

(No Model.)

2 Sheets—Sheet 1.

W. A. LORENZ.  
PAPER BAG MACHINE.

No. 333,646.

Patented Jan. 5, 1886.

Fig. 2.

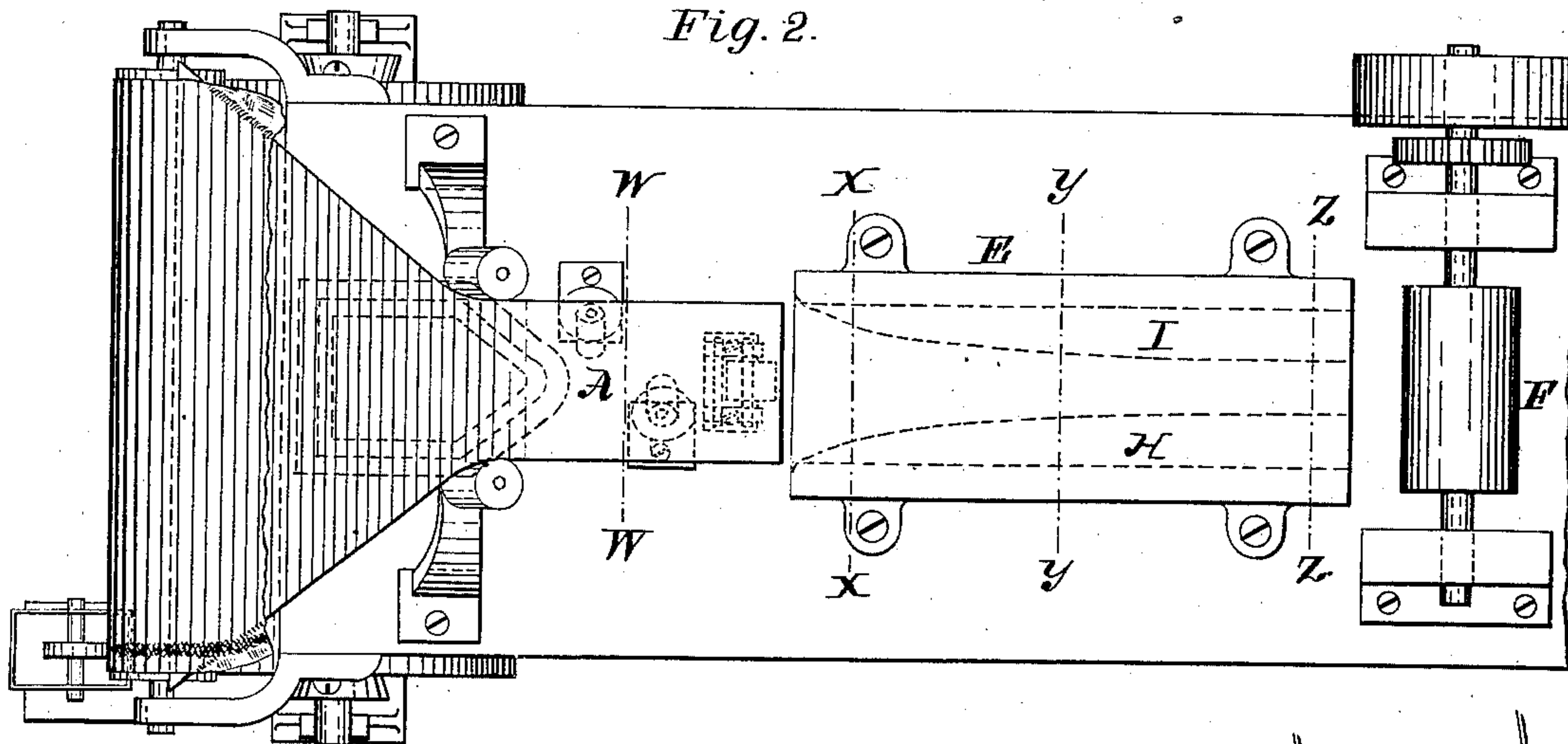


Fig. 3.

