

J. NAZEL.
MECHANISM FOR THE MANUFACTURE OF CLIPS.

APPLICATION FILED DEC. 21, 1903.

3 SHEETS—SHEET 1.

Fig. 1b

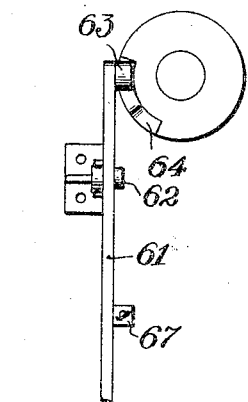


Fig. 1

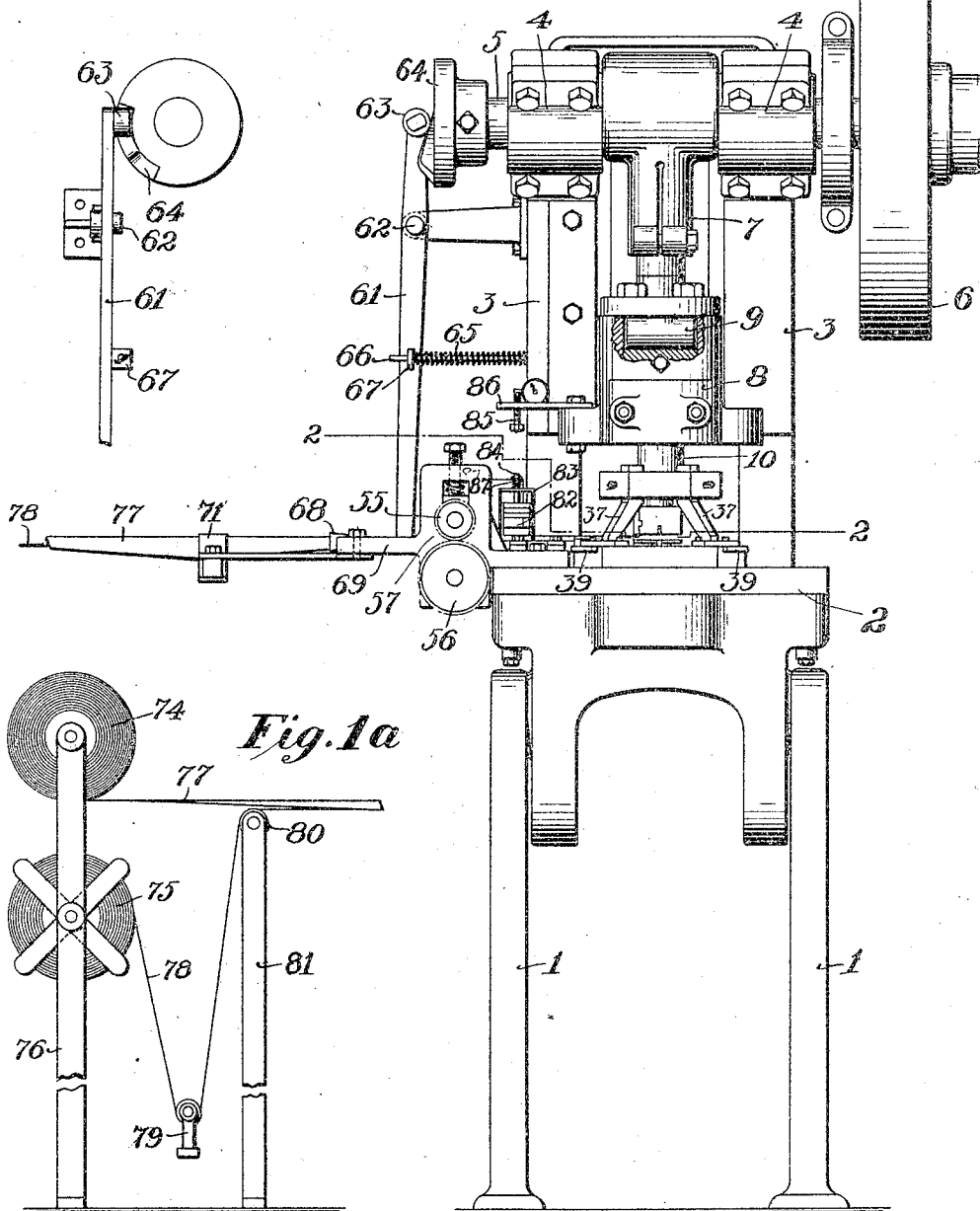
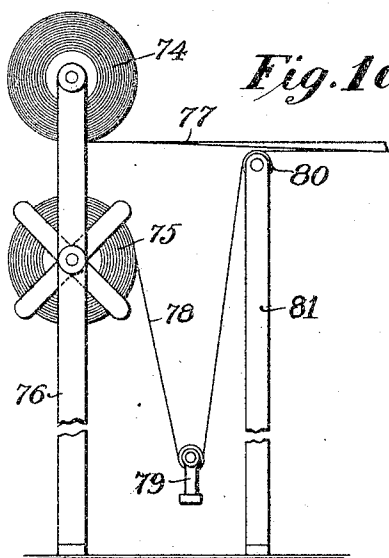


