

GEORGE GUILD.

Paper Bag Machine.

No. 123,013.

Patented Jan. 23, 1872.

Fig. 1.

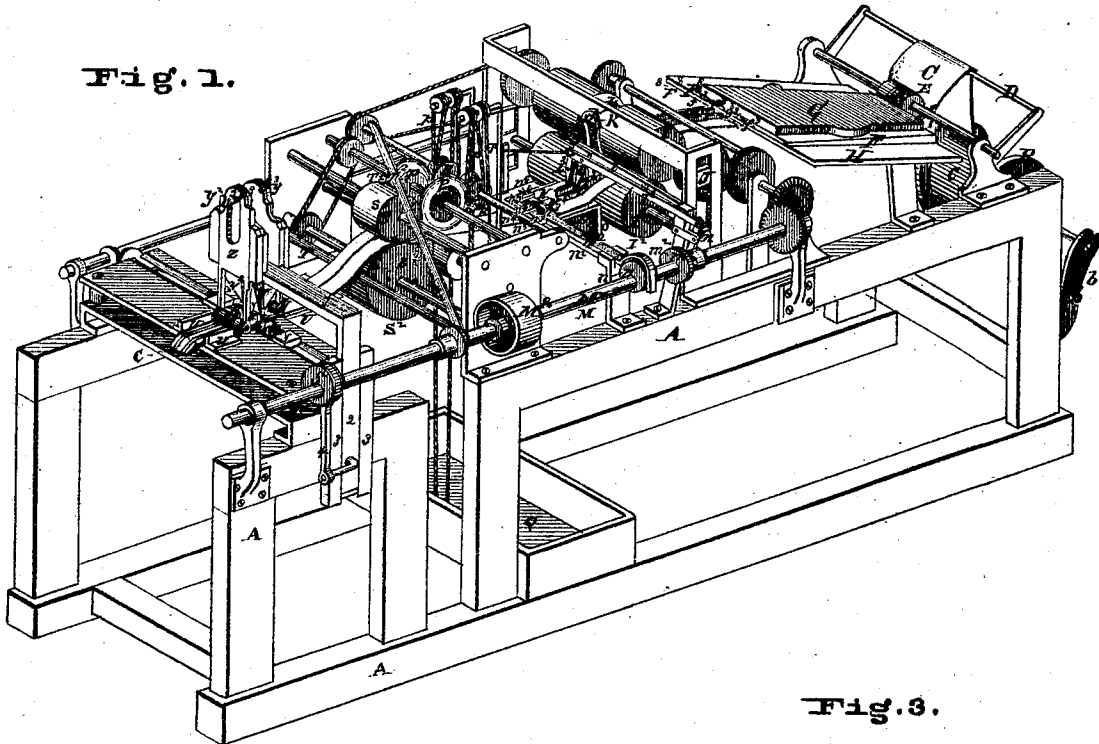


Fig. 2.

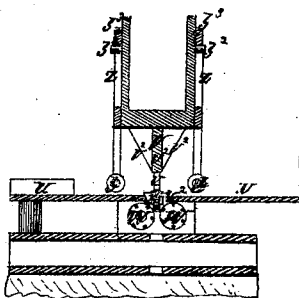


Fig. 4.

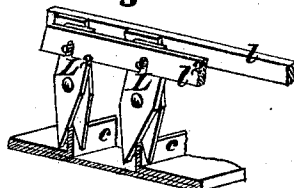


Fig. 5.

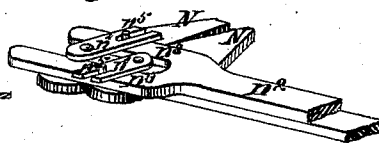
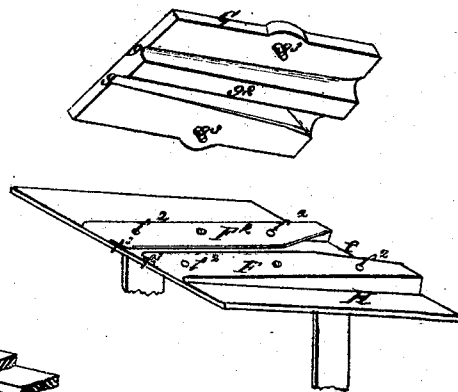


Fig. 3.