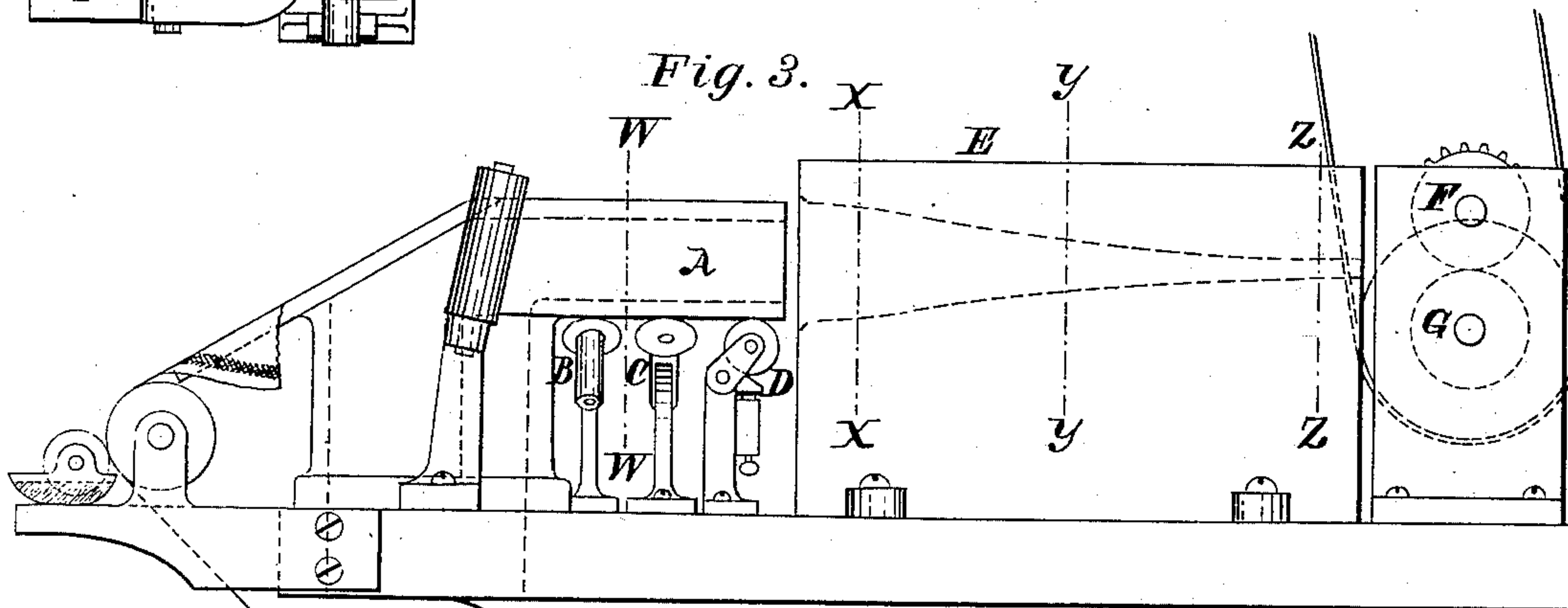


Fig. 4.

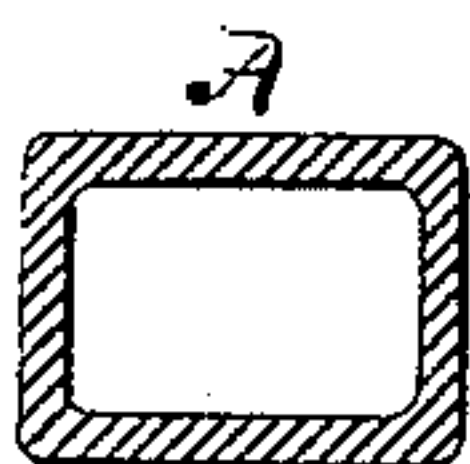


Fig. 5.

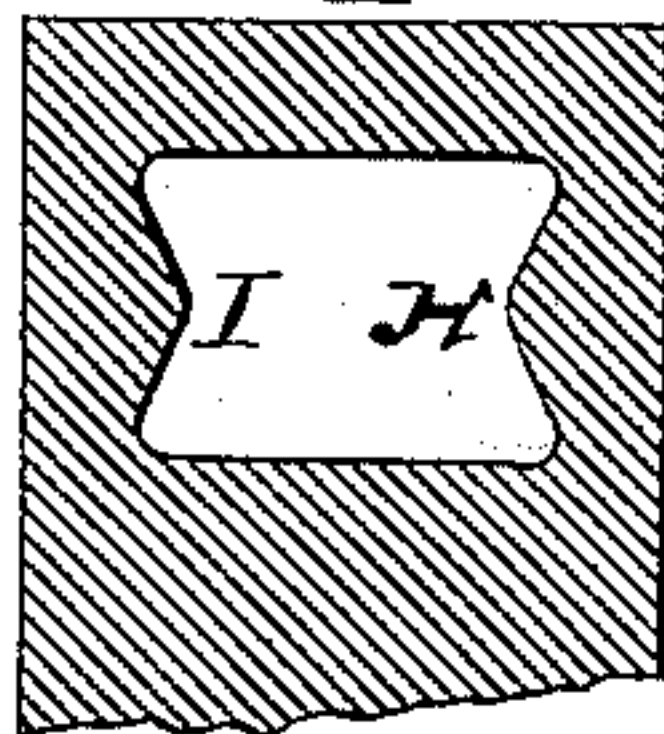


Fig. 6.

