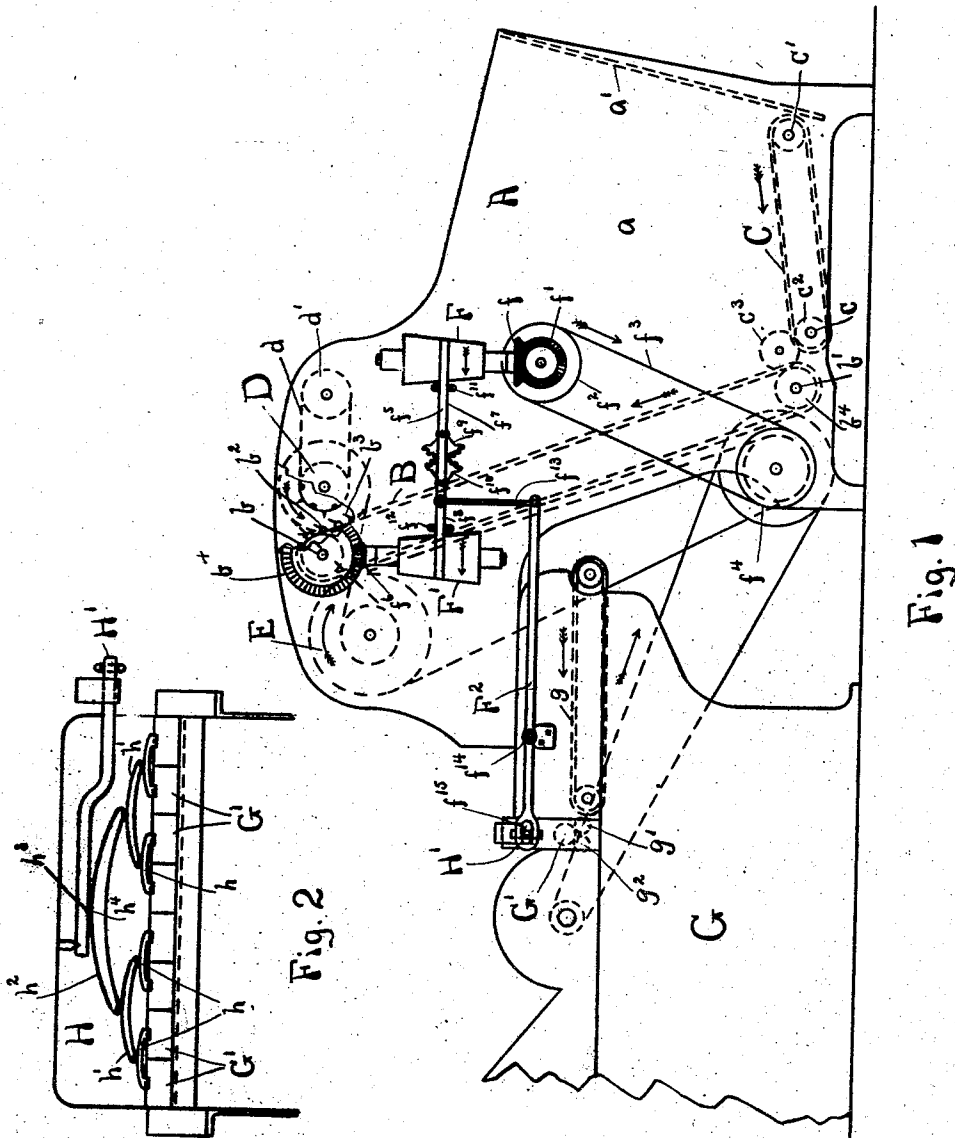


(No Model.)

A. H. MORTON.
MACHINE FOR FEEDING TEXTILE FIBERS.

No. 506,713.

Patented Oct. 17, 1893.



WITNESSES

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INVENTOR

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UNITED STATES PATENT OFFICE.

ALBERT H. MORTON, OF LOWELL, MASSACHUSETTS, ASSIGNOR TO THE
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MACHINE FOR FEEDING TEXTILE FIBERS.

SPECIFICATION forming part of Letters Patent No. 506,713, dated October 17, 1893.

Application filed May 23, 1893. Serial No. 475,246. (No model.)

To all whom it may concern:

Be it known that I, ALBERT H. MORTON, a citizen of the United States, residing at Lowell, in the county of Middlesex and Commonwealth of Massachusetts, have invented a certain new and useful Improvement in Machines for Feeding Textile Fibers, of which the following is a specification.

My invention relates to machines for feeding textile fibers of that class in which spiked or toothed lifting-aprons are employed to raise such fibers from a hopper or supply box and to discharge them upon a suitable receiving surface of the machine to be supplied, and the object of said invention is so to regulate the speed of said apron that the supply furnished thereby will be substantially uniform at all times.

In the accompanying drawings, Figure 1 is a side elevation of a feeding machine, showing the feed-apron and its rolls, the lifting-apron and its rolls, the doffer, the rotary comb and its clearing devices in dotted lines (a small part of the lifting-apron and comb being shown in full lines, a part of the frame of the machine being broken away for that purpose), also a side elevation of a part of a picker, opener or similar machine with variable speed-mechanism for driving the lifting-apron and a part of the system of levers which control said speed-mechanism, showing the feed-rolls and feed-apron of said last-named machine in dotted lines; Fig. 2, a front elevation of a part of the frame of a cotton-opener or similar machine, the feed-rolls and a system of scale-levers such as may be used to control the mechanism which drives the lifting-apron.

