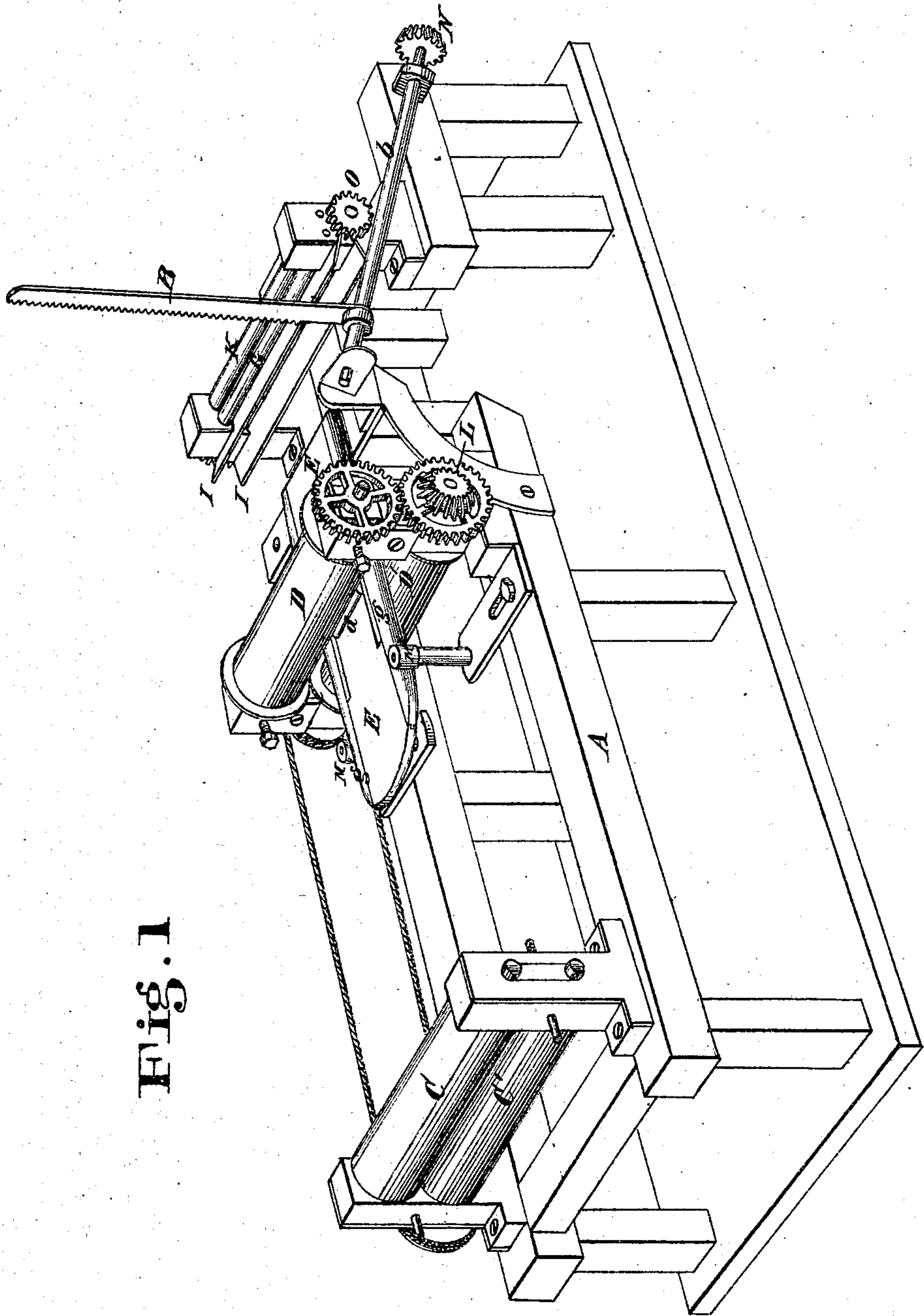


**J. S. OSTRANDER.**  
**Paper-Bag Machines.**

No. 143,925.

Patented Oct. 21, 1873.



