No. 881,320. PATENTED MAR. 10, 1908.

E. HORTON.

BASKET MAKING MACHINE.

APPLICATION FILED JAN. 14, 1907.

2 SHEETS—SHEET 1.

Fig. 1.

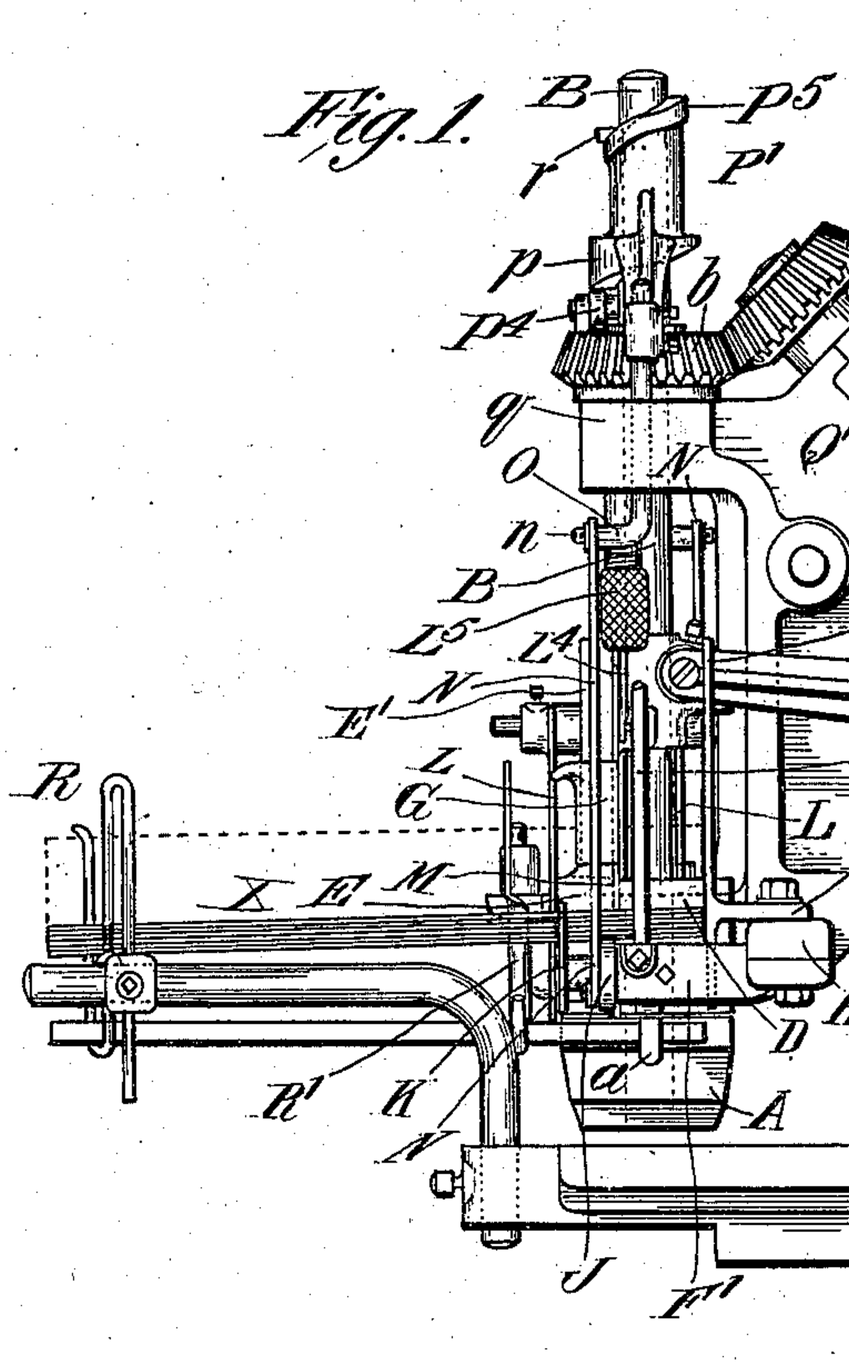


Fig. 3.