A represents the frame of the feeding-machine, the space *a*, inclosed by the sides of the machine, the end-piece *a'*, the lifting-apron B and the bottom or feed-apron C forming a hopper or supply-box, in which the stock is placed. The stock is carried toward the lifting-apron B by a feed-apron C, said aprons B C being endless belts, the apron B running on the parallel rolls *b b'* and the apron C on the parallel rolls *c c'*, said apron B having transverse slats *b²*, provided with teeth *b³*, inclined in the direction in which said apron B

travels, and said apron C being driven from the apron B by gears *b⁴ c²* fast on the respective shafts of the apron-rolls *b' c* and engaging the intermediate gear *c³*. D is a rotary comb which removes surplus stock from the lifting-apron, the spikes of said comb being stripped by a perforated belt *d*, running on said comb and on an idle-roll *d'*, as fully described in Letters Patent to me, No. 475,246, dated May 17, 1892. E represents the doffer which removes the stock from the lifting-apron. All of the above mentioned parts are of a well known construction and operation, except as hereinafter stated.

It is customary to run the lifting-apron and feed-apron at a uniform rate of speed, as by a belt connecting pulleys on the shaft of the upper lifting-apron roll and on the pulley *f⁴* hereinafter named.

G indicates a picker, opener or other machine, having a feed-apron *g* to which fibers may be supplied by the lifting-apron B, said feed-apron *g* conducting the fibers to feed-rolls *g' g²*, and to another feed-roll or sectional evenner-roll *G'* arranged above the rolls as is shown in the patent to Clarke and Perham, No. 245,609, dated August 16, 1881. The sectional evenner-roll *G'* may represent any sectional feed-surface between which and a feed-roller or feed-rolls the fibers are fed, as the sectional evenner-plates or feed plates shown in the patent to Whitehead, No. 110,318, dated December 20, 1870, provided the sections of such sectional feed surface independently yield according to the thickness of stock passing between said sections and the feed-roll or may represent any yielding feed-roll or feed-plate. Such a yielding feed-device combined with levers operated thereby constitutes an evenner and is commonly used to control through intermediate mechanism, the speed of feed-rolls, according to the amount of stock passing between said feed-rolls and said yielding feed-surfaces.

H represents a system of scale-levers in three series, the scale-levers *h* each resting upon two sections of the roll *G'*, the levers *h'* of the second series each resting upon two levers *h* of the first series and the main scale-lever *h²* resting upon two levers *h'* of the sec-

ond series, substantially as shown in said Clarke and Perham patent. I connect the system of scale-levers operated by such sectional evener-devices with a variable speed-mechanism which drives the lifting-apron B. This variable speed mechanism consists of reversed speed-cones F F', one, F, of which is driven by bevel-gears $f f'$, one, f , of which gears is fast on the shaft of said cone F and engages the other bevel-gear f' , the latter being secured to a band-pulley f^2 , concentrically therewith and said band-pulley being connected by a band f^3 to another band-pulley f^4 , driven at a uniform speed from the machine to which fibers are fed. The cones are connected by a belt f^5 and the driven cone F' has secured to its shaft a bevel pinion f^6 which engages a bevel-gear b^4 on the shaft of the upper lifting-apron roll b . The belt f^5 is caused to traverse on the cones by belt-shipping levers $f^7 f^8$ of ordinary construction, substantially as shown in said Clarke and Perham patent, having segmental gears $f^9 f^{10}$ which engage each other and having belt-shipping forks $f^{11} f^{12}$ which extend above and below said belt f^5 , one of said belt-shipping-levers (that, f^8 , nearest the driven cone F') being connected by a rod f^{13} to one end of a lever F², pivoted at f^{14} on the side of the machine G, and the other end of said lever F² having a slot f^{15} which receives the outer end of a lever H' having its fulcrum on the knife-edge h^3 and resting upon a knife-edge h^4 on the main scale-lever.

It is evident that when the sectional evener-roll G' or any part thereof is raised, the slotted end of the lever f^2 will also be raised, its other end depressed and the belt f^5 moved toward the large end of the driven cone F' and the small end of the driving cone F, thus diminishing the speed of the lifting-apron B, and that when the thickness of stock between said sectional evener-roll and the feed-rolls $g' g^2$ is diminished, the sectional evener-roll will approach said feed-rolls and the weight of the lever H' will by the means above de-

scribed raise the belt on the cones F F' and increase the speed of said lifting-apron and cause stock to be fed thereby more rapidly on to the feed-apron g .

By the means above described of varying the speed of the lifting-apron, the apron g of the machine G will be furnished with a substantially uniform supply of fibers.

I claim as my invention—

1. The combination of an evener, a lifting-apron, mechanism for actuating the lifting-apron, and connections between the said mechanism and evener whereby the speed of said lifting-apron is varied inversely to the amount of stock passing through said evener, as and for the purpose specified.

2. The combination of a feed-roll, yielding sectional feed-surfaces, scale-levers, operated by said sectional feed-surfaces, a lifting-apron and a variable speed-mechanism controlled by said scale-levers, to vary the speed of said lifting-apron inversely to the amount of stock passing between said feed-roll and said sectional feed-surfaces, as and for the purpose specified.

3. The combination of a feed-roll, a sectional evener-roll, scale-levers, operated by said evener-roll, a lifting-apron, reversed speed-cones, one of said cones driving said lifting-apron and the other of said cones having a uniform rotation, a belt, connecting said cones, and belt-shifting mechanism, operated by said scale-levers, to vary the position of said belt upon said cones, and to vary the speed of said lifting-apron by a variation in the amount of stock between said feed-roll and said evener-roll, as and for the purpose specified.

In witness whereof I have signed this specification, in the presence of two attesting witnesses, this 12th day of May, A. D. 1893.

ALBERT H. MORTON.

Witnesses:

ALBERT M. MOORE,
MYRTIE C. MANSUR.