**Fig. 1**

**Attest**

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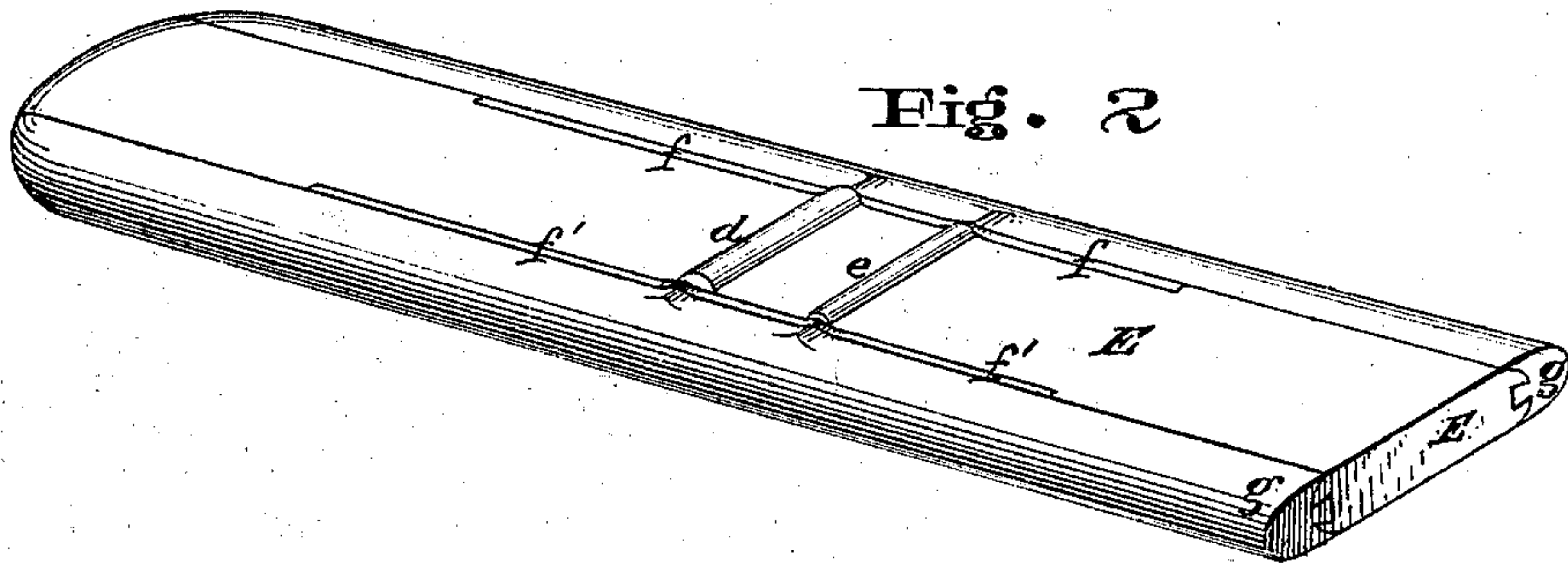


