

No. 635,723.

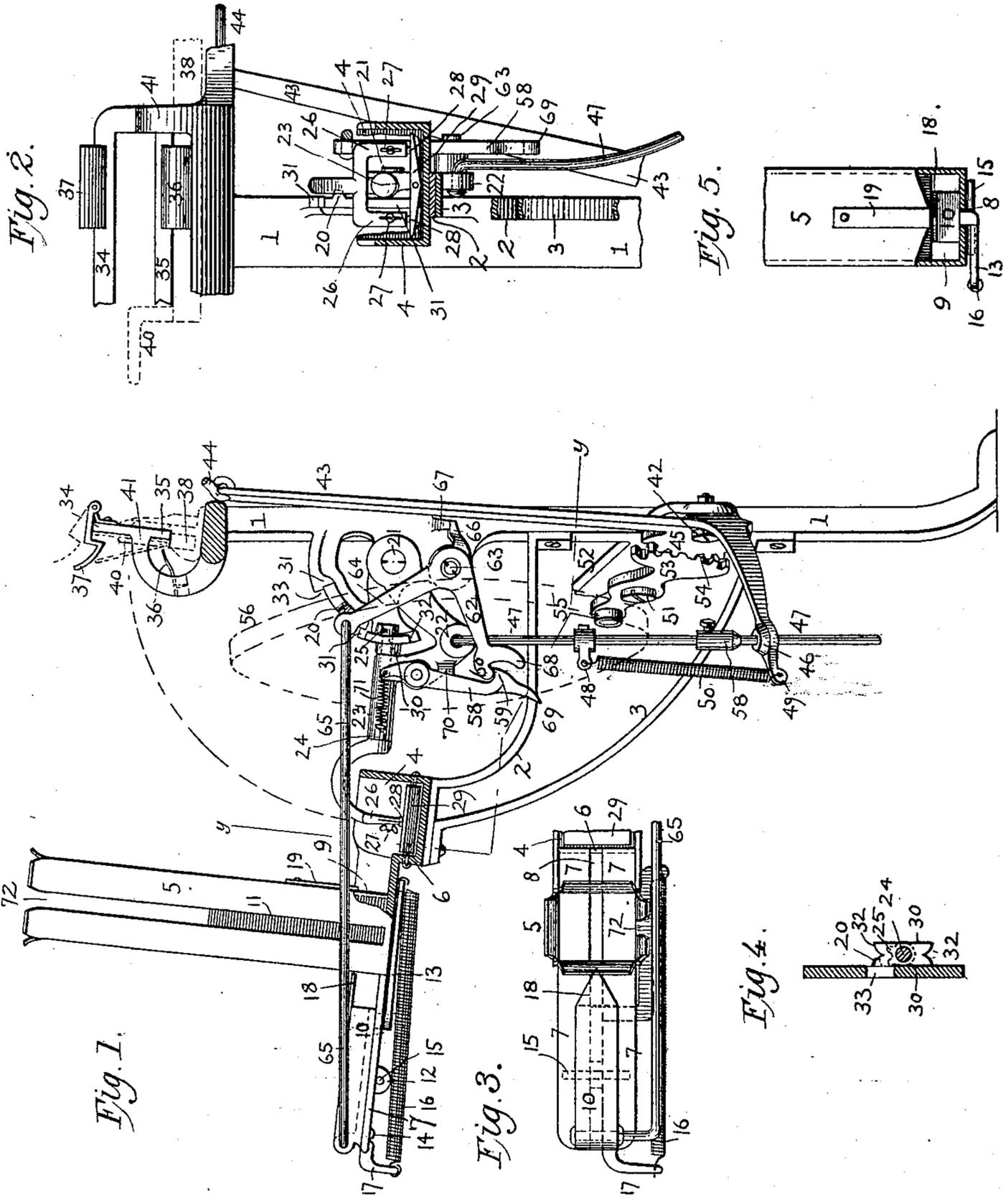
Patented Oct. 24, 1899.

