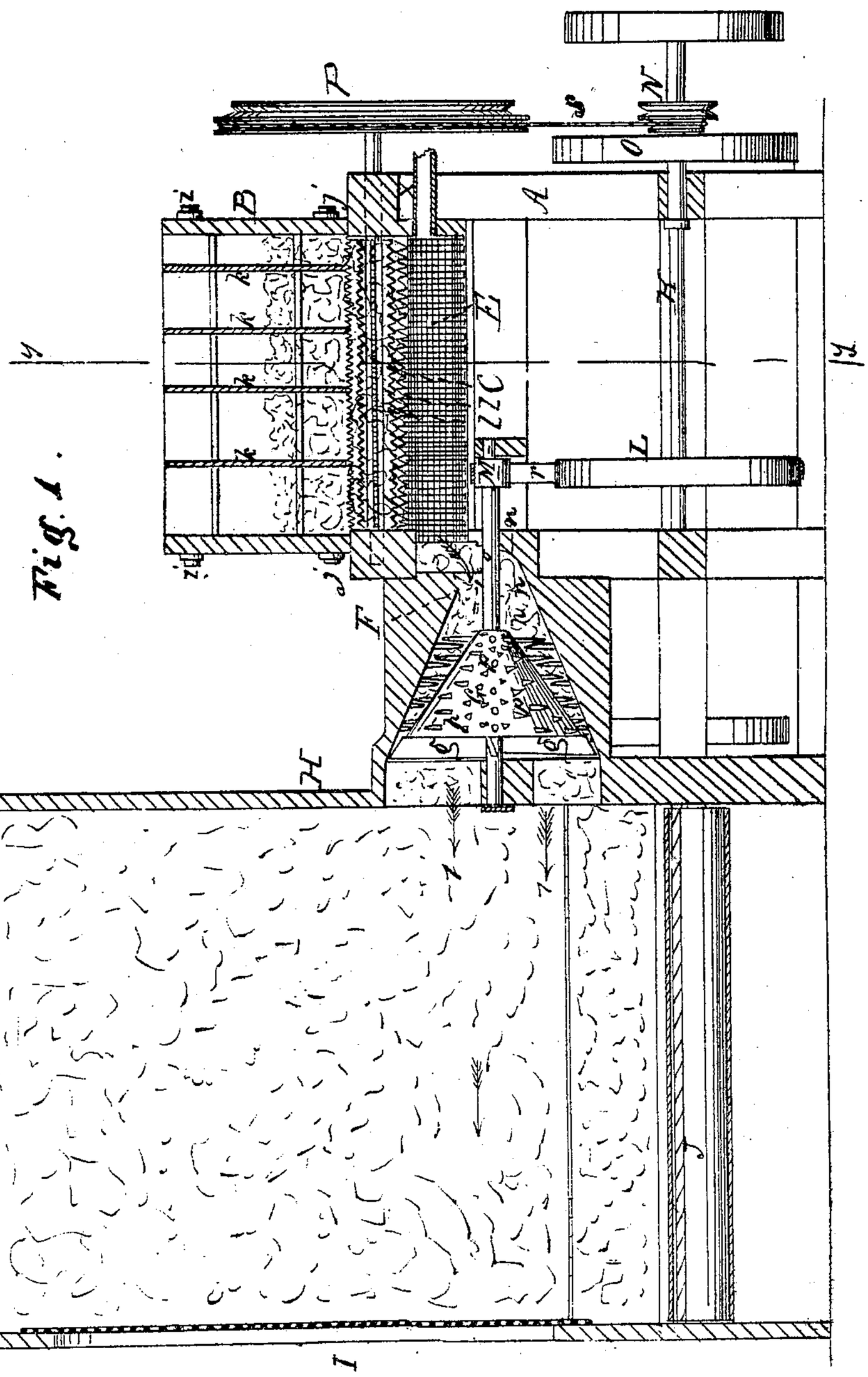
Sheet 1-2 Sheets.

Arneson, Pederson & Rees.

Forming Bals.

No. 13613. Patented Oct. 2, 1855.



Sheet 2 - 2 Sheets.

Arneson, Pederson & Rees.

Forming Bats.

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Fig. 2.

