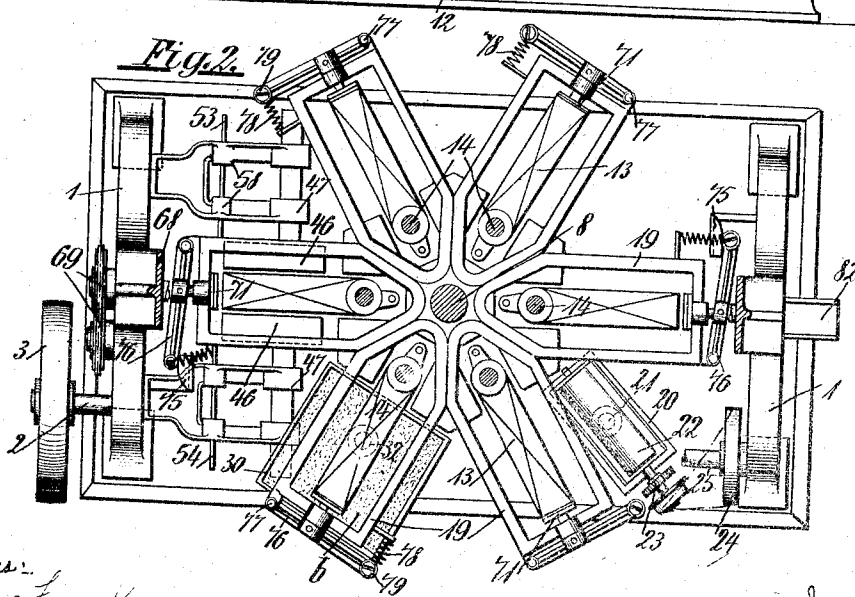
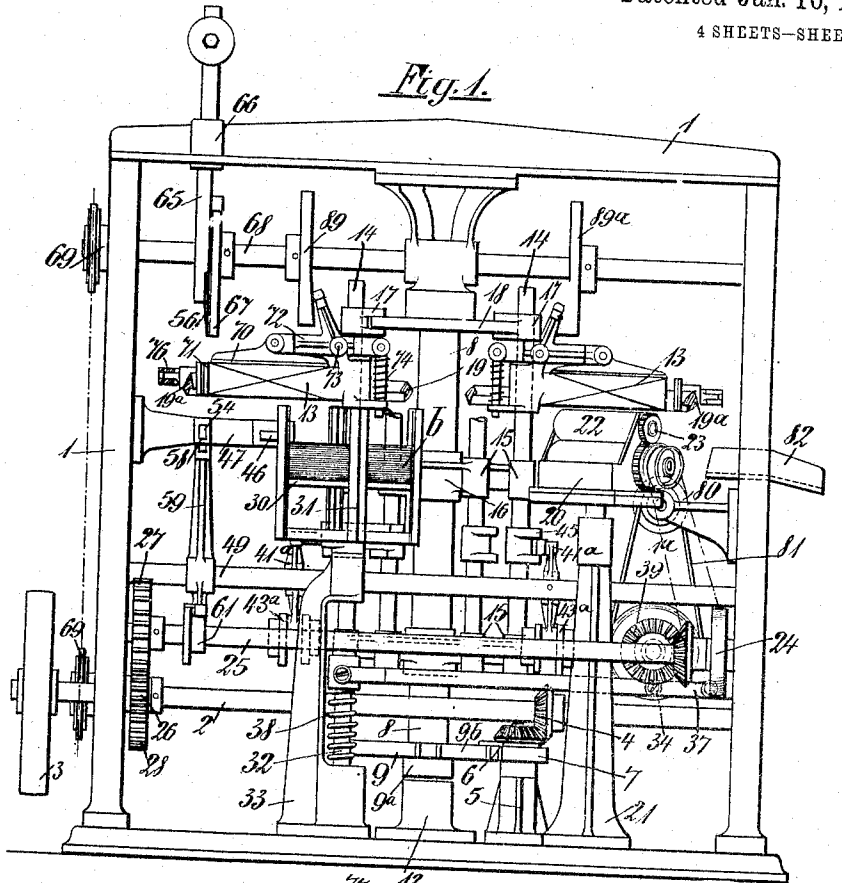


K. OTTING.  
MACHINE FOR MAKING PAPER RECEPTACLES.  
APPLICATION FILED SEPT. 16, 1907.

1,015,268.

