

(No Model.)

2 Sheets—Sheet 1.

J. WEST.
MANUFACTURE OF PAPER BAGS.

No. 487,862.

Patented Dec. 13, 1892.

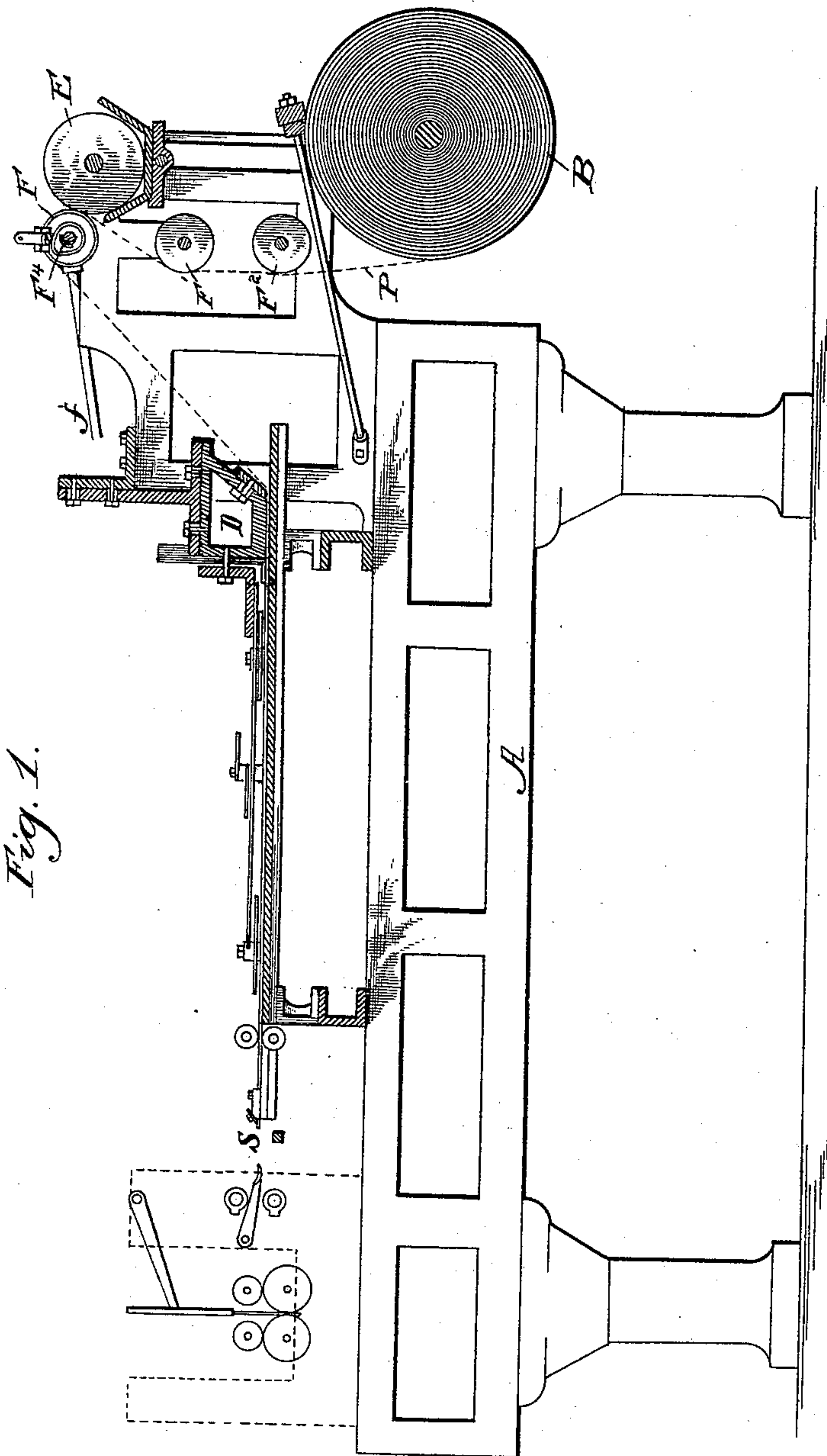


Fig. 1.

