

(No Model.)

J. ARKELL.

MACHINE FOR MAKING TUBULAR BAG BLANKS.

No. 447,065.

Patented Feb. 24, 1891.

Fig. 1.

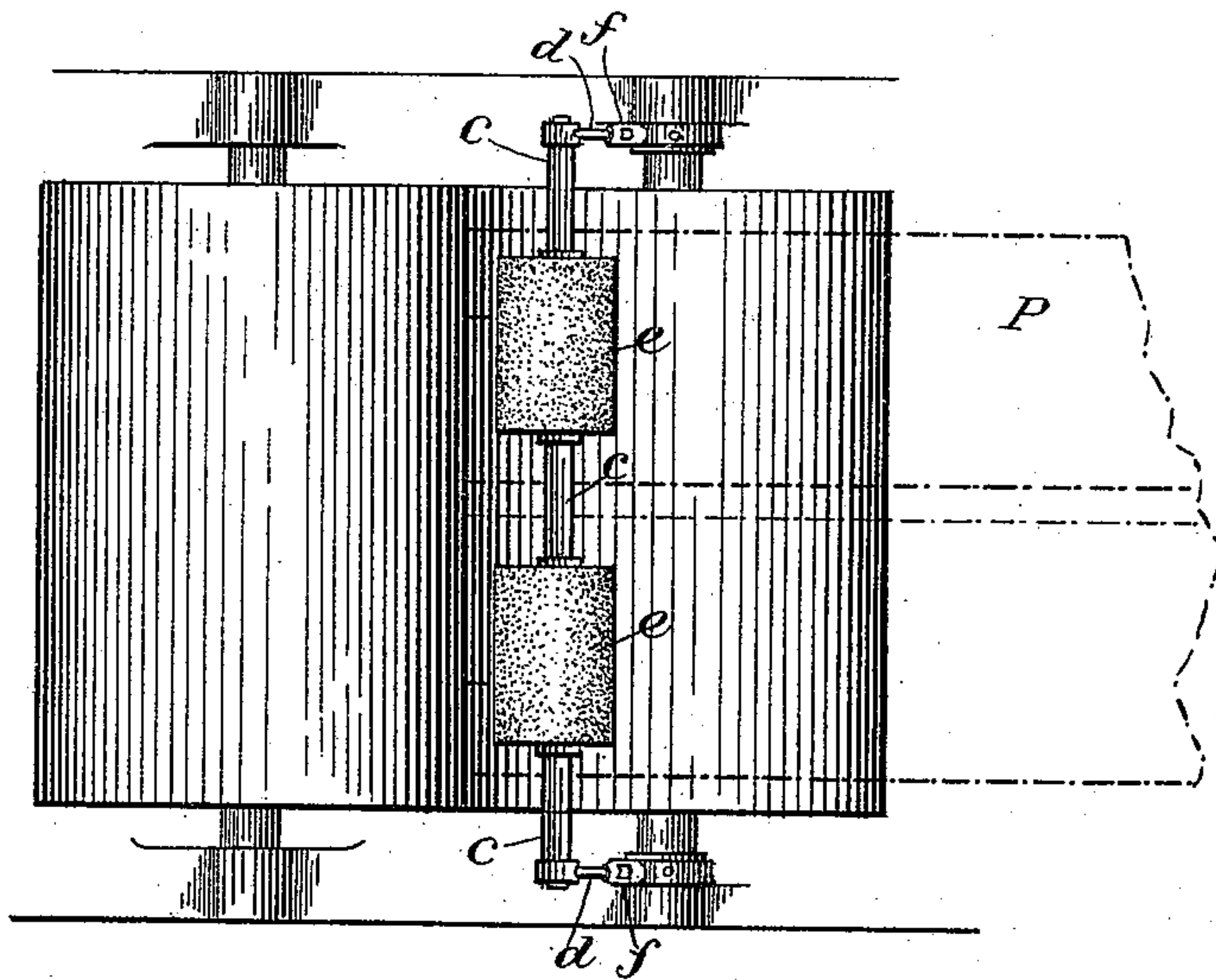
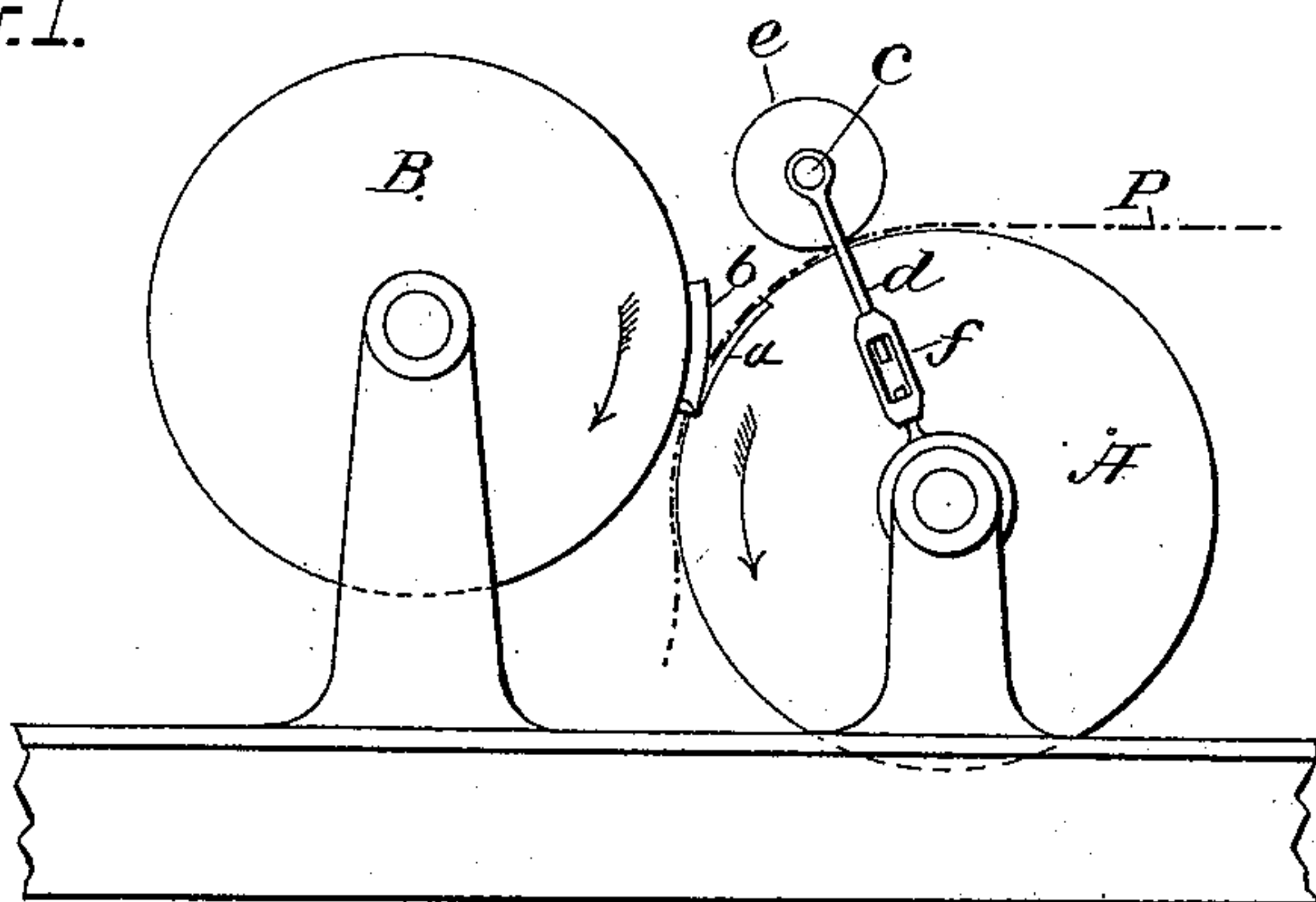


