

A. H. BRAECKLEIN.
MACHINE FOR COVERING PIES.
APPLICATION FILED OCT. 9, 1916.

1,266,913.

Patented May 21, 1918.
4 SHEETS—SHEET 1.

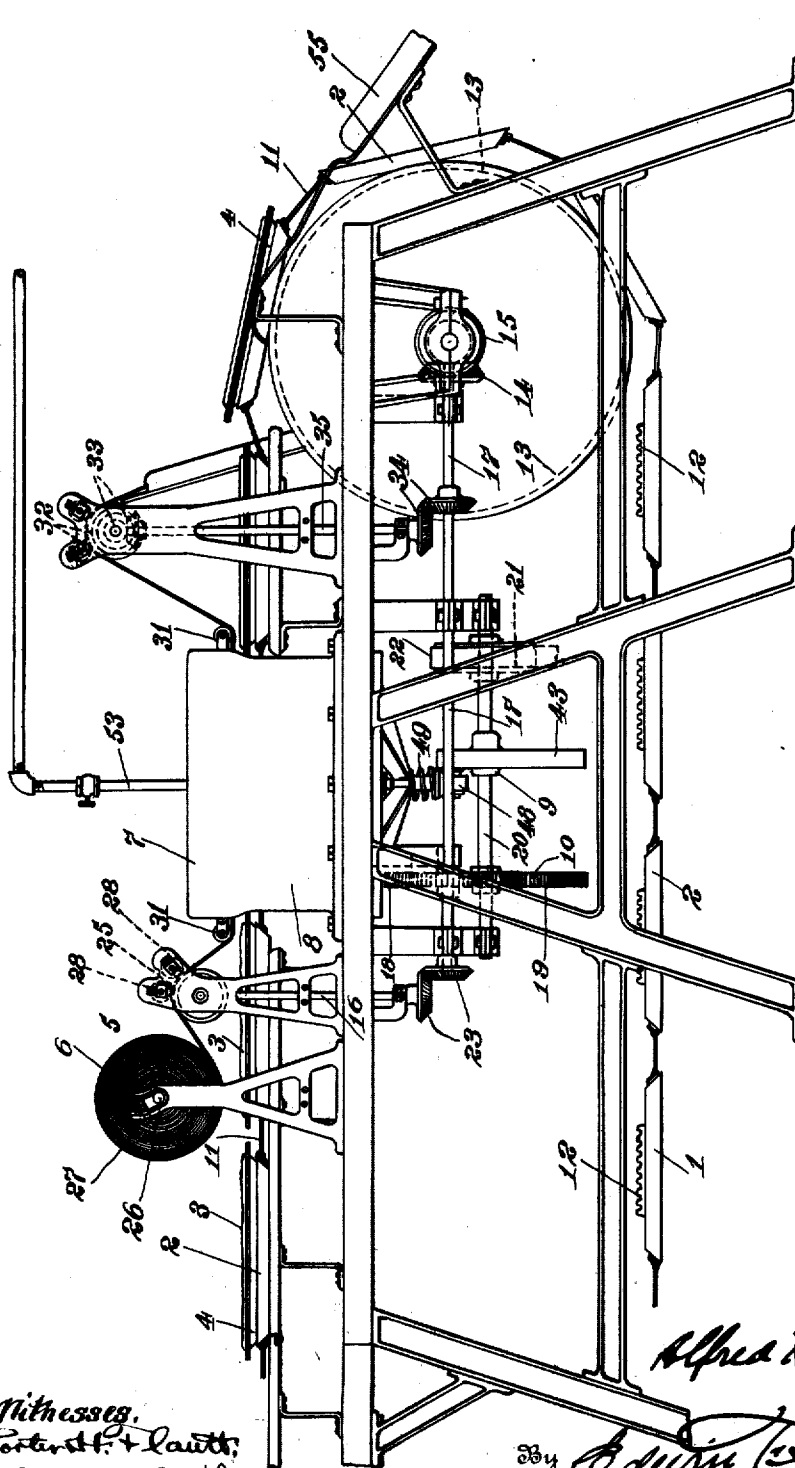


Fig. 1.

