

(No Model.)

2 Sheets—Sheet 1.

C. W. GAY.  
PAPER BOX MACHINE.

No. 546,318.

Patented Sept. 17, 1895.

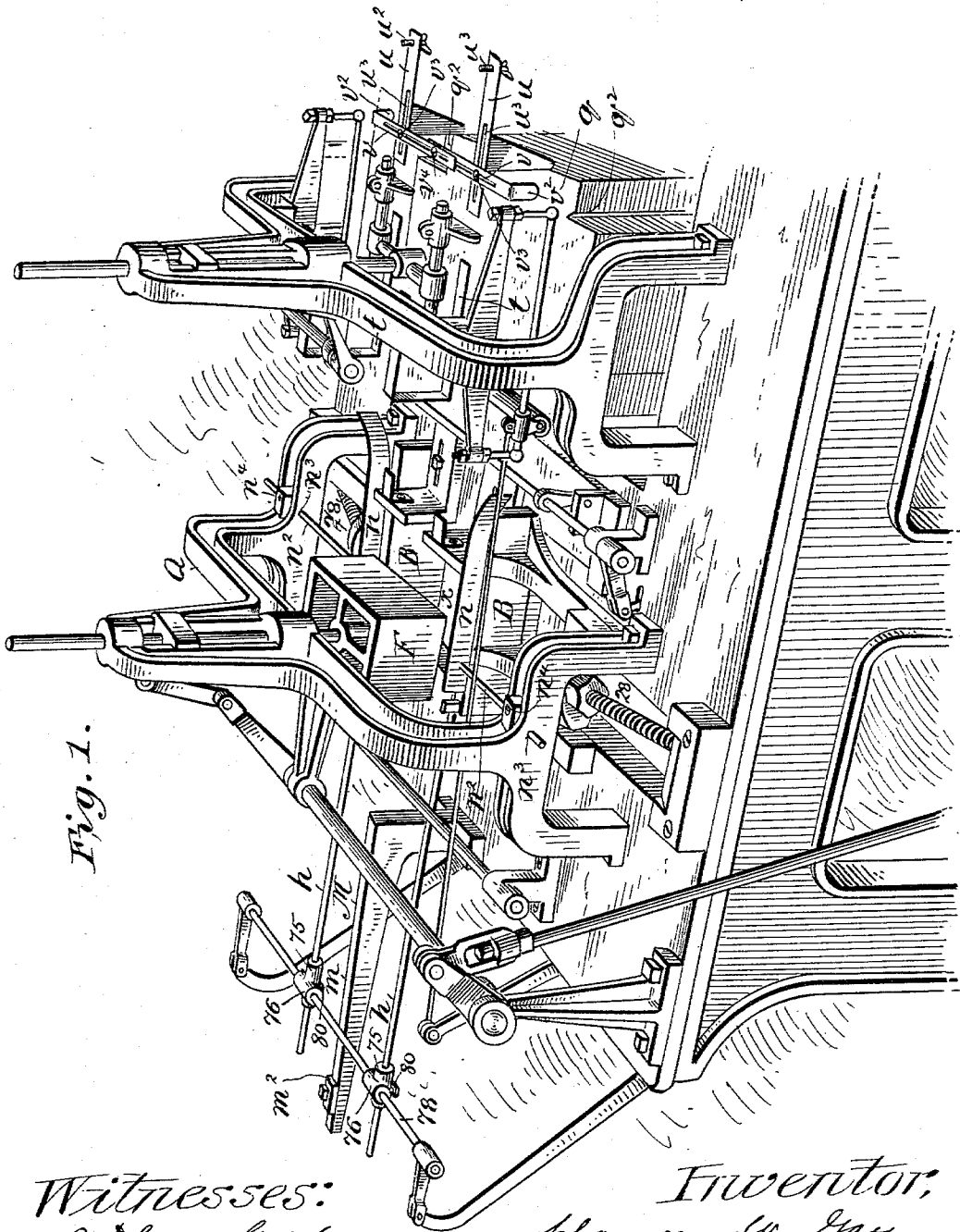


Fig. 1.