Fig. 1a



WITNESSES:

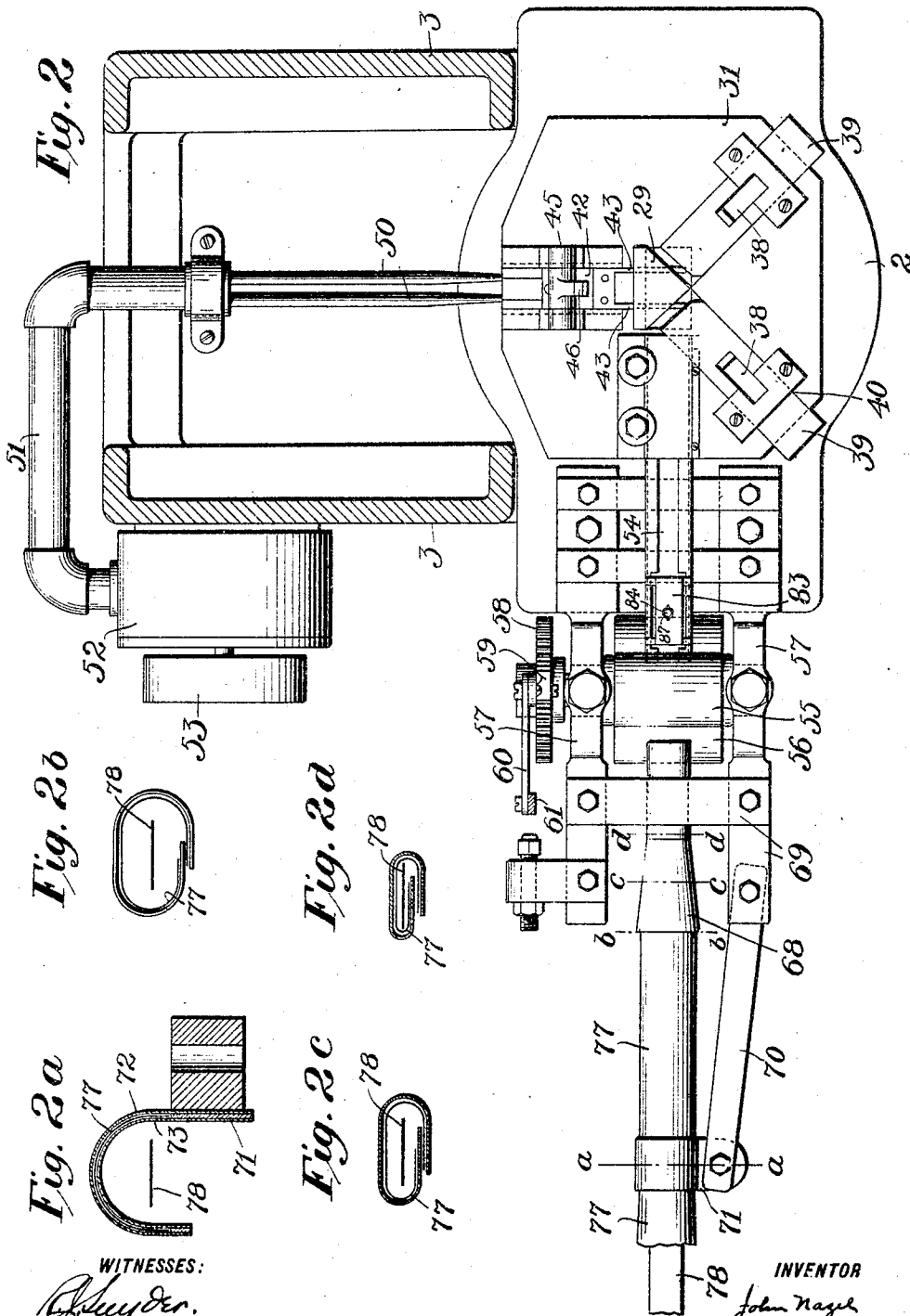
W. H. Snyder.
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INVENTOR