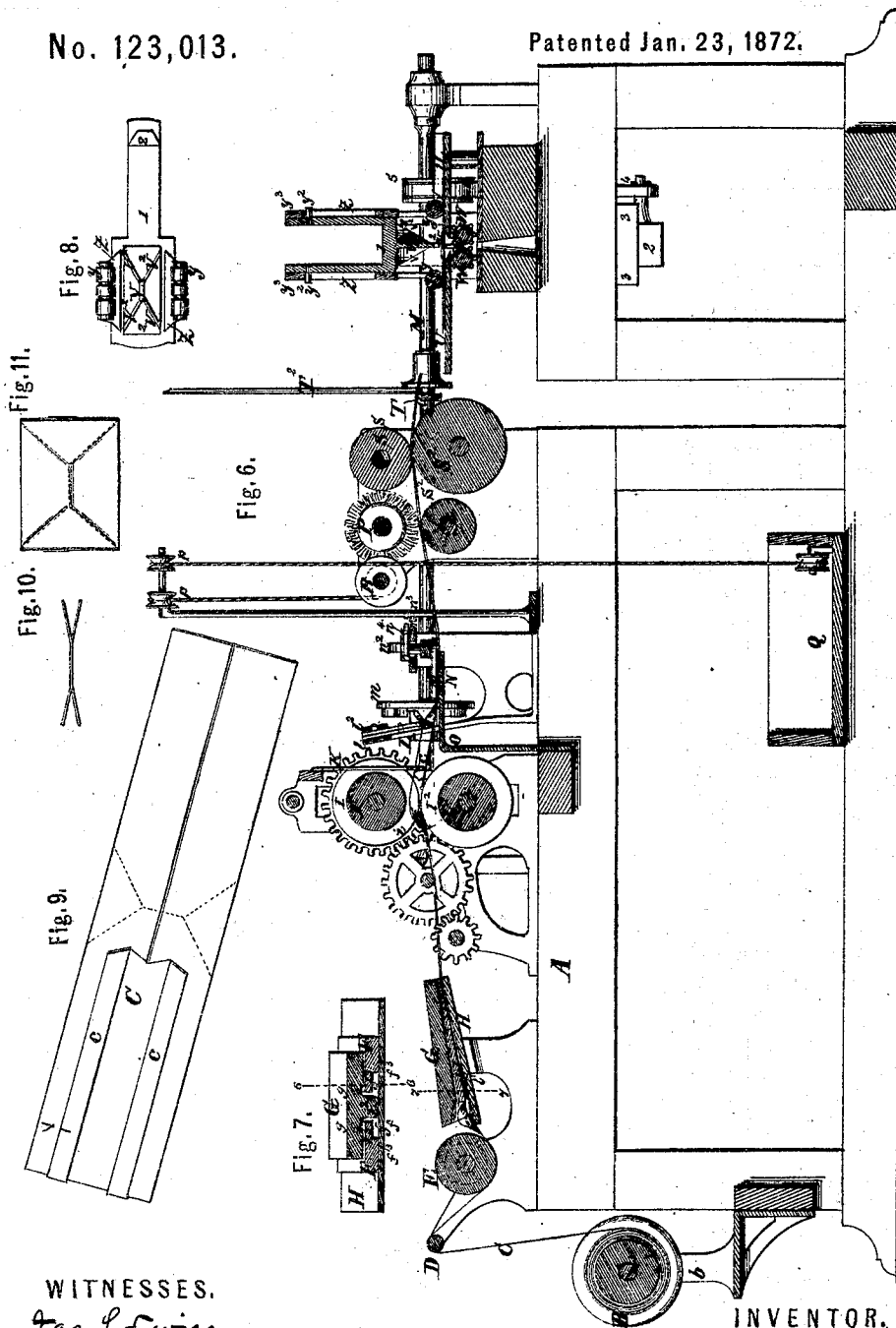
Attest.
Walter Allen

Inventor.
George Guild
By Thos. B. Co. Atty.

GEORGE GUILD. Paper Bag Machine.

No. 123,013.

Patented Jan. 23, 1872.



WITNESSES.

Gas L. Lwin
Walter Allen

INVENTOR.

Geo. Guild
By [Signature]

UNITED STATES PATENT OFFICE.

