

No. 646,673.

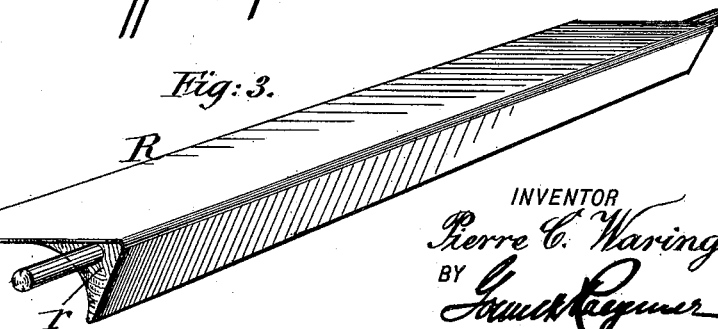
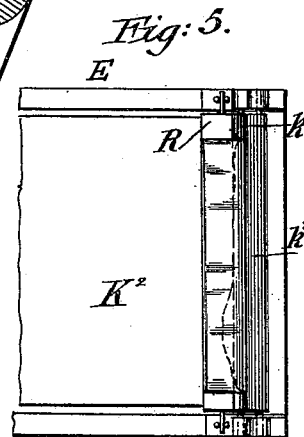
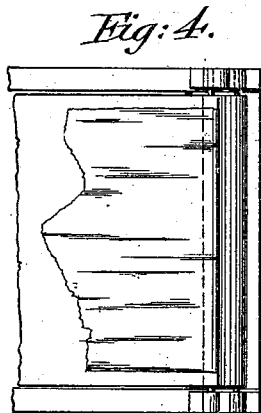
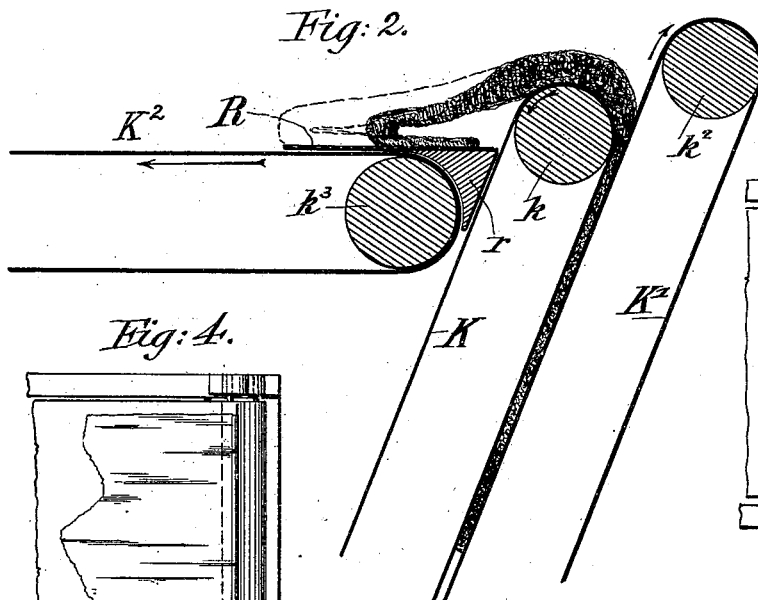
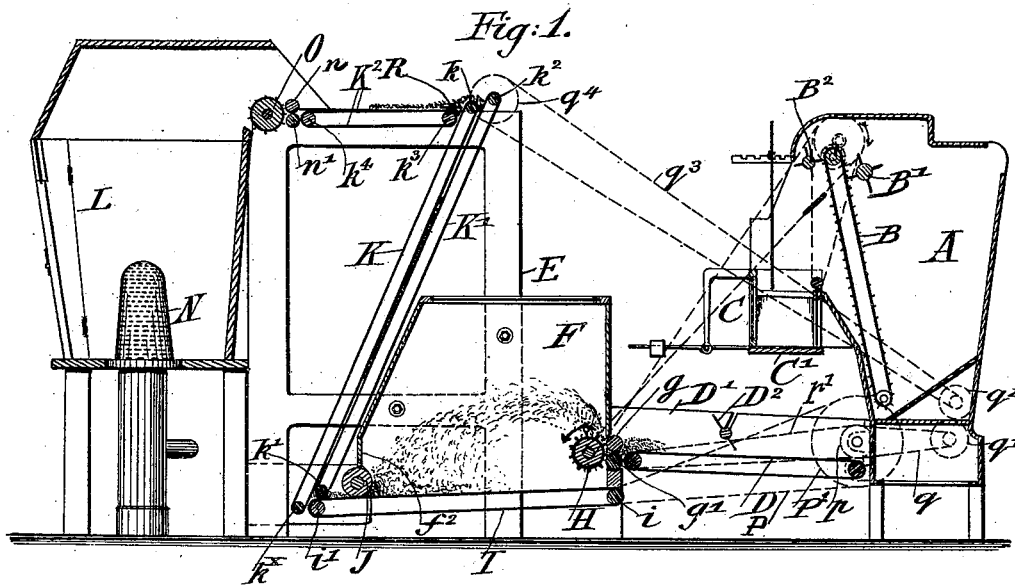
Patented Apr. 3, 1900.