Patented Jan. 16, 1912.

4 SHEETS—SHEET 1.



Witnesses:  
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Inventor:  
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4 SHEETS—SHEET 2.

Fig. 3.

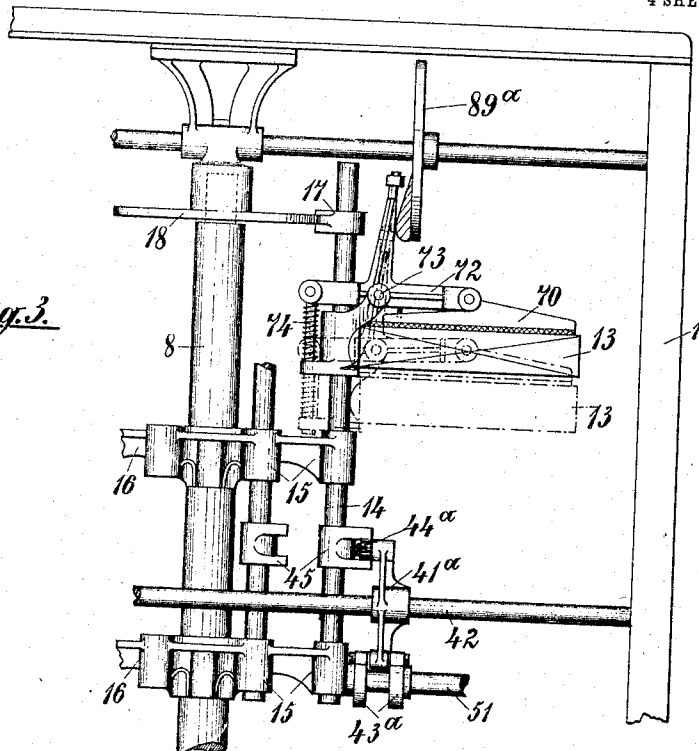
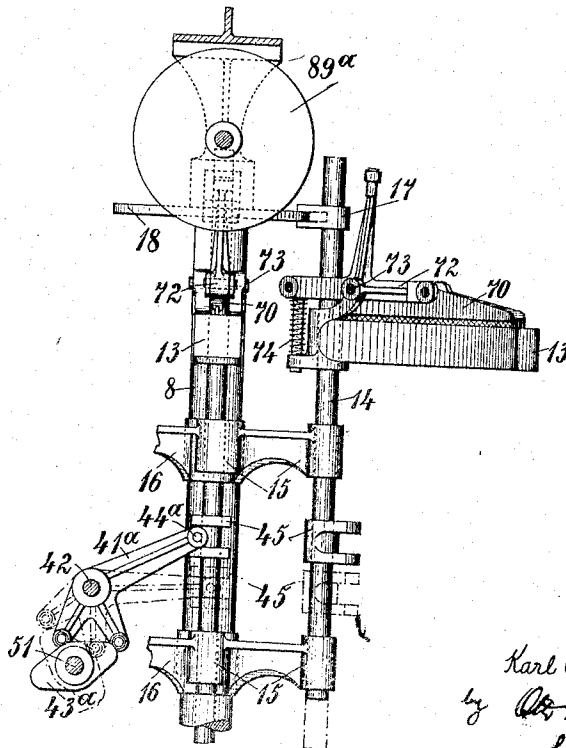


Fig. 4.