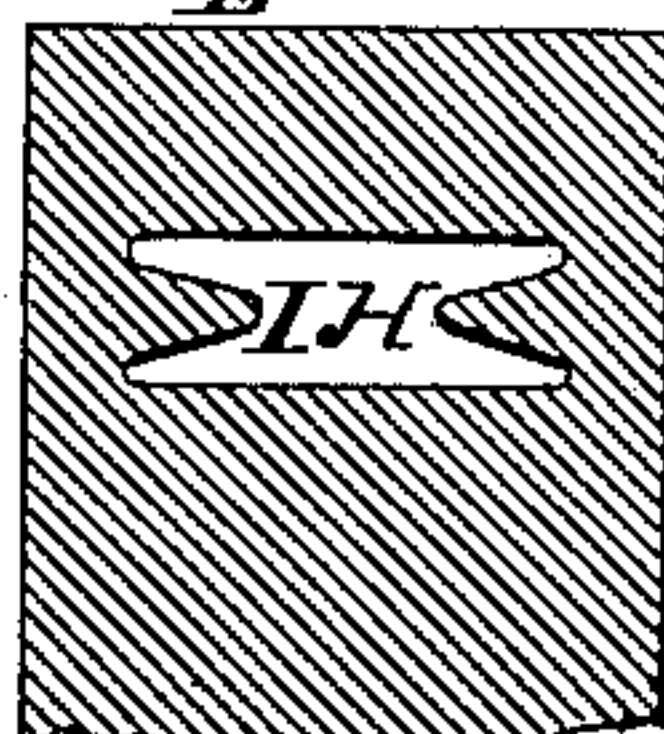


Fig. 7.

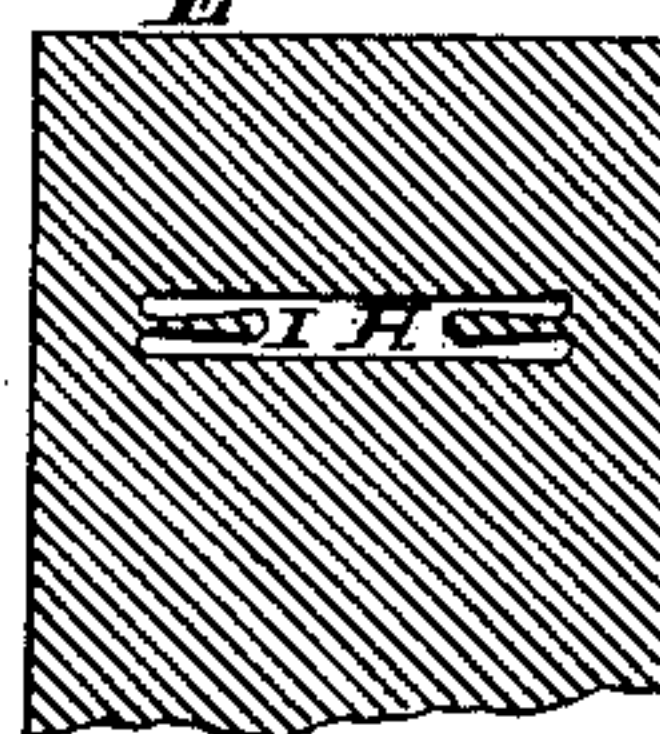


Fig. 8.

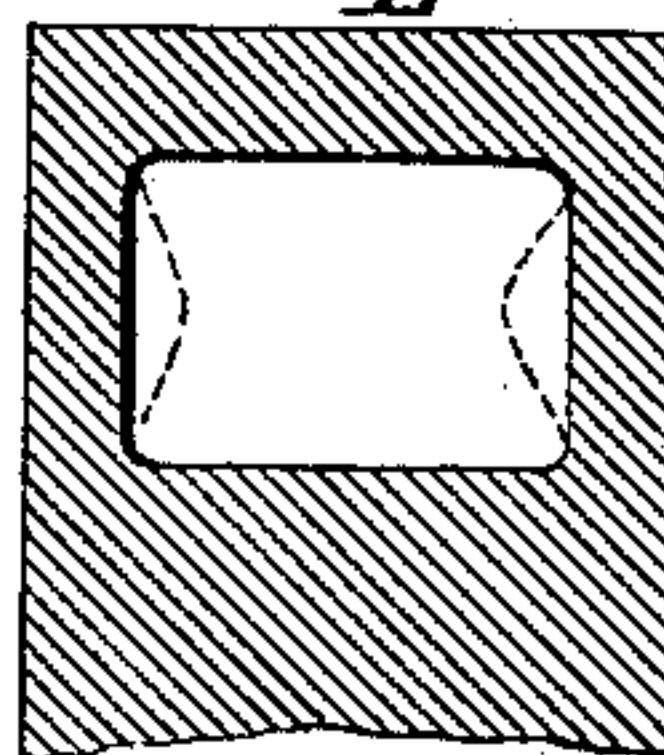


Fig. 9.