Witnesses:  
J. D. Garfield  
H. J. Clemons

Inventor:  
Chauncey Co. Gray—  
by Chapman & Co.—  
attys—

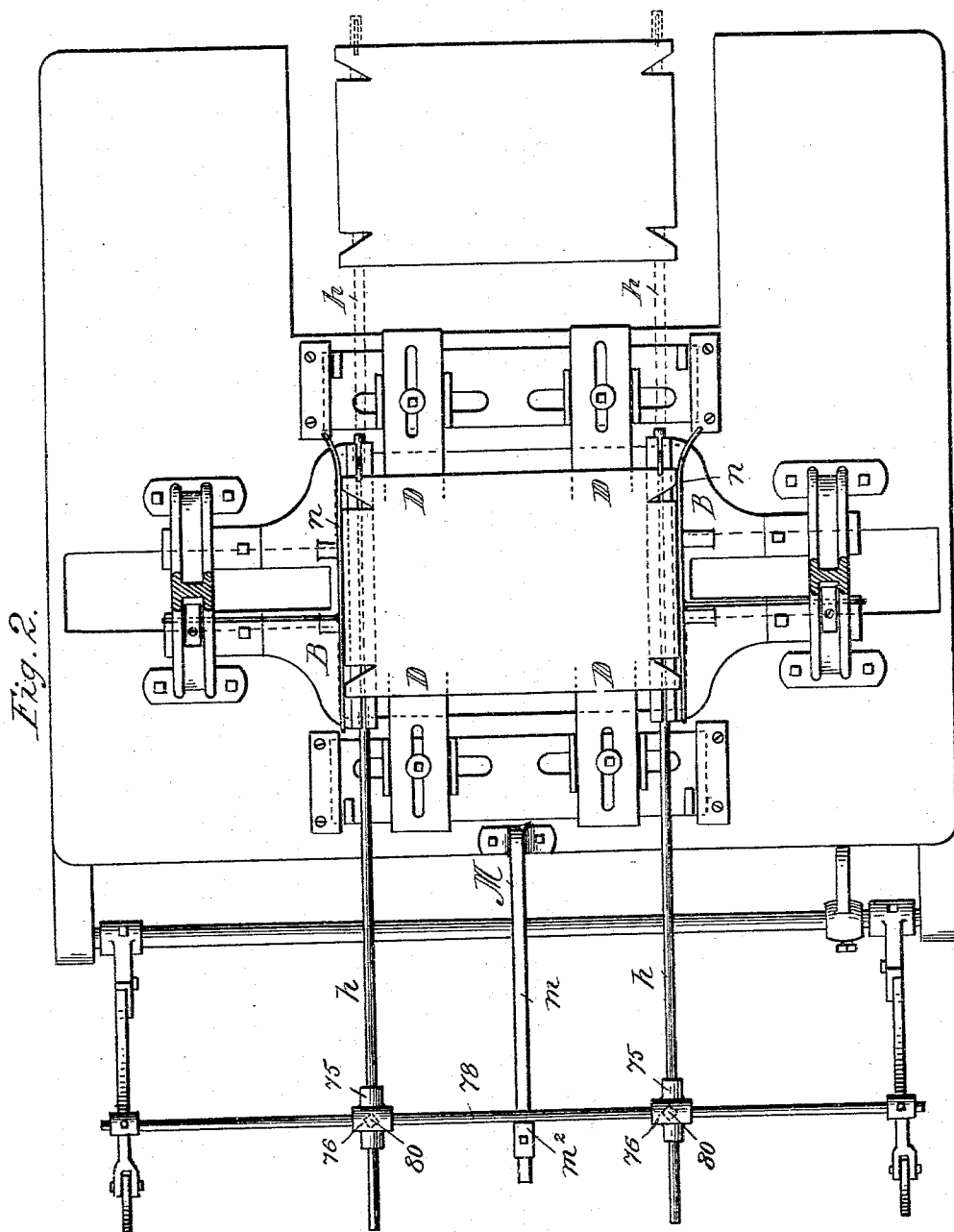
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2 Sheets—Sheet 2.