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3 SHEETS—SHEET 2.



WITNESSES:
Wm. H. Crane Jr.

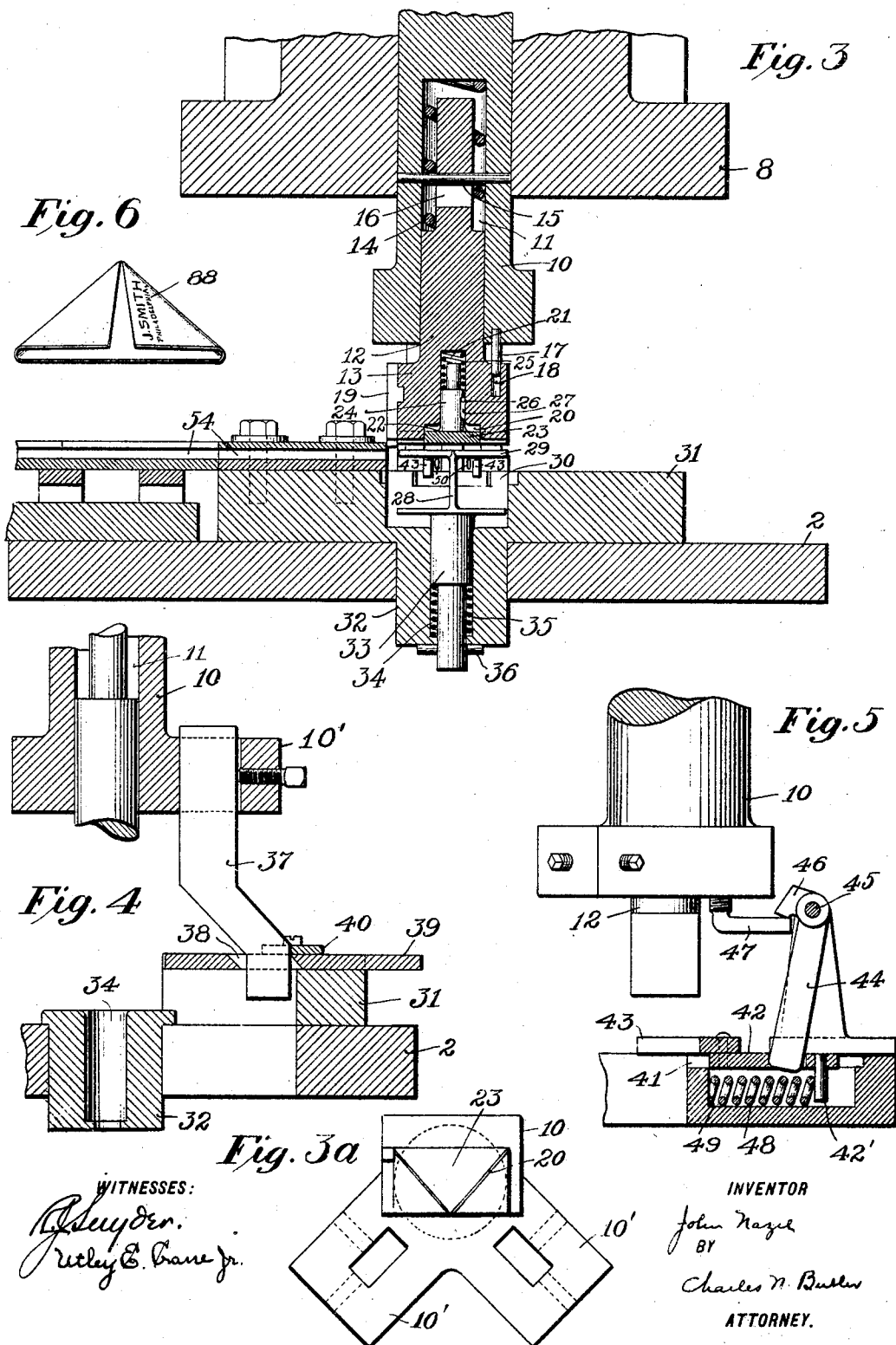
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3 SHEETS—SHEET 3.