Witnesses.
Forrest H. Lawitt,
Alice G. Dwyer

Inventor
Alpha H. Braecklein
By Edwin P. Samuels
Attorney

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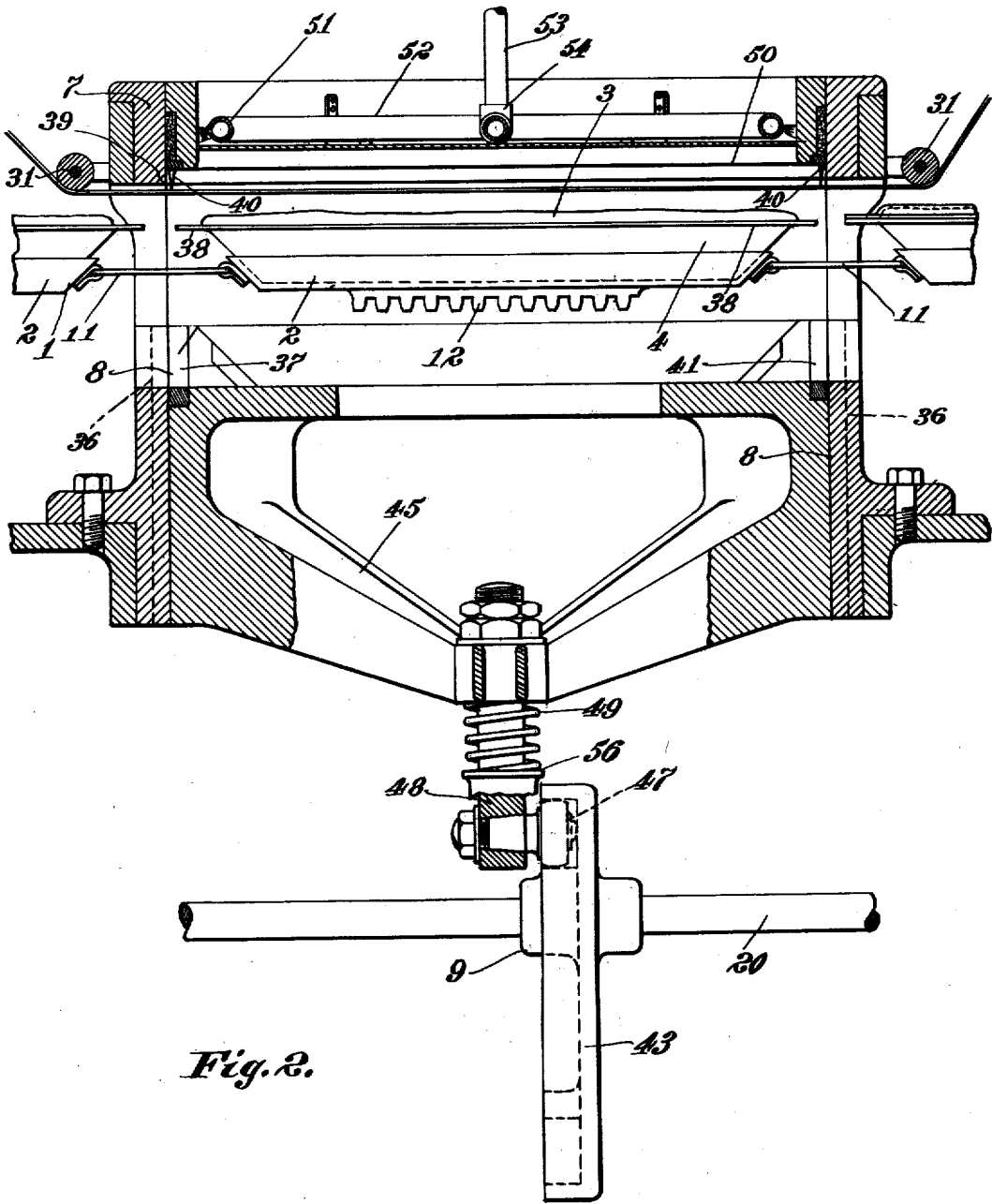


Fig. 2.