Witnesses:  
Charles F. Smith  
D. R. Kirby

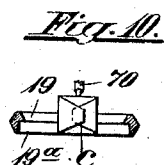
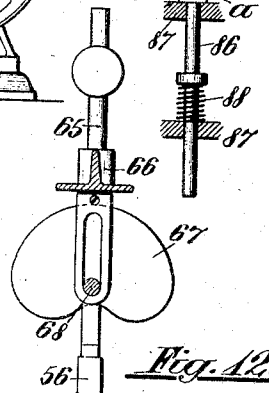
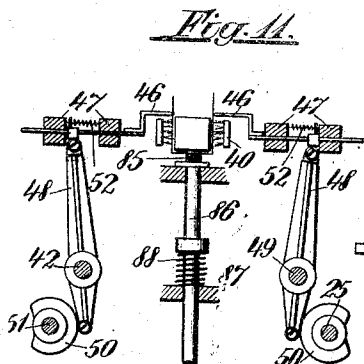
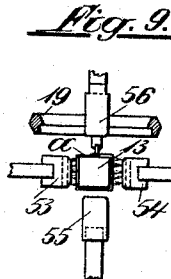
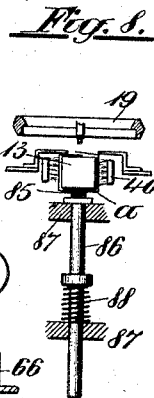
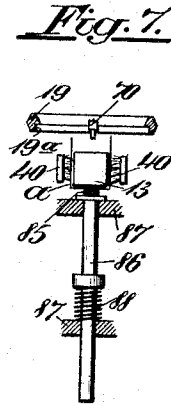
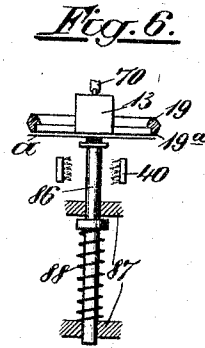
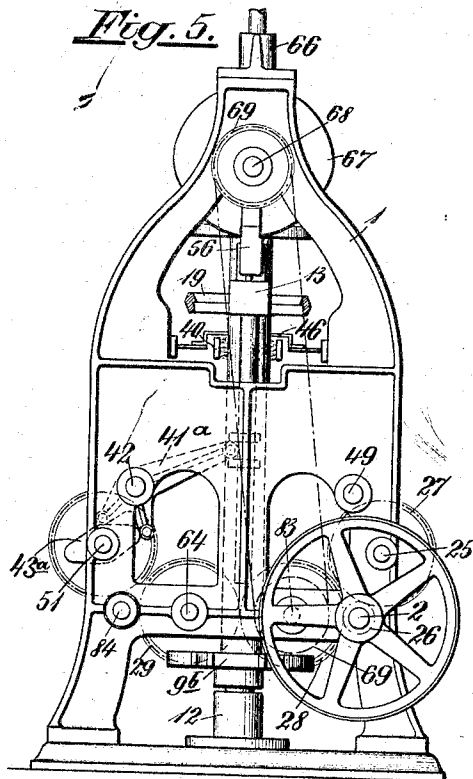
Inventor:  
Karl Otting  
by *[Signature]*  
Attorney

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4 SHEETS—SHEET 3.



Witnesses:  
Charles Frank  
ARRELY

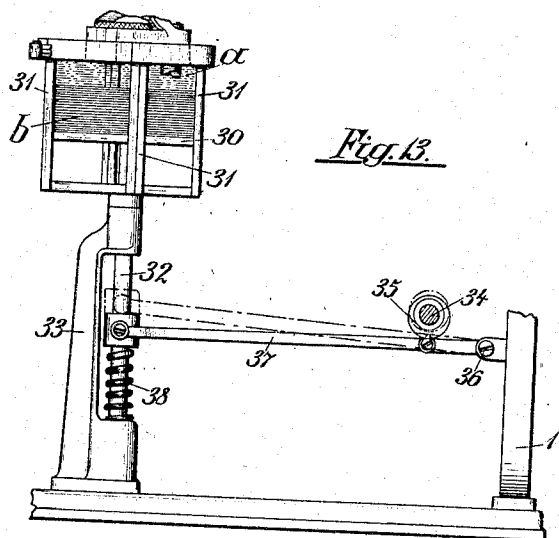
Inventor  
Karl Otting  
by *Wm. H. ...*  
his Attorney