GEORGE GUILD, OF ST. LOUIS, MISSOURI, ASSIGNOR TO HIMSELF AND
JAMES GILLIES, OF SAME PLACE.

IMPROVEMENT IN PAPER-BAG MACHINES.

Specification forming part of Letters Patent No. 123,013, dated January 23, 1872.

I, GEORGE GUILD, of the city and county of St. Louis and State of Missouri, have invented a certain Improved Paper-Bag Machine, of which the following is a specification:

Nature and Object of the Invention.

My invention belongs to that class of paper-bag machines in which the paper is furnished in rolls and discharged in form of bags ready finished for use. My invention consists, first, in a peculiar construction of folder having three removable plates resting on a table over which the paper passes—different sizes of plates being used for different-sized bags; second, in the combination and arrangement of a pair of feed-rollers, the upper grooved, and a fork co-operating therewith to receive the paper as preliminarily folded, and to present the same to the cutting devices; third, in automatic jaws or fingers by which the upturned edges of the paper are alternately turned outward and inward preparatory to pasting; fourth, in devices by which the bag form is doubled together at its mid-length and the bottom formed, the latter being creased inward upon each side by a thin roller so as to open out into a flat buttoned bag, and the form is retained while the cut and pasted bag is being forced down by the former and drawn down by the discharging rolls.

Description of the Drawing.

Figure 1 is a perspective view of my machine. Fig. 2 is a vertical section through the "former" and the pressure and discharging-rolls. Fig. 3 is a perspective view of the folder, the top plate being removed and turned up to show its under side. Fig. 4 is an enlarged perspective view of the scissors, by which the upturned edge of the paper is nicked. Fig. 5 is an enlarged perspective view of the folding jaws. Fig. 6, Sheet 2, is a longitudinal section of the machine as represented in Fig. 1. Fig. 7 is a transverse section of the folder on the line 7, Fig. 6. The line 6 in Fig. 7 indicates the plane of section shown in Fig. 6. Fig. 8 is a bottom view of the forming-plunger. Fig. 9 is a perspective view of a bag-blank, as severed, the dotted lines indicating the position of the bottom creases, next formed. Fig. 10 is an end view of the bag as it leaves the

"former." Fig. 11 is a bottom view of the bag as opened in use.

General Description.

A is a rectangular frame, upon which the working parts are supported. B is a removable drum carrying a roll of paper, C, and having journal-bearings in brackets *b*. The paper passes upward from the drum and over a roller, D, and beneath a short roller, E, which, being much narrower than the strip of paper, causes the edges of the latter to turn upward, said edges being still further curled in the mouth of the folder, and a narrow portion of the edge turned directly upward. The folder consists of two side plates, F F², and a top plate, G. The side plates are held in position by steady-pins *f*², which pass through holes in the table H. The side plates have broad rabbets *f*³ on the under sides extending to the inner edge, the thin plate of metal above the rabbet being beveled at the front end to partly form the sides of the mouth *f*, the rabbets becoming more and more contracted vertically as they extend backward so as to fold the paper flatly while passing through. The top plate G has two rounded grooves, *g*, on the under side, the grooves being larger at the mouth and contracting backward; between the grooves there being a rib, *g*², which nearly touches the table, and causes the narrow edges *c* of the paper to turn upward and to issue from the rear edge of the folder in that position. The top plate G is held in position by its own weight and by steady-pins *g*³ passing through the plates F F² and the table H. The plates of the folder may be changed to suit bags of different widths. The paper after passing through the folder passes between two feed-rolls, I I², the roll I having a circumferential groove, *i*, to admit the upturned edges *c* of the paper. The roller I is journaled in gravitating boxes J so as to always press with equal force upon the paper whatever the thickness of the latter may be. K is a depending fork which holds the edges *c* in position for proper presentation to the cutting-shears or scissors L L², by which the edges of the paper are cut transversely at the mid-length and at the ends of the bag-blank. These shears have each one fixed jaw or blade attached to a bar, *l*, the other blades being