WITNESSES:

W. E. Bane Jr.
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INVENTOR

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UNITED STATES PATENT OFFICE.

JOHN NAZEL, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO PARK NOVELTY COMPANY, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

MECHANISM FOR THE MANUFACTURE OF CLIPS.

SPECIFICATION forming part of Letters Patent No. 779,096, dated January 3, 1905.

Application filed December 21, 1903. Serial No. 185,969.

To all whom it may concern:

Be it known that I, JOHN NAZEL, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain Mechanism for the Manufacture of Clips, of which the following is a specification.

This invention is designed primarily for covering a metallic ribbon with paper, printing at regular intervals sections of the covered ribbon, and forming such sections into clips suitable for protecting book-cover corners; but it is obvious that the principles employed for these functions may be utilized for the manufacture of various products.

The nature and characteristic features of the invention will more fully appear by reference to the following description and the accompanying drawings in illustration thereof, of which—

Figure 1 represents a front view of a machine having the improvements applied thereto. Fig. 1^a represents an elevation of the mechanism for carrying the metal and paper to be operated upon. Fig. 1^b represents a side elevation of the feed-operating mechanism. Fig. 2 represents a sectional plan view taken on the line 2 2 of Fig. 1. Fig. 2^a represents a sectional view taken on the line *a a* of Fig. 2. Fig. 2^b represents an elevation taken on the line *b b* of Fig. 2. Fig. 2^c represents a sectional view taken on the line *c c* of Fig. 2. Fig. 2^d represents a sectional view taken on the line *d d* of Fig. 2. Fig. 3 represents a sectional elevation taken through the feedway and forming mechanism. Fig. 3^a represents a bottom view of the female die, the plunger and the arms projecting from the stem which carries them. Fig. 4 represents a sectional elevation in illustration of the reciprocating mechanism for folding the clips. Fig. 5 represents a sectional elevation in illustration of the reciprocating mechanism for discharging the clips, and Fig. 6 represents a perspective view of a clip formed by means of the improvements.

Referring to the drawings, the improve-

ments are applied to a press comprising the base 1, the table 2, the columns 3, the bearings 4, carried by the columns, the crank-shaft 5, journaled in the bearings, the driving-pulley 6 for rotating the crank-shaft, the reciprocating pitman 7, actuated by the crank-shaft, the reciprocating press-head 8, having the pivotal connection 9 with the pitman, and the stem 10, carried by the head.