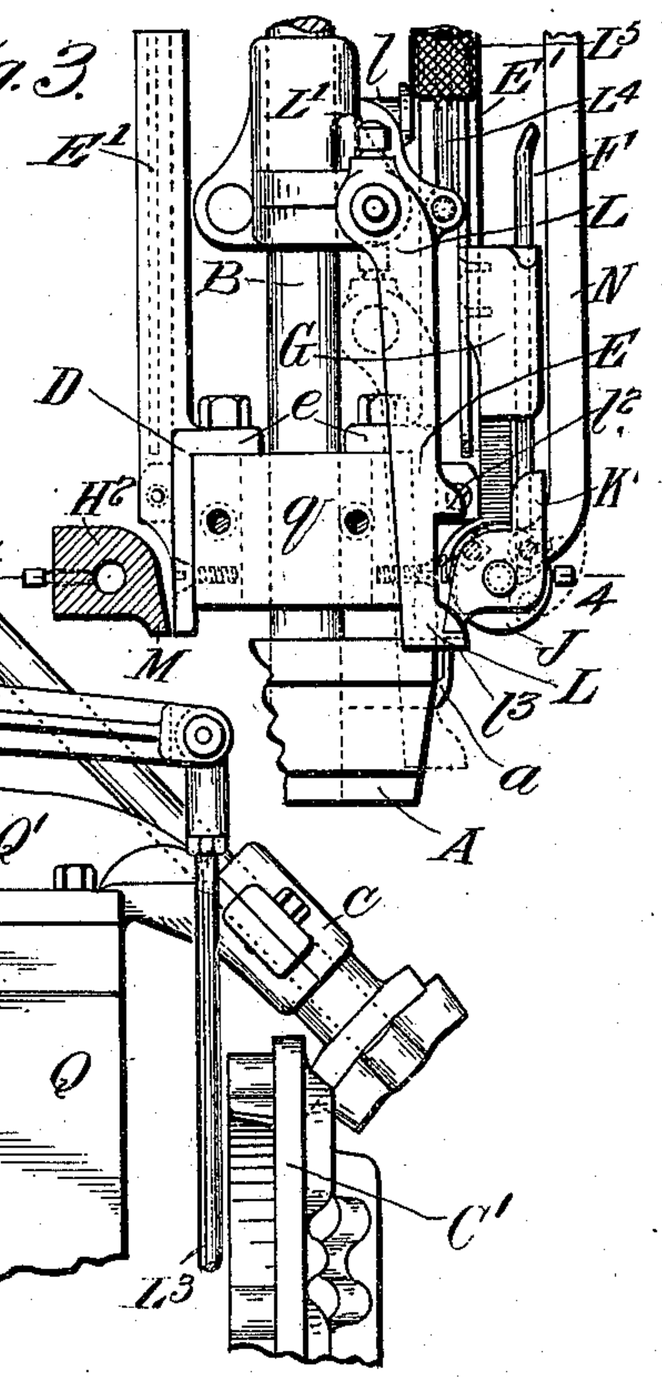


Fig. 2.

