

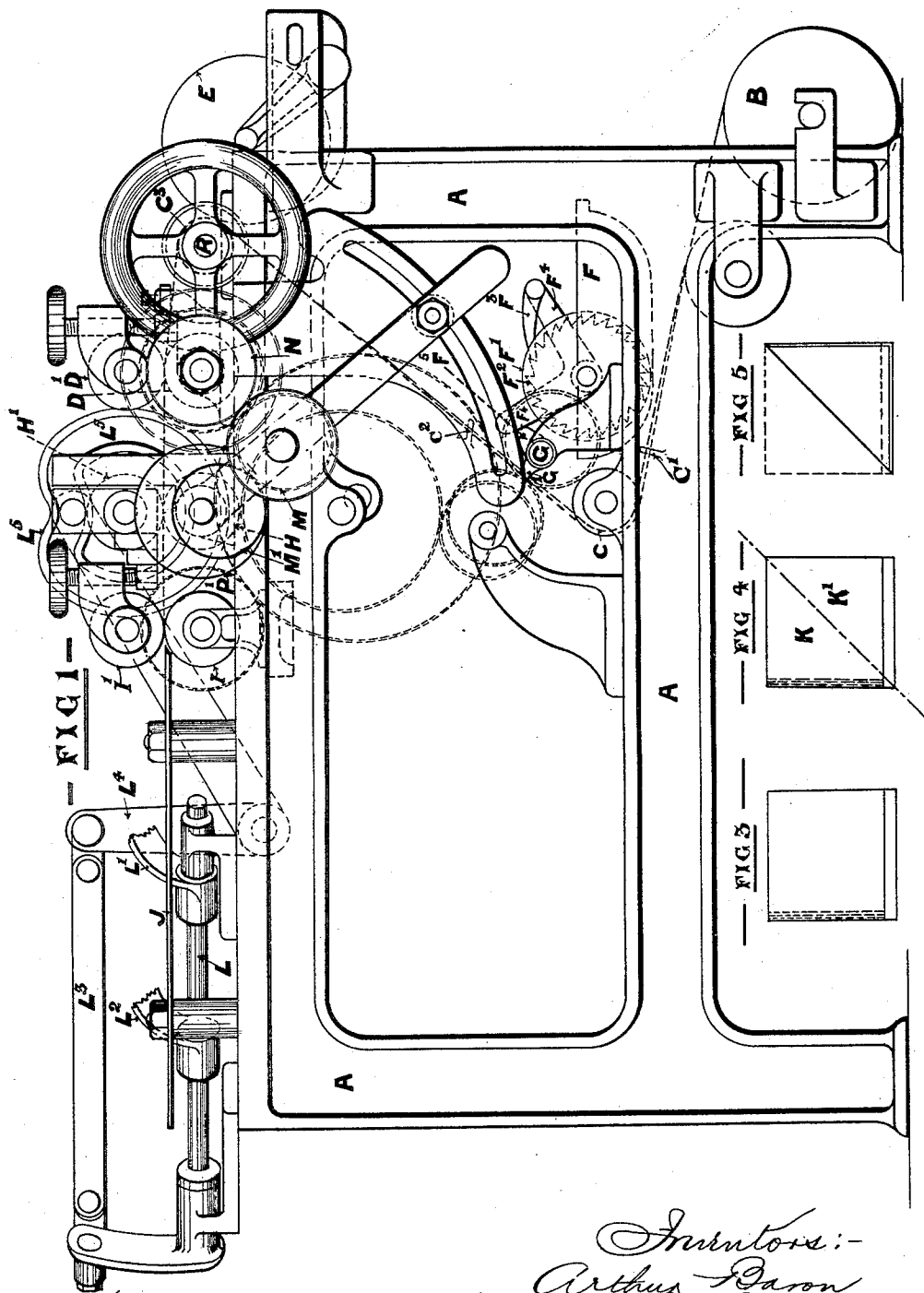
(No Model.)

3 Sheets—Sheet 1.

A. BARON & J. T. BIBBY.
MACHINE FOR MAKING THREE CORNERED BAGS.

No. 460,907.

Patented Oct. 6, 1891.



