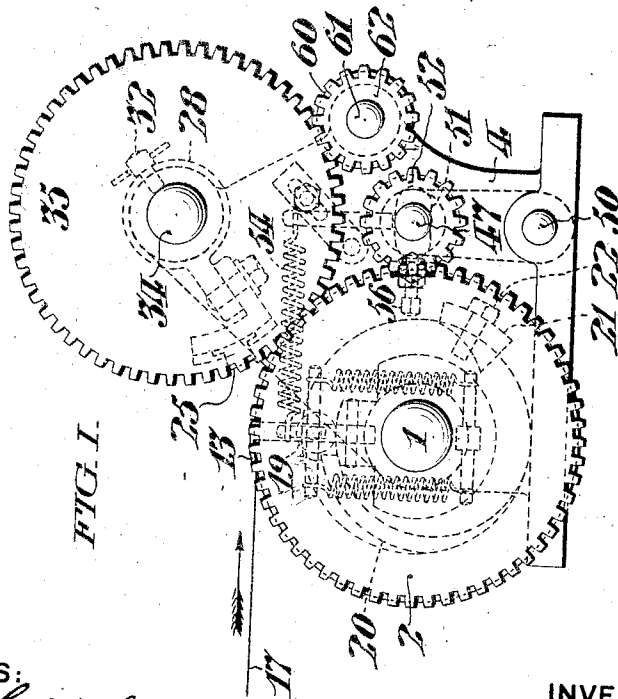
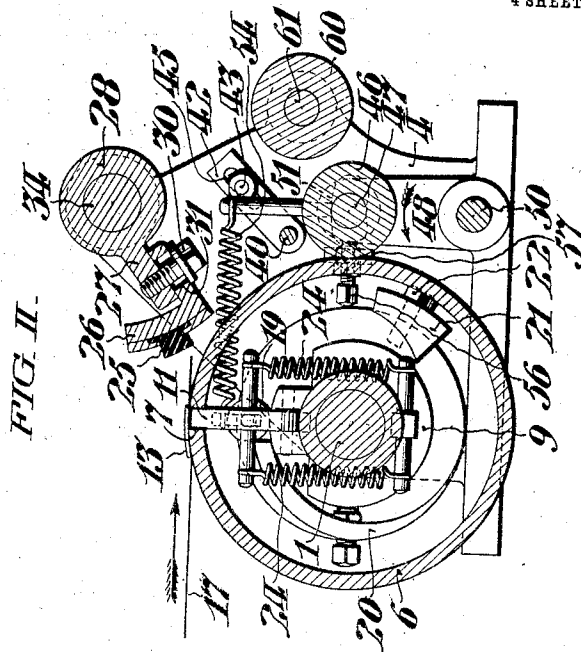


G. W. SWIFT, JR.
GRIPPING, PASTING, AND FOLDING MECHANISM
APPLICATION FILED AUG. 17, 1908.

961,324.

Patented June 14, 1910.

4 SHEETS—SHEET 1.



WITNESSES:

Clifton C. Halliwell
Philip W. Vessey

INVENTOR:

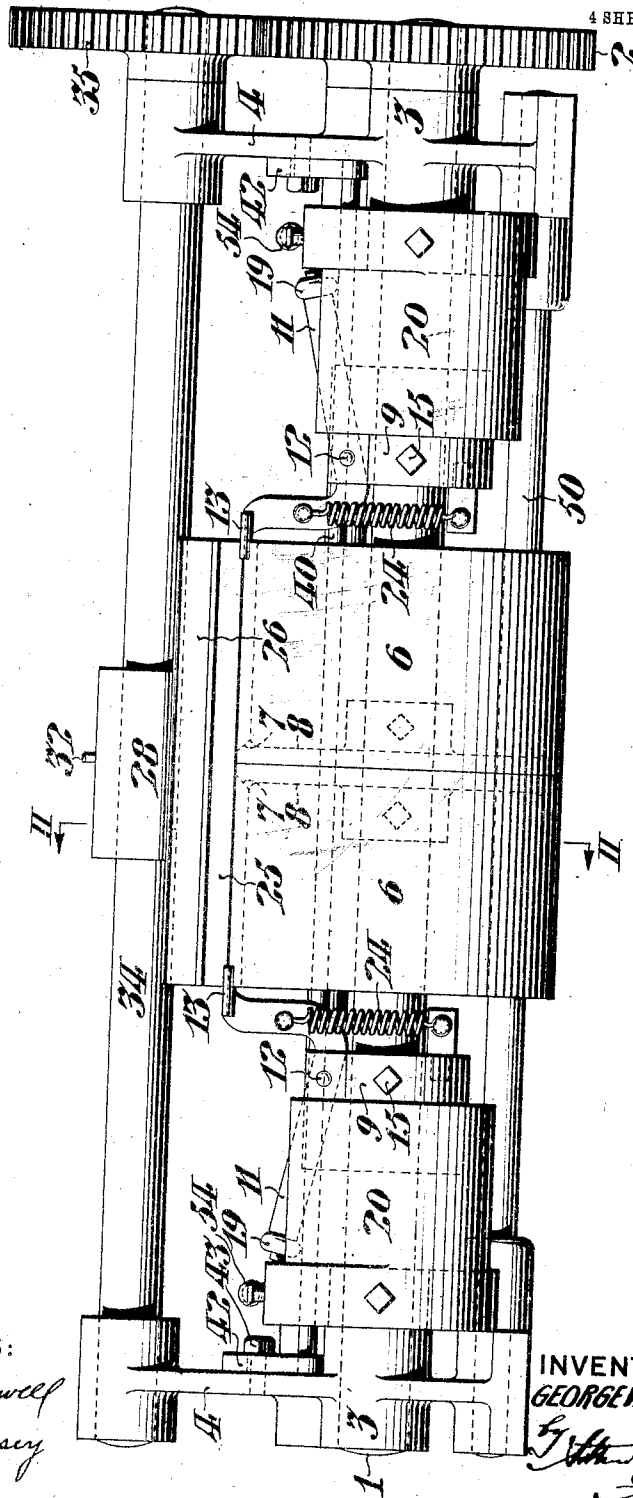
GEORGE W. SWIFT, JR.,
G. W. Swift, Jr.

961,324.

Patented June 14, 1910.

4 SHEETS—SHEET 2.

FIG. III



WITNESSES:

Clifton C. Halliwell
Philip W. Vasey

INVENTOR:

GEORGE W. SWIFT, JR.
By [Signature]

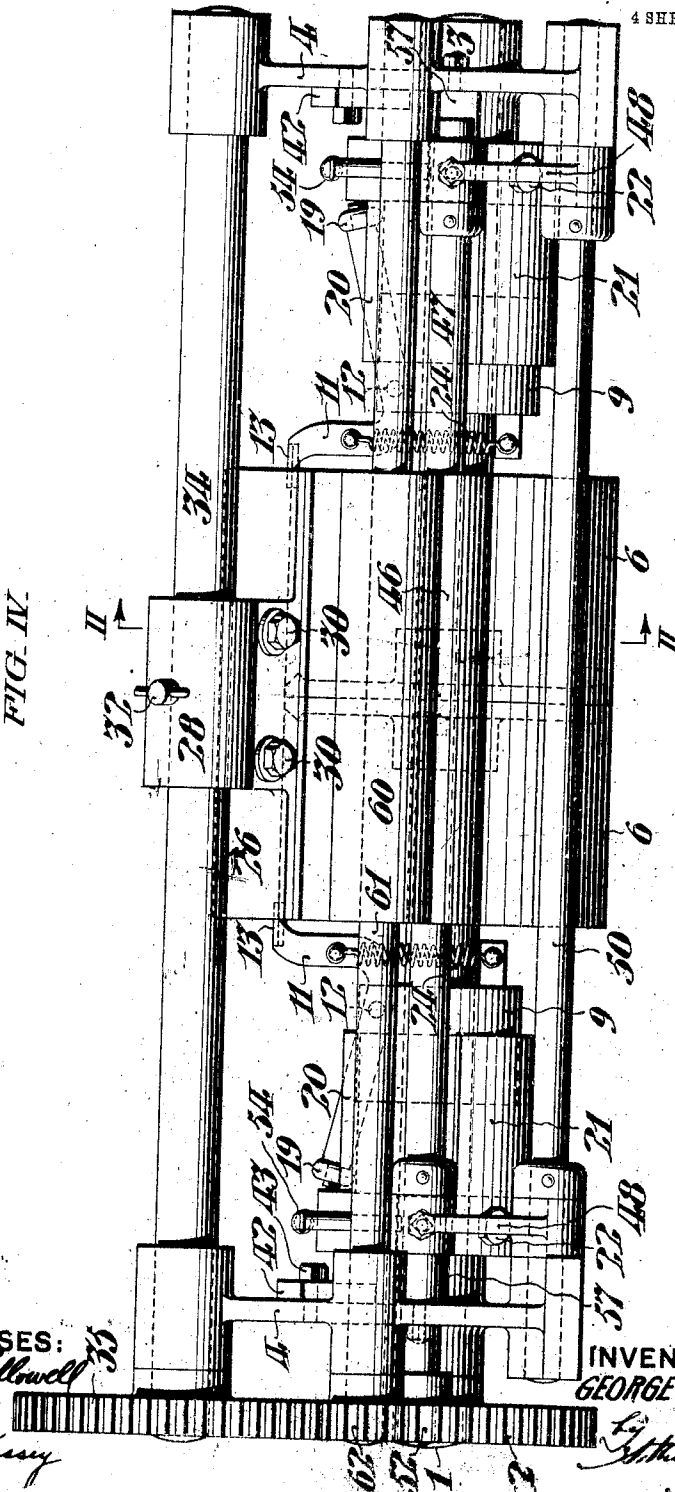
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4 SHEETS—SHEET 3.