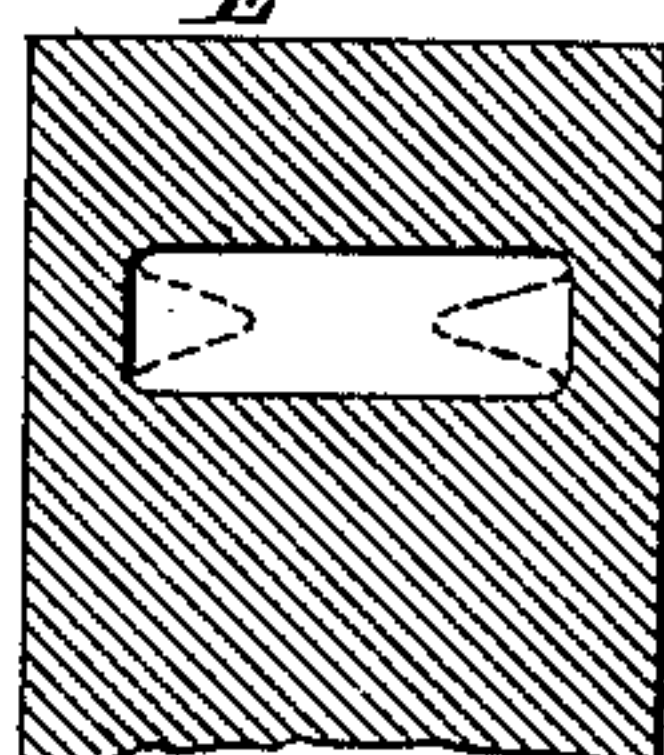


Fig. 10.

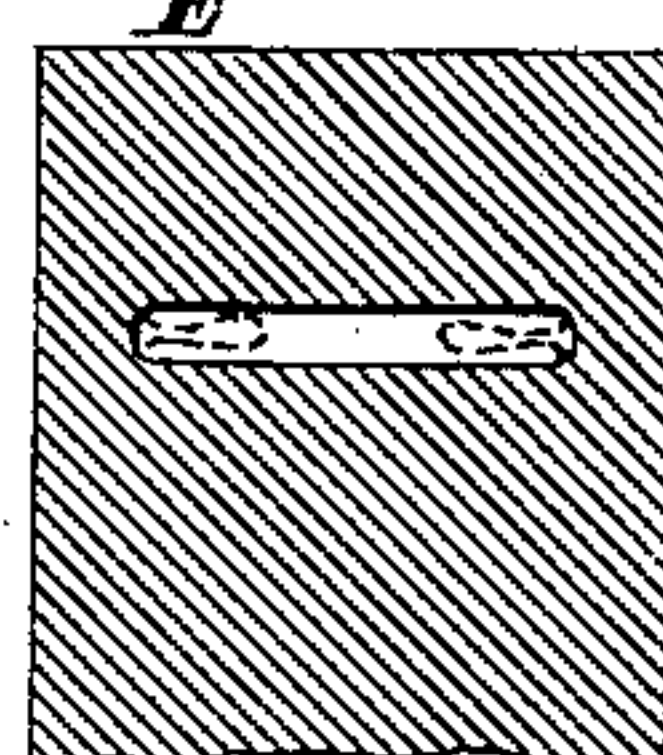


Fig. 1.



Witnesses:

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Inventor:

William A. Lorenz.  
By Albert H. Walker Attorney.

(No Model.)

2 Sheets—Sheet 2.

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PAPER BAG MACHINE.

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Fig. 11.