Witnesses,
For Inventor, F. H. H. H.

Alice J. Brown

Inventor
Alfred H. Braecklein

By Edwin T. Samuel

Attorney

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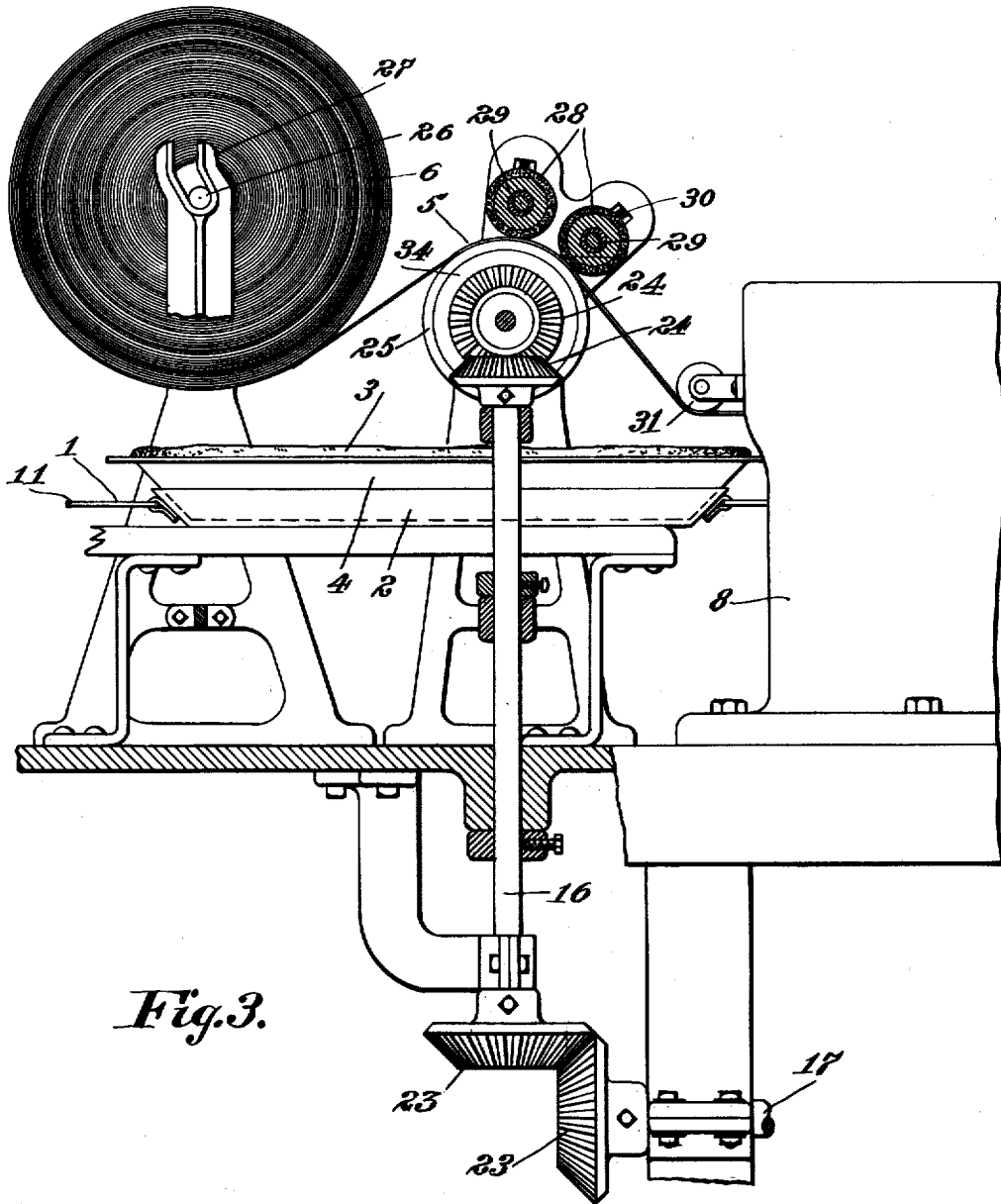


Fig. 3.

