

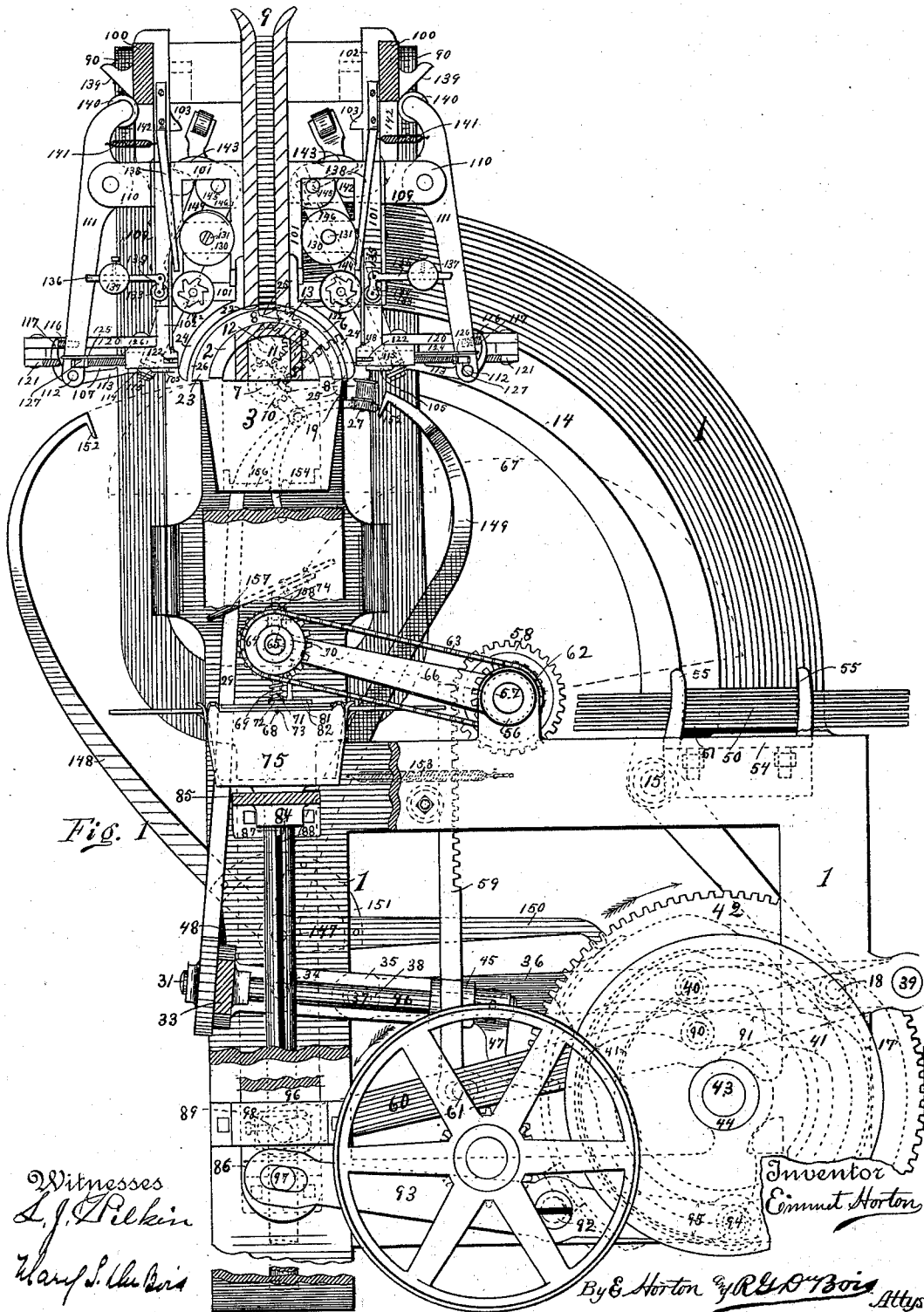
(No Model.)

7 Sheets—Sheet 1.

E. HORTON.
BASKET MAKING MACHINE.

No. 578,876.

Patented Mar. 16, 1897.



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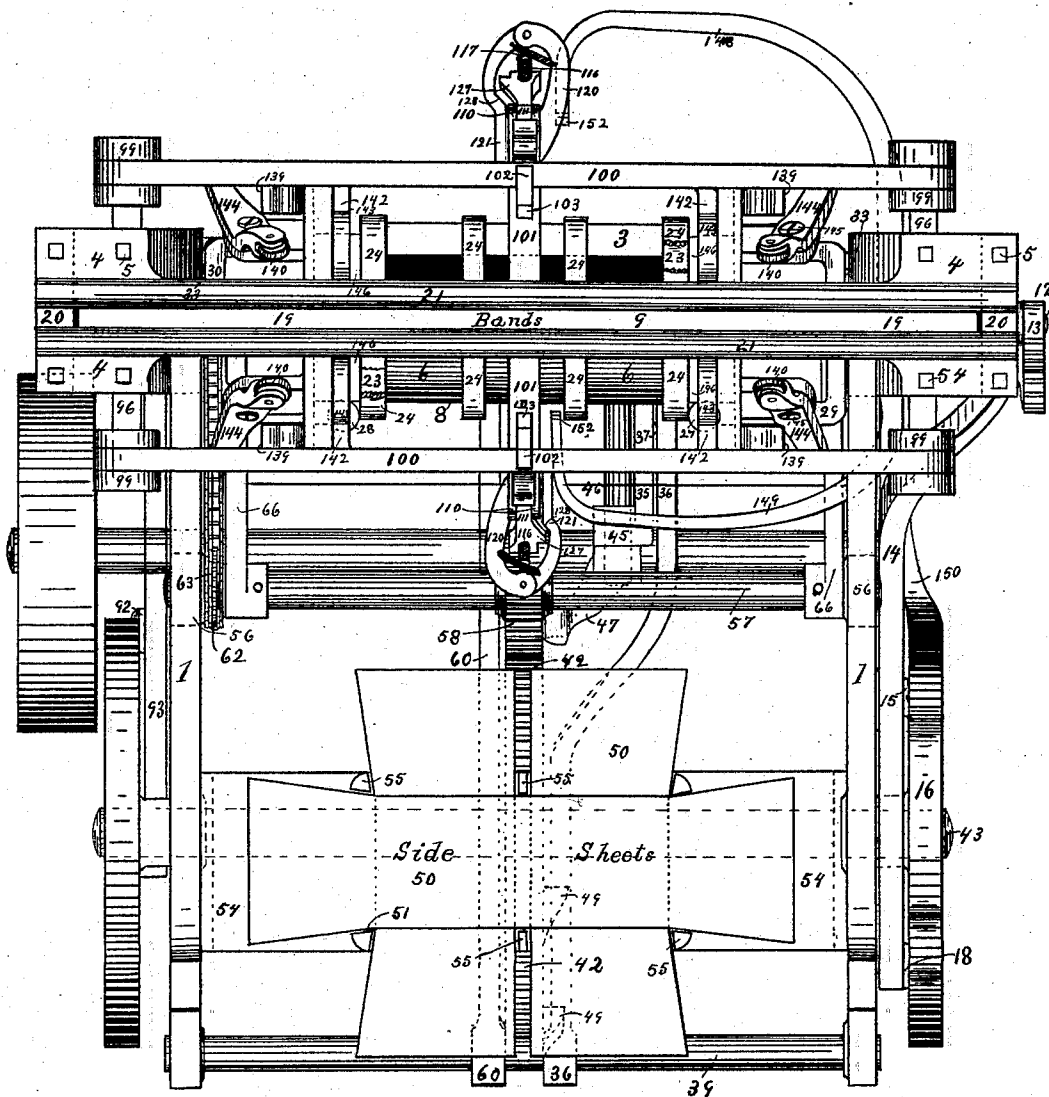