Witnesses:

J. B. McGirr.

H. S. McArthur

Inventor:

James West
By Foster Freeman
att'y

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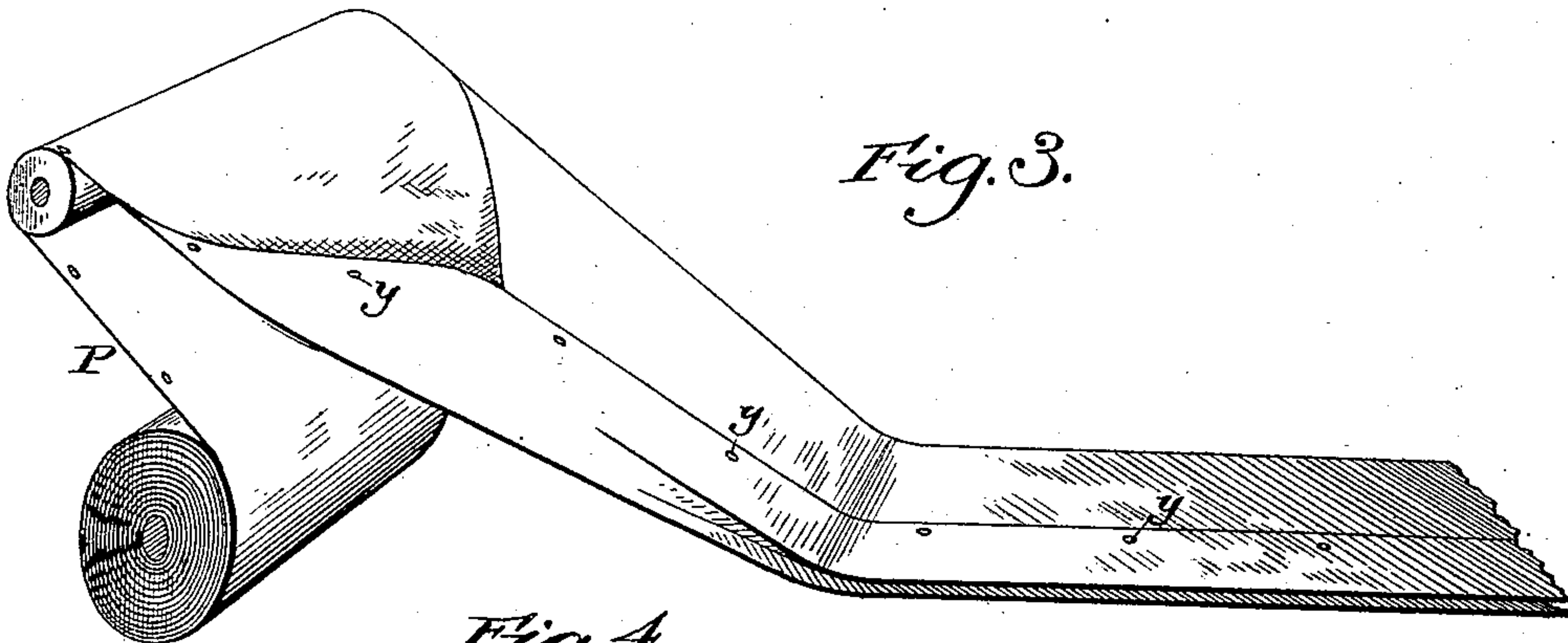
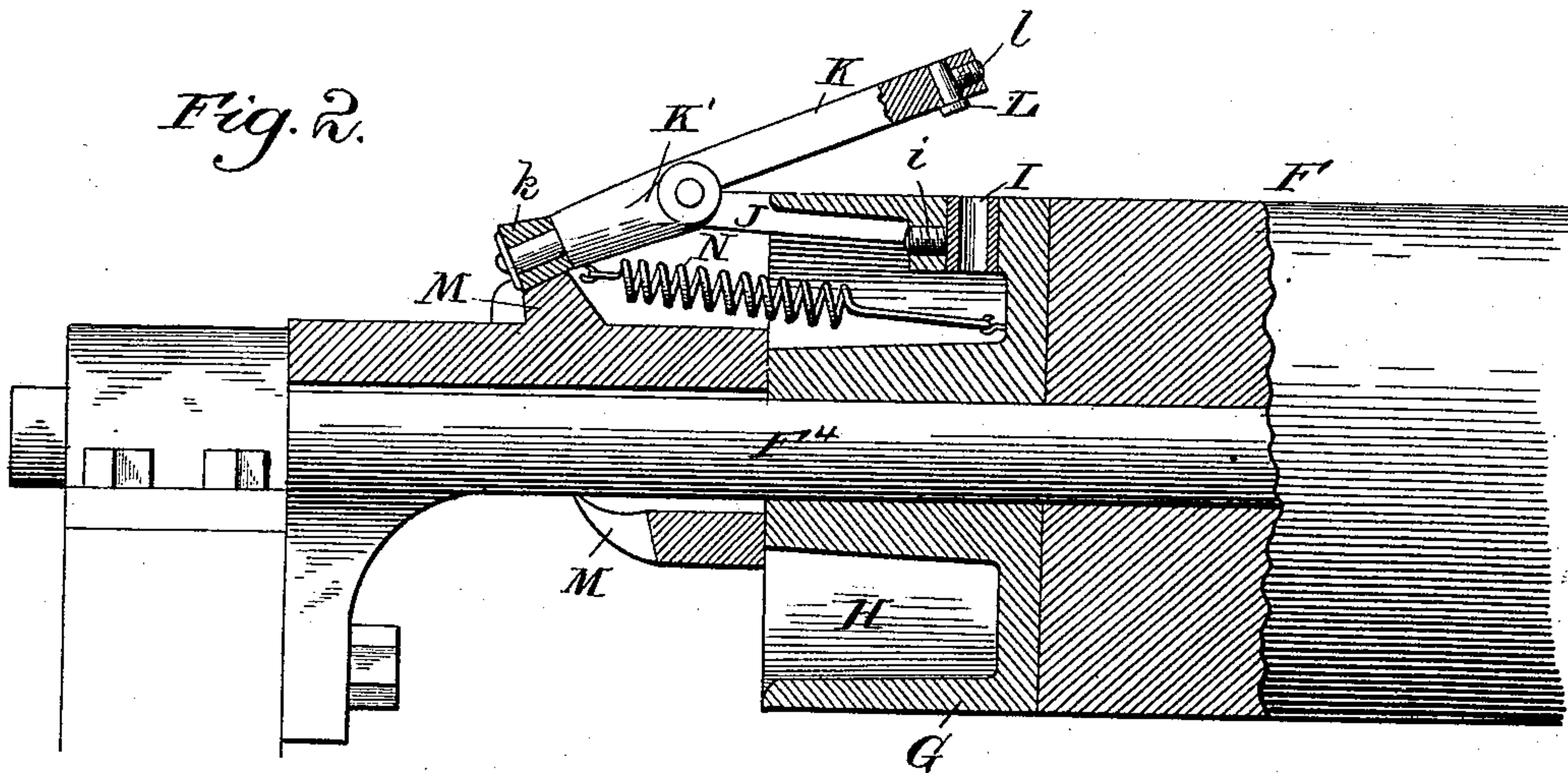
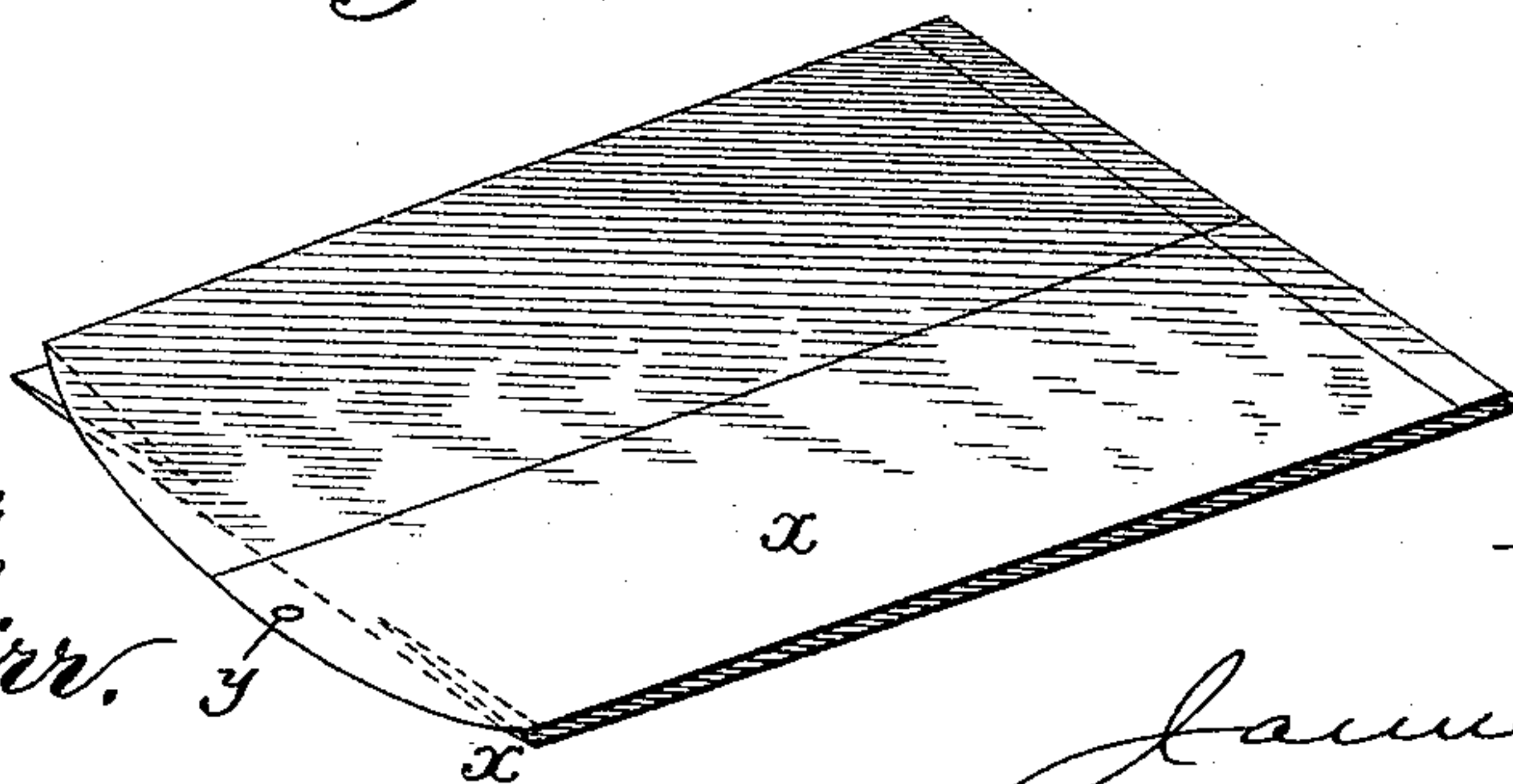