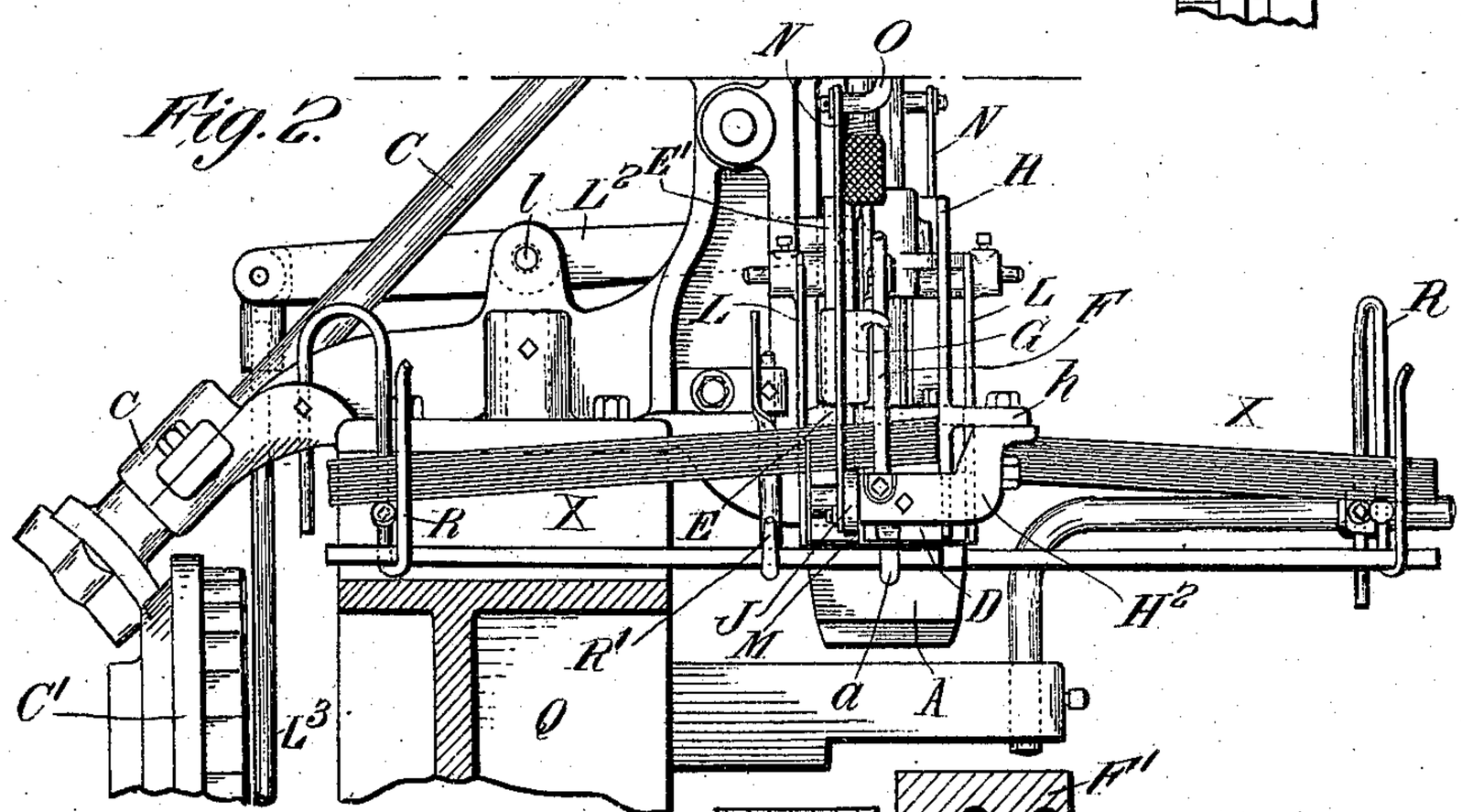
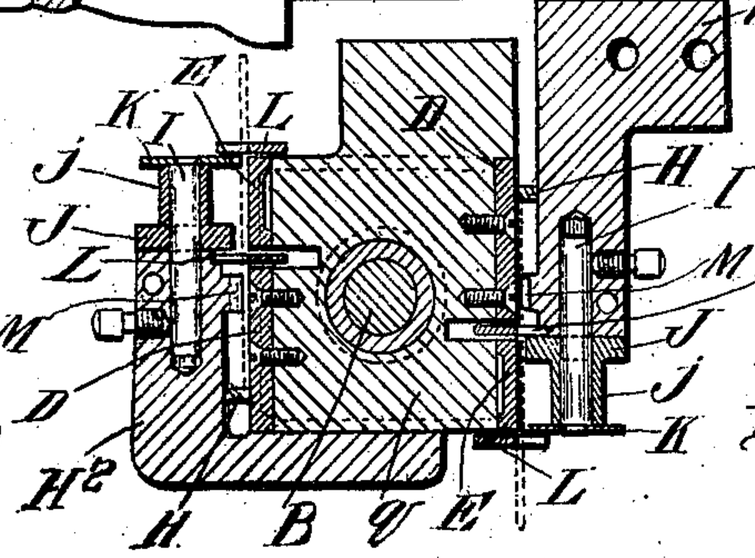


Fig. 4.



WITNESSES.

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2 SHEETS—SHEET 2.

Fig. 5.