Fig. 3

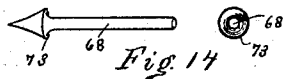


Fig. 14

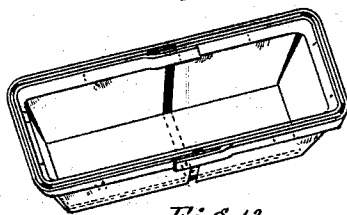


Fig. 13

Witnesses
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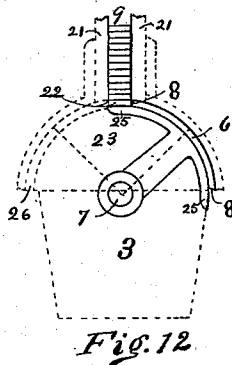


Fig. 12

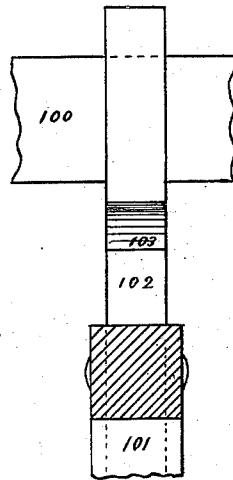


Fig. 4

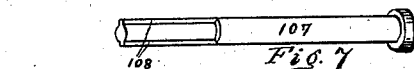
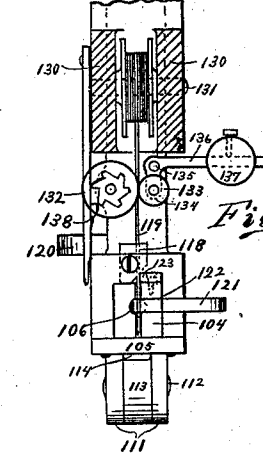


Fig. 7



Fig

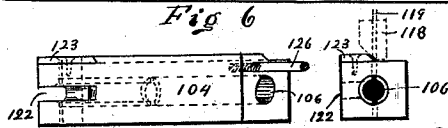


Fig. 8

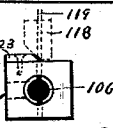
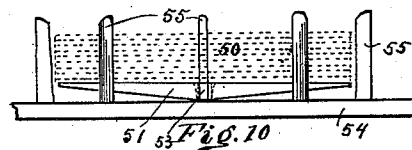


Fig. 9

Witnesses *L. J. Gilkin*

Wang P. Hu Bo



51 53 7

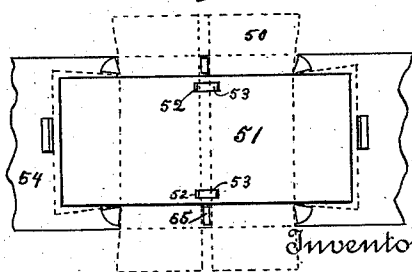


Fig. 1

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Fig. 11 Emmet Horton

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(No Model.)

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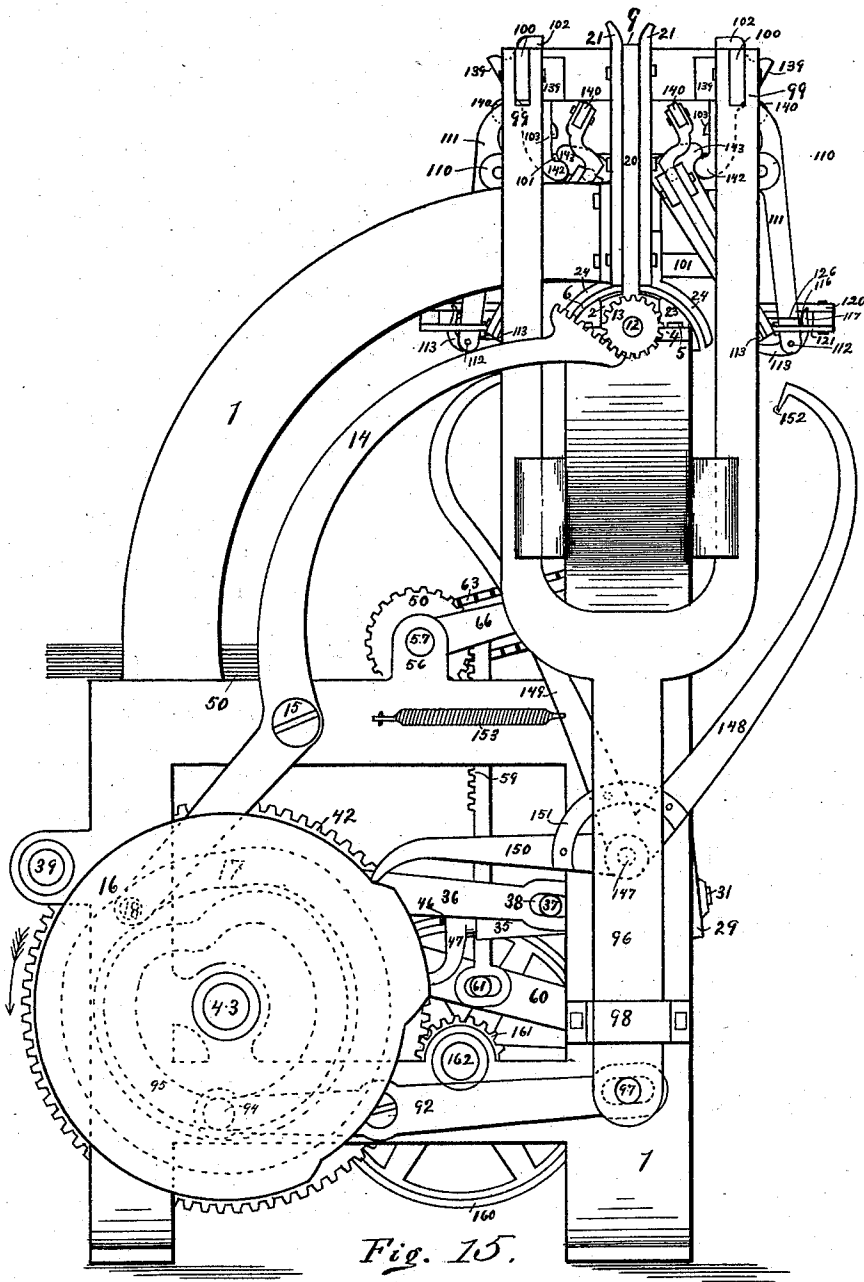