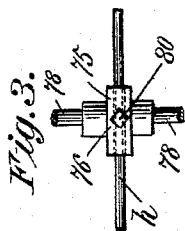
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PAPER BOX MACHINE.

No. 546,318.

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Witnesses:  
*J. D. Yaffee*  
*A. S. Clemons*



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*Attys.*

# UNITED STATES PATENT OFFICE.

CHAUNCEY W. GAY, OF WEST SPRINGFIELD, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE BRIGHTWOOD BOX MACHINERY COMPANY, OF SPRINGFIELD, MASSACHUSETTS.

## PAPER-BOX MACHINE.

SPECIFICATION forming part of Letters Patent No. 546,318, dated September 17, 1895.

Application filed August 2, 1894. Serial No. 519,239. (No model.)

*To all whom it may concern:*

Be it known that I, CHAUNCEY W. GAY, a citizen of the United States, residing at West Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Paper-Box Machines, of which the following is a specification.

This invention relates to improvements in machines for making paper boxes, patented to me May 8, 1894, No. 519,531, the object being to render such machine more durable, efficient, and certain in its operation.

The features of improvement relate to the peculiar blank-conveyer in its combination with a part in connection with which it has a sliding support, and to devices which, in combination with the conveyer, serve to cause the blanks to be squared and guided strictly to their required positions over the throat of the folding devices.

The invention consists in the constructions and arrangements of parts, all substantially as will hereinafter fully appear, and be set forth in the claims.

In the drawings, Figure 1 is a perspective view of the upper part of the paper-box machine which forms substantially the subject-matter of the aforesaid patent with the present improvements applied thereupon. Fig. 2 is a plan view of sufficient of the parts of the machine to show the present improvements in the conveyer and the support and buffer devices therefor. In this view a box-blank is shown as conveyed to its position over the folding-throat. Fig. 3 is an inverted plan view of one of the members, which is adjustably affixed to each of the conveyer-bars and with which a transversely-applied rod has a free sliding engagement.

In the drawings it will be perceived that the throat  $\alpha$  under the folding-plunger F, at which the folding is to be performed, is constituted by the vertical plates D D, mounted on slides to approach and recede from each other, and the reciprocatory followers B B, which are operated by toggles 28.

The conveyer comprises the horizontal bars  $h h$ . These, as fully set forth in said patent, move longitudinally through slideways there-

for in the tops of the end followers B B, and in addition to their longitudinal movements the conveyer-bars  $h h$  have, necessarily, movements transversely of their lengths by reason of the reciprocatory movements of the followers B B, and to permit this action the driving connection for the conveyer-bars is had by affixing at or near the rear end of each bar  $h$  the collar 75 75 with the right-angularly-perforated member 76, through which the cross-rod 78 has the sliding connection. Said cross-rod receives its movement bodily and transversely of its length by the driving connections, substantially such as heretofore employed and set forth or as usual in conveyers for envelope and analogous machines, although in this machine the driving connections are duplicated, so that both ends of the rod will be compelled to move in unison and always in a line at right angles to its length.

Upon the rear central portion of the table of the machine is mounted an L-shaped bracket M, its horizontal member  $m$  rearwardly extending and serving as a support for the cross-bar 78, on which the same may rest and slide. The said horizontal member  $m$  has at its rear extremity the buffer, preferably consisting of a block of rubber  $m^2$ , against which the bar in reaching the limit of its rearward movement may abut for a yielding resistance and a definite limitation of the rearward movement of the said bar and the conveyer as a whole.

The buffer is a fixed point. The conveyer always has the same throw, and for the adjustment of the conveyer to meet the requirements arising by running the machine for various sizes of boxes the bars  $h h$  are adjusted with relation to said rod 78 to accord with such different sizes. Thus for a wide box the conveyers  $h$  project farther forward than for a narrower box. This adjustment when made is maintained by the set-screws 80.