The stem 10 is provided with the recess 11, within which the shank 12 of a female die 13 is adapted to reciprocate. This die is pressed downward by the coiled spring 14, seated in the recess and engaging the die-shank, and its downward movement is limited by a pin 15, fixed in the stem 10 and passing through the slot 16 in the die-shank. The die may be kept in alinement in any suitable manner, as by a pin 17, fixed to the stem 10 and adapted to move freely in a way 18 in the die. The die is provided with the knife 19 and has therein the seat 20 and the recess 21. A plunger 22 is carried by the die, having an angular head 23, adapted to reciprocate in the seat 20, and a shank 24, adapted to reciprocate in the recess 21. The plunger is pressed downward by a spring 25, located in the recess and engaging with the shank, and its downward movement is limited by a pin 26, passing through the shank-slot 27 and fixed to the die.

A male die 28, having an angular head 29 registering with the plunger-head, is adapted to reciprocate in the recess 30 of the bed 31, the latter being provided with a stem 32, seated in the table 2. The male die has a shank 33, adapted to reciprocate in a recess 34 of the stem 32, being pressed upward by a spring 35, which engages the shank and stem, and being limited in its upward movement by a pin 36, fixed to the shank and adapted to engage the stem.

The cam-bars 37, fixed to the arms 10' of the stem 10, play through the respective slots 38 of the horizontally-reciprocating fingers 39, which move in guideways 40 of the bed 31. The fingers pass beneath the head 29 of the male die when the descending stem has forced

the female and male dies down in the operation of shearing the strip fed thereto and setting or initially turning the corners of the shorn blank, the turning of the corners being completed by the fingers, which press them under the male-die head.

Reciprocating in a guideway 41 of the bed is a slide 42, carrying fingers 43, the slide being connected with the lever 44, adapted to rock upon the fulcrum 45, carried by the bed. The lever has fixed thereto a dog 46, which lies in the path of a finger 47, fixed to and reciprocating with the stem 10. In its upward movement the finger 47 lifts the dog 46 and throws the lever 44 and the fingers 43 forward to disengage from the anvil or male-die head the clip formed thereon. Upon the downward movement of the stem the finger is withdrawn from the dog, when the spring 48, which engages the seat 49 of the bed and the pin 42' of the slide, retracts the fingers 43. The clips thus disengaged are ejected by a blast from the nozzles 50, leading from a blast-pipe 51, through which air is forced by a blower 52, operated by a pulley 53.

The covered ribbon is fed to the forming mechanism through a way 54 by the rollers 55 and 56, journaled in the housings 57. The roller 56 has a ratchet-wheel 58 fixed thereto, which is operated by a pawl 59, reciprocated by an arm 60, connected to the long arm of the lever 61. The lever 61 has the fulcrum 62, carried by the frame, and its short arm has the roller 63, which bears against the face of the cam-wheel 64, fixed on and revoluble with the shaft 5. The cam advances the pawl, which is retracted, and the roller 63 kept in contact with the cam 64 by a spring 65 on a rod 66, having one end fixed to the frame and the other end playing through a lug 67 on the lever 61, the spring lying between the lug and the frame.

A folding-tube 68 leads to the feed-rollers, having the supporting-frame 69, carried by the roller-housings. This tube gradually contracts from the section *b b* (shown in Fig. 2^b) through the section *c c* (shown in Fig. 2^c) to the section *d d*. (Shown in Fig. 2^d.) The frame 69 through the arm 70 carries the semicircular folder 71, having the separated outer and inner walls 72 and 73. In line with the folding devices 68 and 71 are the paper-roller 74 and metallic ribbon-roller 75, journaled in the frame 76. The paper ribbon 77 and the metallic ribbon 78 are drawn from their respective rollers (the metallic ribbon being kept tight by the rolling weight 79) over the roller 80 of the frame 81 through the folders 71 and 68 to the feed-rollers 55 and 56. The paper is carried between the walls of the folder 71 to start its fold about the metallic ribbon carried centrally therethrough, while the tube 68 finally folds the paper around the metal ribbon as they pass therethrough to the feed-

rollers, which advance the covered strip step by step to the forming mechanism.

