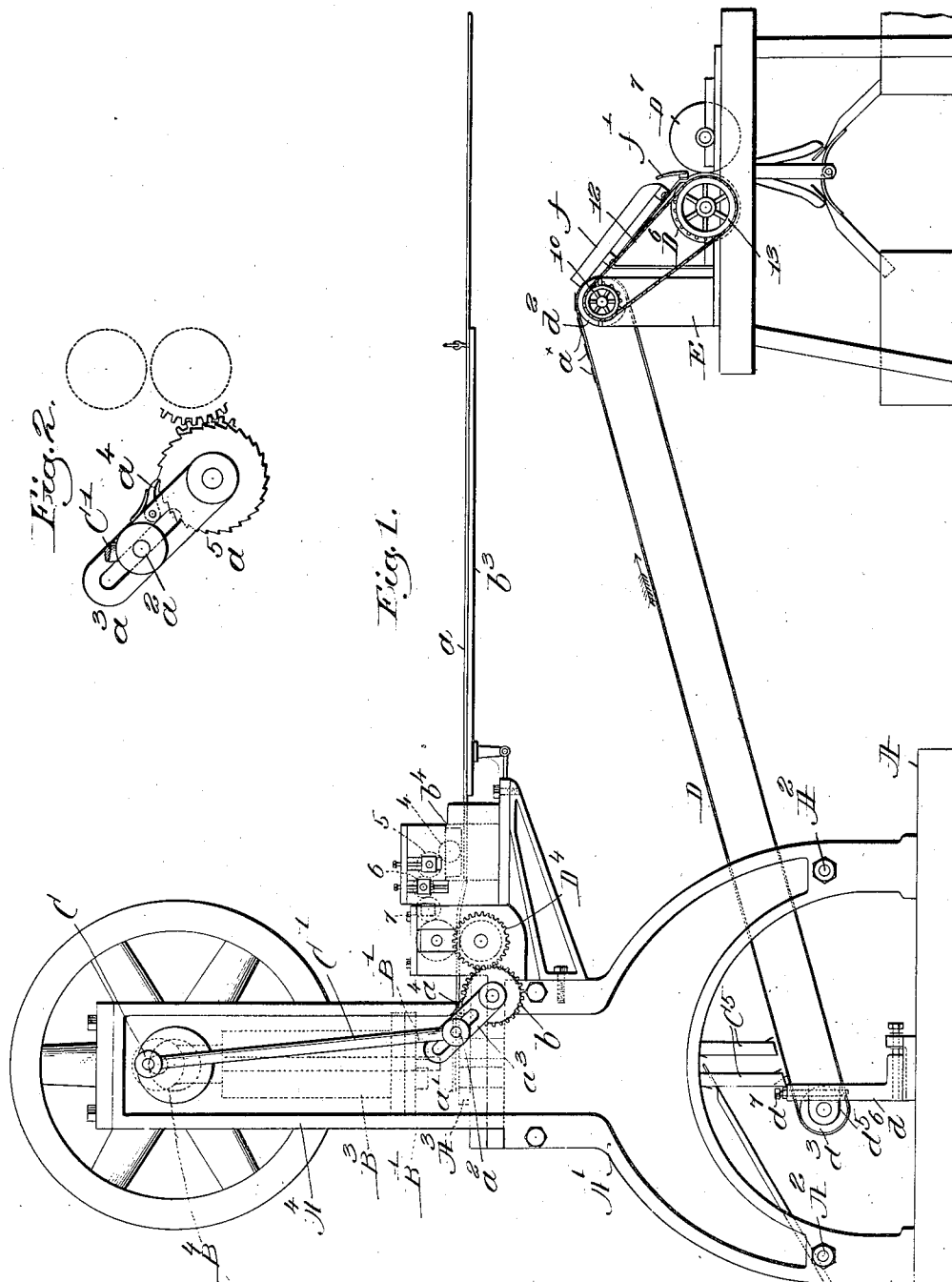


D. J. BOGAN.
MACHINE FOR THE FORMATION OF BLANKS.
APPLICATION FILED JAN. 23, 1905.

938,115.