pivoted to the fixed blades. The pivoted blades are also pivoted to a pitman, l^2 , operated by a lever, m , and a cam, m^2 , on the motive shaft M. n is an eccentric upon the shaft M, and the eccentric rod n^2 has horns n^3 connected by two arms, n^4 , and pins n^5 to two pivoted jaws, N N, so as to alternately spread the jaws apart and bring them together, to first fold down the edges c of the paper outward and then inward as the paper passes over the table O, from whence it passes beneath the paste-rolls P P, whose peripheries are covered with some soft material that is supplied with paste from a box, Q, by endless cords p stretched over rollers above the paste-rollers and beneath rollers at the bottom of the paste-box Q. The cords p receive motion from the paste-rollers and from the grooved rollers R R, between which the ascending sides of the cords pass, and which have rotation by means of belts. S S² are the second pair of feed-rollers, between which the paper passes from the paste-rolls, and from the rolls S S² the paper passes over the stationary shear or knife T and upon the table U, upon which it slides between the guides u , and, when sufficient length for a bag has passed over the knife T, the blank is cut off by the rotary knife T² attached to the shaft M by means of an adjustable collar thereon, so as to allow the knife to be adjusted to sever the blank at the proper time. Simultaneously with the cutting off of the blank, whose mid-length is beneath the "former" V, the latter descends, its two pivots v carrying down the blank through the aperture u^2 in the table and between the pair of discharging-rolls W W, by which the bag is drawn from the former and ejected beneath the table. The "former" V has four inclined wings, v^2 being X-formed in horizontal section, and it is flanked by two thin rollers, y , which make inward side creases to the bag as it passes downward by means of the "former" and rolls. Upon the "former" are two vertically sliding plates, Z, having, at their lower edges, anti-friction rollers z , which, when the "former" is descending, rest upon the blank C² and keep it in position. When the "former" is again raised to allow another length of paper to pass beneath it, the plates Z are also raised by means of studs z^2 engaging cross-bars z^3 of the plates. The "former" is attached to the horizontal arm 1 of a vertical slide-bar, 2, working in guides 3, and having vertical reciprocation by means of an eccentric-rod, 4, and eccentric 5 upon the shaft M.

Operation.

The machine receives motion from a belt on the pulley M² on the shaft M, and gives the before-described motions to the rollers and the other moving parts by means of cog-wheels and belts and pulleys shown. The drum B, having a roll of paper, C, thereon, is hung upon the brackets b , and the end of the paper C is drawn over the roller D and passed be-

neath the short roller E, its edges being turned upward at each end of the roller and passing through the folder, by which about one-fourth of its width upon each edge is folded inward, and a narrow strip at each edge is folded directly upward; in this condition it passes beneath the first feed-rolls, and the edges c are held in position by the fork K and pass between the blades of the scissors L L², by which the edges c are clipped through at points that will be at the mid-length and the end of each bag. From the scissors the paper passes beneath the jaws N N. When the jaws are in contact, as shown in Fig. 1, and the paper moving onward, the jaws enter between the two upturned edges c and immediately opening by the action of the eccentric n , as described, fold the edges c down in an outward direction and rest upon them until the paper has traveled the length of a bag beneath the scissors when the edges c are again cut by the scissors, and passing between the (now) open jaws are (by the closing of the latter) folded down inward. The edges c are thus alternately folded inward and outward. The paper after passing beneath the jaws N N passes beneath the paste-rollers, which are so placed as to paste the paper in two continuous lines passing over the outward fold. From the paste-rolls the paper passes between the second pair of feed-rollers and between the cutting-blades T T², by which the bag-blanks are cut off, and then passes beneath the former V, by which, and the creasing-rollers y , the lower corners of the bag-bottom are creased inward, the creases extending up both sides of the bag to the top as the discharging-rolls draw the bag from the "former" and discharge it beneath the table, pressing the sides of the paper together to cause them to adhere.

Claim.

I claim—

1. A folder, constructed substantially as herein described, consisting of the side plates F F² provided with rabbets f^3 , and top plate G, arranged to operate as explained, for the purpose specified.

2. The combination and arrangement of the feed-rolls I I², feed-roll I having a circumferential groove, i , and the fork K, as and for the purposes specified.

3. The folding jaws N N, arranged as described—namely, to alternately fold the edges of the paper inward and outward, substantially as set forth.

4. The former V v v^2 , rollers y , pressure-plates and rollers Z z , and discharging-rollers W, constructed and arranged substantially as described.

In testimony of which invention I have hereto set my hand.

Witnesses:

GEORGE GUILD.

SAM'L KNIGHT,
A. MARTIN.