FIG. IV.



WITNESSES:

Clifton C. Hollowell

Philip W. Vasey

INVENTOR:

GEORGE W. SWIFT, JR.

Arthur E. Smith

961,324.

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4 SHEETS—SHEET 4.

FIG. VI.

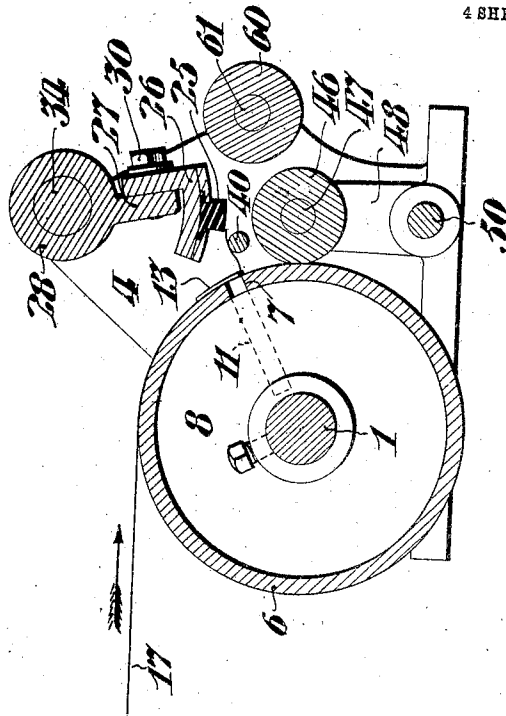
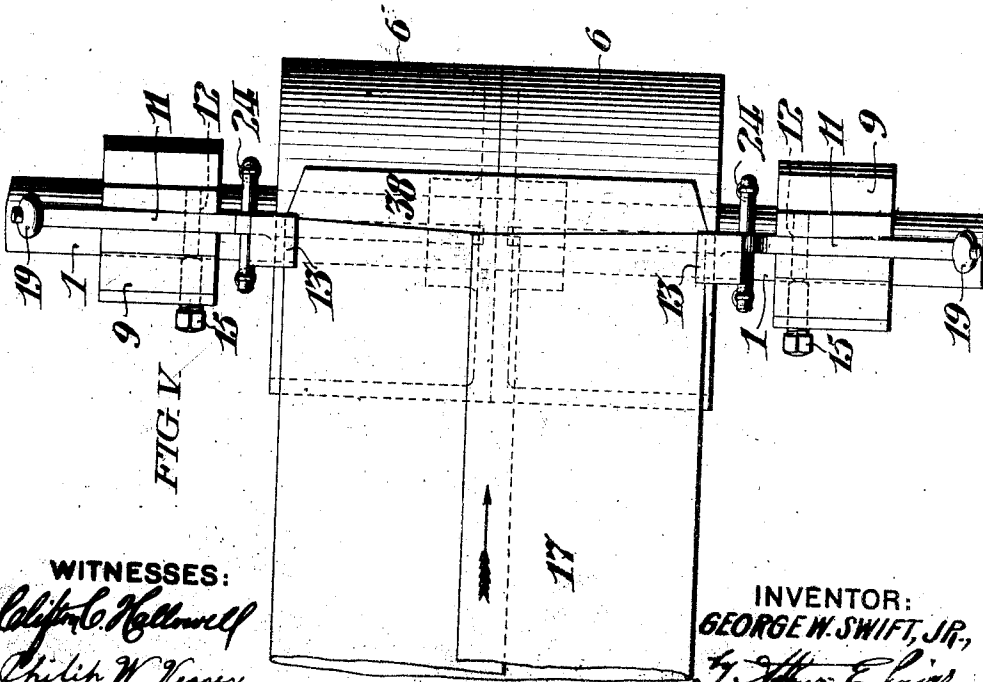