E. HORTON.
BASKET MAKING MACHINE.

(Application filed Nov. 24, 1894.)

(No Model.)

2 Sheets—Sheet 1.



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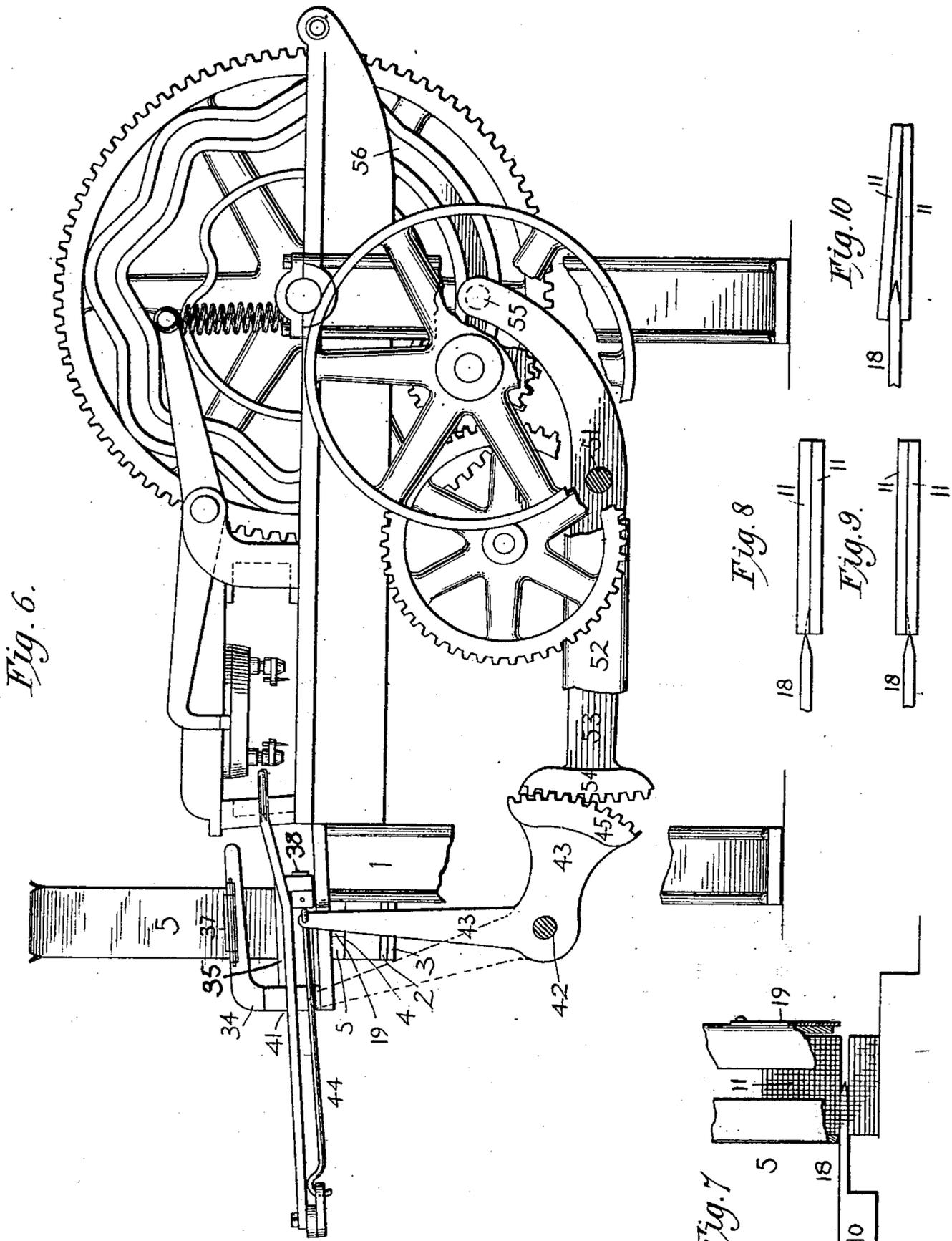


Fig. 6.