Witnesses
Porter H. Flanigan
Alice J. Meyer

Inventor
Alfred H. Braecklein
by Edwin K. Samuels
Attorney

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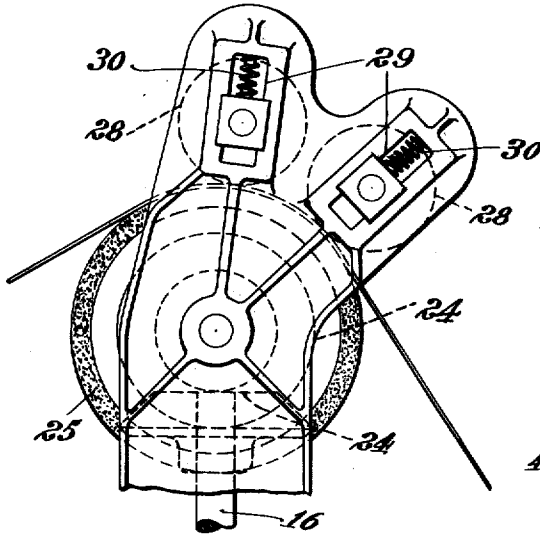


Fig. 4.

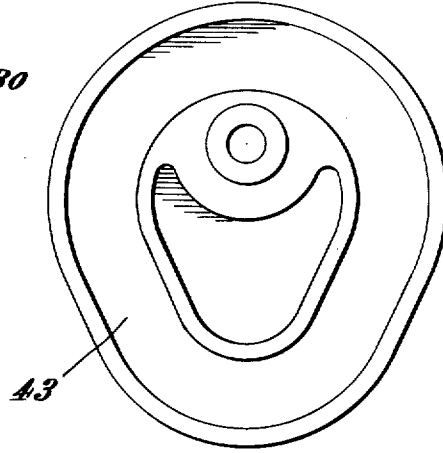


Fig. 5.

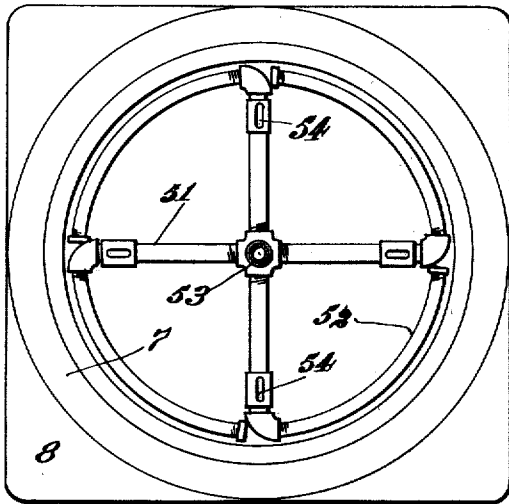


Fig. 6.

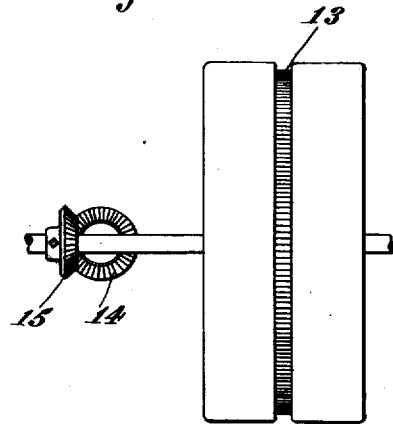


Fig. 7.

Witnesses.
Porter H. Hault.
Alice J. Horgan

Inventor
Alfred H. Braecklein
By Edwin H. Samuel
Attorney

UNITED STATES PATENT OFFICE.

ALFRED H. BRAECKLEIN, OF BALTIMORE, MARYLAND.