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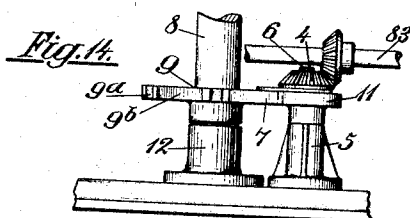
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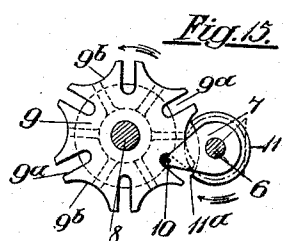
4 SHEETS—SHEET 4.



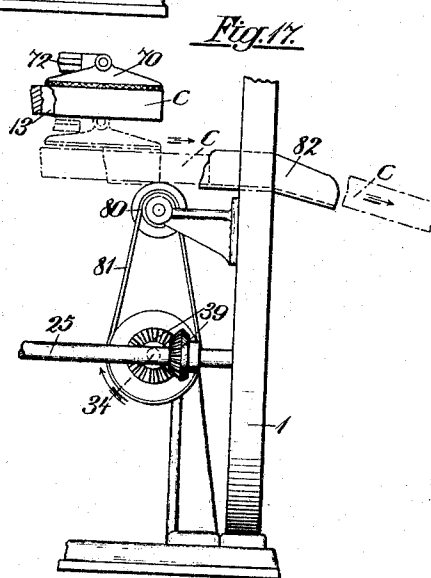
*Fig. 13.*



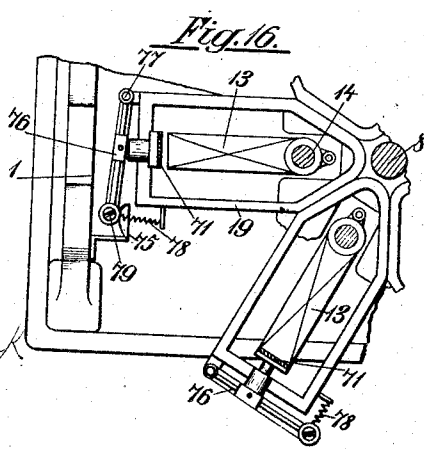
*Fig. 14.*



*Fig. 15.*



*Fig. 17.*



*Fig. 16.*

Witnesses:  
C. L. Franck  
D. P. Kelly

Inventor  
Karl Otting  
by *Chas. E. R.*  
his Attorney

# UNITED STATES PATENT OFFICE.

KARL OTTING, OF LUDWIGSBURG, GERMANY.

MACHINE FOR MAKING PAPER RECEPTACLES.

1,015,268.

Specification of Letters Patent.

Patented Jan. 16, 1912.

Application filed September 16, 1907. Serial No. 393,066.

*To all whom it may concern:*

Be it known that I, KARL OTTING, fabricant, a subject of the Kingdom of Wurttemberg, residing at Ludwigsburg, in the Kingdom of Wurttemberg and Empire of Germany, have invented certain new and useful Improvements in Machines for Making Paper Receptacles, of which the following is a specification.