Messrs:—
 J. A. Rutherford.
 A. B. Norris,

Inventors:-
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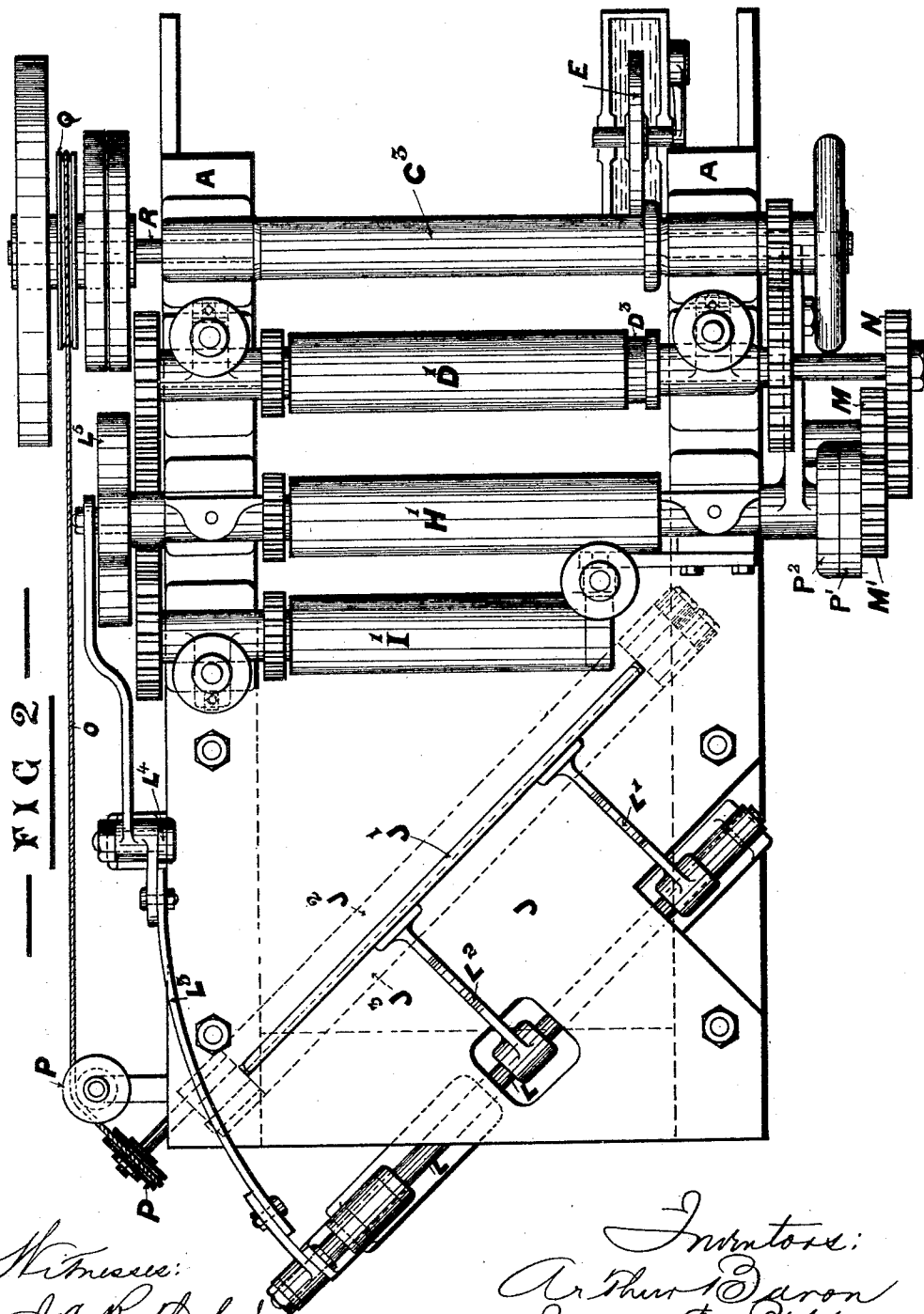
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3 Sheets—Sheet 2.