Fig. 2.

ATTEST:

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# UNITED STATES PATENT OFFICE.

JAMES ARKELL, OF CANAJOHARIE, NEW YORK.

## MACHINE FOR MAKING TUBULAR BAG-BLANKS.

SPECIFICATION forming part of Letters Patent No. 447,065, dated February 24, 1891.

Application filed February 15, 1890. Serial No. 340,502. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES ARKELL, of Canajoharie, in the county of Montgomery and State of New York, have invented a new and  
5 useful Improvement in Machines for Making Tubular Bag-Blanks; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of  
10 this specification.

My invention relates to that type of machines for making tubular bag-blanks in which the web of paper is mounted on a suitable spindle or shaft at one end of the machine, and while being unwound therefrom  
15 and drawn through the machine has a line of paste applied to one edge of the web, and then has the latter folded over widthwise and its meeting edges pasted together, so as to  
20 form a continuous flattened tube, the said flattened tube then passing between a pair of cylinders provided with male and female cutting devices, which operate to sever the continuous flattened tube into flattened tubular  
25 blanks of the proper length, and at the same time to make certain necessary slits at one end of the bag-blank to facilitate the subsequent folding up of that end of the flattened tubular blank into what is commonly known  
30 in the market as an "Arkell and Smith's Satchel-Bottom Paper Bag."

An example of this type of machine is exhibited in Letters Patent granted to me on the 11th day of February, 1868, and numbered No. 74,190; and my present invention  
35 has for its object to overcome a practical defect or difficulty in the use of such machines, which defect consists in a liability of the leading end of the continuous tubular blank  
40 to sometimes slightly spring back or recede after the cutting therefrom of a bag-blank, the result of which is an inequality or unevenness sometimes in the lengths of a number of bag-blanks made by the machine.

45 I have found by experience and long practice that in such machines as alluded to for making tubular bag-blanks, owing to the tension or strain under which the web of paper sometimes travels while being folded into the  
50 tubular condition and while being fed or drawn forward by the bite of the cutting

rolls or cylinders, there will frequently be a spring back or recession of the continuous flattened tubular web, which recession, occurring only periodically and irregularly, will  
55 cause a variation in the lengths of the finished bag-blanks, and that as a consequence when these finished tubular bag-blanks come to be fed into a bottoming-machine the folding up and pasting together of the parts of  
60 the paper to form the satchel-bottom will not be done accurately or properly. Sometimes the last-made folded and pasted seam to effect the satchel-bottom will have the parts overlapped too much and sometimes overlapped  
65 too little. By my present improvement or invention I have entirely overcome this difficulty, so that any machine of the type heretofore patented to me will inevitably make  
70 all the bag-blanks of any aggregate number of exactly the same length.

My invention consists in the combination, with the first one of the pair of rolls or cylinders between which the continuous flattened tube passes and by which said tube is cut  
75 into tubular bag-blanks, of suitable means for forcing the continuously-folded flattened paper tube to travel always and exactly with the periphery of said roll or cylinder, irrespective of whether said flattened tube is or  
80 is not always effectually held within the bite between said cylinder and the other one of the rolls or cylinders of the pair which usually operate to draw or feed the continuous flattened tube along and cut it up into bag-  
85 blanks, all as will be hereinafter more fully explained, and as will be more particularly pointed out in the claim of this specification.

To enable those skilled in the art to which my invention relates to make and use the  
90 same, I will now proceed to more fully describe my invention, referring by letters to the accompanying drawings, which form part of this specification, and in which I have shown my invention carried out in that particular  
95 form in which I have so successfully practiced it; although my improvement may of course be carried into effect under various modifications as to the details of construction of a machine embracing the same.

100 In the drawings, Figure 1 is a side view or elevation of so much of a machine for making



flattened tubular bag-blanks as it is necessary to show for the purpose of illustrating my present improvement, the machine partially shown being of that type made the subject of my Letters Patent hereinbefore referred to. Fig. 2 is a top view of the machine or parts shown in elevation at Fig. 1, and in both figures the same part will be found designated by the same letter of reference.

In the drawings, A represents the first and B the second one of the pair of rolls or cylinders, which are formed, respectively, with circumferential depressions *a* and projecting cutters *b*, which operate in the usual and well-known manner to cut and sever the folded web or flattened tube of paper as it passes between the bite of said rollers. Said cylinders are mounted, as usual, in a suitable frame-work, as clearly shown, and are rotated by suitable means in the directions indicated by the arrows at Fig. 1.

P represents the folded web of paper, which is drawn in the usual manner by the action of the rollers A and B from the supply-roll or wound web around and past the devices which fold the web up into the continuous flattened tube, all in a manner well understood, and as fully explained, among other publications, in the Letters Patent heretofore granted to me, as above mentioned.