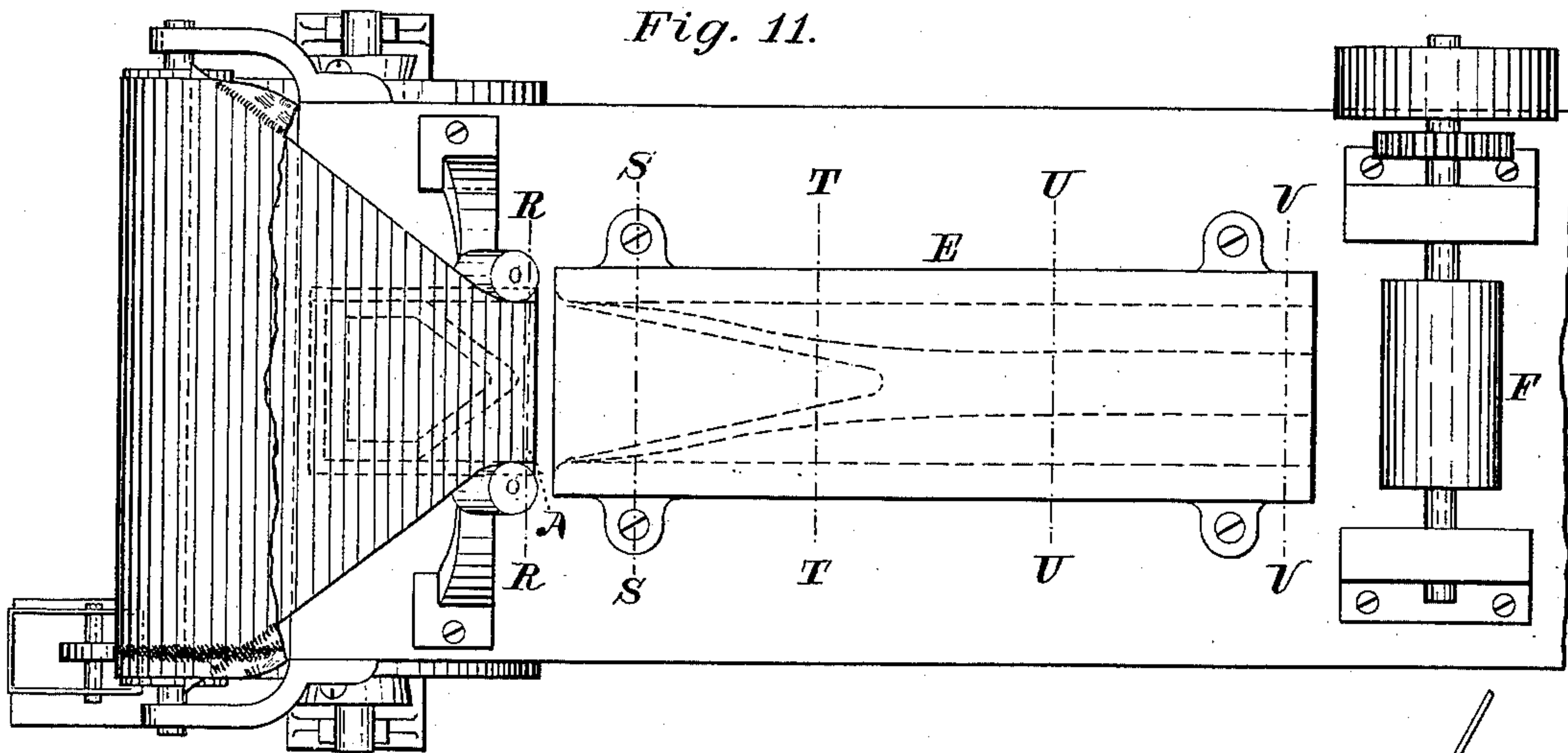


Fig. 12.

