan directs the material so that it will fall exactly in the center, thus securing a more accurate weight and a better result. As the pin on cog-wheel Q' strikes the boss on the depending arm of the T-shaped lever R the latter, by means of rod d^{10} , disengages dog d^6 from the ratchet d^9 , releasing pulley d^3 and the machine starts into operation again, picking fresh material and discharging it into the scale-pan until the proper quantity is collected therein, when the whole series of operations will be repeated as before.

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

1. The combination with the weighing and

feeding mechanism of carding-engines, comprising a scale-pan and means for discharging it when filled and for returning it to its proper normal position when emptied, substantially as described, of mechanism substantially as described, whereby the stock fed forward in the interval between the tipping of the scale-pan and the stoppage of the feeding mechanism is retained until the scale-pan returns to receiving position and is then discharged into the scale-pan, substantially as and for the purpose described.

2. The combination with a weighing and feeding machine for carding-engines, having a scale-pan, and weighing and tipping mechanism for operating it, of a retaining-pan adapted to catch the material fed forward during the interval between the tipping of the scale-pan and the stoppage of the feeding mechanism; means for holding the retaining-pan in position to catch the stock during the tipping of the scale-pan, and means for holding the retaining-pan out of the way when the scale-pan is in position to receive stock, for the purpose and substantially as described.

3. The combination of a feeder, of a scale-pan, the spike-apron, and mechanism for stopping the spike-apron when the scale-pan is discharging its contents, substantially as described, with a retaining-pan above the scale-pan adapted to catch any material fed forward after the scale-pan has tipped and prior to the return of the scale-pan to receiving position; means for throwing the retaining-pan into position to catch such material upon the tipping scale; and means for returning said retaining-pan to normal position, out of the way, when the scale is in position to receive a new charge of stock, all substantially as and for the purpose described.

4. The combination of the scale-pan and its operating mechanism, substantially as described; with the retaining-pan, the weighted lever for throwing the retaining-pan into receiving position; a latch adapted to hold the retaining-pan in discharging position; a trip mechanism for releasing said latch, upon the tipping of the scale-pan; and mechanism for throwing the retaining-pan into discharging position when the scale-pan returns to re-

ceiving position, all substantially as and for the purpose set forth.

5. The combination of the retaining-pan, the lever on the shaft thereof, the latch pivoted to said lever, a bracket supporting the free end of said lever, the notched block 8 on said lever, and the retarding-spring 6" on the bracket adapted to engage block 8, for the purpose and substantially as described.

6. The combination with a feeder, of the retaining-pan; its weighted lever; the latch 6 for holding the pan in discharging position; the trip-rod 7 for releasing said latch; a weight for throwing the pan into receiving position; and the rod 9 and finger 10 for throwing the pan into discharging position, all substantially as and for the purpose described.

7. The combination of a weighing and feeding mechanism for carding-machines, and like purposes; of a scale-pan, and the weighing and tipping mechanisms for operating the same; a spike-apron, and mechanism for stopping the spike-apron upon the tipping of the scale-pan and while it is discharging its contents, substantially as described; with a retaining-pan located above the scale-pan; a weighted lever for throwing the retaining-pan into receiving position; a latch 6 for holding said retaining-pan in discharging position; a trip-rod 7 for releasing said latch connected to and operated by the mechanism for arresting the spike-apron, so that the latch is tripped simultaneously with the stoppage of the spike-apron; a rod 9 connected to said lever, and a finger 10 connected to the mechanism for releasing the spike-apron drive, adapted to engage rod 9 and force the retaining-pan into discharging position simultaneously with the return of the scale-pan to weighing position and the starting of the spike-apron, all substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

GEORGE D. SECOR.

Witnesses:

JAMES DU SHANE,
EDWARD F. DUBAIL.