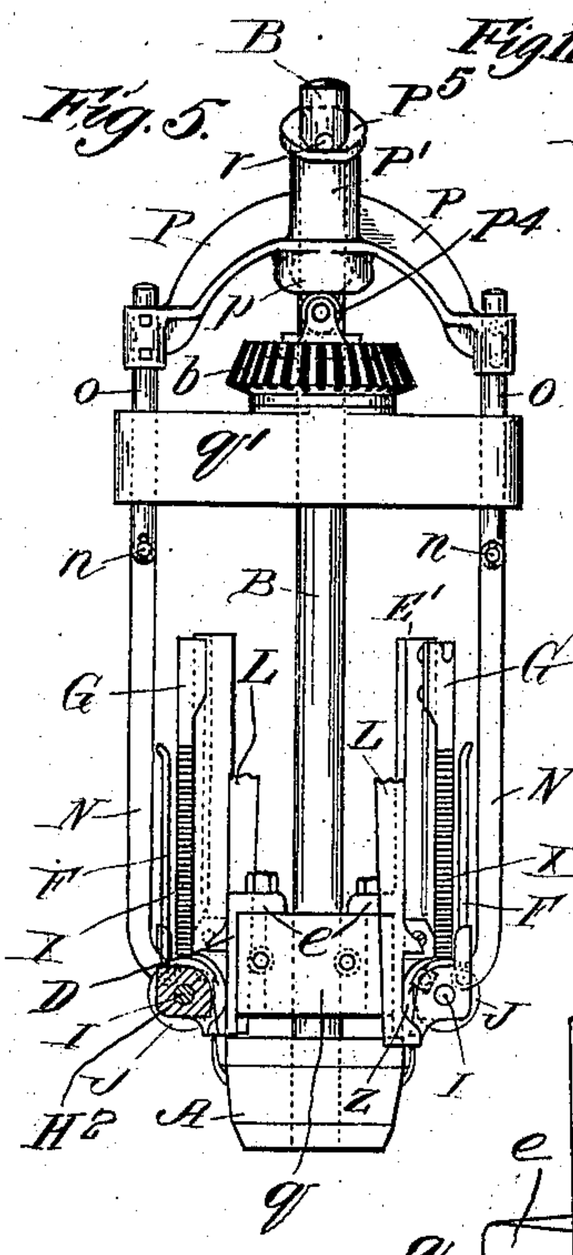


Fig. 11.

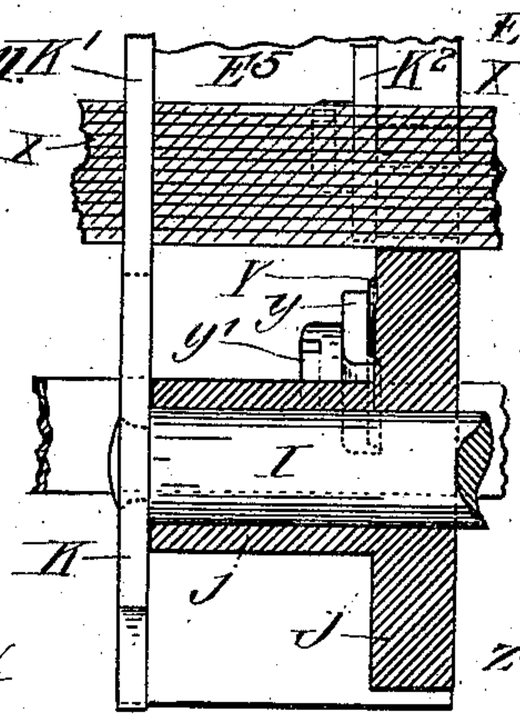


Fig. 10.

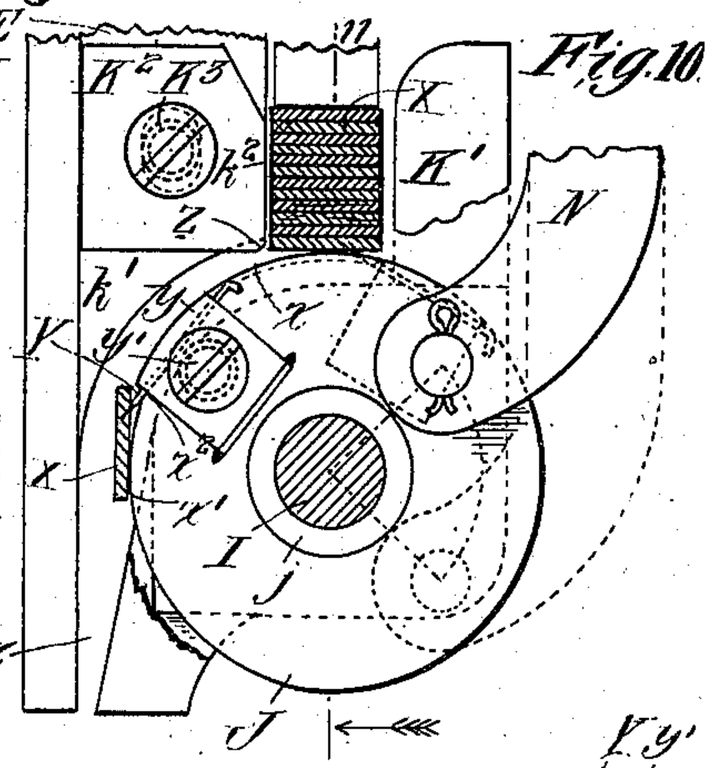


Fig. 12.

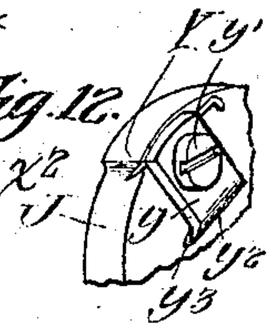


Fig. 7.