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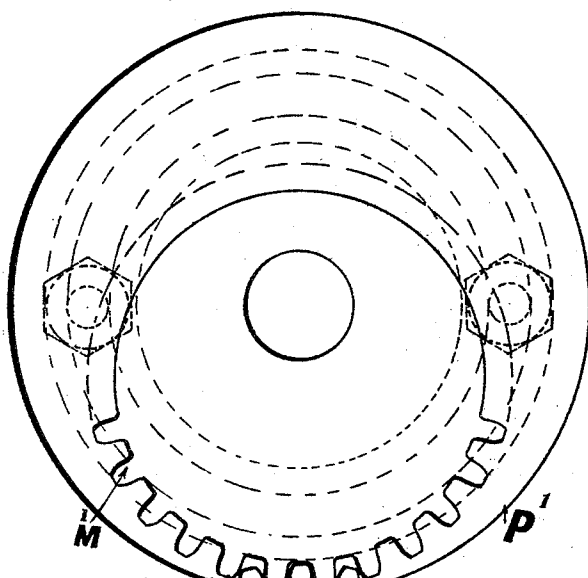
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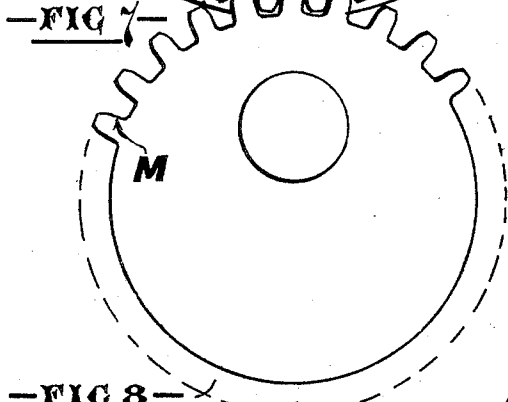
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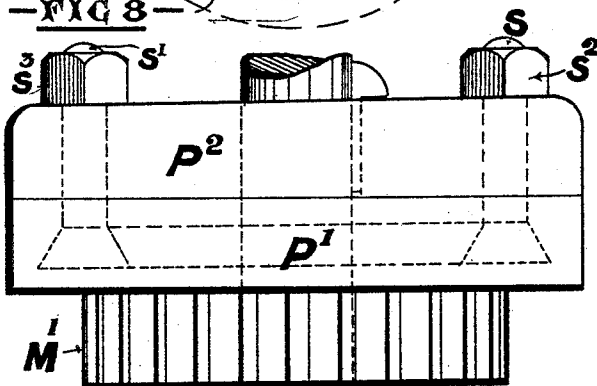
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—FIG 7—

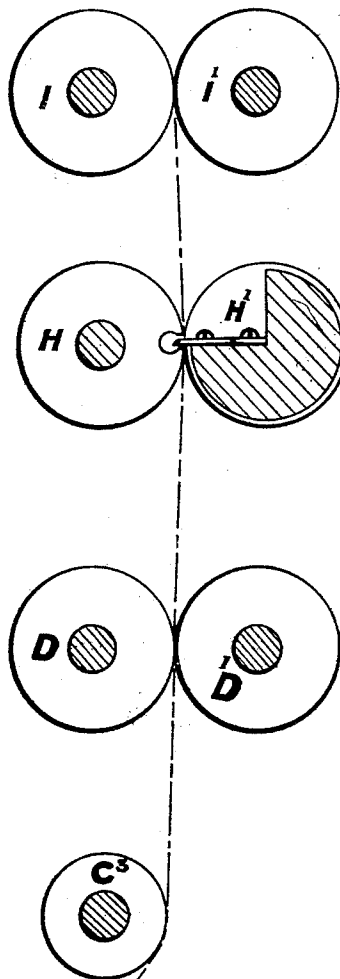


—FIG 8—



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—FIG 6—



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UNITED STATES PATENT OFFICE.

ARTHUR BARON AND JOHN THOMAS BIBBY, OF BURNLEY, ENGLAND.

MACHINE FOR MAKING THREE-CORNERED BAGS.

SPECIFICATION forming part of Letters Patent No. 460,907, dated October 6, 1891.

Application filed December 18, 1890. Serial No. 375,158. (No model.) Patented in England December 10, 1888, No. 17,992.

To all whom it may concern:

Be it known that we, ARTHUR BARON and JOHN THOMAS BIBBY, subjects of the Queen of Great Britain, residing at Burnley, in the county of Lancaster, England, have invented new and useful Improvements in Machines for Making Three-Cornered or Triangular-Shaped Bags, (for which we have received Letters Patent in England, No. 17,992, dated December 10, 1888,) of which the following is a specification.