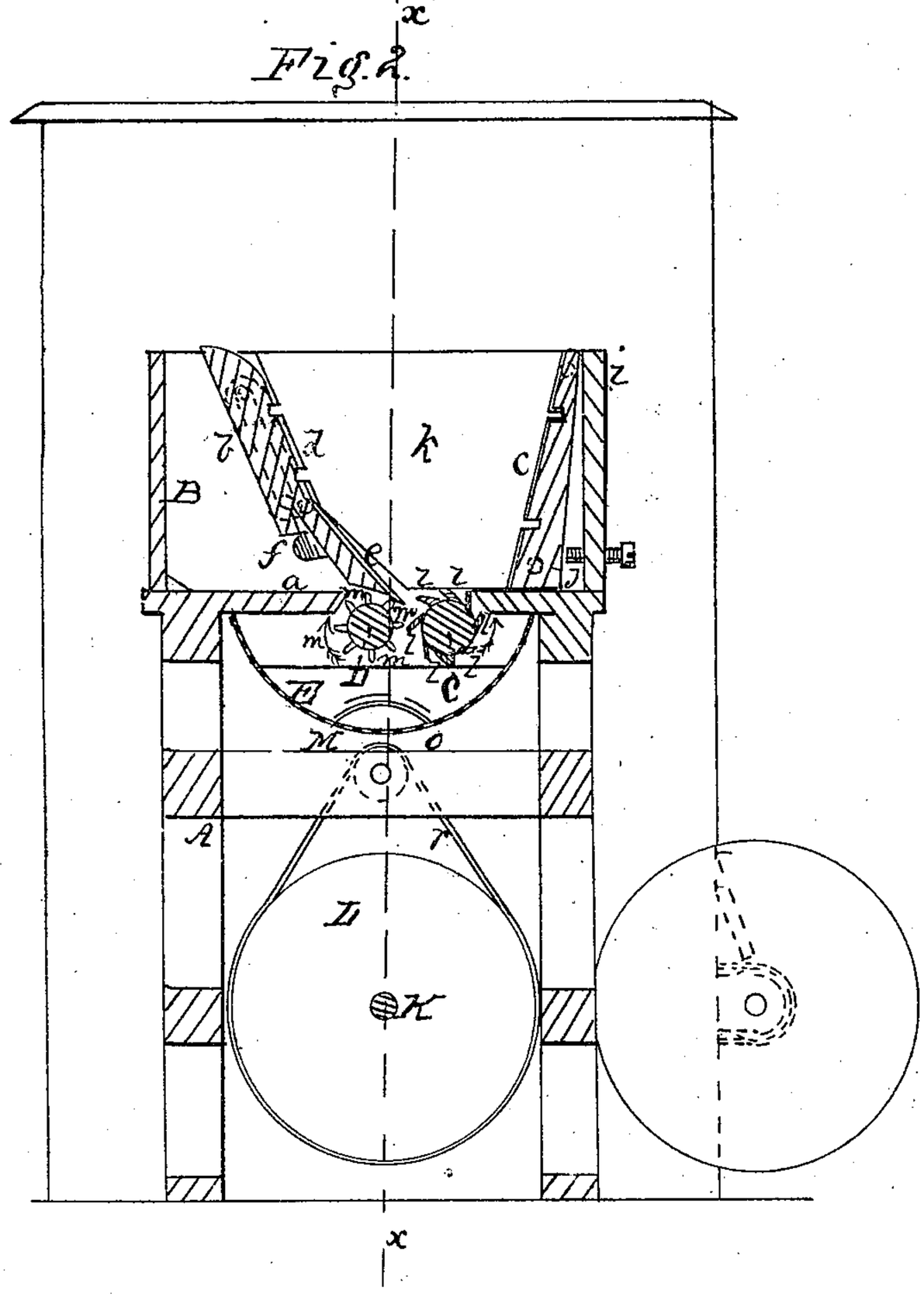
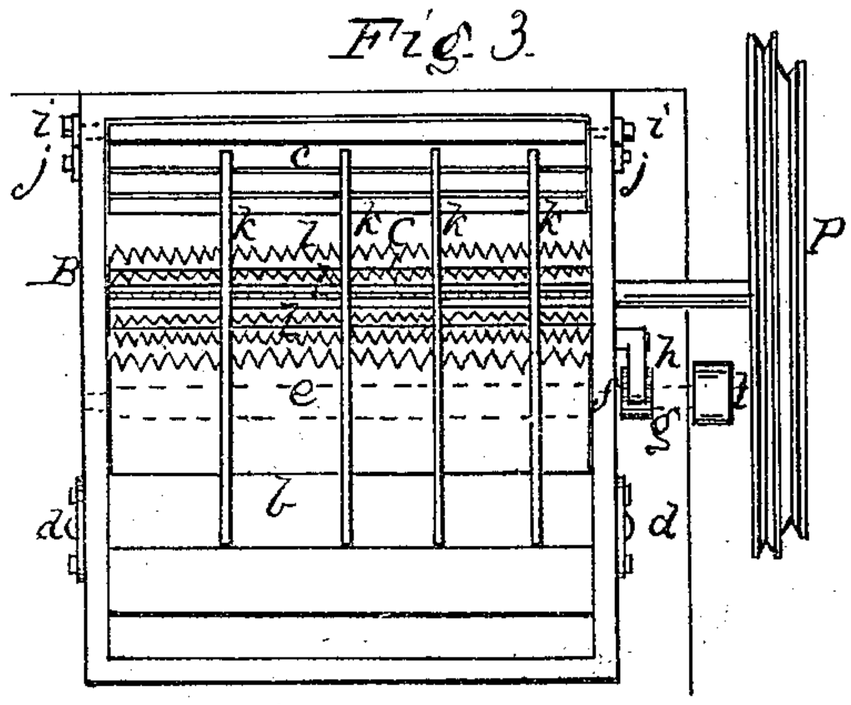