Fig. 15.

Witnesses

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(No Model.)

7 Sheets—Sheet 6.

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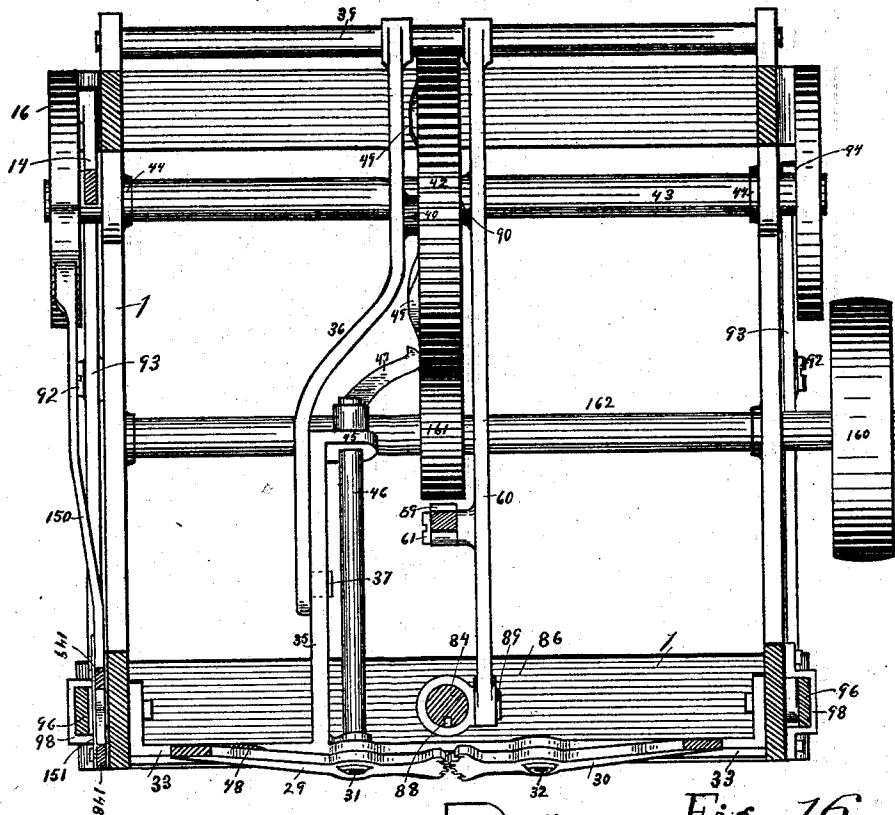


Fig. 16.

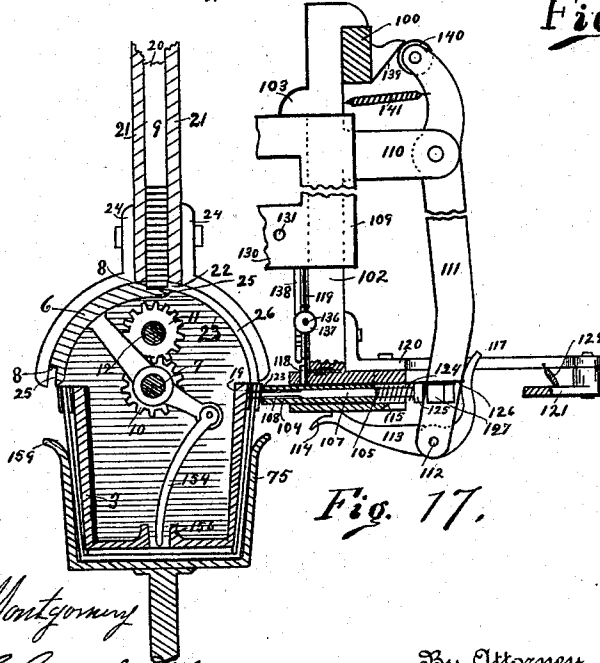


Fig. 17.

Witnesses
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R. S. Warfield.