There are ranging longitudinally above and parallel with the followers B B two guide-plates, (seen at  $n n$ ), the forward extremities of which are deflected outwardly from the path of the blank in moving from the pile at  $q$  to its position to be upbent under the plunger. Each of these guide-plates  $n$  is carried at the

inner end of a rod  $n^2$ , which is arranged at right angles thereto, and each rod is adjustably supported in a socket-hole  $n^3$  therefor in the uprights of the rear arch Q, or in other appropriate support therefor.

A set-screw  $n^4$  confines the rod, which carries the guide-plates  $n$   $n$  in any suitably adjusted position. These plates  $n$   $n$  serve to bring the blanks truly to their positions over the folding-throat and to obviate any lateral displacement which the blank may acquire as it is moved to its place under the plunger. They also serve to prevent any shifting of the blank when the same rests on the top of the movable throat members and when such members have their movements of separation or approach.

The blanks, which are shown in the pile at  $q$ , have their corner portions cut out, as seen at  $q^2$ . The position of the gum-box (not shown) is over the front of the pile in this machine, as customary for locating such gum-box in envelope-machines, and the bottom of this gum-box forms the support for the bars  $u$   $u$ , which are secured by the screws  $u^2$   $u^2$ . These are longitudinally slotted, as seen at  $u^3$ , and serve as the supports on which are the transverse strips  $v$   $v$ , which have the depending extremities  $v^2$   $v^2$ . These strips  $v$   $v$  are, longitudinally of their length, slotted, and by the screws or clamps at  $v^3$  they are suitably adjustably confined on the slotted support-bars  $u$   $u$ , while their overlapping terminal portions are confined by the clamp-screw  $v^4$ .

The depending members  $v^2$   $v^2$  have their positions in line with the cut-outs or recesses  $q^2$  at the corners of the blanks, so that as the blanks are raised by the gummers and detached to fall upon the conveyer, then thereunder, the so-detached blank will be restrained from any shifting either laterally or toward the front of the machine by said parts  $v^2$   $v^2$ .

By moving the transverse strips  $v$   $v$  longitudinally of the bars  $u$   $u$  and by telescoping the transverse strips one relative to the other the depending members  $v^2$   $v^2$  may have their positions to accord with the blanks of any given dimension.

Having thus described my invention, what

I claim, and desire to secure by Letters Patent, is—

1. In the paper-box machine of the character specified, the combination with the reciprocatory followers, B, B, and the conveyer-  
rods,  $h$ ,  $h$ , mounted in ways of the followers, movable in unison with them, and also movable endwise through them, of members adapted to be confined along the lengths of said rods, the cross-rod, 78, having a free sliding engagement through said adjustably confined members, the stationary horizontal bar on which said rod, 78, is supported as it moves, and which has the buffer,  $m^2$ , fixed thereon, all substantially as and for the purpose set forth.

2. In a paper box machine, the combination with the movable members constituting the contractible throat under the plunger, and the blank conveyer of the strips,  $n$ ,  $n$ , arranged in parallelism at opposite sides of, and above, the said contractible throat and having the outwardly deflected forward ends, substantially as and for the purpose set forth.

3. In a paper box machine, the combination with the movable members constituting the contractible throat under the plunger, the blank conveyer, and the supports, as the uprights of the arch, Q, having the transverse socket holes,  $n^3$ ,  $n^3$ , of the rods passed through and adjustably confined in said socket holes, which are provided at their inner ends with right angular strips, or plates,  $n$ ,  $n$ , the forward end portions of which are outwardly deflected, substantially as and for the purposes set forth.

4. In a paper box machine of the character described, the combination with the conveyers,  $h$ ,  $h$ , of the horizontal, longitudinally ranging bars,  $u$ ,  $u$ , with the slots,  $u^3$ , and the transverse slotted strips,  $v$ ,  $v$ , having the depending members,  $v^2$ , and the clamp-screws,  $v^3$ ,  $v^3$ , adjustably confining the slotted strips,  $v$ , in different endwise positions along the length of the bars,  $u$ , substantially as described.

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Witnesses:

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