Fig. 7.

Fig. 8.

Fig. 9.

Fig. 10.

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UNITED STATES PATENT OFFICE.

EMMET HORTON, OF DUNDEE, NEW YORK, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE HORTON BASKET MACHINE COMPANY, OF WASHINGTON, DISTRICT OF COLUMBIA.

BASKET-MAKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 635,723, dated October 24, 1899.

Application filed November 24, 1894. Serial No. 529,866. (No model.)

To all whom it may concern:

Be it known that I, EMMET HORTON, a citizen of the United States, residing at Dundee, in the county of Yates and State of New York, have invented certain new and useful Improvements in Basket-Making Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to basket-machines of the character shown in my Patent No. 530,048, dated November 27, 1894. It comprehends certain improved devices for separating one or more blanks from a pile or assemblage of blanks placed in the machine, and also certain improvements in mechanism whereby a blank or blanks of a certain kind—*i.e.*, the “side” blanks—so separated are transferred to the “form.” These improvements are applicable to the machine disclosed by said Letters Patent, and except as herein otherwise appears the general construction is or may be the same as shown in that patent.

In the accompanying drawings, Figure 1 is an end view showing my improvements attached to the main part of the machine which is indicated in a general way in Fig. 6. Fig. 2 is a vertical section on the lines *y y* of Fig. 1 looking to the right. Fig. 3 is a plan view of the feed-box and that part of the mechanism to the left of the dotted lines *y y* in Fig. 1. Fig. 4 is a view in detail of the segmental parts that give half-revolution to the needle-arm referred to in the following description. Fig. 5 is an end view showing the slide and the mouth of the feed-box. Fig. 6 is a side elevation of the side of the machine opposite that to which my improvements are applied. This view does not disclose all parts of the machine that would show in such an elevation, but only such parts as are sufficient to indicate the application of my improvements to the machine of my prior patent. Fig. 7 is an enlarged view of the separator and deliv-

erer. Figs. 8 and 9 show how the point of the separator wedges its way between adjoining blanks, the line *a* indicating the split produced in case the point should not exactly strike the division-line. Fig. 10 represents the separator part way between two blanks.

From the leg of the frame 1 are projected the arms 2 and 3, which jointly form a laterally-projecting upwardly-curved bracket. On the end of this bracket is bolted the bottom of a rectangular box 4, which is hereinafter called the “secondary” feed-box, for the sides. The sides of this feed-box rise well up in height, except the outer one 6, adjoining the primary feed-box 5, containing the pile of blanks or “sides” and which is sustained by or formed in one piece with said side 6, which rises partially in height with the others and is turned at right angles and extended in the form of a flat bifurcated plate whose two parallel parts 7 7 are separated by a slot 8, extending throughout its length. Adjacent to the secondary feed-box and erected vertically on this plate is the primary feed-box 5. The side of said primary feed-box adjoining the secondary feed-box and also its opposite side are cut away next the plate 7 to form the opening 9, through which and across the bottom of the box the separator and pusher 10 18 reciprocate to separate and drive out of it one or more of the sides 11 from the bottom of the pile of sides in the primary feed-box and deliver them into the secondary feed-box. This slide 10 has projecting from its lower side, through the slot in the plate 7 on which it rests, the arms 12 and 13 and also a shorter projection 14 at its rear end, all serving as guides for the slide. The central one 12 has projected laterally through it and under the plate a pin 15, that holds the slide down to the plate, and the front arm 13 extends to one side and forward and has secured to it one end of a spring 16, the other end of which is attached to an arm 17, secured to the outer end of the plate 7.