The present invention relates to a machine for the production of paper receptacles of any kind and size from flat sheets of paper which are stacked in a pile from which the sheets are taken off singly and are at the same time provided with adhesive, whereupon they are formed into the desired receptacle at one stopping place only in the machine. For this purpose a number of forming mandrels are provided which are revolved intermittently and may also be depressed. With each of these mandrels there moves an adhesive stamp, as well as the bottom pressing stamp, the first performing a double function in that it supplies the adhesive and at the same time conveys the attached sheet of paper from the stack to the folding point where the formation of the receptacles takes place, the paper at a second stopping point of the machine being removed from the mandrel. For the purpose of forming the bottom of the receptacle, the mandrel is depressed whereby the paper blank is brushed from the stamp and is conveyed between the brushes which fold it about the mandrels, whereupon there is then formed a paper cylinder and the bottom of the package is then completed.

The present invention differentiates from similar machines heretofore constructed in that it is extremely simple not only in construction but also in the elements employed therein, inasmuch as for example, the adhesive applying stamp serves also to convey the paper to the operating position in the machine, and inasmuch as also the formation of the sheet of paper to a complete package takes place at only one stopping point in the machine, the other stopping point being needed only for the taking up by the stamp of adhesive and for tightly pressing the parts where adhesive has been applied.

One embodiment of the invention is illustrated in the accompanying drawing, wherein—

Figures 1 and 2 are front and plan views respectively, of the invention certain parts

being omitted for the sake of clearness; Fig. 3 is a front view of the mandrel conveying and depressing mechanism, and Fig. 4 is a view at right angles to Fig. 3; Fig. 5 is a view illustrating the stopping point in the machine where the sheet of paper is operated upon; Figs. 6 to 10 illustrate the successive steps whereby the longitudinal fold is made; and Fig. 11 shows the mechanism for operating the parts, shown in Figs. 6 to 10. Fig. 12 illustrates the manner of folding the bottom of the receptacle; Fig. 13 is a front view illustrating the manner of taking the sheet from the pile; Figs. 14 and 15 are front and plan views respectively, of the mechanism for intermittently rotating parts hereinafter referred to; Fig. 16 is a plan view illustrating the application and the release of the bottom stamp; and Fig. 17 illustrates the discharge of the completed receptacle.

Referring to the drawing 1 is the frame of the machine in which the main driving shaft 2 carrying the pulley wheel 3 is mounted, the latter by means of spur wheels 26, 28, driving a horizontal shaft 83, and the latter by means of the beveled gear 4 driving a vertical shaft 6 in the bearing 5. Carried by the shaft 6 is a crank 7 which is provided for the purpose of intermittently rotating a vertical shaft 8 mounted in the bearing 12 on the base of the frame 1, through the aid of a disk 9 (Figs. 14 and 15) rigidly mounted on said shaft. The disk 9 has slots 9<sup>a</sup>, into which a roller 10 on the crank 7 enters and is also provided with peripheral indentations 9<sup>b</sup>, of the same diameter as a disk 11 mounted upon the shaft 6 and having an indentation 11<sup>a</sup>, the round part of said disk 11 entering the indentations 9<sup>b</sup>, and thereby stopping the disk 9 during each complete revolution of the crank 7, that is, until the latter enters the next slot 9<sup>a</sup> in the disk 9.

In the embodiment of the invention illustrated in the drawing the disk 9 is provided with six slots 9<sup>a</sup> to correspond to the six stopping points in the machine. By the rotation of the shaft 8, a number of forming mandrels 13 are carried along with it (six in the present instance) each of which is mounted upon a vertical shaft 14 these mandrels extending in a horizontal plane, and being arranged radially to the shaft 8. These shafts 14 are movable in sleeves 15 of disks 16 which are arranged upon the

shaft 8 and also in jaws 17, which engage a fixed disk 18 and are guided thereby. Each mandrel 13 is surrounded by a substantially rectangular frame 19 which carries the adhesive applying stamp 19<sup>a</sup> and is also secured on the shaft 8.