FIG. V.



WITNESSES:

Calvin C. Hollenbeck
Philip W. Vassar

INVENTOR:

GEORGE W. SWIFT, JR.,
By Arthur E. Baird
Att'y.

UNITED STATES PATENT OFFICE.

GEORGE W. SWIFT, JR., OF BORDENTOWN, NEW JERSEY.

GRIPPING, PASTING, AND FOLDING MECHANISM.

961,324.

Specification of Letters Patent. Patented June 14, 1910.

Application filed August 17, 1903. Serial No. 443,933.

To all whom it may concern:

Be it known that I, GEORGE W. SWIFT, JR., of Bordentown, in the county of Burlington and State of New Jersey, have invented a certain new and useful Improvement in Gripping, Pasting, and Folding Mechanism, whereof the following is a specification, reference being had to the accompanying drawings.

My invention relates to mechanism adapted to intermittently grip and release a continuously progressed web of paper or other flexible fabric, and adjustable to cooperate with such webs of different widths. As hereinafter described, said web may be a flat tube adapted to form a bag or envelop, and said gripping mechanism cooperates with mechanism arranged to paste and fold backward the front edge of said web as the latter is carried forward by said gripping mechanism, and, then seal the same as a flap closing said tube. As hereinafter described, said gripping and pasting mechanisms are so correlated as to effect the folding operation by a stationary bar; said gripping mechanism being arranged to alternately hold and release the web with respect to a rotary cylinder, and said pasting mechanism comprising a print of paste upon said web edge flap, but then lifts the latter so as to present it in position to be folded backwardly as the gripping mechanism carries the web beneath said bar; said flap being then sealed in folded position by a roller opposed to said cylinder. As hereinafter described, said gripping mechanism comprises respectively opposite and counterpart pivoted levers arranged to be oscillated by cams in concentric relation with said rotary cylinder, against which said levers engage the web, and the fulcrums of said levers are adjustable axially toward and away from each other in correspondence with the width of the web which is to be engaged.

My invention comprises the various novel features of construction and arrangement hereinafter more definitely specified.

In said drawings: Figure I is a side elevation of a convenient form of my invention. Fig. II is a vertical longitudinal sectional view, taken on the line II, II, in Figs. III and IV. Fig. III is an elevation as seen from the left side of Fig. I. Fig. IV is an elevation as seen from the right side of Fig. I. Fig. V is a fragmentary plan

view of the gripping mechanism, showing the front end of a flat tubular web having its front edge cut to form a closure flap. Fig. VI is a vertical longitudinal sectional view, similar to Fig. II, showing the position of the web when the mechanism has been shifted to fold back its forward edge.