A short distance above the periphery of the cylinder A, not, however, vertically over the shaft thereof, but preferably at a point slightly in advance of a vertical plane passing through the shaft of the cylinder, is located a shaft or arbor *c*, which, in the case shown, is mounted to turn freely in bearings or journal-boxes formed in the upper ends of the radially-projecting arms *d*, which extend upwardly from the vicinity of the shaft or axis of the roll or cylinder A, and on said shaft or arbor *c* are securely mounted two short presser-rolls *e*, which are arranged, as shown, so as not to come in contact with the freshly-pasted seam of the continuous flattened paper tube P, but which are of a sufficient or proper diameter to have their peripheries run in forcible contact with the flattened paper tube on either side of said seam-like or pasted portion of the folded paper web.

For the purpose of adjusting and regulating the contacting pressure of these small rolls *e* upon the folded paper which passes between their peripheries and the periphery of the cylinder A, I have provided the skeleton frame-like device or radially-arranged holding-arms *d* with a take-up screw or hand-nut *f*, as clearly shown, by the use of which (turning the hand-nuts in one direction or another) the operative can vary the distance between the axis of the spindle *c* and the axis of the shaft on which is mounted the cylinder A for the purpose of increasing or diminishing the contacting pressure between the peripheries of said cylinder and the pair of idler-rolls *e*, as the thickness and condition of the flattened tubular paper web and other sur-

rounding circumstances may require. I make these idler-rolls *e* preferably of a semi-hard rubber, or of any other material; or in any other manner, which will give the most desirable peripheral surface for effecting a sufficient and proper bite or hold on the paper, which has to travel along between and with the rotating surface of said rollers and the traveling periphery of the cylinder A. The size of and material composing these idlers *e*, as well as the particular means by which they are held properly in place and rendered adjustable relatively to the periphery of the cylinder A, may, however, of course, be modified or varied according to the judgment of the constructor of the machine for making the tubular bag-blanks. It is, however, desirable or important, especially in the form of bag-blank machine shown, that these idlers should not run in contact with the freshly-pasted seam-like portion of the paper tube, since thereby the paste might all be squeezed out before dry and the perfection of the paste seam be destroyed.

The object and effect of having the idlers or presser-rolls *e* located somewhat in advance of a point vertically over the axis of the cylinder A is to effect the bite between said rollers and the periphery of the cylinder A in advance of the point or line at which the folded paper web first comes into contact with the periphery of said cylinder, and thus obtain a better bite or grip of the folded paper web between the periphery of the cylinder A and the periphery of the idlers or presser-rolls *e*.

In the operations of a machine provided with my present improvement, as hereinbefore shown and described, the action of all the parts of the machine, or mechanisms for pasting, folding, cutting up into tubular blanks and discharging the flattened blanks finished, are substantially the same as heretofore, except that any tendency or liability of the continuous flattened tube to recede or spring back at the vicinity of the leading end thereof, after the cutting off therefrom by the male and female slitting and cutting devices of the cylinders A and B is effectually prevented by the presence of the presser-rolls *e*, which, when properly adjusted, act and operate at all times to positively insure the movement of the flattened tubular web in perfect accordance with the movement of the periphery of the first cylinder A, even though for an instant the main drawing action or feed of the flattened paper tube may cease to be performed by the biting and drawing action of the contacting peripheral surfaces of the cylinders A and B.

Having now so fully explained the character of my improvement that those skilled in the art can easily practice my invention, either in the precise form of contrivance shown or under some modification thereof, what I claim, broadly, as new, and desire to secure by Letters Patent, is—



The combination, with the pair of drawing-rolls which also operate to sever the web of material into separate bag-blanks, of the device which by direct coaction, as explained, 5 with that one of said rolls onto the periphery of which the material first passes prevents any recession of the leading end of the material relatively to said roll-periphery after

the severance of the material, substantially as and for the purpose hereinbefore set forth. 10

In witness whereof I have hereunto set my hand this 24th day of January, 1890.

JAMES ARKELL.

In presence of—

JAS. D. MCDIARMID,

WM. M. MURRAY.