Fig. 3.



UNITED STATES PATENT OFFICE.

P. ARNESON, J. PEDERSON, AND H. REES, OF NEW YORK, N. Y.

PREPARING MATERIALS FOR HAT-BODIES.

Specification of Letters Patent No. 13,613, dated October 2, 1855.

To all whom it may concern:

Be it known that we, PETER ARNESON, JORGEN PEDERSON, and HANS REES, of the city, county, and State of New York, have invented certain new and useful Improvements in Machinery for Mixing and Otherwise Preparing Furs or other Materials Used for Manufacturing Hat-Bodies; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1, is a longitudinal vertical section of our improvement, *x*, *x*, Fig. 2, showing the plane of section. Fig. 2, is a transverse vertical section of ditto, *y*, *y*, Fig. 1, showing the plane of section. Fig. 3, is a plan or top view of the feed box.

Similar letters of reference indicate corresponding parts in the several figures.

The nature of our invention consists—

1st. In the combination of a weighing or proportioning feed box, with which the machinery for taking the fur, or other material therefrom, and thoroughly mixing it in said proportions preparatory to its being used in hat-bodies.

2nd. Our invention consists in the peculiar means or device employed for detaching and loosening the fibers of the materials and drawing the same from the feed box into the draft or blast passage; the device above mentioned also serving to prevent the admission of large foreign substances into the machine, as will be presently shown and described.

3rd. Our invention consists in the peculiar combination of parts or means employed for mixing the different kinds of furs or other materials and delivering the same in a loose and light state from the machine.

To enable others skilled in the art to make and use our invention, we will proceed to describe its construction and operation.

A, represents a framing which may be constructed in any proper manner to support the several working parts of the machine.

B, represents a rectangular box which is placed upon a platform (*a*) on the upper part of the framing A.

The box B, has two inclined end boards *b*, *c*, placed within it. The board *b*, is allowed to slide up and down within the box B, and may be secured at any desired point by set screws *d*, shown in Fig. 3, and by dotted line in Fig. 2. To the lower end of the board *b*, there is attached by joints or hinges an inclined plate *e*, the lower end of which is toothed or serrated. This plate may be set at the required angle of inclination by means of an elliptical or cam-shaped bar *f*, directly back of the upper part of the plate, see Fig. 2. One end of this bar *f*, on the outer side of the box B, has a pinion *g*, upon it, into which pinion a pawl *h*, catches and keeps the bar in the desired position, see Fig. 3. The other board *c*, is attached to the upper part of the box B, by pivots *i*, *i*, and the lower end of the board may be moved farther in or out and secured at the desired point by set screws *j*, *j*.

Between the two boards *b*, *c*, there are placed partitions or plates *k*, which may be adjusted so as to divide the space between the two boards into several compartments of different or varying dimensions, the partitions or plates being allowed to slide laterally between the two boards. The two boards *b*, *c*, with the partitions or plates *k*, constitute the feed box.

Underneath the box B, there are placed two cylinders C, D. These cylinders work in suitable bearings in the upper part of the framing A. The cylinder C, is directly underneath the partitions *k*, and is provided with a series of serrated plates *l*, attached tangentially to its periphery as clearly shown in Fig. 2. The other cylinder D, has a series of radial pointed rods *m*, attached to its periphery the rods *m*, extending within a short distance of the serrated edges of the plates *l*, on the cylinder C. The serrated edge of the plate *e*, also extends to within a short distance of the edges of the plates *l*, this distance however may be varied as circumstances require by adjusting the board *b*.

Directly underneath the cylinders C, D, there is placed a semi-cylindrical floor or screen E, which extends the whole length of the cylinders. This screen is attached to the underside of the platform *a*, and communicates with the small end of a conical shell F; the interior of which has teeth or pointed rods *n*, projecting from it, as shown in Fig. 1. Within the shell F, there is placed a conical head G, the shaft *o*, of which runs in suitable bearings on the fram-

ing A. The periphery of the head G, has teeth of pointed rods *p*, attached to it, and the large end of the head has wings or blades *q*, secured to it, the wings or blades projecting rather obliquely from the end of the head G, and serving the office of a fan which together with the head is entirely inclosed by the shell F. A portion of the teeth on the head G, may be of knife blade form, and set rather obliquely to aid the wings or blades *q*, in creating the necessary draft. The shell F, communicates with a box H, the side of which, opposite to the shell F, has a screen I, placed in it. The bottom of the box H, is formed of an endless apron J, shown in Fig. 1.