In said figures: the shaft 1, carrying the gear 2, is journaled in the bearings 3 in the side frames 4, and also carries the hollow rotary cylinder comprising the axially aligned sections 6, having the respective aligned slots 7, in their peripheral walls, extending toward each other to the inner end walls 8 of said sections. Said shaft 1 also carries the axially adjustable collars 9, having the gripping levers 11 respectively pivoted thereon at 12. Said levers have their inner ends 13, curved to fit the periphery of said cylinder. Referring to Fig. III: it may be noted that said collars 9 are normally secured upon said shaft 1 by set screws 15, but, it is to be understood that when said set screws are loosened, said collars 9, may be shifted axially toward and away from each other so that webs 17 of different widths, may be engaged by said curved ends 13, of said levers 11 against the periphery of said cylinder. The outer ends of said gripping levers 11, are provided with rollers 19, arranged to successively engage the cams 20 and 21 as said shaft 1 is rotated. Said cams 20, which raise the levers 11 from said cylinder, to receive the web, have hubs mounted in stationary position on the respective bearings 3, but said cams 21, which raise said levers from the cylinder to release the web, are secured on said hubs by the set screws 22, as shown in Figs. II and IV, so that the position of said cams 21, may be adjustably varied although they are normally stationary like the cams 20. It may be noted that said levers 11 are normally pressed into engagement with the periphery of said cylinder by the springs 24, which connect said levers with said collars 9. Said cylinder comprising the sections 6, conveniently serves as a platen for the paste depositing type 25, which comprises a strip of rubber or similar resilient material, mounted in the chase 26, which is adjustably secured to the flange 27 on the hub 28 by the set screws 30, extending through the slots 31 in said chase, and engaging said flange. Said hub 28 is adjustably secured by the set screw 32 on the shaft 34 which

carries the gear 35, engaging the gear 2, so that said type and cylinder are synchronously rotated. Said type 25 is arranged to deposit paste upon the transverse forward edge of the web 17, which as shown in Fig. V is cut to form a flap 38, which when folded backwardly and sealed upon the flat tube formed by the web, constitutes a closure for a bag or envelop. Said flap 38, which projects beyond the gripping levers, adheres to said type 25, after the latter is pressed thereon, and is retained by said type as the latter turns away from the cylinder, so that as the latter continues to rotate, said flap is folded backwardly as shown in Fig. VI, being bent in alinement with the forward edges of the curved ends 13 of the gripping levers, and, as the type releases and passes away from said flap, the latter having encountered the bar 40, is maintained in folded position by said bar. Said bar 40 is supported at its ends in the brackets 42, which, as best shown in Fig. II, are adjustably secured to the side frames 4, by the bolts 43, extending through the slots 45 in said brackets.

The creasing and sealing roller 46, is mounted on the shaft 47 journaled in the outer ends of the rocker arms 48 carried by the rock shaft 50, which is journaled in said frames 4. Said shaft 47 extends through the slot 51 in the frames 4, shown in Fig. I, and is provided with the pinion 52 engaging the gear 2 on said shaft 1. Said rocker arms 48 are provided with the springs 54 which continually press the roller 46 toward the cylinder 6, as shown in Fig. II. However, the effective pressure of said roller 46, upon the folded edge of the web, may be adjustably varied by the abutment screws 56, which extend through the lugs 57 projecting from the respective side frames 4; said abutment screws being respectively opposed to the free ends of the rocker arms 48, to limit the movement of said arms and the roller 46, toward said cylinder 6.

The type 25 is conveniently supplied with a coating of adhesive by the paste distributing roller 60, which it encounters at each revolution. Said roller 60 has its shaft 61 journaled in the side frames 4, and is provided with the pinion 62, in mesh with the gear 35 on the shaft 34, whereby said roller 60 is continuously rotated in contact with a roller dipping into a supply of adhesive.

Referring to Fig. V, it is to be understood that the flat tubular web 17 is progressed over the cylinder 6, until the rear portion of its flap 38 is in alinement with the forward edge of the curved ends 13 of said levers 11, whereupon said levers being disengaged by their respective cams 20, are drawn down by their springs 24, to grip the web 17 upon the periphery of the cylinder 6, and carry said web forwardly until said flap 38 has been

pasted and carried outwardly by the type 25, and folded backward against the bar 40; the fold being made in the web in alinement with the forward edges of the gripper ends 13. Said fold being then creased, and the flap pressed and sealed upon the web by the roller 46, the gripping levers 11 are then raised by the cams 21, to release the web.