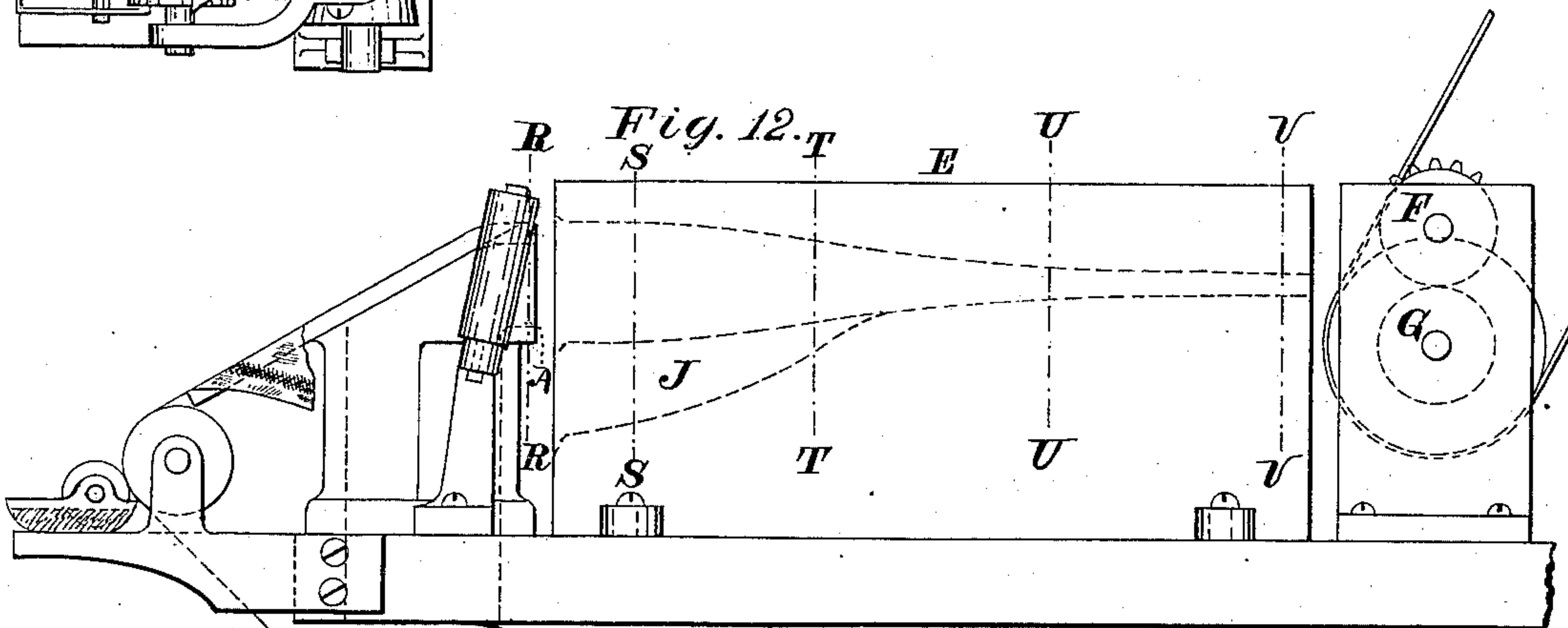


Fig. 13

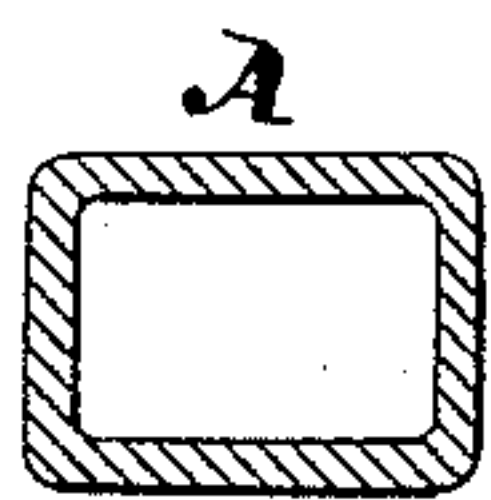


Fig. 14

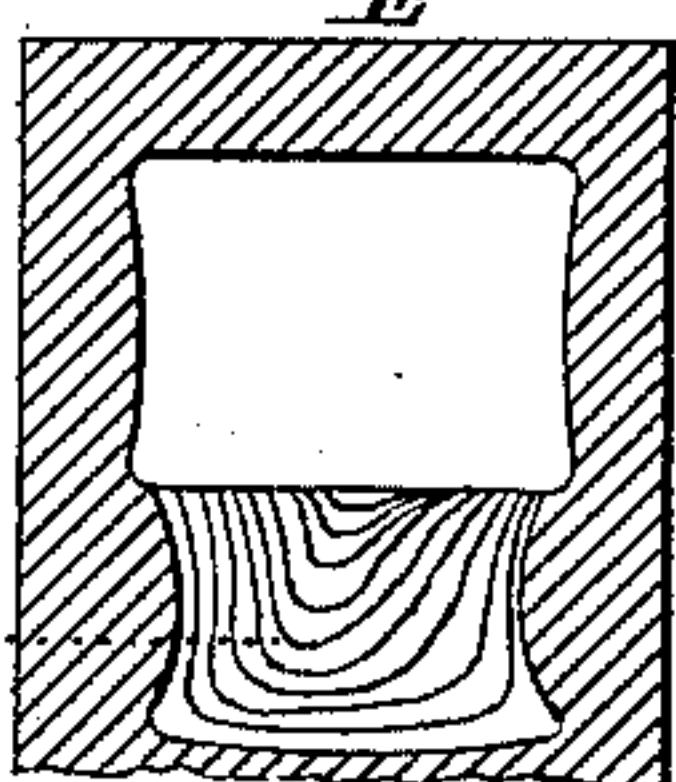


Fig. 15