Patented Oct. 26, 1909.

3 SHEETS—SHEET 1.



Witnesses:
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W. W. Knapp.

Inventor.
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by Crosby & Rogers, Attys

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3 SHEETS—SHEET 3.

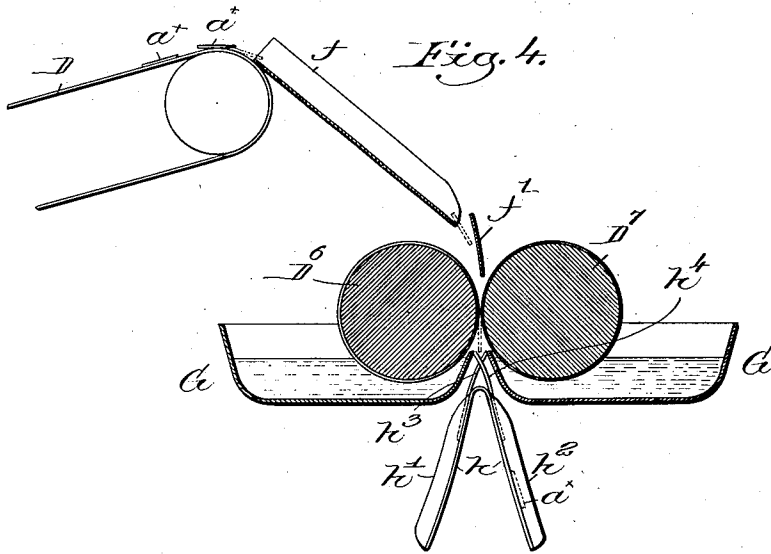


Fig. 5.

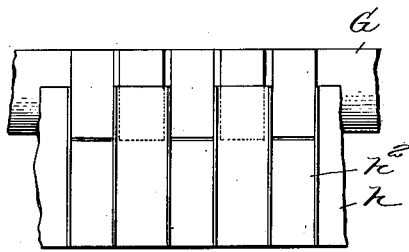
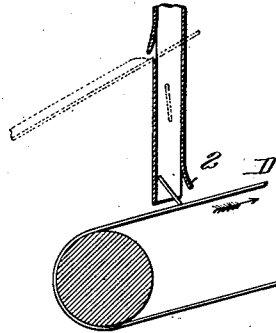
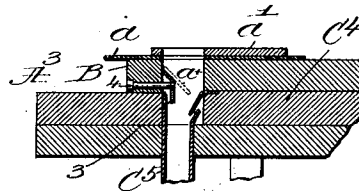


Fig. 7.



Fig. 6.



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UNITED STATES PATENT OFFICE.

DANIEL J. BOGAN, OF BALLARDVALE, MASSACHUSETTS, ASSIGNOR TO BROWN-BINNAN COMPANY, A CORPORATION OF MASSACHUSETTS.

MACHINE FOR THE FORMATION OF BLANKS.

938,115.

Specification of Letters Patent.

Patented Oct. 26, 1909.

Application filed January 23, 1905. Serial No. 242,216.

To all whom it may concern:

Be it known that I, DANIEL J. BOGAN, a citizen of the United States, residing at Ballardvale, county of Essex, State of Massachusetts, have invented an Improvement in Machines for the Formation of Blanks, of which the following description, in connection with the accompanying drawing, is a specification, like characters on the drawings representing like parts.

This invention has for its object the production of a machine for printing and cutting out blanks from paper or cardboard at a continuous operation, and preferably printed blanks which are alike are kept together and delivered in the same receptacle. Provision has also been made for waterproofing the printed blanks at their sides and edges. The paper, preferably in the form of a roll, is led over a table between paper feeding means shown as rolls and is acted upon by a series of printing dies or electrotypes carried by a cylinder to which the dies are removably attached that any special die may be applied to the roller as demanded. Inking means of suitable usual character supply ink to the dies and each die, as the paper is fed under the cylinder, prints its own legend on the paper, the legend being anything desired. The paper having been printed is cut to form circular or other shaped blanks, each containing the desired legend or advertisement. The blanks are cut out by a gang of punches that deliver the blanks into guideways constructed to deliver the printed sides of the blanks uppermost and deliver them onto an endless belt or apron, and thereafter the blanks are waterproofed and assorted as will be described.