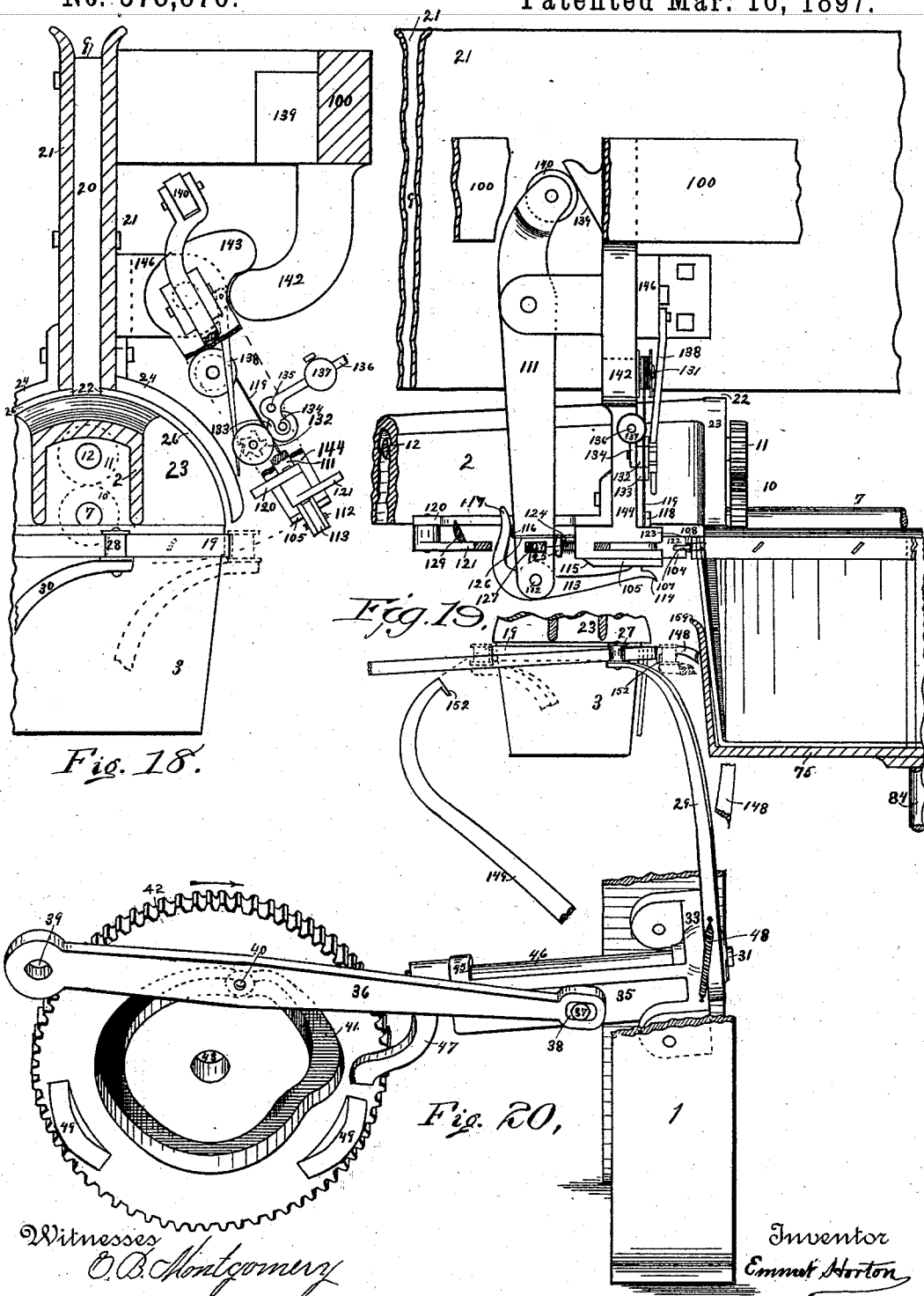
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UNITED STATES PATENT OFFICE.

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

BASKET-MAKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 578,876, dated March 16, 1897.

Application filed November 24, 1894. Serial No. 529,865. (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 figures of reference marked thereon, which form a part of this specification.

This invention relates more especially to mechanism for automatically or mechanically making what is commonly known as the "Excelsior" grape-basket, and is a continuation of my study in devising similar means to those described in my Patent No. 530,048, dated November 27, 1894, on the particular mechanism for assembling and uniting the parts for the basket known to the public as the "Climax" grape-basket.

The Excelsior basket is composed of sheets of wood veneer crossed at the bottom and bent up in the form of the frustum of a pyramid and bound together by a pair of wooden bands, united to the inner and outer edges of the sides by tacks or staples. The larger-sized basket is oblong, as shown hereinafter, and is the one the machine is designed to make. Heretofore all of this class of baskets or receptacles have been made by hand, the process consisting of first placing the inside band around the form and tacking its lapped ends, then bending the crossed sheets composing the bottom and sides over the form, and finally wrapping and fastening the outside band around the edges of the folded side pieces.

The object of my invention is to provide mechanism for feeding the bands to the form in position to be united in any suitable manner to the inner and outer edges of the basket sides, in connection with means for wrapping them about the form and means for pressing or folding the body portions of the basket over the form, whereby a basket of this character can be made mechanically with bottom, sides, and bands complete, a feat which, so far as I am aware, has never before

been accomplished, excepting insomuch as shown in my patent aforesaid.

In the accompanying drawings, Figure 1 is a side elevation of the complete machine with the exception of parts of the frame which have been broken away to more clearly show the mechanism behind. Fig. 2 is an elevation of the front of the machine. Fig. 3 is a plan view of the machine in the same position as in Figs. 1 and 2. Fig. 4 is a detail view in elevation of the stapling mechanism, partly in section. Fig. 5 is an end view of the same. Fig. 6 is a sectional plan view of the stapling mechanism on the line *xx* of Fig. 4. Fig. 7 is a detailed view of the nailing or driving rod. Fig. 8 is a detailed view of the nailing or stapling block in which the driving-rod is cased and in which it reciprocates. Fig. 9 is a rear end view of the same, dotted lines showing the relation the block has to the knife and wire, which is clipped between the two, and also the withdrawing-rod for the block, which is screwed into its rearward end. Fig. 10 is an elevation of the cage for holding the basket sides and is designed to show more plainly the method of constructing the leveling or rocking bottom on which the sides rest. Fig. 11 is a plan view of the same. Fig. 12 is a detail view showing more clearly the method of taking the bands from their guide and delivering them alternately to either side of the form one at a time. Fig. 13 is a view of the completed basket. Fig. 14 is a view of my improved lifting-needle. Fig. 15 is a full elevation of the left side of the complete machine. Fig. 16 is a horizontal section of the machine, giving a plan view of all the parts below the table. Fig. 17 is a detail end view of the form and one of the nailers, the parts being shown partly in section. Fig. 18 is a detail view of the form, together with parts of the wrapping-arms and nailing mechanism. Fig. 19 is a detail view of the form and parts of its immediately-associated mechanism, portions being cut away to show those behind. Fig. 20 is a detail view of the form, the wrapping-arms, and the cams for operating the same, showing the bands being wrapped about the form.