18 represents a separator consisting of a thin plate beveled on its upper and lower edges and preferably chamfered at its sides to a point and extending beyond the front end

of the slide or pusher 10, to the top of which it is secured. This point is beveled in such a manner to its center as to cut its way readily without mutilation of the blanks to a complete separation of the sides in the primary feed-box and to pass those under the plate out of said box with the slide, the side next to and directly over the separator-plate being brushed or held back by the flat spring 19, secured to the side of the primary feed-box and extending down to its mouth 9 in close juxtaposition to the upper side of the separator as it passes through the box. By this means a bunch or number of the blanks are cut out of the primary feed-box and delivered into the secondary feed-box. The number of sides or blanks thus transferred at one operation from the bottom of the pile of blanks in box 5 to the secondary box will depend, of course, upon the thickness of the blanks and the space between the separator 18 and the face of the plate 7.

I will now describe the parts for transferring the sides from the feed-box to the pincer-jaws and farther on the means for operating the separator and side-transferring devices.

Projecting laterally from the side of the leg 1 opposite the secondary feed-box 4 is a segmental plate having a lateral tooth 20, such as that of an ordinary gear. Screwed into the plate central with such gear is the stud 21. Pivoted to oscillate on this stud is the picker-arm 22, having a shaft-bearing 23 at its outer free end arranged longitudinally on a radial line running to the center of a stud on which the arm is pivoted. Secured to revolve in the bearing of said arm is the shaft 24. The inner end of this shaft has hung on it a segmental pinion 25, with two teeth, that is caused to have a half-revolution intermittently and back, as its connection with the gear-plate determines in the oscillation of the arm 22. The other end of the shaft next the bearing is formed into a hook to bend up, over, and down into the feed-box and is also branched at its extreme end into the two arms 26, constituting the part which thus enters the feed-box. Each of these arms 26 has its free end slotted in halves and provided with a gripping-screw 27, that will draw the halves so slotted toward each other.

28 represents picking-needles arranged in the slots under force of the gripping-screws 27 and to project sufficiently from the end of the arms to nicely pierce one of the sides or blanks at a time. The leveling-table 29, on which the sides rest, is pivoted in the box on a line between the approaching needles. The table therefore rocks under the slightest pressure of the needles to perfectly cooperate with the needle-arms, thus insuring perfect work in piercing and lifting the sides by the needles.

By referring more particularly to Fig. 4 it will be seen that the segmental pinion 25 is provided with a flange next its hub side. This

flange is cut away to form flattened edges 30, parallel with each other, across the flange on either side of the pinion. 31 represents a flat track on the gear-segment and on which the flattened parts of the pinion-flange may alternately travel a distance at either end of the stroke made by the oscillation of the arm that carries the pinion. Now as the pinion is being slid along on the track-face of the gear when about midway of the stroke the tooth 20 of the gear strikes against the nearest one of the two teeth of the segment-pinion. At this point the track on the segmental plate is cut away on either side of the tooth 20 and the end 32 of the flange of the pinion is allowed to run off the end of the track and be swung in the track-opening 33 by the intermeshing teeth until a half-revolution of the pinion and its shaft has been made and the other side of the flattened flange has struck against and rolled upon the continuing part of the track to slide in the further completion of the stroke. The sides are thus picked up by the arms of the shaft, brought up out of the box, turned half-way around, and delivered against the bars 34 and 35. In reaching this position the side slides over or compresses the sheet-spring 36, secured to the frame and projected toward the bar 35, and striking against said bar the side then raises the sheet-latch 37 at the top, which by its own weight falls, hooking behind the advancing side. The return stroke of the needle-arms now withdraws the needles out of the side thus retained by the hook of the latch and the spring against it, and the side of its own weight rests on top of the reciprocating pincer-bar 38, awaiting the backward stroke of the pincers or jaws 40, (the jaw of the bar 38 being sufficiently offset,) which carry the side back against the arm 41 of the frame before the jaws embrace it to deliver it to the form, thus adjusting each side to the same position in the jaws.

The pincer-jaws are the same in construction and behave in the same manner as in my prior patent above mentioned and cooperate with the form X, Fig. 6, and other parts of the machine as set forth in said patent—that is to say, the side-feeding mechanism hereinbefore described may be applied to the machine of said patent in the place of the side-feeding mechanism disclosed therein. In the construction of this application, however, the pincer-jaws and needle-arm may be actuated in a manner different from that shown in said patent, and the manner in which they are operated herein I will now describe.