MACHINE FOR COVERING PIES.

1,266,913.

Specification of Letters Patent.

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Application filed October 9, 1916. Serial No. 124,748.

To all whom it may concern:

Be it known that I, ALFRED H. BRAECKLEIN, a citizen of the United States of America, and resident of the city of Baltimore, State of Maryland, have invented certain new and useful Improvements in Machines for Covering Pies, of which the following is a specification.

The formerly existing unsanitary conditions as to various products of bakeries have been recognized and to some extent remedied as by the wrapping of bread, the distribution of cakes and crackers in sealed packages, etc., but pies, great quantities of which are made in factories or large bakeries and distributed through grocers, smaller bakeries, confectionery stores and the like, are exposed to contact with the hands of the attendants as well as to flies, street dust and other carriers of infection.

Owing to the size, shape and weight of the commodity, it is not conveniently handled by any of the existing wrapping machines and the applicant has conceived the idea of applying a circular paper blank cut from a suitable web to the top of the pie, the periphery of the blank being pasted or otherwise suitably attached to the periphery of the plate. This is most conveniently accomplished by using a paper web coated as to its entire surface, or only partially, with paraffin or other suitable adhesive, as sealing wax or resin, presenting the pies by means of a chain or other suitable conveyer, passing the web over the pies, cutting the blanks by means of a suitable die which may be so devised as to carry a circular knife edge for cutting the blanks and a circular pressing surface which is heated either by electricity or a gas jet or other convenient means and adapted to be pressed downward on the edge of the blank, pressing it against the periphery of the plate and melting the paraffin or other adhesive so that the edge of the blank is permanently affixed to the edge of the plate by the hardening of the paraffin or other adhesive. As the periphery of the plate must be adapted to be combined with the adhesive, and further, as the plates must be sold with the pies so that they must be made of a cheap material, paper plates or plates of thin metal with a paper flange are used.

As thus outlined, the invention consists in the combination of means for feeding a

paper web, means for presenting the pies in suitable containers successively beneath the web, means for cutting circular blanks from the web and means for pressing the blanks when cut against the periphery of the containers, suitable adhesive being provided for affixing the edges of the blanks to the edges of the containers.

In the accompanying drawing, I have illustrated an apparatus embodying my invention in the preferred form.

Figure 1 is a side elevation;

Fig. 2 is a longitudinal central section through the die and support;

Fig. 3 is an elevation partly in section of the rear of the machine showing the paper web and the paper feed;

Figs. 4, 5, 6 and 7 are detail views.

Referring to the drawings by numerals, the machine consists of a conveyer 1 with suitable cups 2 to receive the pie 3, or more particularly, the pie plates 4; paper feeding means 5; a paper web 6 wound on a suitable roll; a die 7; a support 8; means 9 for bringing the die and support into operative relation; and intermittently operating driving means 10 connected to the conveyer and the paper feed.

More specifically, the conveyer consists of a series of cups 2 connected by links 11 and provided each with a short section of toothed rack 12 to be engaged by the large toothed gears 13 over which the chain is passed and by which it is driven. The gears 13 are rotated by means of suitable connections 14 and 15 from a shaft 17 which is intermittently driven by mutilated gears 18 and 19, the latter being on the main shaft 20 carrying a pulley 21 driven by a belt 22 from any suitable source of power. The paper feed 5 is driven intermittently at intervals corresponding to the intervals of operation of the conveyer and at a speed substantially equal to the conveyer speed. This is accomplished by means of two sets of bevel gears 23, 23 and 24, 24. One of the gears 23 is on the intermittently driven shaft 17, the other on a vertical shaft 16. Of the bevel gears 24, one is on the upper end of the shaft 16 and the other carries a paper feeding roller 25 engaging the paper web 6 which is mounted in the form of a roll on suitable spindles 26 in a bearing 27 provided for that purpose at the rear of the machine. Idler rollers 28, shown as mounted

ed in sliding bearings 29 and pressed toward the roller 25 by means of springs 30 may be provided to give the feeding means a sufficient grip on the web. The paper, guided by suitable guide rollers 31 is led from the grip of the rollers 25 and 28 directly over the conveyer and at same time across the path of the die to be described, and thence into the grip of the drawing rollers 32, the bottom one of which is driven by sets of bevel gears 33, 34 and upright shaft 35, one of the gears 33 being on the lower one of the rollers 32 and the other on the shaft 35, and the gears 34 being on shaft 35 and the other on the intermittent shaft 17.