Fig. 2

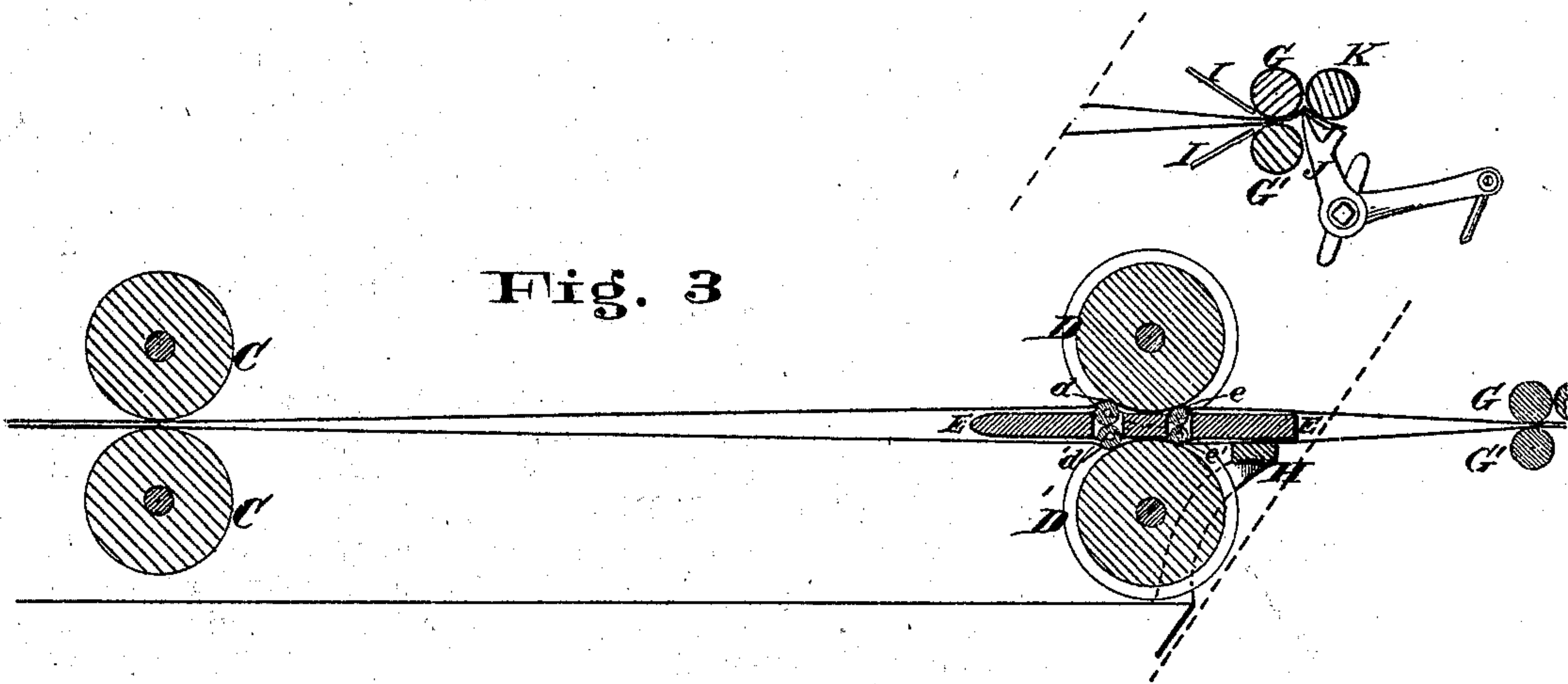


Fig. 3

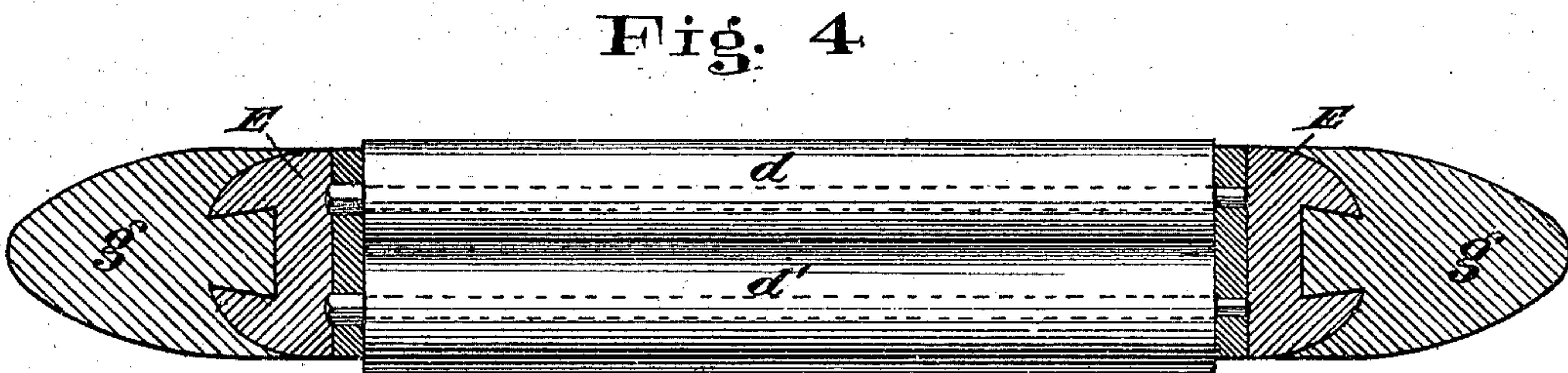


Fig. 4

Attest

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# UNITED STATES PATENT OFFICE.

JAMES S. OSTRANDER, OF DAYTON, OHIO.

## IMPROVEMENT IN PAPER-BAG MACHINES.

Specification forming part of Letters Patent No. **143,925**, dated October 21, 1873; application filed July 3, 1873.

*To all whom it may concern:*

Be it known that I, JAMES S. OSTRANDER, of Dayton, Montgomery county, State of Ohio, have invented a certain new and useful Improvement in Paper-Bag Machines, of which the following is a specification:

My invention relates to machines for cutting off paper tubes diagonally, for the formation of bags therefrom; and consists of a peculiarly-constructed and operating device for slightly opening the tube of paper, after it has been fully formed and fed to the machine, in such a way as to enable a revolving knife to sever the tube while partially open, thus forming the usual lap for the pasting of the bottom seam of the bag. My invention is so designed that it can be applied to any machine for tube forming, it being applicable only to devices for cutting off after the tube has been completely formed and pasted, and by reason of its peculiar character it admits of ready change to suit different widths of bags, and operates in such a way as to assist rather than retard the progress of the tube over it.

Figure 1 is a perspective view of that portion of a bag-machine which embodies my improvement. Fig. 2 is a perspective view of my header for partially opening the formed tube as it is fed to the machine. Fig. 3 is a sectional view in the line of the tube, showing the feed-rollers for carrying in the formed tube in the direction of my devices for opening and cutting off, and showing also the feed-rollers operating directly in connection with the device for partially opening the tube. Fig. 4 is a cross-section of my header for partially opening the tube, showing also clearly the provision for changing its width.