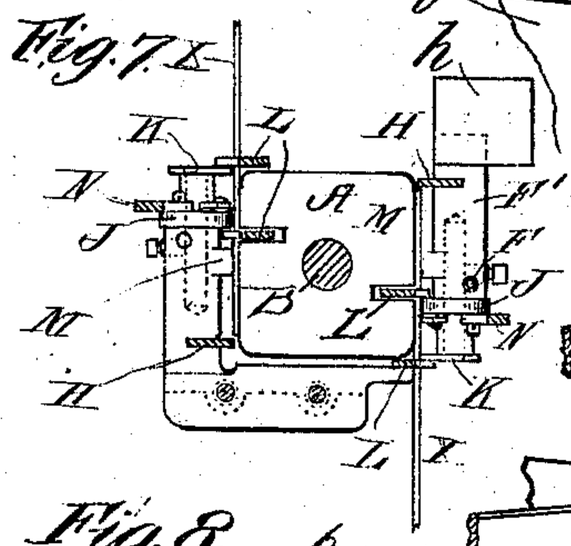


Fig. 8.

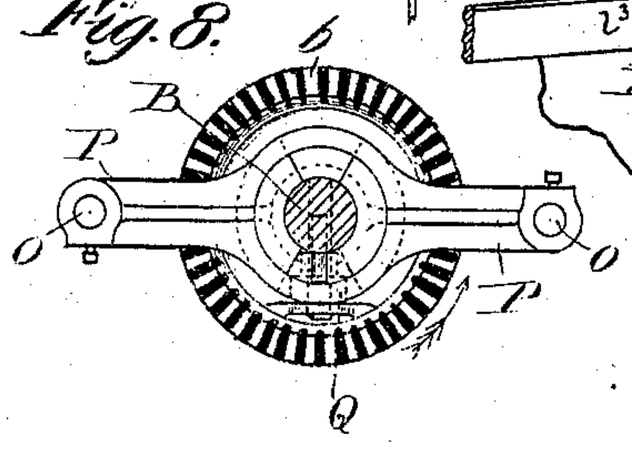
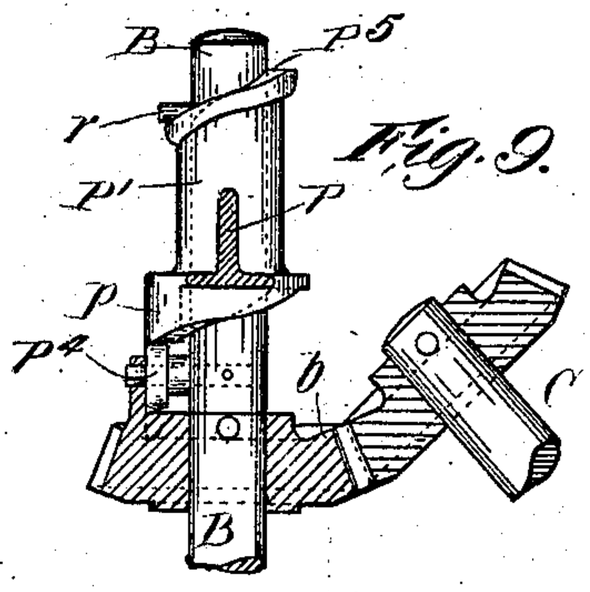


Fig. 6.

Fig. 9.



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UNITED STATES PATENT OFFICE.

EMMET HORTON, OF ELMIRA, NEW YORK.

BASKET-MAKING MACHINE.

No. 881,320. Specification of Letters Patent. Patented March 10, 1908.

Application filed January 14, 1907. Serial No. 352,180.

To all whom it may concern:

Be it known that I, EMMET HORTON, a citizen of the United States, residing in Elmira, in the county of Chemung and State of New York, have invented certain new and useful Improvements in Basket-Making Machines, of which the following is a specification.

My present invention relates to the mechanism for feeding blanks to form baskets or boxes and particularly to the mechanism for feeding the bands used in the construction of baskets of the kind in which the sides and bottom of the basket are formed from crossed pieces of wood veneer or similar material, which are bent into shape by forming mechanism and are held in their bent or shaped condition by bands or strips of wood or similar material secured to the upper edges of the sides of the basket. Several patents of the U. S. have been granted to me for improvements in such machines. As examples, I will refer to my Patents No. 760,791 of May 24, 1904, No. 765,839, of July 26, 1904, and No. 835,135, of November 6, 1906.