Coöperating with the conveyer 1, the paper feed 5 and the operating means therefor, are the dies 7, the support 8 and the means 9 for moving these parts into and out of their coöperative relation. The intermittent gearing driving the conveyer is so timed and arranged that each of the cups 2 in turn stops for a predetermined interval directly over the support 8. This support includes a frame 45 mounted to reciprocate on suitable guides 36 and provided with a cutting and supporting ring 37 of width and diameter to engage the flange 38 of each pie plate and receive the cutting edge as later described. The flanges are preferably of considerable width and kept moderately clear of dough, etc. for the reception of the paste, or adhesive at the edge of the blank.

In the present instance, the die 7 or die member which is mounted in the path of the moving support, is stationary. This die member 7 is provided with a circular, downwardly disposed knife edge 39 of a diameter slightly in excess of that of the flanges 38 of the plates to be used. The ring 37 is slotted at 41, in alinement with the links 11 to receive the same when the die and support are in contact and pins 40 are placed in the die opposite the slot. The function of the pins, which are slightly longer than the blade, is to puncture the paper tabs, *i. e.*, the portions of the paper corresponding to the slots 41, not cut in the operation of the die and place them in a condition in which they will be easily severed by a slight strain.

In addition to cutting the paper and pressing it against the rim of the pie plate, it is desirable, if an adhesive which is softened by heat be used as herein provided, that there be some means for heating the supporting ring 37 or the corresponding pressing surface 50 on the die, the surface 50 being a circular shoulder on the die just inside the knife which is brought into contact with the paper pressing it against the rim of the plate at the upper end of the stroke of the support. For this purpose I have shown in the present instance a burner 51 consisting of a pipe ring 52 perforated to project jets of flame into contact with the

die metal near the pressing surface 50. The burner is supplied with gas by way of a pipe 53 and there is a suitable aperture 54 for the admission of air so as to give a Bunsen flame.

The support 8 is given the vertical stroke described by means of a cam 43 on the main shaft 20. The cam 43 as shown is a path cam engaged by a suitable follower 47 carried by a stud 48, connected to the frame 45 of the support preferably so that the operation of the support may be controlled and cushioned by a spring 49. To this end the stud may be provided with a shoulder 56 and having a sliding engagement with the frame 45, the spiral spring 49 encircling the stud and being between the shoulder 56 and the bottom surface of the support.

The operation of the machine is easily understood from the preamble and description. Pies as they come from the oven are placed either by hand or automatically in the cups 2 of the conveyer 1 by which they are carried with a step by step motion into operative relation with the die 7, each cup with the pie therein being caused to dwell for a predetermined period in exact registration with the die. The paper web is likewise fed forward, preferably with a step by step motion corresponding to that of the conveyer and at approximately the same speed, the web being drawn over each pie as it comes to rest in alinement with the cutting elements. In the present instance, the cutting of the blank is accomplished by the stroke of the support bringing the blank into contact with the circular knife blade 39 which forms a part of the die 7. To this end, the supporting ring 37 which engages the flange 38 of the plate from beneath moving the plate with the pie therein upward against the paper, is made wider than the flange on the plate and extends beneath the blade so that the paper is forced against the knife edge by the cutting ring. The blade is preferably of a diameter exceeding that of the plate so the blank is big enough to cover the plate even when raised at the center by the pie and moves without detriment over the edge of the plate.