Reference-numeral 1 indicates the frame of the machine, the lower half or base of which

is in the form of a cube and comprises the four legs. Rising vertically on the front of this portion of the frame by an upward extension of the two front legs is the upper part
 5 of the frame, to which is secured the partially cylindrical bridge or cross bar 2, crossing from one to the other, midway of which and rigid therewith the oblong basket-form 3 is suspended in the same longitudinal direction.
 10 I will now give a more particular description of this bridge-bar and basket-form, which are cast hollow, as indicated by the marginal dotted lines in the drawings. The form, by reason of its downward and inward taper on
 15 all its external sides, is cast thickest on its upper edge, and to this edge, on the ends of the form, is joined the bridge-bar, extending outward each way and tapering down to winged seats 4 as they approach the upward-
 20 extended legs of the frame, to which said wings are secured by bolts 5, the legs being turned inward horizontally at their upper ends to receive them. It will thus be observed that the form is a part of and makes
 25 the only rigid connection in the center of the two parts of the bridge-bar. The space between and over the form is occupied by the oscillating quarter-cylinder 6, (see Fig. 12,) which is journaled for its oscillation on the
 30 shaft 7, which in turn is journaled longitudinally to rock across the space in the upper part of the form. This cylinder-section 6 has its parallel edges 8 adapted to intersect and drive in front of it a band at a time from the
 35 band guide or reservoir 9 to the sides of the form alternately as the cylinder oscillates back and forth by the rocking of its shaft 7, on which is fixed the segment 10, which meshes with a like segment 11 on the end of
 40 shaft 12. This shaft is journaled longitudinally with and in the bridge-bar and extends from the form to its outer end over the leg of the frame and sufficiently beyond to retain on it another gear 13, which intermeshes with
 45 the oscillating segmental lever 14, which is fulcrumed on the stud 15, projecting from the side of the frame. The lever is thus hung to pass downward alongside the frame, connecting, with its fulcrum intervening, the
 50 segment on the shaft of the bridge-bar at its upper end and an operative cam-wheel 16 at its lower end. This wheel has on its internal side a cam or grooved path 17, in which a truck journaled on the stud 18, projecting
 55 from the end of the lever into the groove of the wheel, is fitted to travel. It will thus be seen that the shape of the grooved path and the rotation of its wheel through the connecting means just described will cause the cylinder-section 6 to oscillate and deliver the
 60 bands to the form at the proper time.

19 in Fig. 1 shows the first or inner band for the basket delivered to place for wrapping about the form.

65 The formation of the band-guide 9 will now be described. At each outer end of the bridge-bar a standard 20, of equal lateral thickness

to that allowed for the width of the bands, is vertically projected, and to these are bolted
 70 plates 21, longitudinal with the bridge-bar, to connect the standards on their front and rear sides to the full height of their projection. Between these plates and standards is thus
 75 formed a fitting guide or reservoir in which the bands may be piled one on another to the full height of the plates, providing sufficient
 80 pressure by their own weight to straighten out the lowermost ones in the guide susceptible to operation thereon by the cylinder as they pass out of the mouth 22, which is provided by the space or opening between the
 85 lower edge of the plates and the periphery of the semicircular ends 23 of the bridge-bar above where it joins onto the ends of the form. Bolted to the plates and projecting
 90 therefrom over to the form in the same circle as that traversed by the periphery of the cylinder are the several arms or guides 24, between the underside of which and the bridge-bar and also the steps 25, which project from
 95 and travel with the cylinder, is formed a further conduit 26 from the mouth at the bottom of the plates over to the sides of the form.

The next step is the method of moving the
 100 rollers 27 and 28, which are journaled and carried on the upper free ends of the arms 29 and 30, respectively, each of which has a swinging rectangular movement in the shape of a U that causes the rollers to roll on and
 105 wrap the bands alternately from either side about the form as they are delivered in front of the rollers by the action of the cylinder, as heretofore described. The alternate or
 110 normal resting position for these rollers is at the corners of the form, from which position they proceed to move across the end of the
 115 form and down midway its side and thence back to the first corner, awaiting the arrival of the band which is to be wrapped in the reverse direction, and so on with one band on
 120 the inside and the other on the outside of the material of the baskets as they are made and delivered off the form.

The studs or pivots 31 and 32, on which the
 125 arms 29 and 30 are pivoted to swing in the longitudinal direction of the form, are stationed below the basket-form in a vertical line that would strike the said form about
 130 one-fourth of the distance of its length in from its ends. The rollers will thus travel as near as possible on a level with the form. The position of these pivots is obtained by
 135 having a cross-bar 33, with ends turned at right angles, from which studs project that journal the cross-bar, so that it will turn in the front legs of the frame. The studs or
 140 pivots 31 and 32 are projected from said cross-bar, which, when turned, causes the arms with their rollers to swing in a lateral direction by the form. This turning or rocking
 145 of the cross-bar is caused by an arm 35, which projects inward from its side at right angles thereto and is connected to a lever 36 by means of a stud 37 and slot 38 at the front or free

end of the said lever 36, which is pivoted on the shaft 39, crossing between the legs in the rear of the frame and actuated by a truck stud and roller 40, situated about midway of the lever and projecting into the grooved path 41 in the side of the wheel 42, which latter is hung to revolve with its shaft 43, journaled in the bearings 44, across the lower rear portion of the frame.

10 The arm 36 of the cross-bar is provided with a bearing 45 at its free end for the shaft 46, which is a continuation of the stud 31, journaled in the cross-bar, and the arms 29 at the front and 47 at the rear of the bearings for the shaft in the cross-bar are rigidly secured to it. Connecting the arm 29 above its bearing to the cross-bar is the spring 48, which operates in swinging the arm outward as it is released from expanding the said spring caused by the intercourse of the arm 47 with lugs 49, projecting from the side of the wheel 42. This arm 47, projecting in the path of rotation of the lugs, is swung back, thus rocking the shaft, oscillating the arms, and causing the rollers to travel in a longitudinal direction around the form. Fig. 2 shows the lower ends of the arms 29 and 30 brought together and provided with intermeshing teeth, so that one will oscillate the other and cause the rollers carried by the arms to operate to and from a common central line between them.