The object of my invention is to provide improved mechanism for separating the bands from the stacks or piles and delivering them to the basket forming mechanism with greater regularity than heretofore, thereby increasing the output of the machine. Where the bands vary in thickness, there is some chance of the feed mechanism heretofore employed missing a band now and then, thus delaying the operation of the machine. The band feeding mechanism constructed in accordance with my present invention operates equally well on thick and thin bands and thus there is no delay in the operation of the machine due to imperfect feeding of the bands.

In the accompanying drawings:—Figure 1 shows a right hand side elevation of so much of a basket making machine as is necessary to show how my improvements may be embodied therein. Fig. 2 is a similar view of the left hand side of the machine. Fig. 3 shows a front elevation with parts in vertical section of part of the mechanism. Fig. 4 shows a transverse section on the line 4—4 of Fig. 3. Fig. 5 shows a front elevation with parts broken away and some parts omitted of the band feed mechanism. Fig. 6 is a perspective view on an enlarged scale of the band folding, guiding and improved band separating and feeding mechanism in their relation to the basket form. Fig. 7 shows a sectional plan of the form and the band holding, separating and feeding devices. Fig. 8 is a detail plan view of the form shaft, (with the form shaft in section) one of its actuating gears and the reciprocating frame for actuating the band feeders. Fig. 9 is a detail view of the form shaft, its actuating gears and the frame for actuating the band feeders with devices operated by the form shaft for giving an up and down movement to the frame. Fig. 10 is a detail view in front elevation of one of the band separating and feeding devices (the one on the right hand side of the machine) and certain parts associated therewith. Fig. 11 is a detail view in vertical section on the line 11—11 of Fig. 10 looking in the direction of the arrow. Fig. 12 is a detail view of one of the band separating and feeding disks and the needle carried thereby.

In my Patents No. 760,791 of May 24, 1904 and No. 765,839 of July 26, 1904, I have shown means for holding two piles of bands and for separating the lowermost band from the pile, said means comprising spiral plates or screws, the upper ends of which enter between the bottom bands in the piles and which cause the bands to be moved into the paths of rotary cam disks which cause the bands to be conveyed into the paths of vertically moving plungers which push the bands into engagement with the form.

In the band feeding mechanism constructed in accordance with my present invention the holding frames and the guides for the bands are similar to those shown in my patents above mentioned, while the devices for separating the bands from the piles and delivering them to the band plungers are different.

The main frame, Q, is similar to that heretofore employed by me. I have shown only that portion of the frame which is concerned in supporting the mechanism for operating the form and the band feeding mechanism. The form, A, which is of the construction shown in my Patent No. 765,839 is mounted on the lower end of a vertical shaft, B, geared at *b* with a shaft, C, which extends downwardly and rearwardly through bearings, *c*, *c*, of the frame to a gear wheel, C′, by which it is driven. The mechanism for driving the form is the same as that shown in my last mentioned patent. The

upper part, Q′, of the frame has a bearing bracket, *q*, for the lower portion of the form shaft, B, and a stationary cross head, *q′*, in which the upper part of the form shaft has a bearing.

The two piles of bands, X, are arranged on opposite sides of the form, as heretofore, their outer ends being held in frames, R, of usual construction, which are suitably supported on the main frame. Other supports, R′, for the bands may also be employed. The inner ends of the bands extend into the spaces between plates, D and E, and vertical rods, F. There is a plate, D, and a plate, E, on each side of the lower bearing bracket, *q*, and both of the plates are secured to said bracket, in the manner shown in Fig. 3, each of said plates being formed with a laterally projecting flange, *e*, bolted to the top of said bracket. Each plate, E, is provided with a vertically extending portion, E′, formed with grooves for guiding a weight, G, which rests on the top of the pile of bands below it, holds them properly in place, and tends to move them downwardly. The inner ends of the bands in each pile rest against a gage plate, H, the gage plate on the right hand side of the machine being attached to a portion of the frame, H′, as indicated in Fig. 6, while the other gage plate, namely, that on the left hand side of the machine, is attached to a part, H², of the frame, as indicated in Fig. 2. Each of said gage plates is formed with a flange, *h*, for facilitating its attachment to the frame. Each gage plate serves as a stop or gage for the inner ends of the bands in the manner specified in my former patents. The vertical bar, F, on the right hand side of the machine is attached to a frame part, F′, which latter is attached to the frame part, H′, before referred to and as shown in Figs. 1 and 6. There is a part, H², similar to the part F′, on the left hand side of the machine which is in like manner provided with a vertical rod, F, as indicated in Fig. 2. To each frame part F′, or H², is secured a bar or axle, I, which extends on the right hand side of the machine forwardly and on the left hand side of the machine rearwardly through a disk, J, having a long hub, *j*. To the outer end of each bar or axle, I, is attached a guide plate, K, the lower portion of which is of the shape shown in my patents above mentioned and serve a similar purpose. Each plate is, however, formed with an upwardly projecting portion, K′, which has not heretofore been used and which serves a new purpose. It serves to hold the bands in the lower portion of the pile in a proper vertical position, in the manner indicated in Fig. 10, and also to prevent the lower bands in the pile from being moved out of place when the disk, J, is being moved backwardly or in a direction contrary to its feeding movement. The plates, K, as described in my former patents, serve to guide the bands into the paths of band plungers, L, which are constructed in the manner shown in my before mentioned patents, and operate in the same way.