K, represents the driving shaft placed at the lower part of the framing A. This shaft has a pulley L, at one end around which a band *r*, passes, said band also passing around a pulley M, on the shaft *o*, of the conical head G. On the opposite end of the shaft K, there are two pulleys N, O, one of which N, has a band *s*, passing around it, said band also passing around a pulley P, on the end of the cylinder C. The pulley O, has a band passing around it, which band also passes around a pulley on the end of the cylinder D, not shown.

Hat bodies are manufactured from various kinds of furs, and other materials of different qualities or sorts. These different materials are not mixed in equal quantities but vary considerably, and it is important that a certain quantity only of each kind should be used. These different materials, in order to manufacture good hat bodies, must be well mixed together. Our machine accomplishes this and at the same time better prepares the fur for the next operation by loosening it and separating it more effectually than formerly, in the following manner.

The different materials are placed in the compartments formed by the partitions *k*, which are moved or adjusted between the two boards *b*, *c*, so that the size of each compartment will be in proportion to the quantity of material in it. Motion is then given the driving shaft K, and the cylinders C, D, rotate in the direction indicated by the arrows, shown in Fig. 2. The serrated plates *l*, on the cylinder C, draw the materials from the compartments formed by the partitions *k*, and carry it to the cylinder D, the teeth or rods *m*, of which take it from the teeth of the plates *l*, and throw it upon the screen or floor E. The serrated edge of the plate *e*, regulates the feed of the material to the cylinder D, this plate being adjusted so as to leave a space of the proper width between it and the plates *l*, of the cylinder C, as previously stated.

The cylinder C, which is the feeder of the machine rotates quite slowly compared with the cylinder D, but with a sure grip brings the material from each compartment in the box B, against the teeth of plate *e*, to the cylinder D, which loosens and detaches them in a great measure and they fall light on the screen E. Foreign substances, bits of metal, etc., are occasionally found in the material, these if they are large stop the slow cylinder C, and they may be removed without damage, and if small they fall and remain harmless on the floor or sccreen E. As the conical head G, rotates a blast or draft is generated by the wings or fans through the shell F, and screen E, or tube ×, in the direction of arrow 1, by which the material is drawn from the screen or floor E, through the shell F, where it is mixed in the ordinary manner and discharged into the box H, where by means of the same blast it circulates in the air and completes the mixing, which is here more thorough in as much as it is better separated and consequently much lighter than it was as formerly done. In the box H, the material falls on the endless apron J, and by it may be deposited in the hopper or feed box of the next machine or on other aprons in connection with it avoiding handling which is very desirable, as even though it is done carefully it remats the fur and in a measure nullifies the operation to which it has been subjected.

The above machine does the work perfectly, the material is properly mixed in suitable proportions and much labor and expense is saved besides which the machine itself is not injured by hard foreign substances passing through it. At present the material is placed on a feed board and is fed directly to the shell F, and head G, by hand. The person feeding takes the material from a box into which it has been shaken in a succession of layers according to the number and quantity of the kinds or sorts to be mixed. Besides the imperfect manner in which this necessarily is done by hand, hard substances continued in the fur often pass unobserved into the machine and break its teeth and otherwise injuring it, besides endangering the person feeding the machine.

We do not claim the shell E, and conical head G, separately, nor do we claim the box H, separately for they have been previously used.

Having thus described our invention what we claim as new and desire to secure by Letters Patent is—

1. In combination with a feed box, having adjustable partitions therein so that, the material to be used may be proportioned in quantity in its different apartments, the machinery for taking it therefrom and thoroughly mixing it in said proportions, preparatory to its being used in hat bodies, as described.

2. We claim the combination of the two cylinders C, D, and plate *e*, constructed as shown viz, the cylinder C, having serrated plates *l*, attached to its periphery and the plate *e*, provided with a serrated edge for the purpose set forth.

3. We claim the combination of the box H, provided with the endless apron J, the shell F, and conical head G, with the wings or blades *g*, at its end whereby the materials are thoroughly mixed and discharged from the machine in a loose and light state, and may be deliverd without handling to the next machine.

PETER ARNESON.
JORGEN PEDERSON.
HANS REES.

Witnesses:
Jos. Geo. Mason,
J. W. Coombs.