I do not desire to limit myself to the precise details of construction and arrangement herein set forth, as it is obvious that various modifications may be made therein without departing from the essential features of my invention as defined in the appended claims.

I claim:—

1. The combination with a cylinder; of a gripping lever pivotally supported independently of said cylinder, arranged to normally engage the periphery of said cylinder; a stationary cam arranged to actuate said gripping lever; and, means arranged to adjustably secure the pivotal support of said lever to operatively engage different axial regions of said cam and cylinder.

2. The combination with a hollow rotary cylinder having a slot in its peripheral wall; of a gripping lever pivoted to oscillate in said slot, and having one end arranged to engage the periphery of said cylinder; of a cam, in invariable axial relation with said cylinder, but capable of relative rotary adjustment, arranged to actuate said gripping lever; and, means arranged to adjustably engage said gripping lever with respect to said cam and cylinder; whereby its opposite ends may operatively engage different axial regions of said cam and cylinder.

3. The combination with a hollow cylinder having a slot in its peripheral wall; of a shaft for said cylinder; a collar axially adjustable on said shaft; a gripping lever arranged to oscillate in said slot, and having one end arranged to engage the periphery of said cylinder; means carried by said collar tending to normally shift said lever into engagement with the periphery of said cylinder; a stationary cam arranged to engage said lever to oscillate it away from the periphery of said cylinder; and, means arranged to adjustably secure said collar, at different axial regions on said shaft whereby the opposite ends of said lever may operatively engage different regions of said cam and cylinder.

4. The combination with a hollow rotary cylinder having a slot in its peripheral wall; of a shaft for said cylinder; a collar arranged for independent axial adjustment on said shaft; a gripping lever pivoted on said collar and arranged to oscillate in said slot, and having one end exterior to said cylinder, arranged to engage its periphery; means arranged to actuate said lever with respect to said periphery; and, means ar-

ranged to adjustably secure said collar at variable regions on said shaft, whereby said gripping lever may engage different regions of said actuating means and said cylinder.

5 5. The combination with a hollow rotary cylinder having a slot in its peripheral wall; of a gripping lever arranged to oscillate in said slot, and having one end arranged to engage the periphery of said cylinder; means continually tending to shift said lever to engage said periphery; a stationary cam arranged to intermittently shift said lever to disengage said periphery; and, means arranged to adjustably engage the support of said lever, at variable positions relative to said cam and cylinder; whereby said lever may operatively engage different regions of said cam and cylinder.

20 6. The combination with a hollow rotary cylinder, having a slot in its peripheral wall; of a shaft for said cylinder; a collar arranged for axial adjustment on said shaft; a gripping lever pivoted on said collar, and arranged to oscillate in said slot; a spring mounted on said collar, tending to engage one end of said lever with the periphery of said cylinder; and, a stationary cam arranged to encounter the free end of said gripping lever, to shift said lever in opposition to said spring, substantially as set forth.

35 7. The combination with a hollow rotary cylinder, having a slot in its peripheral wall; of a shaft for said cylinder; a collar carried by said shaft and arranged for axial adjustment thereon; a gripping lever pivoted on said collar, arranged to oscillate in said slot; a spring tending to shift said gripping lever, to engage one end thereof with the periphery of said cylinder; a stationary cam eccentrically disposed with respect to said shaft; and a roller on the free end of said lever, arranged to encounter said cam and shift said lever in opposition to said spring to disengage its end from said periphery, substantially as set forth.

50 8. The combination with a hollow rotary cylinder having a slot in its peripheral wall; of a gripping lever arranged to be axially adjusted with respect to said cylinder, to oscillate in said slot and grip a web against the periphery of said cylinder; a paste depositing type arranged to rotate in synchronous relation with said cylinder, to paste the forward edge of said web, and retain said edge, while rotating from said cylinder, to fold it in alinement with the gripping lever; a sealing roller arranged to press said forward pasted edge against the web; resilient means tending to press said roller to engage said web; and, an abutment in opposition to said resilient means arranged to variably determine the minimum distance between said roller and cylinder, substantially as set forth.

