J. ARKELL.

Pasting Apparatus for Bag-Machines.

No. 133,395. Patented Nov. 26, 1872.

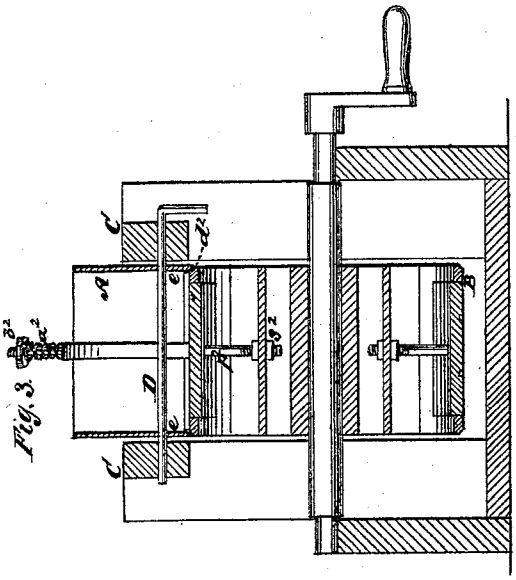

Fig. 3.

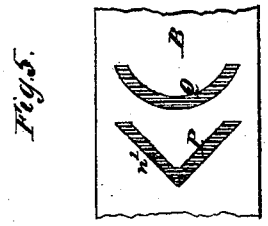

Fig. 5.

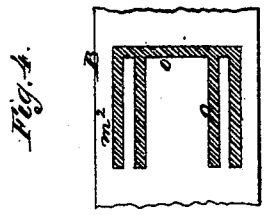

Fig. 4.

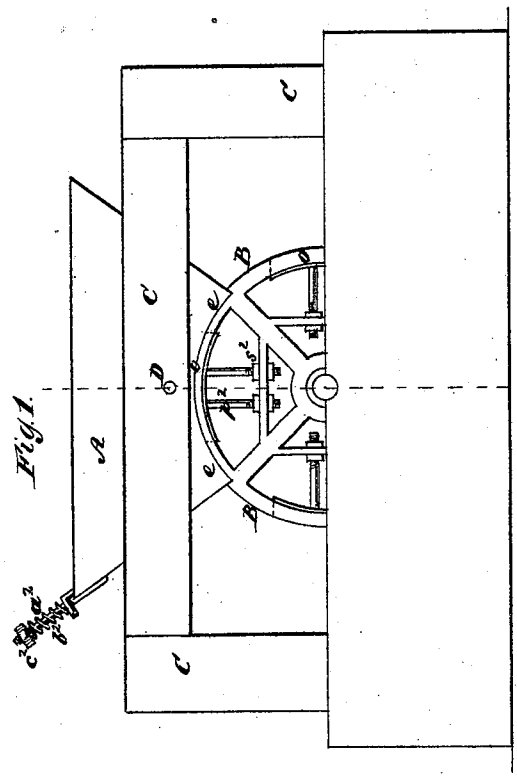

Fig. 1.

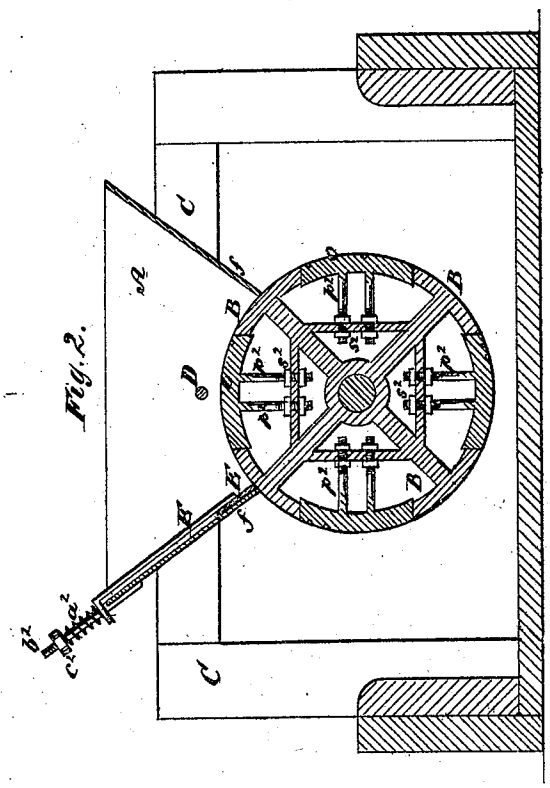

Fig. 2.

Witnesses:
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Inventor:
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By Attorney
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UNITED STATES PATENT OFFICE.

JAMES ARKELL, OF CANAJOHARIE, NEW YORK, ASSIGNOR OF ONE-HALF OF HIS RIGHT TO BENJAMIN SMITH AND ADAM SMITH.

IMPROVEMENT IN PASTING APPARATUS FOR PAPER-BAG MACHINES.

Specification forming part of Letters Patent No. **133,395**, dated November 26, 1872.

To all whom it may concern:

Be it known that I, JAMES ARKELL, of Canajoharie, of Montgomery county, in the State of New York, have invented certain new and useful Improvements in Pasting Apparatus for Paper-Bag Machines; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing making part of this application.