Fig. 4.



Witnesses:

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H. S. McArthur

Inventor.

James West
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UNITED STATES PATENT OFFICE.

JAMES WEST, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-HALF TO SAMUEL CUPPLES, OF SAME PLACE.

MANUFACTURE OF PAPER BAGS.

SPECIFICATION forming part of Letters Patent No. 487,862, dated December 13, 1892.

Application filed December 4, 1891. Serial No. 414,038. (No model.)

To all whom it may concern:

Be it known that I, JAMES WEST, a citizen of the United States, and a resident of St. Louis, in the State of Missouri, have invented certain Improvements in the Manufacture of Paper Bags, of which the following is a specification.

It has been found necessary to provide paper bags with openings in which to insert the strings or wires by which bundles of the bags are supported in position ready to be torn off for use. At first such openings were formed by punching bundles of the bags; but this proved to be relatively quite expensive, requiring more time than that needed for manufacturing the articles at the rate of ten thousand or fifteen thousand per hour. Afterward punching devices were arranged upon the paper-bag-making machines in positions adjacent to the bottom-folding or the severing devices. This sometimes necessitated that one portion of the punch should be adjacent to the folded part of the strip and resulted in many disadvantages, among which were the difficulty of properly arranging the punching devices in the limited space which they would occupy and the many objections incident to the fact that the punched pieces of necessity were thrown onto the folding, pasting, and other forming devices and not only interfered with their operations, but also adhered to the paste on portions of the bags, the rapid movements of the operating parts scattering the punched pieces and preventing their full collection in any suitable receptacle. A further objection was the necessity of punching through two thicknesses of paper, increasing the wear upon the punch. To overcome these objections, I operate upon the strip of paper at a point distant from the forming or folding appliances before the paper is folded to bring the edges together to form a tube and as immediately as possible after it passes from the reel. This permits me to make use of punching devices of any suitable character, affords ample room for their disposition and operation, requires only one thickness of paper to be punched, and the pieces that are punched out are at such a distance from the forming and folding and severing appliances that they in no way impede

the operation of the machine and are not scattered and thrown upon the pasted portions of the strip or bag. Any suitable punching devices that will punch openings at uniform distances in the strip after it leaves the roll may be employed, it being necessary only to insure a perfect puncture and a separation of the punched pieces from the strip and the regular disposition of the openings, so that when the strip is subsequently severed the said openings shall be in juxtaposition to the severed edge, permitting the cord or wire to be readily passed through the same.