This invention is designed to increase the production of cup-shaped, three-cornered, or triangular-shaped bags by a continuous and uninterrupted process, and also for the better securing of the tip or bottom of the bag than heretofore, the varied motions of the machine being so arranged that the severing, pasting, and folding mechanism of such bags may perform their respective functions uninterruptedly while the paper is in motion. For this purpose several sets of rolls are mounted in suitable bearings on a horizontal table on the upper part of the machine. The paper on entering the machine is first creased at the edge, so as to form a narrow fold longitudinally in the direction of its length. Within this fold or crease at intervals a supply of paste is deposited for the better securing of the tip or bottom of the bag. The paper thus creased and folded now passes over a disk partially immersed in a size-trough and receives upon the outer surface of the fold a streak or supply of paste, when it is then passed forward to the first pair of rolls, which may be termed the "feed-rolls," whence it passes between the next set or cutting-rolls to the third set or draw-rolls. The severance of the paper into lengths from the continuous roll of paper is effected by the cutting or severing rolls. One revolution of the said rolls severs a blank or sheet of paper. By increasing the speed of the cutting or severing rolls shorter blanks are severed, and longer blanks by reducing the speed. The traverse of the paper through the machine in both cases may be at the same continuous speed. The speed of the cutting-rolls is determined by change-wheels and eccentric or elliptical blocks or disks. Immediately the severed sheet or blank of paper emerges from and clears the draw-rolls. It is then creased by a knife or folding edge diag-

onally from corner to corner through a diagonally-disposed slit extending across the table, when it is seized by a pair of rolls situated immediately beneath and in a line with a diagonal slit, firmly pressing the pasted and folding edges together, depositing the bag now formed upon traveling tapes, which convey it to the drying-cylinder.

We would observe that by the above arrangement of mechanism various sizes of cup-shaped or three-cornered bags may be made in one machine, the speed of the cutting-rolls and the width of the paper determining the size of the bag.

In the accompanying drawings, Figure 1 is a side elevation, and Fig. 2 a plan, of a machine for the manufacture of cup-shaped or triangular bags during the continuous and uninterrupted traverse of the paper through the machine. Fig. 3 represents a paper blank with a narrow fold, when severed. Fig. 4 represents a similar view, indicating by dotted lines the direction of the final crease. Fig. 5 is an enlarged view of the bag as being finally closed and finished. Fig. 6 is a sectional elevation showing the position of the various sets of rolls, the gearing being excluded with a view to render the description of the said rolls and their respective functions more intelligible. Figs. 7 and 8 are respectively side and end elevations of a pair of elliptical or eccentric wheels and the manner of adjusting the same to the speed or traverse of the paper at the time of severing the paper blank.

Referring to Figs. 1 and 2, A is the framework of the machine, B a reel of paper, from which bags are subsequently assumed to be made. The paper, in passing into the machine, is made to overhang at the margin the end or edge of roller C to the extent of about five-eighths of an inch, so as to cause a deflection of the overhanging margin, which is then gradually turned under the traversing paper by guide-fingers C' and C² until it is finally laid flat with the fold on the top of the traversing sheet of paper when passing over the guide-roller C³ on its way to the draw-rollers D and D'. The paste-disk E deposits a continuous streak of paste along the upper surface of the narrow fold while passing over guide-roller C³, and to prevent the paste so

applied from adhering to the roll D' the latter is reduced in diameter at D³, as seen in Fig. 2, sufficient to be clear of the fold. During the formation of the narrow fold a supply of paste is deposited within the fold at suitable intervals, which is designed to assist in more firmly securing the tip or bottom of the bag. This supply of paste is used in addition to the longitudinal streak of paste deposited by the paste-disk E.

The pasting device for supplying and transmitting paste at intervals within the crease of the narrow fold may consist of paste-trough F, in which revolves the paste-disk F', on the arbor of which is fixed ratchet-wheel F². This wheel is actuated by catch F³, joined to one end of the lever F⁴, the other end of which is acted upon by the revolving cam F⁵, secured to shaft G. To this shaft is also secured the paste point or finger G', which, revolving, receives from the disk F' a supply of paste, which is transmitted within the crease of the narrow fold of each bag-length before the fold is finally laid and at a point which will subsequently form the tip or bottom of the bag.