The band plungers are attached to a cross head, L′, which is mounted to reciprocate vertically on the form shaft. It is operated by a lever, L², pivoted at *l*, to the main frame and connected by a rod, L³, to its actuating mechanism. Fig. 3 shows one of the band plungers connected with the cross head, L′. The band plungers may be provided with rods, L⁴, extending through blocks, L⁵, to exert a friction in the manner specified in my former patents. Each band plunger is formed with lugs, *l²*, *l³*, the lug, *l³*, serving to strip the completed basket from the form, while the lug, *l²*, serves to push a band into engagement with the form hook, *a*. The parts, F′, and H², are formed with guides, M, which serve to direct the bands towards the form hook after they have been turned by the band feeding devices, in the manner illustrated in Fig. 4. Each of the disks, J, is arranged to oscillate beneath a pile of bands. It has a curved surface or peripheral portion, *x*, at the top on which the pile of bands rests and which is adapted to move back and forth beneath the pile without moving the lowermost band therefrom. The disk is also formed with a curved surface or peripheral portion, *x′*, of less radius than that of the surface, *x*, there being a shoulder, *x²*, between the two surfaces. The surface, *x′*, serves to support a band while it is being moved from beneath the pile in the proper position to be engaged by the band plungers. The surfaces, *x*, *x′*, do not constitute the entire circumference of the disk, but only a portion of it. It is obvious, therefore, that the separating and feeding devices need not be in the form of a disk, although the disk shape is preferred. Near the shoulder, *x²*, is arranged a needle, Y, for engaging the lowermost band in the pile. The shank of the needle is clamped to the disk, J, by means of a plate, *y*, and a screw, *y′*. The inner end, *y²*, of the plate is flanged and this flange enters a recess, *y³*, in the disk. In this way the plate is kept from slipping and is clamped securely by means of the screw, *y′*, to hold the needle in proper position. It is obvious that by the devices shown the needle may be adjusted as circumstances require. The projecting point of the needle extends outward from the shoulder, *x²*, its extreme outer end being preferably approximately in line with the surface, *x*.

The manner in which the feeding devices just described operate, will be more fully described later on. A plate, K², is attached to a downwardly extending part E⁵ of the upwardly projecting portion E′, of each throat plate, E. Its outer edge, *k²*, lies close to the inner edge of the bands, X, and its lower

outer corner, *z*, is located a short distance above the disk. The plate is held securely in place by a set screw, K^3, and it may have a slight vertical adjustment. *k'*, indicates a guide, the edge of which is curved, as shown in Fig. 10, around a portion of the periphery of the disk. This curved surface serves to guide a separated band into the throat, Z, where the band is engaged by the band plungers.

In order to oscillate the disks, I preferably employ the mechanism next to be described. To each disk, J, is pivotally connected a vertical connecting rod, N, which is joined at *n* to a vertically reciprocating bar, O. To the upper end of each bar, O, is fixed a vertically moving frame, P. This frame has a sleeve, P', surrounding the upper portion of the form shaft, B, loosely and the sleeve is adapted to move up and down relatively to the form shaft while not rotating therewith. The frame, P, beneath its sleeve, P', is formed with a cam track, *p*, which rests on a roller, P^4, mounted to revolve in bearings fixed to the form shaft. The sleeve is formed at its upper end with a cam track, P^5, across which extends a stud or pin, *r*, carried by the form shaft. The arrangement is such that as the form shaft rotates an up and down movement is given to the frame which causes the bars, O, to reciprocate vertically and through the medium of the connecting rods, N, an oscillating movement is given to the disks, J. Normally the piles of bands rest on the curved edges, *x*, of the disks as indicated in Fig. 10. When the frame P, drops or is moved downwards the shoulders, x^2, move upwardly and rearwardly until they pass under and rearwardly beyond the bands. The lowermost band in the pile on each side of the machine then drops on to the surface, *x'*, of each disk and into the path of the needles. When the frame, P, rises the disks move forward, causing the needles to engage the under sides of the lowermost bands and move them inwards. The bands first come in contact with the lower outer corners of the guide plates, K^2, which turn the bands downward and then the bands come in contact with the curved guides, *k'*, which direct the bands downward into the channels or throats, Z. When the bands reach the channels, the band plungers engage them and push them into engagement with the form. Then the frame, P, descends and the needles are retracted and brought into position to again engage the lowermost bands in the piles. Of course the band feed mechanism is so timed as to feed the bands at proper intervals relatively to the mechanism which feeds and bends the body blanks and the nailing mechanism which secures the bands and the body blanks together.