50 represents the side sheets for the baskets, that are arranged in a pile, properly crossing each other by the operator of the machine, and from which pile they are automatically delivered, by mechanism hereinafter described, to the basket-form. This pile is arranged on the leveling-table 51, (see Figs. 10 and 11,) which is beveled in opposite directions from its center on its under side. 52 are the holes through the central thicker portion near the edges of the table, and 53 are the studs projecting vertically through the holes from a plate 54, crossing near the rear portion of the frame and upon which the table rests and rocks, sensitively adjusting the sides by the action of the lifting and transferring mechanism. Projecting from the plate 54 around the table are the several posts 55, arranged in their location to properly guide and retain the side pieces in proper relation with each other and the table.

Journalled in the bearing 56 and extending across over the cubical part of the frame is the shaft 57, partially rotated by the pinion 58, situated thereon, and intermeshing with the vertically-reciprocating rack 59, which obtains its motion from the oscillation of the lever 60, to which the said rack is united by the stud 61, projecting through a slot in the rack.

Rigidly secured to the bearing 56, in which the shaft 57 has a rocking rotation, is the sprocket-wheel 62, over which the chain 63 passes to another sprocket-wheel 64, situated on the end of shaft 65. This shaft is journaled to rotate in the free ends of two paral-

lel arms 66, which are rigidly secured to and extend out from the central shaft 57. Now it will be seen that as the central shaft is rocked to and fro the secondary, or what I shall term the "needle," shaft will be swung back and forth through the medium of the arms in a semicircular arc, as shown by the dotted line 67 in Fig. 1, and by reason of the principle involved in the chain connection on the gearing of the shafts the needles 68 or the needle-arms 69, carried by the needle-shaft, are held pointing downward in a vertical direction throughout the swinging movement of the needle-shaft.

70 indicates any number of collars that may be strung upon the needle-shaft or its component parts. When it is necessary to transfer larger sheets of stock for larger baskets; these collars are provided with vertical holes through them as they are located on the shaft, and in these holes the needle-arm is inserted so that it can play up and down with and against the action of a spring 71, which is coiled on the arm between the flange 72 at its lower end and the collar above. A needle 68, having a diametrical enlargement 73 (shown in Fig. 14) adjoining its point, is projected below the flange from the lower end of the needle-arm, the upper end of the arm being provided with a button 74, that will rest upon the collar and regulate the fall of the needle-arm. As the shafts are rotated the needles swing over and enter the cage containing the sides placed there by the operator. The continuation of the stroke, expanding the springs on the needle-arms, causes the needles to puncture a layer of the sides, and the withdrawal of the arm, contracting the spring, lifts the sides on the points of the needles out of the cage and conveying them without turning deposits them on the former 75 in proper position to be carried thereon up to the form 3, which enters the former in the completion of its upward stroke, and thus closes the sheets of stock about the ends and sides of the form, retaining them in this position for the reception of the nails and until after the nailing process, the method of which will be described hereinafter.

To insure the certain depositing of the sides on the former, the needle-shaft is provided with collars 80, to which are fulcrumed the levers 81. These levers are very light and have at their lower ends a curving horizontally-extended foot 82, which as the lever turns on its fulcrum drops slightly below the extreme downward movement of the needles. The other ends of the levers are extended over to strike upon the stops 83, projecting from the frame, which come in contact sufficiently before the completion of the stroke of needle-shaft to bring the feet of the levers below the needle-points at the completion of the stroke. Thus the side sheets are nicely delivered from the cage to the former.

The former 75 is secured to the upper end of the shaft 84, whose bearings for its verti-

cal reciprocations are in the cross-bars 85 and 86, and is prevented from turning in its bearings by the spline 87, intersecting the shaft and its upper bearing and traversing the groove 88, cut longitudinally in the shaft. Reciprocation is given to this shaft by the lever 60, which also reciprocates the rack 59. Through this interconnection of the side delivering mechanism the movements of the whole are regulated, so that as the former completes its stroke the needle-shafts also complete their strokes, approaching each other as the former drops and separating as it rises. This assures their positive coöperation. The shaft 84 is fitted with a collar which is provided with a stud 89, projecting into a slot in the free end of the lever 60, which latter is oscillated by its truck and stud 90, traversing the path or groove 91 in the side of the wheel 42, but on the opposite side from that traversed by the truck of the lever 36. The lever 60 is also pivoted on the shaft 39 at the rear of the frame.

I will now describe the staple making and nailing mechanism.

To either side of the frame on the studs 92 are fulcrumed the levers 93. These levers are oscillated by having their rear ends provided with a truck and stud 94, which travels in the groove or path 95 in the side of a wheel on either side of the frame, fixed on the shaft 43, which also carries a series of cam-wheels controlling the whole mechanism of the machine. Outside of the front legs, on either side of the frame, are the pitmen 96, the lower ends of which are connected to the front ends of the levers 93 by the usual stud and slot 97. A guide 98, by which the lower end of the pitman is held for its reciprocation, is bolted to the legs of the frame. These pitmen are divided at their upper ends, branching astride the bridge-bar and band guide-plates at the top of the machine. Each of these branching arms is bolted at its upper end 99, one on either side of the plates, to a cross-bar 100, which crosses the frame in a parallel direction, which holds them in a proper position to suspend the stapling devices therefrom and raises and lowers them alternately as the pitmen reciprocate up and down. This motion of the cross-bar 100 operates the nailing mechanism also.

101 are a series of brackets which are secured to project out from the plates 21. In front of these brackets is a groove in which the bar 102 is held and is enabled to reciprocate up and down. The upper end of this bar is made to hook over the top of the bar 100, and in the rear of this vertical hooked bar is a projecting lug 103, which comes in contact with the top of the bracket and regulates the drop of the bar. This bar carries the nailing mechanism, and, when dropped, places it in position to operate, but when drawn up by the action of the cross-bar 100, as shown in Fig. 1, lifts the nailing mechanism out of the path of the bands as they are

being wrapped about the form. The lower end of the vertical hooked bar is turned at right angles, and across its lower face is a groove in which the nailing-block 104 reciprocates to and from the form, held in place by the plate 105, which is screwed or bolted to the bar on either side of the groove.