One arrangement of the parts for effecting the punching of the strips, as above described, is illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal section of sufficient of a bag-making machine to illustrate my improvement. Fig. 2 is an enlarged section of a punching device. Fig. 3 is a perspective view of the strip in process of formation into a bag. Fig. 4 is a perspective view of the finished bag.

A is the frame of the machine.

B is the usual paper roll, the end of which passes over guide-rolls and is led into a suitable tube-forming device D, and the paper passes in contact with a paste device E and receives a line of paste for securing the edges together in forming the tube, said edges being turned down by suitable folders and a rotating cutter S severing the tube into bag-sections and bottom-folding devices T acting to form the bottom, as usual. In passing from the roll to the tube-forming devices the paper may pass over one or more guide-rolls, as F F' F², and I may, as shown, attach my punching device to one of the guide-rolls. This guide-roll carrying the perforating or punching device is connected to a shaft *f*, which may be connected, for instance, with what are known as the "hold-on rolls" of the machine, (not shown,) although it is evident that the roll can be driven from other parts of the machine.

The punching or perforating device consists, essentially, of a short section of a roll, as G, which is fitted on the shaft F⁴ of the roll F and secured in any desired manner. This section is preferably made of metal and it is hollowed or cored out, as shown at H, and is

provided with an opening extending through the periphery of the roll, in which is inserted the female die I, which is held in position by any suitable means, as a set-screw *i*, the cutting-edge of the die being preferably coincident with the periphery of the roll. Connected to the roll by some suitable means, as by the rods J, which may be integral with the roll or separate therefrom and attached thereto, is a lever K, one end of which extends over and parallel with the axis of the roll and carries in its free end the male cutting-die L, secured and adjusted therein by a screw *l* or other device. The bearings of this lever K are preferably extended on either side, as at K', so that the lever will move between the lugs in a manner to accurately correspond in its movement with the fixed female die.

In order to operate the punch-carrying lever, I provide a cam M, which is rigidly secured to the frame of the machine and is so shaped as to cause the lever at the proper moment to carry the punching-die into operative position with the fixed punching-die on the roll to perform the punching operation and then to swing the lever outward, so that it will extend substantially at right angles to the shaft of the roll to permit the arm of the lever to pass by the edges of the web of paper being operated upon. The end of the lever bearing on the cam is preferably provided with a friction-roll *k*, the bearing-surface of which is inclined to correspond with the face of the cam, and the lever is held in contact with each cam by a spring N, so that it will move in accordance with the contour of the cam and be thrown into operative position to perform the punching at the desired time and

to move outward to pass the paper without interfering therewith. I need not more fully describe these parts, as they constitute the subject-matter of a separate application for Letters Patent, Serial No. 406,235.

It will be seen that the web of paper P passes from the roll B over the roll F and receives a perforation near its edge, the perforations being at equal distances apart and at uniform distances from the edge of the paper, and the cutter S operates to sever the tube on lines adjacent to the projections, so that when the bag X is subsequently formed by folding, pasting, and severing the strip a portion at one side projecting beyond the edge *x* of the other side will have a perforation *y*, as shown in Fig. 4.

It will of course be evident that after the traveling strip has been punched at regular intervals, as described, or in any other suitable manner, it may be folded in any of the usual modes and pasted and formed and severed to make bags of any of the usual forms.

I claim as my invention—

The improvement in the method of making punched paper bags, consisting of punching a strip of paper at regular intervals and then folding the same into a tube and severing the tube to form bag-sections on transverse lines adjacent to the punched openings, substantially as described.

In testimony whereof I have hereunto set my hand to this specification.

JAMES WEST.

Witnesses:

N. G. PIERCE,
CHARLES E. FOSTER.