While my improvements are especially adapted for feeding bands for baskets of the kind specified and are shown as applied to band feeding mechanism of this kind, I wish it understood that they may be applied to other machines for feeding blanks in the construction of other kinds of baskets or boxes from those specified.

I claim as my invention,—

1. A blank feeder for basket making machines having a curved surface on which the blanks normally rest, a shoulder and a needle projecting from the shoulder adapted to engage the under side of the lowermost blank in the pile, means for actuating the blank feeder and a guide for turning the blank while it is being fed to cause it to assume a position with one of its longitudinal edges beneath blank plungers, and blank plungers adapted to further move the blank.

2. A blank feeder having a curved surface on which the blanks normally rest, a shoulder, a needle projecting from said shoulder and pointing in the general direction of movement of the blank feeder and which is adapted to engage the under side of the lowermost blank in the pile between its longitudinal edges and guides for directing the blank while being moved by the feeder.

3. The combination of means for holding a pile of bands, an oscillating feeder below the pile having a curved surface on which the bands rest, and a needle projecting from the surface and pointing in the general direction of the movement of the feeder and adapted to engage the lowermost band in the pile between its longitudinal edges, means for oscillating the band feeder, and means for guiding the bands while being fed.

4. A blank feeder having an outer peripheral surface on which the blanks normally rest, a peripheral inner surface of less radius on which the blanks are carried while being fed, and a shoulder between said surfaces, a needle projecting from the shoulder for engaging the blanks between their longitudinal edges, means for oscillating the blank feeder and a guide for directing the bands while being fed.

5. The combination of means for supporting a vertical pile of bands, a band feeder having a curved surface on which the bands rest, a needle projecting from the surface of the feeder and adapted to engage the lowermost band in the pile between its longitudinal edges, a guide for directing the bands while being fed, and an adjustable plate above the feeder at one side of the bands, one corner of the lower portion of which is adapted to engage the lowermost band and direct it while being moved by the feeder and one vertical edge of which serves to hold the remaining bands in place.

6. The combination with means for holding a pile of bands of an oscillating disk having a curved surface on which the bands rest, a needle projecting tangentially from the curved surface of the disk, means for oscillat-

ing the disk, and means for guiding the band while being fed.

7. The combination of means for holding a vertical pile of bands, of an oscillating disk having a curved surface on which the bands rest, a needle projecting from this surface tangentially and adapted to engage the lowermost band in the pile between its longitudinal edges, and a curved guide for directing the bands while being fed and which operates in connection with the disk to turn the band to cause it to assume a position with its longitudinal edges one above the other, for the purpose specified.

8. The combination of means for holding the blanks in a pile, a form to which the blanks are fed, a rotary shaft to which the form is secured, a frame reciprocated by the shaft, a blank feeder and connections between said blank feeder and said reciprocating frame.

9. The combination of a form, its rotating shaft, a frame sleeved thereon, devices operated by the form shaft for reciprocating said frame, the oscillating blank carriers and connections between said blank carriers and said reciprocating frame.

10. The combination of means for holding the blanks in a pile, a blank feeding disk on the periphery of which the blanks rest, a weight resting on the pile of blanks and pressing them towards the disk, a needle carried by the disk for engaging the under side of the blanks and means for oscillating said disk.

11. The combination of the throat plates, having upwardly projecting guide portions, weights mounted thereon, the guide plates having upwardly projecting portions near the lower portions of the piles of blanks, the adjustable guide plates opposite said upwardly projecting portions and oscillating blank feeders arranged below the pile of blanks.

In testimony whereof, I have hereunto subscribed my name.

EMMET HORTON.

Witnesses:
I. B. COLEMAN,
GUS. WOLFGRAM.