We will now describe the varied functions of the several rolls and the knife or folding edge for the production of bags of a triangular or three-cornered shape in a continuous and uninterrupted manner. The first set of rolls D and D' draws the paper from the reel B into the machine. The paper thus drawn is severed into bag-lengths or sheet-blanks by the second pair of rolls H and H'. Each blank when severed is then carried forward by the third pair of rolls I and I', and immediately after its liberation from the said rolls it is struck by the knife or folding edge J' (seen in Fig. 2) through a diagonally-disposed slit formed in the plate J. By this operation the bag-length becomes creased diagonally on the line indicated in Fig. 4 and is deposited between the bite of the rolls J² and J³, the two triangular halves K and K' of the blank being folded one over the other, as seen in Fig. 5, to complete the bag.

The knife or folding edge J', as seen in Fig. 2, is attached to arms L¹ and L², secured to shaft L, from which projects upward a lever connected by a rod L³ to a vertical lever L⁴. (Seen in Figs. 1 and 2.) To the shaft carrying the lever L⁴ is secured another lever carrying at its outer end a bowl, acting in the recess of the heart-shaped cam L⁵, so as to suddenly depress the knife or folding edge J' at the proper time to form the final crease.

We would here observe that with the exception of the cutting-rolls H and H' the several sets or pairs of rolls above enumerated are arranged to revolve continuously in the same direction and at the same surface speed. If desired, however, the last set of rolls J² and J³ may have imparted to them an accelerated speed to deliver the finished bags upon the traveling tapes clear and out of the way of those behind and may be actuated by means of endless cord O and guide-pulleys P from

grooved pulley Q, fixed to driving-shaft R. The cutting-rolls, which are irregular but continuous in their motion, are held out of contact with each other by a projecting rim at each end of the rolls, so that the cutting-edges only are brought together and then only during the severance of the bag-length. (See Fig. 6.) This irregularity in the motion may be effected by a pair of elliptical or eccentric wheels M and M', which may be adjusted to increase or diminish the speed of the cutting-rolls immediately before and during the severance of the bag-length and in accordance with the speed or traverse of the paper through the machine when increasing or diminishing the bag-length, as hereinafter explained.

The eccentric-wheel M is in gear with corresponding wheel M', to which is cast or fixed disk-plate P', having an annular dovetailed recess sunk in its face, in which is fitted the edges of the bolts S and S'. (Seen in Figs. 7 and 8.) These bolts project through holes in disk-plate P², keyed to the arbor of the roll H, so that by tightening the nuts S² and S³ the two disk-plates and the eccentric-wheel M' become firmly secured to the arbor of the roll H. When the eccentric M' requires adjustment, as and for the purpose above described, the nuts S² and S³ are slackened and the eccentric-wheel M' moved to a suitable position on the arbor of the roll H, when the nuts are again tightened to secure the parts together.

In all cases the cutting-rolls are made to sever a bag-length at each revolution, and to increase or diminish the bag-length it is then requisite to substitute for change-wheel N (seen in Figs. 1 and 2) another of a smaller or larger diameter, when the speed of the cutting-rolls and the movement of the folding-edge will be simultaneously affected. When, however, any alteration in the speed of the cutting-rollers is effected by the substitution of a change-wheel, as above described, the eccentric-wheel M' will require to be moved or turned upon the arbor of the cutting-roll H at the same time to bring the cutting-edges of the rolls to the speed or traverse of the paper during the severance of the bag-length.

Having now described our said invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a machine for the manufacture of triangular-shaped bags, the combination of creasing-roll C and paste finger or point G', by which paste is deposited at intervals within the crease of the narrow fold, substantially as and for the purpose specified.

2. In a machine for the manufacture of triangular or three-corner-shaped bags, the combination of the cutting-rolls H and H', the eccentric-wheel M, the eccentric-wheel M', adjustably connected with one of the cutting-rolls for increasing or diminishing the speed of the cutting-rolls before and during the severance of the bag-length, and the

change-wheel device, substantially as described.

3. In a machine for the manufacture of triangular or three-corner-shaped bags, the combination of the cutting-rolls H and H', one of which is provided with a plate P², the eccentric-wheel M, the eccentric-wheel M', provided with a plate P', mounted on the plate secured to the roll, devices for adjusting the plate of the eccentric-wheel relatively to the plate on the roll for increasing or di-

minishing the speed of the cutting-rolls before and during the severance of the bag-length, and a change-wheel device, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

ARTHUR BARON.

JOHN THOMAS BIBBY.

Witnesses:

JOSEPH HOWARTH,

J. WESLEY C. STAFFORD.