By reference to Figs. 7, 8, and 9 it will be seen that the nailing-block is provided with a longitudinal hole 106, which is of two different diametrical dimensions. The smaller hole is provided with longitudinal grooves corresponding in depth to the dimensions of the larger hole. This hole 106 is thus formed to accommodate the nail-driver, which is a rod of different sizes corresponding to the dimensions of the hole, the smaller part being provided with flanges 108, traveling in the grooves in the block.

The vertical bar 102 is held in its groove by the plate 109, which is bolted over it to the bracket 101. From the front of this bar 102 projects the arm 110, in the outer end of which is fulcrumed the driving-lever 111, whose lower end projects in the rear of the nailing-block and has hung on its extreme end the pawl 113, pivoted on the bolt 112. One end of this pawl is in engagement with the rear end of the block, so that when the arm is swung forward the block is shoved until the pawl is released by its inclined end 114 coming in contact with the inclined surface 115 of the plate 105, and as the end 114 continues to advance up the inclined plane of the plate it causes the extended tail 117 of the pawl in the rear of the lever to compress a spring 116 between itself and the lever.

118 is a knife which is securely held in the casing for the block. The wire 119 is passed down in front of the block across the chamber. To the same casing is bolted the arm 120, which projects around to the rear of the lever 111. To the free end of this arm the bender 121 is pivoted to swing horizontally, and the free end of this bender is turned at right angles and projects into the chamber in which the block reciprocates in front of the wire.

122 is a slot in the block which permits it to travel astride the bender. The upper side of the block is provided with a knife or cutting edge 123, which by the reciprocations of the block is enabled to shear past the knife in the casing. At this point the pawl, remaining engaged with the block, forcibly causes it to cut the wire and bend it over the bender, thus forming a staple, and leaves it in the slots in the end of the block, which are in alinement with the wire and which are traversed by the flanges of the driving or nailing rod. Now the pawl is released from the block, which is further advanced by the spring 124, coiled on the driving-rod and seated against the flange 125 of the said rod and the block. It will now be seen that when at any time in the remainder of the stroke the block comes in contact with the basket

material as it is advanced it will cease to move, the spring 124 will be compressed, and the nailing-rod will pass through the block and drive the staple in front of it home. As the lever 111 swings back to the full limit of its stroke the block is returned by the rod 126, screwed into the rear end of the block and hooked around the lever, but not in such a manner as will prevent the lever from moving closer to the block when the latter comes in contact with the basket material.

Projecting from the lower end and on one side of the lever 111 is the inclined lug 127, and inwardly projecting from the side of the bender-arm 121 is a similar lug 128, which projects in the path traversed by lug 127. The result is to move the free end of the bender from in front of the traveling block just after the staple has been bent and placed in the grooves, the lugs traveling up their inclines, swinging the bender outward, expanding the spring 129, which of course operates to return the bender in front of the wire for another staple as the lever with the lug retreats.

Behind the bar 102 and between the arms 130 of the bracket is the pin 131, passing through the brackets, which carries the wire-spool rotating upon it. Just under the bracket and fixed upon proper studs projecting from the bar 102 are the intermeshing feed-rollers 132 and 133, between which the wire from the spool passes on its way down in front of the knife 118 in the casing. The smaller one 133 of the rollers is carried on the shorter end 134 of an L-shaped arm, which is pivoted on its angle on the stud 135, located on the bar 102 above the roller. The longer end 136 of the L-shaped arm is extended outward horizontally and supplied with a movable weight 137. This makes the small roller elastic in its pressure of the wire against the larger roller, both being sufficiently loose in their connection as not to interfere with such elasticity.

Secured by screws and suspended from the side of the bracket is the hook or pawl 138. On the side of the larger roller 132 is rigidly fixed a ratchet-roller the teeth of which come in contact with the hook as the rollers are raised and lowered through the medium of the arm, and the wire is thereby fed forward for a staple at the beginning of each downward stroke of the bar.

The cross-bar 100 is provided with projections which furnish an inclined surface 139, running upward and outward from the lower edge of the bar. Resting against the lower end of this inclined surface is the roller 140, carried in the upper end of the driving-lever 111. Now it will be seen that as the bar 100 is lowered the vertical bar 102 and the driving-lever 111 fall with it, and the stapling mechanism is placed in the proper position opposite the bands wrapped around the form for operation. At this point the lug 103 on the bar is at rest on top of the bracket and can move no farther, but the cross-bar 100 con-

tinues in its stroke, which, through the medium of the incline and roller, forcibly operates the driving-lever against the action of the spring 141, which, when the cross-bar is raised, returns the lever, and consequently the stapling mechanism, to their normal positions.

In Fig. 1 it will be noticed that the wire-feeding rollers are represented as being located upon the side of the bracket and that their operating-pawl is secured to and operated up and down on the ratchet of the roller by means of the vertical bar 102; and, further, the stapling mechanism designed to make and drive the staples in the ends of the baskets, on account of conflict with the bands as they are being transferred from their guide to the form, instead of moving vertically, is swung outward away from the application of the said bands. While the operation of all the stapling mechanism is the same, the swinging of the mechanism for stapling the ends is accomplished by means of an arm 142, projected down as a part of the cross-bar 100 and turned inwardly at its outer end to hook under an angular projection 143 on the pendent arm 144, which carries the driving-lever and nailing mechanism, as heretofore described. This pendent arm is fulcrumed on the pin 145, which is projected from the side of a flattened bracket or angle-iron 146, which in turn is bolted to the plates 21 in the same manner as the other brackets. As the driving-arm is swung into position the roller at its upper end is brought under the incline on the cross-bar and the curved end of the arm 142 travels down the side of the pendent arm and holds it in position while the nailing is being done.