P. C. WARING.

BAT FORMING AND FEEDING MECHANISM FOR HAT BODY FORMING MACHINES.

(Application filed Feb. 10, 1900.)

(No Model.)



WITNESSES:

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UNITED STATES PATENT OFFICE.

PIERRE C. WARING, OF YONKERS, NEW YORK.

BAT FORMING AND FEEDING MECHANISM FOR HAT-BODY-FORMING MACHINES.

SPECIFICATION forming part of Letters Patent No. 646,673, dated April 3, 1900.

Application filed February 10, 1900. Serial No. 4,760. (No model.)

To all whom it may concern:

Be it known that I, PIERRE C. WARING, a citizen of the United States, residing at Yonkers, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Bat Forming and Feeding Mechanism for Hat-Body-Forming Machines, of which the following is a specification.

10 This invention has relation to certain improvements in bat forming and feeding mechanism for hat-body-forming machines such as shown and described in my Patent No. 641,172, dated January 9, 1900. In the mechanism referred to there is no provision for delivering to the picker bats of approximately-uniform thickness from end to end or, rather, bats which are practically straight at the ends and which are at approximately-equal distances apart. In the ordinary equalizers, due to the action of the picker, the bat will be delivered much attenuated at both ends, which will be also rough and very irregular in outline, in consequence of which the bat is much more elongated than is necessary and takes a longer period of time to pass through the feed-rollers of the forming-machine, thereby materially reducing the productive capacity of the forming-machine. The described attenuation at the ends lengthens the bat beyond what is necessary for attaining the best results, and hence, even if the distances between the bats and the time of their delivery into the cone-casing are always practically the same, the output of the machine cannot be as great as if the bats were fed in in less time, with the time between the feeding in of the successive bats more accurate.

It is the object of the present invention to make the bats of approximately-uniform thickness from end to end in such a manner as to produce practically straight and thickened ends, so as to overcome the coils or bad results incident to attenuated ends and to thereby give the attendant more certain or definite time between the formation of each hat-body for the performance of his manipulations, whereby the output of the machine may be increased and the quality of work improved.

To these ends my invention consists of cer-

tain features of construction and combinations of parts to be hereinafter described and then claimed.

In the accompanying drawings, Figure 1 is a vertical longitudinal section of my bat forming and feeding mechanism for hat-body-forming machines shown in connection with an automatic feeding and weighing mechanism. Fig. 2 is an enlarged detail view showing the action of the end-straightener for the forward ends of the bats. Fig. 3 is a detail perspective view of the forward end-straightener. Fig. 4 is a plan view showing how the forward ends were made ragged and attenuated by the prior machines, and Fig. 5 is a plan view showing how the ends are made straight by the present invention.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A indicates the hopper into which the fur is charged; B, a toothed apron for elevating the fur; B', a clearer, and B² a wiper arranged at the opposite side of the apron B, so as to detach the fur from the teeth of the apron and discharge it into the scale-pan or tilting platform C' of the weighing mechanism C. These parts are the same as covered by my Patents Nos. 628,878 and 628,879, dated June 11, 1899, and need not be further described in detail.

From the scale-pan or tilting platform C' the fur weighed out is dropped onto an endless conveyer D, above which there is journaled in suitable bearings of a trough D' a distributor D², which distributes the fur about the apron before it reaches its discharge end. At the discharge end of the apron there is arranged a frame E, which supports a fur-equalizing chamber or casing F. A pair of feed-rollers g g' is journaled in suitable bearings in said chamber or casing F adjacent to the discharge end of said apron and is adapted to feed the fur issuing from the apron to a toothed cylinder or picker H, which is journaled in suitable bearings in said casing at a suitable distance above the bottom of the casing. The toothed cylinder H rapidly rotates in the direction of the arrow and throws the fur passing from between the rollers g g' up into the chamber or casing F, so that it falls in a shower and is de-