In the intervals between the step-by-step advance of the covered strips simultaneously with the operation of the shearing and forming mechanism the paper cover of the sections to be shorn may be printed with a suitable advertising device by means of a printing-stamp 82, reciprocating in a frame 83, which is carried above the guideway 54. The stamp is operated by a reciprocating rod 84, fixed thereto and lying in the path of a bolt 85, reciprocated by an arm 86, fixed to the reciprocating press-head, the stamp being elevated in any suitable manner, as by a spring 87. The successive sections thus printed are shorn, shaped, and ejected in the form of the clip 88.

It will now be understood that the revolution of the crank-shaft effects the forward movement of the ribbon during the interval between the successive impacts between the dies and that the printing is effected simultaneously with the impact of the dies in the operation of shearing and setting the blank. Following the setting of the blank the reciprocating fingers for folding its corners move under the head of the male die while it is in its depressed position, and the reciprocating fingers for ejecting the clip thus formed move into contact therewith upon the withdrawal of the dies and the folding-fingers.

Having described my invention, I claim—

1. In a machine of the class described, the combination of ribbon-feeding mechanism, with means for covering said ribbon, a device for shearing blanks from said covered ribbon, mechanism for setting said blanks, and mechanism for folding said blanks, substantially as specified.

2. In a machine of the class described, reciprocating shearing and forming mechanism, mechanism for feeding a ribbon to said forming mechanism, means for folding a wrapper on said ribbon, and a device coacting therewith for printing said covered ribbon, substantially as specified.

3. In a machine of the class described, a reciprocating die, a second die coacting therewith to shape a blank, a reciprocating finger coacting with said dies to fold the shaped blank, and a reciprocating cam for operating said finger, substantially as specified.

4. In a machine of the class described, a reciprocating female die, a reciprocating male die coacting therewith, a plunger carried by said female die and registering with said male die, a reciprocating bending device coacting with said dies, mechanism for operating said bending device, a reciprocating discharging device coacting with said dies, and mechanism for operating said discharging device, substantially as specified.

5. In a machine of the class described, a

reciprocating stem, a die carried by and reciprocating relatively to said stem, a reciprocating cam carried by said stem, and a reciprocating thrusting device operated by said cam, substantially as specified.

6. In a machine of the class described, a reciprocating stem, a die carried by said stem, a second die coacting with said first die, a thrusting device reciprocating transversely to said stem, a lever for operating said thrusting device, and mechanism whereby said stem operates said lever, substantially as specified.

7. In a machine of the class described, a male die, a female die coacting therewith, a folding device coacting with said dies, a reciprocating device for disengaging the articles formed by said die and folding mechanism, and blowing mechanism for ejecting said articles, substantially as specified.

8. In a machine of the class described, a reciprocating stem, a female die carried by and reciprocating relatively to said stem, a plunger carried by and reciprocating relatively to said female die, a male die registering with said female die, a reciprocating folding device connected with and operated by said stem, and a reciprocating disengaging device connected with and operated by said stem, substantially as specified.

9. In a machine of the class described, a stem, a die carried by said stem, a second die coacting with said first die in setting a blank, a device for folding said blank, a device operated by said stem for disengaging the folded article from the die on which it is formed, and blast-nozzles for discharging the articles formed from said blanks, substantially as specified.

10. In a machine of the class described, a pair of feed-rollers, a folder leading thereto, blank cutting and shaping mechanism, and mechanism for folding the shaped blanks, substantially as specified.

11. In a machine of the class described, mechanism for feeding a ribbon, mechanism for covering said ribbon, mechanism for shearing blanks from the covered ribbon, and means for turning toward each other corners of said blanks to form clips, substantially as specified.

In testimony whereof I have hereunto set my hand, this 19th day of December, A. D. 1903, in the presence of the subscribing witnesses.

JOHN NAZEL.

Witnesses:

JOHN THIEL,
UTLEY E. CRANE, Jr.