A is the frame of the machine, and B represents a revolving knife for cutting off paper tubes diagonally, for which Letters Patent were granted to Charles H. Morgan, February 17, 1863.

My machine is adapted to receive into the feed-rollers C C' paper tubes of any length which have been previously formed and pasted; and such a tube is shown in the drawings as entering feed-rollers C C', which are arranged to deliver it properly to my opening and cutting off devices. D D' are feed-rollers having a belt connection with rollers C C', the rollers

D D' being provided to act in conjunction with rollers C C' for feeding the tube, and also in conjunction with my peculiar device for partially opening the tube. The latter may be described as follows: E is a block of wood or metal, called by me a spreader or header, of such thickness as to accommodate a pair of rollers, *d d'*, within it, touching each other and projecting slightly above and below the surface of the header. Another pair of rollers, *e e'*, smaller in diameter, are also located within the header, and all these rollers turn on axes fitted in the straps or bearing-plates *f f'*. The sides of the header E are dovetailed, as shown, to receive interchangeable edges *g*, so as to increase or decrease the width of the header to suit different widths of bags. In the machine the header E is located between the rollers D D' in such a position, as shown, that the rollers *d d'* are upon the feed side, and the rollers *e e'* are located on the discharge side of the feed-rollers D D', the rollers *d e* having their peripheries in contact with the upper feed-roller D, and the rollers *d' e'* having their peripheries in contact with the roller D'. The distance between the rollers *d* and *e* and *d'* and *e'* enables the feed-rollers D D' to enter well between them and thus lock, as it were, the header E in place, while at the same time the paper tube, which is fed so as to surround the header E, is in contact with moving rollers upon all sides, as shown, so that it has no disposition to drag in feeding. This provision of rollers *d d' e e'*, in addition therefore to serving to retain the header in place, also so materially assists in relieving the tube from friction in feeding that a greater number of bags can be cut off per minute than if fed over a stationary block, E, with no such provision of rollers. In order that the tube while being cut off may be properly supported, feeding and tension rolls G G' are provided, whose peripheries are by proper gearing arranged to run (under all conditions of bag-making, whether long or short) at a greater speed than the peripheries of the rollers D D', so that in the feeding of the tube by these rollers D D' G G' the latter exert a vigorous tension upon the tube (resisted by the rollers D D') such as to enable the separation of the tube easily and effectually at the point of desired severance when the knife in its rev-



olution strikes it. In order to prevent any depression of the header E when the knife strikes, a supporting-rest, H, is attached to the frame below the passing tube. To enable the severed end of the tube to enter the rollers G G' properly, the usual flaring guide-plates I I' are provided, and the bottom seam of the bag, after the passage of the tube through the rollers G G', may be seamed, pasted, and delivered by the customary pasting-and-folding blade J and rollers G K. To enable the machine to make different lengths of bags, the framing of the rollers G G' K and knife B are adjustable to and from the revolving knife, and the speed of either the feeding-rolls D D' G G' is changed, or the speed of the revolving knife B, in order to make different lengths of bags. To prevent any lateral play of the header during the operation of the machine, side rolling idlers M, whose frames are adjustable, are so located on the machine that they may run in contact with the sides of the tube of paper at the edge of the header, in the manner shown.

It is obvious that my improvement is adapted to be operated in connection with any form of knife, or diagonal severing device, other than the one described. The shaft *b* of the knife may be connected to the driving power of the machine in any preferred way; and so also may the feed-rollers D D' and G G' K be connected to the driving power of the machine by any of

the well-known forms of gearing, through the medium of the gear-wheels N L O, or otherwise.

The bearings of upper roller D are, as shown, adjustable from front to rear of the machine-frame, so that the axis of the upper roller may be adjusted relatively to the axis of the lower roller, so as to be parallel thereto or otherwise, for the purpose of compensating for any irregularities in the sizes and location of the rollers *d d' e e'*, and adjusting the paper to run in the proper direct line toward the knife.

I claim—

1. In combination with feed-rollers D D' and knife B, the header E, fitted with rollers *d d' e e'*, and connected and operating substantially in the manner and for the purpose specified.

2. The header E, having interchangeable sides or edges *g*, substantially as and for the purpose specified.

3. The combination of the knife B, header E, fitted with rollers *d d' e e'*, and feed-rollers D D', the roller D turning in horizontally-adjustable bearings, substantially as and for the purpose specified.

In testimony of which invention I hereunto set my hand.

JAMES S. OSTRANDER.

Witnesses:

FRANK MILLWARD,

JOS. K. LINN.