After a band has been wrapped around the form by the rollers it is necessary that it should be held firmly about the form in such condition until after the nailing operation has been completed. I will now explain the mechanism for this purpose. Pivoted to the outside of one of the front legs of the frame on the stud 147 are two presser-arms 148 and 149. Another arm 150 is pivoted on the same stud with its free end extended rearward, resting upon the periphery of the cam-wheel 16. All three of these arms are connected by a circular plate 151 a short distance from the pivot and each arm is individually bolted to this plate, as seen in Fig. 1. These presser-arms diverge from one another as they extend upward and again approach each other and also inward. The upper free ends of these arms are provided with presser-feet 152, terminating in the arc of a circle true to the lapped ends of the bands and in which the arms oscillate. Portions of the cam-wheel 16, having points of increase and decrease in its diametrical measurement, cause the operative lever to rise and fall and the presser-arms to oscillate, expanding and contracting the spring 153, attached to one of the arms 149 and the side of the frame. As the presser-

arms oscillate their presser-feet are brought alternately to bear upon the form, but at such times as the lap of the band is made on their respective sides.

5 After the basket has been made it is next in order to deliver it off the form and out of the machine. For this purpose the plunger 154 is arranged to be projected downward through the bottom of the form to strike the
10 bottom of the basket and shove it off the form. This plunger is pivoted to the end of an arm projecting from the hub of the segmental pinion 10 on the cylinder-shaft 7, the rocking of which, as the first band is supplied to the form, causes the plunger to descend, driving the
15 completed basket out of the way. The lower end of this plunger is guided by reciprocating through a hole 156 in the plate, which extends internally across the bottom of the form. 157 represents a shield and delivering-plate which is arranged to incline down to the front of the machine, and is retained in its position by the standards 158, projecting from a collar on the needle-shaft and properly
20 bolted or screwed to the under side of the plate. As the shield is traveling forward the basket is delivered off the form and, falling upon it, is given a thrust to the front and out of the machine.

30 It may be proper to remark that the former is merely a cup or casing in which the form may be projected, with sufficient space between them for the basket-stock, and the projections 159 at the upper corners of the former are aids in correctly locating and retaining the basket sides as they are placed thereon. The general outward curve at the top of all the sides of the former enables it to more effectively slide up and close the stock
35 about the form. The sheets for the sides are partially cut into or scored across at their breaking-point on the form, which is the corner about the bottom of the basket. In Fig. 3 only one is shown on either side of the stapling devices, as more would encumber the drawings.

40 160 represents the belt-pulley, 161 the pinion driving the cam-wheels, and 162 the shaft, on which the pulley and pinion are hung at the bottom of the frame imparting the power applied through the belt.

While the machine herein specifically shown and described is automatic in its operations, being self feeding, assembling, and deliver-
55 ing, yet it is evident that parts of it might be operated by hand in conjunction with the other parts. For instance, the blanks might be laid upon the forming-cup by hand instead of being automatically fed thereto, or the
60 bands might be fed to the form in position to be united to the inner and outer edges of the basket sides by means of manual devices, or the nailing mechanism might be actuated by hand or foot power when the other parts are
65 machine-driven, or in other numerous ways the machine might be changed without departing from the scope and spirit of my in-

vention, which consists of an organization of parts arranged and adapted to make a basket of the kind described with bottom, sides, 70 and bands complete.

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

1. In a basket-making machine, the com- 75 bination with a form and mechanism for placing about the form the blanks composing the bottom and sides of the basket, of a band feeding and adjusting mechanism, and a nailing mechanism arranged to be automatically
80 advanced toward and away from the form, whereby the assembled parts are united and the nailing mechanism moved out of the way of the assembling mechanism as and for the purpose set forth. 85

2. In a basket-making machine the combination with a form and mechanism for automatically assembling the bottom, sides and bands about the form, of a nailing mechanism arranged to be moved toward and away 90 from the form.

3. In a basket-making machine the combination with a form, and mechanism for placing the body portion of the basket about the form, of a band feeding and adjusting mechanism, and a nailing mechanism adapted to 95 apply nails and unite the bands and sides upon two or more sides of the form at one operation.

4. In a basket-making machine the combination with a form, and assembling and uniting mechanism, of a band feed hopper or chute centrally disposed above the form, and mechanism for separately removing and transferring the bands from the chute to the 105 sides of the form.

5. In a basket-making machine the combination with a form, and mechanism for assembling the body portions about its bottom and sides, band-rollers traveling in opposite 110 directions about the form, a clamping mechanism for holding the bands in lapped position and uniting mechanism.

6. In a basket-making machine, the combination with a form and mechanism for pressing or folding the body portion of the basket over the form, of a band-feeding mechanism arranged and adapted to advance a pair of bands to the form in position to be united to the inner and outer edges of the basket sides, 115 and uniting mechanism, substantially as described.

7. In a basket-making machine, the combination with a form and mechanism for pressing or folding the body portion of the basket over the form, of wrapping devices arranged to wrap the bands about the form, and uniting mechanism. 125

8. In a basket-making machine, the combination with a form and mechanism for pressing or folding the body portion of the basket over the form, of a band-feeding mechanism consisting of a hopper or holder for the bands and devices for cutting out a pair of bands 130

and feeding them to the form in position to be united to the inner and outer edges of the basket sides.

5 9. In a basket-machine the combination with a form, of a device for folding or pressing over the form the blanks constituting the bottom and sides of the basket, and a band-feeding mechanism arranged and adapted to feed bands to the form in position to be united to the inner and outer edges of the sides, substantially as described.

10 10. In a basket-making machine, the combination with the form of a gravity band-feeding device, an oscillating, transferring-head adapted to remove and transfer single bands from the hopper to the form, means for folding the body portion over the form, and means for uniting the same and the bands, substantially as described.

20 11. In a basket-making machine, the combination with the form of band-wrapping devices, a nailing mechanism, a mechanism for pressing or folding the body portion of the basket to the form, and automatic presser-feet adapted to press and hold the lapped ends of the band to the action of the nailing mechanism, substantially as described.

25 12. In a basket-making machine, the com-

30 bination of a suspended form, and mechanism for automatically pressing or folding the body portions over the form, a band-feeding mechanism, and a nailing mechanism arranged to apply nails to all sides of the form simultaneously.

35 13. In a basket-making machine, and in combination with a form, a clamp for pressing the blanks for the body portion of the basket over the form, a holder for the stacked blanks, and a needle-arm arranged and adapted to separately pick up and transfer the 40 blanks from the holder to the clamp and in position to be pressed over the form, as and for the purpose set forth.

45 14. In a basket-making machine, a form in combination with mechanism for pressing or folding the bottom and side portions of the basket over the form, and band-wrapping rollers arranged to travel around the form, substantially as described.

50 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. DU BOIS.