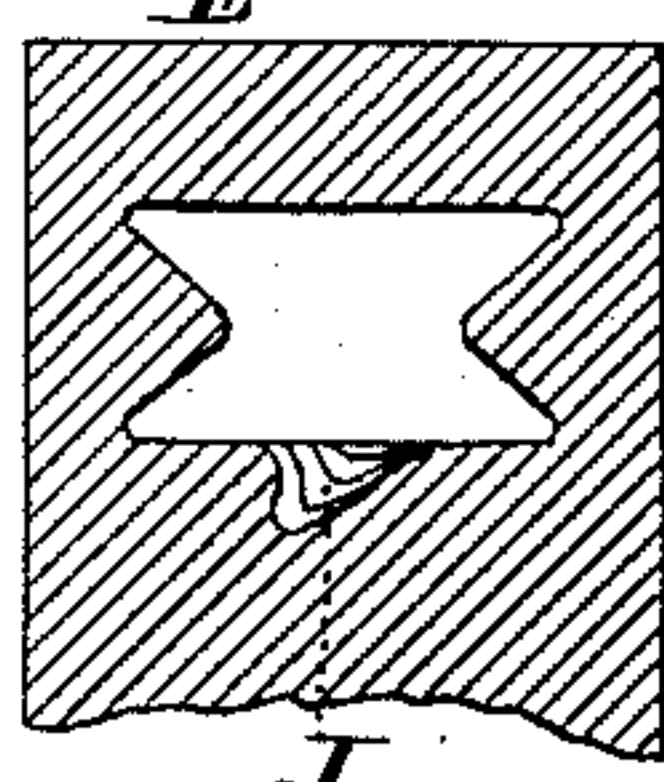


Fig. 16

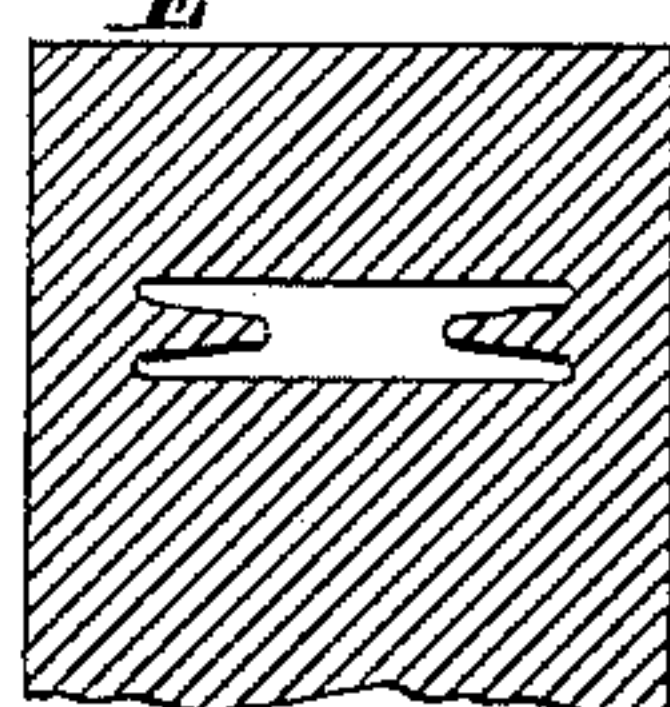
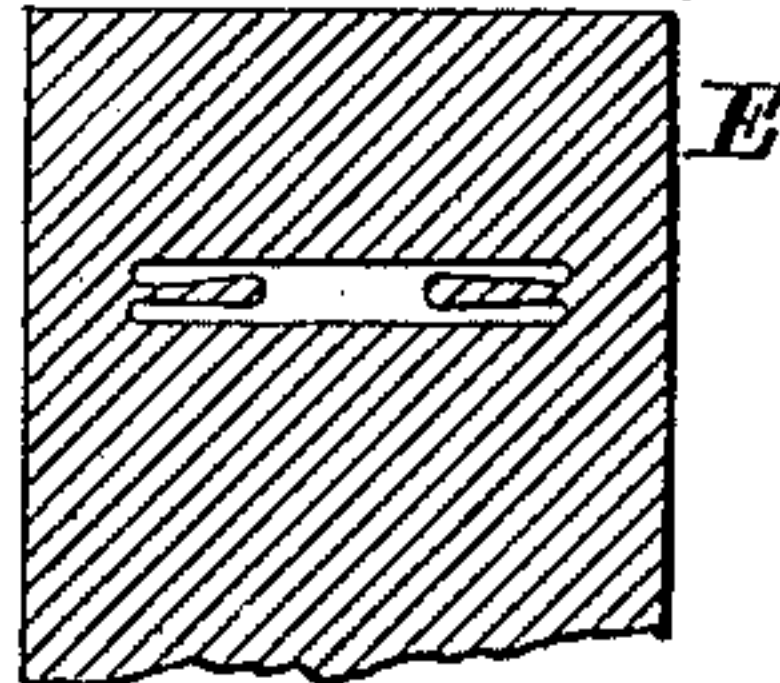


Fig. 17.