It is evident that the number of sides in the secondary feed-box may vary from time to time and that the downward stroke of the needle-arm in its extreme must be a variable one, and this may be accomplished as follows: To a lateral projection from the lower part of the leg on the bolt 42 is fulcrumed the oscillating arm 43, that through the medium

of the connecting-rod 44, hooked to its upper end, reciprocates the pincers. The lower end part of the arm 43 is T-shaped, extending each way. One of these extended parts is provided with teeth 45 in the form of a segment of a gear. The other part is an arm 49, that extends laterally toward the feed-boxes and has in its free end a hole 46, through which is fitted to play loosely the rod 47, the upper end of which is connected with the arm 22. On said rod is a stud and collar 48, adjustably affixed by means of a screw-bolt. Below this collar on the rod is a stop 58, affixed in the same manner. The arm 49 is extended beyond the bearing in which the rod 47 slides. To this extended part of the arm and to a stud on the collar 48 above is affixed a spring-coil 50. On the stud 51, bolted to a cross-bar 52 of the frame of the machine, is fulcrumed the lever 53, the forward end of which is of segmental form and having teeth 54 intermeshing with teeth of the arm 45. The rear end of the lever 53 is provided with a stud and roller 55, designed to be fitted into a cam groove or path that will give the lever proper oscillation in the side of the large driving-wheel of the machine, as indicated by the dotted lines 56 in Fig. 1 and in full line in the side view of the machine Fig. 6. This driving-wheel corresponds with the driving-wheel 4 of my prior patent. It will now be seen that as the intermeshing levers are oscillated the arm 49 is raised and lowered, and as it rises it strikes the stop 58 on the rod, which is carried up with it, and the arm 22 is raised to the upper point of its stroke, depositing a side ready to be grasped by the pincers. As the arm 49 returns it leaves the stop 58 and draws upon the spring 50, which returns the needle-arms upon the sides in the box with an elastic stroke. This operation may be continued until the feed-box has been relieved of all its sides but one or two, at which time the arm 22 moves down sufficiently low to permit the pendent hook 59 to swing under and catch upon the hook 60 of a bell-crank arm 62, fulcrumed on the stud 63 on the frame, and having the other arm 64 connected by the rod 65 across to the slide 10. Now as the arm 22 is moved upwardly the bell-crank lever is operated and the slide drawn through the primary feed-box, delivering more sides into the secondary feed-box against the action of the spring 16, which on the disengagement of the hooks 59 and 60 returns the slide to its normal position, which is determined by the projection 66 at the hub of the bell-crank meeting against a stop 67; projecting from the frame. The hook on the end of the bell-crank arm 62 is extended downwardly and curved about to form the stop 68, that as the hooks are raised swings to meet against an extended end 69 of the pendent hook. The two ends coming together at the proper time disengage the hooks and let the hook of the bell-crank drop out of reach

until the sides have again been lowered in the feed-box. To assure engagement of the pendent hook, it is drawn inwardly against a stop 70 on the arm 22 by the spring 71, connected to an upper extension of the hook and to the shaft-bearing 23. The pendent hook is thus allowed to snap upon the hook of the bell-crank.

The primary feed-box for the sides is provided with a slot or opening 72 throughout its length, permitting the operator in replenishing the feed-box with sides to retain his hold thereon until they are passed down on the top of those already within.

In the event of the point of the separator striking the edge of the blank, as in Figs. 8 and 9, instead of at the division-line between the blanks it will split off a small chip without material injury to the blank and pass on into said division-line, as illustrated in Fig. 10. The chipping action, however, will not occur if the separator 18 exactly enters into the division-line. Hence the separator will have a lateral variance substantially equal to the width of one blank. This variance is a very valuable feature, owing principally to the variation in thickness of the thin blanks of wood veneer out of which this class of baskets is made.