posited evenly and in flocculent condition over the surface of the upper lap of an endless apron I, which passes over rollers *i i'*, journaled in the casing, the discharge end of said apron I extending through the open end *f*² of the casing F. The apron I is driven by a belt P, passing over a pulley or roller *i* and over a large band-pulley P', which is driven from a suitable source of power, the shaft of said pulley P' carrying a smaller pulley *p*, over which passes a belt *p'*, which drives the endless conveyer D. Near to the delivery end of apron I there is arranged a feed-roller J, journaled in suitable bearings and adapted to form contact with the upperlap of said apron I and in connection therewith to form of the fur which has been deposited on the apron a uniformly-thick, unbroken, continuous, and fluffy bat, which is conveyed from the apron I in between a pair of parallel endless conveyer-aprons K K', which pass over suitable guide-rollers *k^x k k' k²*, journaled in suitable bearings of the frame E. The aprons K K' convey the bat upwardly onto a shelf or ledge R, from whence it falls onto a horizontal feed-apron K², which passes over the guide-rollers *k³ k⁴*. The aprons K K' are driven at a rate of speed less than that of the apron I by means of a belt *q*, passing from aforesaid pulley *p*, gears *q' q²*, and a belt *q³*, which passes over a pulley *q⁴* on the upper roller *k²* of apron K'. Feed-rollers *n n'* are arranged next the guide-roller *k⁴*, while between the rollers *n n'* and the cone-casing L there is arranged a picker or toothed cylinder O, which rotates very rapidly and disintegrates the fibrous bat issuing from under the roller *n* and throws the individual fur fibers into the casing L.

The shelf or ledge R is provided with a setting-piece *r*, which fits into the space between the roller *k³* and the apron K and extends from edge to edge of the feed-apron K², said shelf extending over and a short distance along said apron K², so that the forward end of the bat will first fall thereonto and accumulate to a certain and desired thickness before being taken along by the apron K².

When the machine is in operation, the fur deposited upon the apron D will by the conjoint action of the feed-rollers *g g'* and the toothed cylinder H be fed and disintegrated and the individual fibers thrown up into the equalizing chamber or casing F and will fall in a shower and be deposited evenly and in a fluffy condition upon the upper lap of the conveyer-apron I. Now as the apron I and feed-roller J move faster than the parallel conveyer-aprons K K' the bat formed by the apron I and feed-roller J is forced or crowded into the space between aprons K K', because the latter act to retard the more rapid feed of the bat. In this way the bat is shortened, so that when the said parts are properly timed, in accordance with the timing of the weighing mechanism, there will be two or

more bats on the way to the cone-casing. Also by the same means the rear end of the bat, heretofore attenuated, is thickened and to a certain extent straightened, because the thin layer of fibers behind is forced up to the thickened body of the bat. As shown in Figs. 2 and 5, the ragged forward ends of the bats as they are fed from the aprons K K' are attenuated or thinner than the body which is passing between the aprons, and they are hence flabby or weak, so much so, in fact, that the thinner ragged end is not shoved along and does not move directly forward upon the shelf R forming the end-straightener, but lags behind and is temporarily retained by its friction on the said shelf, so that it is bent back under the incroaching adjacent portion of the bat, about as shown, until the bent or folded portion has become thick enough to hold its own against the tendency of the shelf to turn it under still further. The described action in turning under the thin ragged or irregular end of the bat straightens the so-thickened end transversely. When the forward end of the bat is thick and substantial enough, the incroaching portion of the bat pushes the end off the said shelf or end-straightener, whereupon the feed-apron K² takes up the bat and feeds the same forward without any knots or tangles to the picker or toothed cylinder O, which takes up and disintegrates the bat and throws the individual fibers into the cone-casing L, which are then sucked down and deposited onto the cone N. As bat after bat is fed from the aprons K K' the thin forward ends are turned under and straightened, so that the time that it takes for each bat to reach the picker O may be known with some degree of certainty, thus giving the attendant less care and more certain time between the formation of each hat-body and by the shortening of the bats and the thickening and straightening of their forward and rear ends enabling the turning out of more hat-bodies within a given space of time.

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

1. In bat forming and feeding mechanism for hat-body-forming machines, the combination, with a pair of parallel bat-conveying aprons, of mechanism moving at a greater rate of speed than said conveying-aprons for feeding the bat thereto, substantially as set forth.

2. In bat forming and feeding mechanism for hat-body-forming machines, the combination, with means for forming the bats, and means contiguous thereto for feeding the bats forward, of means for straightening the forward ends of the bats, said means being arranged beyond the ingoing end of and in connection with the means for feeding, substantially as set forth.

3. In bat forming and feeding mechanism for hat-body-forming machines, the combina-

tion, with means forming the bats, and a pair of parallel bat-conveying aprons to which the formed bat is fed, of an end-straightener at the outgoing ends of said aprons whereby the forward ends of the bats are straightened and formed into proper thickness, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

PIERRE C. WARING.

Witnesses:

PAUL GOEPEL,
M. H. WURTZEL.