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By Albert H. Walker Attorney.



# UNITED STATES PATENT OFFICE.

WILLIAM A. LORENZ, OF HARTFORD, CONNECTICUT, ASSIGNOR TO FELIX W. LEINBACH AND CLARENCE A. WOLLE, BOTH OF BETHLEHEM, PA.

## PAPER-BAG MACHINE.

SPECIFICATION forming part of Letters Patent No. 333,646, dated January 5, 1886.

Application filed June 16, 1884. Serial No. 134,991. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM A. LORENZ, of Hartford, Connecticut, have invented a new and useful Improvement in Paper-Bag Machines, of which the following description and claim constitute the specification, and which is illustrated by the accompanying two sheets of drawings.

This invention relates to the "former" of that part of a paper-bag machine which continuously manufactures a tucked paper tube from a continuous roll of paper.

That part of such a machine is elaborately shown in Sheets 3 and 4 of the drawings of an application for Letters Patent of the United States for a new and useful paper-bag machine filed in the Patent Office by William A. Lorenz and William H. Honiss, May 15, 1884, and is fully described in that application.

Not all the features of that part of such a machine are shown in the drawings of this application, nor are all the features which are shown in these drawings described in this specification, because the present invention relates to one portion only of that part of such a machine.

Figure 1 in the drawings is a cross-section of the tucked paper tube above mentioned. Fig. 2 is a plan view of my new former and of the adjacent parts of a paper-bag machine. Fig. 3 is a side view of the same. Figs. 4, 5, 6, and 7 are cross-sections on the lines W W, and X X, and Y Y, and Z Z, respectively, of Figs. 2 and 3. Figs. 8, 9, and 10 are cross-sections on lines X X, and Y Y, and Z Z, respectively, of Figs. 2 and 3, but showing a slight modification of the form of the interior of the former. Fig. 11 is a plan view of another modification of my new former and of the adjacent parts of a paper-bag machine. Fig. 12 is a side view of the same. Figs. 13, 14, 15, 16, and 17 are cross-sections on the lines R R, and S S, and T T, and U U, and V V, respectively, of Figs. 11 and 12.

A is the rectangular part of the former. Under it are the roll B, the roll C, and the pressing-roll D, all three of which are identical in construction, mode of operation, and

function with the corresponding parts of the apparatus shown and described in the application of William A. Lorenz and William H. Honiss for Letters Patent of the United States for improvements in paper-bag machines filed on the same day with this application.

E is the hollow part of the former, placed between the rectangular part and the drawing-rolls F and G.

H and I are projections on the sides of the interior of the hollow part of the former. These are curved longitudinally, as shown in Fig. 2, and they gradually increase in depth, and decrease in thickness at the base as they approach the drawing-rolls. At the extreme end nearest the drawing-rolls I prefer those projections thicker at their edges than at their bases, as shown in Fig. 7.

The modified former shown in cross-section in Figs. 8, 9, and 10 differs from that shown in Figs. 2, 5, 6, and 7 only in being without the projections H and I.

The modified former shown in Figs. 11 to 17, inclusive, differs from that shown in Figs. 2, 5, 6, and 7 in having its rectangular part much shorter, and its hollow part much longer, and also in having the form of its hollow part somewhat different in cross-section, as shown in Figs. 11, 12, 14, and 15. That difference in cross-section consists in extending the projections H and I on substantially the lines shown in that behalf in Fig. 11, and also in making a cavity, J, for the accommodation of the borders of the paper before those borders are pasted together.

The mode of operation of this invention is as follows: The drawing-rolls F and G continuously pull the tucked paper tube out of the smaller end of the hollow former E, that former operating to give the tucked shape shown in Fig. 1 to the rectangular tube made by the rectangular former A shown in Figs. 2, 3, and 4; or, if the modification of my invention shown on Sheet 2 of the drawings is used, then the drawing-rolls F and G operate as before, and the hollow former E not only operates to give the final tucked shape to the paper tube, but also operates to bring the borders of the pa-

per together, and thus causes the line of paste to make them permanently adhere to each other.

I claim as my invention—

- 5 The hollow former E, open at both ends, and having its greatest interior width uniform throughout its length, and having its interior

vertical expanse continually diminishing from one end thereof to the other, substantially as described.

WILLIAM A. LORENZ.

Witnesses:

ALBERT H. WALKER,  
FRANK H. PIERPONT.