Figure 1 in side elevation represents a mechanism illustrating this invention in one of the best forms now known to me; Fig. 2 is a detail enlarged of the means for moving the paper and printing the same; Fig. 3 is a section below the dotted line *x*, Fig. 1, with the table over which the paper is fed broken out to illustrate the endless belt below on which are deposited the blanks, the paper also being broken out; Fig. 4 is an enlarged detail showing the endless belt as delivering the blanks to the rolls and waterproofing means, the figure showing the blank assorting means; Fig. 5 is a view of the grooves

shown in Fig. 4 looking to the right; Fig. 6 is a section through the guideway onto which the punched out blanks are delivered and the means for delivering the blanks in such manner that they will fall on the endless belt with their printed sides uppermost; Fig. 7 is a top and side view of the rest shown in Fig. 6.

The bed or flooring A sustains like end frames A' united by suitable tie rods A². The upper ends of the end frames A' sustain a bed A³ on the top of which is secured the hollow member B of the punch to be described, over which is fed the paper *a* to be cut into blanks by the solid member B' of the punch, the paper passing under a stripper plate *a'*. Any number of solid punch members may be used, and there will be a hole in the hollow member B for each solid punch member. The drawing, Fig. 3, shows two rows or sets of solid punch members, six in each set.

The solid punch members are each shaped to correspond with the shape desired for the blank, and they are all carried by a cross head B³ that is reciprocated by usual cranks on a shaft B⁴ having its bearings in the up-rights A⁴, forming a continuation of the side frames, said shaft having any usual pulley or pulleys by which it may be rotated when desired. The shaft B⁴ has an eccentric stud C that moves a connecting rod C', the lower end of which is attached by a clamping stud *a*² in a slot of a pawl carrying lever *a*³, having a spring-pressed pawl *a*⁴ that engages normally the teeth of a ratchet wheel *a*⁵, having a connected gear *b*. By adjusting the stud *a*² in the slot of said pawl carrier it is possible to move said ratchet wheel and its gear for a greater or less distance to provide for varying the distance that the paper *a* may be fed at each feed movement, the distance being variable according to the diameter or size of the blanks to be produced from the web of paper. The feed of the paper is intermittent as the punches have only a right line movement.

Below the openings in the hollow punch member, as shown best in Fig. 6, is a plate C⁴, in holes in which are arranged the upper ends of blank guides C⁵, into which are forced the blanks *a*⁶ as they are cut from the paper. The guide is so shaped as to insure that the blanks drop to the bottom thereof

and strike with their edges on an endless traveling belt D which carries the edge of the blank in contact with said belt toward the tongue 2, far enough to permit the left hand or unprinted side of the blank to drop on the belt. The guide has a rest 3 the position of which is determined by a screw 4 and a blank meeting the rest is so temporarily arrested as to cause the blank to be directed edgewise through the tubes.

A very long sheet of paper *a* taken preferably from a roll, not shown, is led over a table *b*³ under an ink box *b*⁴, in which there is a roller 4 that applies ink to the first roll 5 of a set of two distributing rollers 5, 6, the roller 6 supplying ink to a distributing roller 7 which applies ink to the forms or electroplates 8 detachably secured to the printing roll or form carrier *D*¹, having secured to its journal a gear *D*² that is rotated from a gear of like size below the same on the end of the bed roller *D*³ shown by dotted lines in Fig. 2 sustaining the underside of the paper, said roller having an attached gear *D*⁴ that is rotated by the gear *b* before described. It is supposed herein that the first, third and fifth forms *D*⁸ shown in Fig. 3, contain a different legend from the second, fourth and sixth forms.