I claim as my invention—

1. In a basket-making machine, the combination with a form, of a blank-feeding device consisting of a box or holder for the blanks, an oscillating arm adapted to enter the box and engage and lift the blanks therefrom one by one, means for turning the arm during its oscillations, devices for engaging the extracted blank to strip it from the arm and hold it in position to be advanced to the form, and devices for advancing it to the form, substantially as described.

2. In a basket-making machine, a blank-feeding mechanism consisting of the combination with a feed-box or holder, of an oscillating arm adapted to enter the box to remove the blanks one by one therefrom, means for turning the arm during each oscillation, a receiver for the extracted blank, and a catch for retaining the blank in the receiver upon the withdrawal of the arm on the return stroke, substantially as described.

3. The combination of a holder for blanks, a picker, means for moving the picker into the holder to receive a blank therefrom, means for causing the picker to retract with a blank, means for turning the picker while carrying a blank, and means for receiving the blank carried by the picker.

4. The combination of a picker and means for moving the picker about a pivot transverse to its longitudinal axis, and also moving it about its own longitudinal axis to lift a blank from a pile and to carry and deliver it to a receiver.

5. In a basket-making machine, the combination with a form, of a blank-feeding device consisting of a box for holding the blanks,

an oscillating arm adapted to enter the hopper and engage and lift the blanks one by one therefrom, a receiver for the extracted blank, a latch for retaining the latter in the receiver, and devices for conveying the blanks from the receiver to the form, substantially as described.

6. In side-feeding mechanism for a basket-making machine, the combination of a box for holding the sides, a traveling picker for raising the sides one by one out of the box, and mechanism for replenishing the box with sides when the stroke of the arm increases because of the decrease of the number of sides in the holder.

7. In a basket-making machine, the combination of a form, a box or holder for the blanks provided with a tiltable bottom, a feed-arm provided with engaging devices adapted to enter the holder, pick up the blanks one by one therefrom and deposit them singly in position to be fed to the form, means for catching and holding the blanks as they come from said arm, and mechanism for advancing them to the form, substantially as described.

8. The combination of the box or holder, its pivoted or tiltable bottom upon which the blanks lie, and an oscillating or reciprocating picker-arm having devices for engaging the blanks and lifting them one by one from the holder.

9. The combination of a holder for blanks, a picker-arm pivoted to move toward and from the holder, a shaft carried by the picker-arm, provided with devices for engaging the blanks, a segment adjacent to the path in which the picker-arm moves, and teeth on the segment and shaft which at times engage to cause the shaft to turn in the arm as the picker-arm is moved toward and from the blank-holder.

10. The combination of a holder for blanks, a picker-arm pivoted to move toward and from

the holder, a shaft carried by the picker-arm, provided with devices for engaging the blanks, a segment adjacent to the path in which the picker-arm moves, teeth on the segment and shaft which at times engage to cause the shaft to turn in the arm as the picker-arm is moved toward and from the blanks, and flat surfaces on the segment and shaft which prevent the shaft from turning as the picker-arm is moved and when the teeth are disengaged.

11. In a basket-making machine, a primary feed-box, and a secondary feed-box for holding blanks, in combination with a separator arranged to cut out of the primary box a plurality of blanks and transfer them to the secondary box, and a device for removing the blanks singly from the secondary box, whereby when one hopper becomes exhausted it is replenished from the other, substantially as described.

12. In a basket-making machine, and in combination with the feed mechanism, a pair of feed-boxes for holding blanks, one box having a smaller capacity than the other, and being located below the mouth of the larger one, means for cutting out an instalment of blanks from the larger box and transferring them to the smaller one, substantially as described.

13. In a blank-feeding mechanism, the combination of a primary feed-box, a secondary feed-box, means for transferring as required a plurality of blanks from the primary feed-box to the secondary feed-box, and means for removing the blanks, one by one from the secondary feed-box.

In testimony whereof I hereunto set my hand and affix my seal this 22d day of November, 1894.

EMMET HORTON. [L. S.]

Witnesses:

L. J. WILKIN,
RHESA G. DUBOIS.