9. The combination with a hollow rotary cylinder, having a slot in its peripheral wall; of a gripping lever arranged to oscillate in said slot and engage a web against the periphery of said cylinder; a paste depositing type arranged to paste the forward edge of said web, and to fold said edge in alinement with said levers, by retaining and lifting said pasted edge as the paste depositing type turns from said cylinder; a bar arranged to maintain said web folded; and a sealing roller spring pressed toward said cylinder arranged to press said folded edge and crease it in alinement with said lever and means arranged to adjustably limit the movement of said roller toward said cylinder, substantially as set forth.

10. The combination with a rotary cylinder; of opposed gripping levers arranged to engage a web against the periphery of said cylinder; a radially adjustable paste depositing type arranged to rotate in opposition to said cylinder to paste the edge of said web, and to retain and lift said edge as said type turns from said cylinder, and thereby fold the web in alinement with said gripping levers; and means arranged to secure said type in radially adjustable relation with respect to said cylinder.

11. The combination with a rotary cylinder; of gripping levers, arranged to engage a web against the periphery of said cylinder; a paste depositing type arranged to rotate in opposition to said cylinder, to paste the transverse edge of said web, and to retain and lift said edge as said type turns from the periphery of said cylinder, and thereby fold said web in alinement with the gripping levers; and, a spring pressed roller in geared relation with said cylinder arranged to press said web against said cylinder to press its pasted region upon said web; and means arranged to adjust said roller in opposition to said spring to vary the degree of pressure against said web, substantially as set forth.

12. The combination with a rotary cylinder; of gripping levers arranged to engage a web against the periphery of said cylinder; a paste depositing type arranged to rotate in opposition to said cylinder, to paste the transverse edge of said web, and to retain and lift said edge as said type turns from the periphery of said cylinder, and thereby fold said web in alinement with said levers; a bar arranged to maintain said edge in folded relation to the web body; and, a roller arranged to press said web against said cylinder to crease it where folded and press its pasted region upon said web; a spring tending to press said roller toward said cylinder; and, means arranged to variably limit the movement of said roller toward said cylinder, substantially as set forth.

13. The combination with a rotary cyl- 130

inder; of gripping levers arranged to engage a web against the periphery of said cylinder; a paste depositing type arranged to rotate in opposition to said cylinder, to
 5 paste the edge of said web, and to retain and lift said edge as said type turns from said cylinder, and thereby fold said web in alinement with said gripping levers; a roller arranged to press said web against said cylinder, as it is disengaged from said type, to
 10 crease it where folded, and to press its pasted region into engagement with said web; a spring tending to shift said roller toward said cylinder; and, means in opposition to said spring arranged to adjust said
 15 roller with respect to said cylinder, whereby the degree of pressure upon the web may be varied, substantially as set forth.

14. The combination with a rotary cylinder; of gripping levers arranged to engage a web against the periphery of said cylinder; a paste depositing type arranged to rotate in opposition to said cylinder, to paste the transverse edge of said web, and to retain and lift said edge as said type turns
 20 from said cylinder, and thereby fold said web in alinement with said gripping levers; a rock shaft having opposed rocker arms; a roller journaled in the free ends of said
 25 arms; means tending to press said roller into engagement with said cylinder, whereby said folded edge of the web is creased where

folded and its pasted region pressed into engagement with said web; and, means arranged to vary the degree of pressure of said
 35 roller toward said cylinder, substantially as set forth.

15. The combination with a hollow rotary cylinder, having slots extending longitudinally in its peripheral wall; of gripping
 40 levers arranged to oscillate in said slots, to engage a web against the periphery of said cylinder; a paste depositing type arranged to rotate in opposition to said cylinder, to paste the transverse edge of said web, and to
 45 retain and lift said edge as said type turns from said cylinder, and thereby fold said web in alinement with the gripping levers; a chase for said type having means for radial adjustment upon a rotary hub; a roller
 50 arranged to press said web against said cylinder, to crease it where folded, and to press its pasted region upon said web; a spring pressing said roller toward said cylinder, and adjusting screws arranged to adjust
 55 said roller in opposition to said spring, substantially as set forth.

In testimony whereof, I have hereunto signed my name at Bordentown, New Jersey, this seventh day of August 1908.

GEORGE W. SWIFT, JR.

Witnesses:

JOHN E. HORN,
 R. H. GAROUSAU.