During the movement to the first stopping place, the adhesive stamps 19<sup>a</sup> are provided with adhesive, and for this purpose the adhesive container or reservoir 20 is provided which is vertically displaceable in an upright 21 and is provided with a plurality of adhesive rollers 22 (Figs. 1 and 2). These rollers are constantly revolved during the operation of the machine through spur wheels 23, and a belt drive 24 from a horizontal shaft 25 which is driven by means of the spur wheels 26 and 27. During the movement to the first stopping place the stamps 19<sup>a</sup> pass over and contact with the adhesive roller 22 and are provided with adhesive. At the second stopping place, the paper blank *a* is lifted from the stack *b* (Fig. 13). For this purpose the stack *b* rests upon a plate 30 which is guided in the vertical guides 31 and is reciprocated by the mechanism about to be described. The plate 30 is carried by the rod 32, vertically guided in a standard 33 and is reciprocated by an eccentric 35 mounted upon the shaft 34 by aid of the lever 37 fulcrumed on the pin 36, the lever 37 being loosely connected with the rod 32 and the plate 30 being under the influence of spring 38. The shaft 34 is driven from the shaft 25 by means of the beveled gearing 39. When one of the stamps 19<sup>a</sup> reaches the second stopping point, the stack *b* is raised under spring action against the stamp 19<sup>a</sup>, the uppermost blank *a* being supplied with adhesive and adhering to the stamp 19<sup>a</sup>, the stack *b* thereafter immediately descending. Upon further intermittent operation, the adhering blank *a* is carried by the stamp 19<sup>a</sup> to the third stopping point in the machine, which is the operating point at which the folding operation takes place. At this point, the mandrel 13 is depressed between fixed brushes 40 whereby the blank *a* is detached from the stamp 19<sup>a</sup> and by means of the brushes 40 is wrapped or folded upwardly around the mandrel 13 (Fig. 7). The depression of the mandrel 13 is caused by a two-armed lever 41<sup>a</sup> revoluble about a horizontal shaft 42, guided by a double eccentric 43<sup>a</sup> mounted upon a second horizontal shaft 51, the said shaft 51 being driven through the spur wheels 84 and 29. The free end of the lever 41<sup>a</sup> which carries a roller 44<sup>a</sup> enters a claw 45, one such claw being arranged upon each shaft 14 and this claw embracing the rollers 44 at the third stopping point. When the lever 41<sup>a</sup> is rotated by the eccentric 43<sup>a</sup>, the mandrel 13 is depressed and presses the blank *a* between

the brushes 40. To prevent premature detachment of the blank *a* from the mandrel 13, I provide a pressing stamp 85 carried by a vertical rod 86 which glides in guides 87 (Figs. 6 to 8). This stamp 85 under the action of its spring 88 presses the blank *a* on to the mandrel 13, which when descending carries the blank down with it against the action of the spring 88. The formation of the blank to a completed receptacle now takes place. In the first place by folding over the upstanding ends of the blank *a* about the mandrel 13, a cylinder is formed. This operation is performed by longitudinal folders 46 which are movable horizontally in guides 47 and are under the action of springs 52. This displacement of the folders 46 is effected by levers 48 which are revoluble about shafts 42 and 49 and are guided by eccentrics 50, of which one is mounted on the shaft 51 and the other on a similar shaft 25.