Corresponding to the cutting and supporting ring 37 is the pressing member or surface 50 which engages the paper blank from above as soon as it is cut and presses it against the top surface of the flange 38 of the plate. In the form of the invention, shown, the paper is coated with some adhesive, as paraffin or other suitable sealing wax or gum or any preferred adhesive which may be softened by heat, and the pressing surface 50 is maintained at a suitable temperature by any convenient heating means as shown and described. The heat with the pressure applied to the paper has the effect of causing the paper blank to adhere to the

rim or flange and the withdrawal of the support causes the conveyer which has been slightly lifted by the upward stroke to fall back to its normal alinement. The pie, actuated by gravity, remains in the cup and is thus taken away from the cutters. It is thus also withdrawn from the paper web so that the tabs left by the slots in the cutter provided for the accommodation of the links 11, being duly perforated by the pins 40, are broken and the pie thus wrapped is carried on by the conveyer to a suitable point of discharge, as shown at 55 in Fig. 1.

I have thus described my invention specifically and in detail in order that its nature and operation may be fully understood; however, the specific terms herein are used descriptively rather than in their limiting sense and the scope of the invention is defined in the claims.

I claim—

1. In a machine for covering pies, each pie being presented in a plate, means for feeding paper, means for cutting a blank from the paper to cover the top of the pie and plate and placing the blank on top of the pie with its edges extending beyond the pie, means for rendering the edge portions of the blank adhesive, means for supporting the pie and plate, and pressing means adapted to engage the edge portions of the blank beyond the pie and press them against the plate, the pressing means being formed to leave the center of the blank free so that it does not press against the pie.

2. In a machine for covering pies, each pie being in a suitable plate with an uncovered projecting rim, means for feeding the pies step by step in a predetermined path, means for feeding a paper web of a width exceeding that of the pie plates over the path of the pies, a die alined with the path of the web and of the pies with a blade for cutting blanks to fit the rims of the plates, pressing means for pressing the edge of each blank against the rim of the corresponding plate, a support in alinement with the die to engage the rim of the plate, means for pressing the blade against the support as each pie comes in registration with the cutting means forming a blank which is superimposed upon the pie and plate and at the same time pressing the blank against the rim of the plate, and means for rendering the edge of the blank adhesive.

3. In a machine for covering pies, the pies being each in a suitable plate, a die with a blade adapted to cut a blank to cover the top of the pie and plate, a pressing member

concentric with the die, said pressing member having a circular zone of contact and being adapted to leave the center of the blank free, a support, means for moving the parts relatively to increase and decrease the distance between the blade and pressing member and the support, means for feeding paper to the die, and means for feeding pies into registration with the die and causing each pie to dwell in alinement with the die during one stroke of the mechanism whereby a blank is cut by the action of the die on the support and pressed against the plate by the relative action of the support and pressing surface.

4. In a machine for covering pies, the pies being each in a suitable plate with a projecting rim, a die with a blade adapted to cut a blank of the shape and slightly larger than the rim of the plate, a pressing member concentric with the die, a support, means for moving the parts relatively to increase and decrease the distance between the blade and pressing member and the support, means for feeding paper to the die, and means for feeding pies into registration with the die and causing each pie to dwell in alinement with the die during one stroke of the mechanism whereby a blank is cut by the action of the die on the support and pressed against the edge of the plate by the relative action of the support and pressing surface, the paper being coated with an adhesive, and means being provided to heat the edge of the blank so that it sticks to the rim of the plate against which it is pressed.

5. In a machine for covering pies, the pies being presented each in a plate, means for cutting a blank to cover the top of each pie and plate, means for rendering the edge portion of each blank adhesive, means for pressing the edge portions of the blanks against the plates causing them to adhere, the pressing means being formed with a circular zone of contact and being adapted to leave the center of the blank free to avoid pressing the blank against the top of the pie, and means for feeding each pie and plate to said cutting and pressing means and causing each pie to dwell in operative relation to the said cutting and pressing means during the operation of said means and then to move out of the machine.

Signed by me at Baltimore, Maryland, this 7th day of October, 1916.

ALFRED H. BRAECKLEIN.

Witnesses:

ZELLA KUHN,
EDWIN H. SAMUELS.