The rollers 4, 5, 6 and 7 are and may be all as usual in printing mechanism, and these rollers will be rotated by usual gearing. The forms 8 print on the upper side of the paper, as at *d*. Usually the printing will be in a circle and any words or figures desired may be imprinted in the circle. One form of blank herein provided for to be made may be used to stop the mouths of milk bottles, and by the wording thereon show who supplies the milk. These printed portions as the paper is fed are brought successively in line with the solid punches and the latter descend, pass through the holes in the stripper and act on the paper between the solid punches and the hollow die members, and cut out the printed matter from the paper, forcing the blanks into the guides.

The paper *A*^x with the blanks removed passes out of the machine at its rear side, as shown in Fig. 3.

An endless apron D is led about rollers *d*², *d*³. The roller *d*² having its journal in a frame E, has at one end a sprocket wheel 10 that is embraced by a sprocket chain 12 that surrounds a sprocket wheel 13 fast on the end journal of a roller *D*⁶ provided at its opposite end with a pulley *D*⁵ that is driven by power. A roller *D*⁷ opposed to the roller *D*⁶ is rotated therewith through the blanks *a*^x as they pass between said rollers. The roller *d*³ about which runs the lower end of the belt D, has its journals sustained in bearings *d*⁵, slidably mounted on stands *d*⁶, made adjustable by screws *d*⁷, the adjustment of the roller *d*³ placing the belt at just

the proper distance from the lower ends of the guides.

The blanks *a*^x deposited on the apron with their printed sides uppermost are carried forward thereby toward the upper ends of a series of chutes *f* made adjustable and inclined downwardly and some of them outwardly, as shown in Fig. 3, a chute for each longitudinal row of disks, the apron feeding the disks into the open upper ends of the chutes.

The framework E sustains a baffle plate *f*¹ against which the disks strike as they leave the chutes and by which they are directed into the space leading to the rollers *D*⁶, *D*⁷. The rollers *D*⁶, *D*⁷ revolve in pans G that may contain any suitable waterproofing compound usually employed for waterproofing paper, and as the disks are fed between the rollers the waterproofing material on the edges of the disks are also coated. Below the nip of the rollers *D*⁶, *D*⁷, is an assorting device shown as comprising a yoke 7 presenting grooves *h*¹, *h*², and the bottom of each groove has outwardly extended fingers *h*³, *h*⁴ that cross each other, and the ends of the fingers rest against the edges of the rolls so that the alternate disks of a row of disks parallel with the longitudinal axes of the rollers *D*⁶, *D*⁷ are discharged onto the fingers and enter the grooves *h*¹, *h*² dropping therefrom into suitable boxes, and in this way each longitudinal row of disks on the apron is discharged into a box.

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

1. In apparatus of the class described, the combination with means to print legends on paper, and means to cut blanks containing the printed legends from the paper, of chutes to receive the blanks from the cutting mechanism, and means within the chutes to direct the blanks as they enter the chutes and position them with the printed side always in the same position.

2. In apparatus of the class described, the combination with paper-feeding mechanism, means to print different legends on the paper, and means to cut blanks containing the printed legends from the paper, of an apron situated beneath the cutting mechanism, chutes to convey the blanks from the cutting mechanism to the apron, means to move the apron, and an assorting mechanism to receive the blanks from the apron and assort them that all blanks having the same legend may be kept together.

3. In apparatus of the class described, an apron to deliver a series of blanks, a series of chutes spread somewhat apart at their lower ends, and a pair of rollers into the nip of which said chutes deliver said blanks.

4. In apparatus of the class described, a

pair of rollers and blank-assorting means thereon comprising a series of guides having projecting fingers that cross each other and upon which fingers a series of blanks are fed, all the blanks meeting any one finger being delivered separately from the other blanks.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

DANIEL J. BOGAN.

Witnesses:

GEO. W. GREGORY,
CHAS. A. BROWN.