The closing of the cylinder, that is, the formation of the bottom is effected through the horizontal and vertical bottom folders 53 and 54 and 55 and 56. The horizontal bottom folders 53 and 54 are under the influence of springs 57 and are guided in guides 58. They are moved by levers 59 and turn about shafts 42 and 49 and are swung on the shafts by eccentrics 61 mounted upon shafts 51 and 25. Of the vertical bottom folders 55 and 56, the lower one 55 which is under the influence of spring 62 is moved by an eccentric 63 upon a shaft 64 which is revolved by the spur gear wheel 29. The upper bottom folder 56 is secured to a guide rod 65, which glides at one end in a guide 66 and being guided at the other end through a shaft 68. This folder 55 is guided by an eccentric 67 mounted upon a shaft 68, driven from the shaft 83 by means of sprocket wheels 69 or the like. Pressure is now continually applied to the longitudinal fold and to the bottom until the completed receptacle *c* is discharged from the machine. For this purpose a longitudinal fold pressing stamp 70 and a bottom pressing stamp 71 are provided. In order that the stamp 70 may not interfere with the upstanding ends of the blank *a* when the latter are folded about the mandrel 13, it is necessary to move the stamps 70 out of the way. For this purpose the stamp 70 is carried by a bell crank lever 72 mounted on a fixed pin 73 on the corresponding mandrel 13. The bell crank lever 72 is guided by a disk 89<sup>a</sup> having a cam like surface, the free arm of the lever 72 contacting with the arm on the disk 89<sup>a</sup> when the mandrel 13 is depressed, thus causing the bell crank lever 72 to turn, that is to say, lifting the stamp 70 from the mandrel 13, so that the upstanding ends of the blank may be folded. When the mandrel is lifted the stamp 70 is caused to main-

tain constant pressure by a spring 74 acting upon a rearwardly projecting arm of the bell crank lever 72. The bottom pressure stamp 71 is removed from the mandrel in similar manner. For this purpose a fixed bracket 75 having a beveled surface on one arm is provided and the stamp 71 guided in the frame 19 is joined to a lever 76 which is movable about a pin 77 of the frame and is under the influence of a spring 78, so that the free end which is provided with a roller 79, rests upon the free end of the bracket 75 and draws the stamp 71 away from its mandrel 13, while the blank *a* is being operated upon. Upon further movement the spring 78 again pulls the stamp 71 against the bottom until the completed receptacle *c* is removed from the mandrel 13. For this purpose the mandrel 13 is again depressed just as in the third stopping place by means of a double armed lever 41<sup>a</sup> carried by the shaft 42, the said lever 41<sup>a</sup> being guided by a double eccentric 43<sup>a</sup> upon the shaft 51, the said eccentric entering the claws 45 and carried by the shafts 14. When the mandrel 13 is depressed the longitudinal folding stamp 70 is again lifted off by a disk 89<sup>a</sup> having a cam like surface in order to release the receptacle *c*.

For releasing the completed receptacle, I provide a well known device which consists of a friction roller 80 which is quickly rotated from the countershaft 34 by means of a rope pulley 81 and in consequence of the friction, the receptacle *c* is released and enters a chute 82 to be conveyed to any desired place.

Having now described my invention what I claim and desire to secure by Letters Patent of the United States is:

1. In a machine of the character described, the combination with a plurality of forming mandrels each of a shape correspond-

ing to the shape of the article to be formed, of means for intermittently rotating the same about a common center, a frame surrounding each mandrel and rotatable therewith, an adhesive applying stamp carried by said frame, means for applying adhesive to said stamp, a stack holder, means for reciprocating the same to place the uppermost sheet of the stack in contact with the stamp, means for depressing the mandrels individually and successively whereby the sheet adhering to the stamp is stripped therefrom and partially folded about the mandrel, and means for completing the folding of the sheet about the mandrel.

2. In a machine of the character described, the combination with a center shaft, of a plurality of vertical shafts secured thereto, means for intermittently rotating said vertical shafts and the center shaft, a forming mandrel of a shape corresponding to the shape of the article to be formed mounted to slide on each of said vertical shafts, a frame surrounding each mandrel and rigidly fixed to the vertical shaft, an adhesive applying stamp carried by each frame, means for applying adhesive to said stamps, a stack holder, means for reciprocating the same to place the uppermost sheet of the stack in contact with the stamp, means for successively moving individual mandrels along the vertical shafts to a point where the sheet adhering to the stamp is stripped therefrom and partially folded about the mandrel, and means for completing the folding of the sheet about the mandrel.

In testimony whereof I have hereunto set my hand in the presence of two witnesses.

KARL OTTING.

Witnesses:

ERNEST ENTENMANN,  
FRANZ DRISSNER.