My invention relates to that class of machines in which a rotary carrier or simple paste-wheel runs in and is supplied with a paste box or trough, which paste-wheel comes in contact with the surface to be pasted, and thereon deposits the supply received (upon its periphery) from the box or trough in which it runs; and my invention has for its object to render this kind of pasters capable of doing kinds of work that, as heretofore made and used, it has been useless for, and at the same time to produce a pasting mechanism for all kinds of work which shall be simpler and more efficient than any kind heretofore made or used; and to these ends my invention consists, first, in the employment, in combination with a paste-wheel having parts of its surface cut out, of adjustable and removable portions for receiving and carrying along the paste, as will be hereinafter more fully explained; second, in the employment, in combination with the hopper and paste-wheel, of the spring or yielding "wiper," and a means for regulating and varying its pressure on the paste-wheel, as will be more fully set forth; third, in the combination, with the paste-wheel and any suitable supporting-frame, of a hopper arranged to oscillate on a pivot, and a spring presser or wiper, the whole arranged and operating as hereinafter more fully set forth.

To enable those skilled in the art to make and use my invention, I will proceed to more fully describe its construction and operation, referring by letter to the accompanying drawing, in which—

Figure 1 is an elevation; Fig. 2, a vertical longitudinal section; Fig. 3, a vertical cross-section; and Figs. 4 and 5, detail views of the wheel of a pasting device or paste-applying mechanism made according to or embracing my invention.

In the several figures the same part will be found designated by the same letter of reference.

A is a sort of hopper or bottomless box, which serves as a receptacle or reservoir to contain the paste. It may be made of any suitable material and of the shape shown. B is the paster or paste-wheel, which is made about as shown, is mounted upon a shaft which runs in suitable bearings, and is rotated by any suitable means. The hopper A is so arranged over the paste-wheel B (as seen) that the periphery or face of said wheel occupies the open lower portion of said hopper and constitutes a bottom or supporting surface to retain the contents of said hopper or box. C represents a frame, to which the hopper A is pivoted by a rod, D; and E is a spring-wiper, which is continually pressed down by a spring, a^2, arranged on a stud or pin, b^2, and the tension of which may be regulated at pleasure by a thumb-nut, c^2. The edges of the face of wheel B are slightly chamfered off, (as seen at d^2, Fig. 3,) and the side pieces *e* of the hopper A are extended down a little beyond the periphery of said wheel, as shown, while the end pieces *f* of said hopper come down onto and across the face of B, and, as the wiper E is constantly pressed down (by its spring) onto the face of wheel B, it tends to rock the hopper A slightly on its pivot D and keep that side of hopper A which is opposite to the wiper close down on the face of the wheel. In the face of the wheel B are formed openings, as seen at m^2 n^2, in which are arranged adjustable pieces *o*, in the faces of which are cut cavities of any desired shape, size, and depth, and these adjustable pieces let into the face of the wheel serve to carry the paste to be deposited on the article to be pasted. The adjustable pieces *o* *o* *o* are held in place and moved, as illustrated, by screws or bolts p^2 working in nuts at s^2; or they may be held and adjusted in any other desirable manner. At Figs. 4 and 5 I have illustrated the surface of the wheel B as if straightened out to conform to a flat plane, to show more clearly the plan of the paste-carrying depressed surfaces.

The operation of the paster is as follows: The hopper A being supplied with paste or

mucilage, and the spring-wiper E and adjustable carriers m^2 n^2 having been properly set, the wheel is rotated at a suitable velocity and in contact with the surface of the material or article to which it is desirable to apply the paste. As the face of the wheel B moves beneath the contents of the hopper A it is covered with the paste, and as it passes under the wiper E it is wiped clean of all paste, except where the depressed portions or cavities (at the carriers m^2 n^2) exist. These portions remain charged with a supply of paste, and, as the exposed portion of the face of the wheel thus charged travels in contact with any surface, (such as the paper or cotton of which bags, envelopes, &c., are made,) the paste contained in the depressions or carrying surfaces is deposited upon the surface of the article to be pasted, the surface covered with the deposit corresponding exactly with the shape or contour of the surface of the carrying or depressed portions of the wheel B. Thus, by means of depressions formed in any suitable manner in the surface of the wheel B and some suitable device for wiping off the rest of the the surface of said wheel, I am enabled to deposit upon any surface the material contained in the depressed portions of the wheel-face, very much after the fashion of lithographic printing, (or other processes in which a design is formed by depression in a surface, a semi-liquid material applied to the depressed portion, and the surface on which the design is to be be printed or to which the material contained in the depression is to be transferred brought into contact, under pressure, with depressed surfaces.)

By varying the tension of the spring a^2 the degree of pressure of the wiper on the face of the wheel may be increased or diminished, as circumstances may require; and as the hopper A is hung free to oscillate on the pivot-rod D, any pressure exerted by the wiper E tends to also keep close on to the surface of the wheel the opposite side of the hopper.

I have not shown any connection of the paster with the article to be pasted, but those skilled in the art will readily understand the various applications to such articles which may be made of my improved pasting mechanism.

My improved paster may be arranged so that the wheel B will be rotated in contact with the traveling bed-plate, cylinder, or other carrier surface, (of any sort of paper-bag, envelope, or other machine,) on which is held the article or material to which it is desired to apply, at certain localities, the paste or mucilage; and the wheel B may be so cut and its face so formed as to apply the paste in any design, or in any particular lines and places, as may be desired. The carriers at *o o o o* are formed and arranged to render the paste-wheel adapted to the application of paste in four lines or stripes parallel to each other, (and running in the direction of the circumference of the wheel,) and one running at right angles to these four, as used by me in a particular method of folding and pasting the bottom of "square-bottom" paper bags. At P is shown a differently-shaped depression and carrier adapted to apply the paste in two stripes forming an angle, as illustrated, while at Q is shown still another form of depression and carrier adapted to apply a semicircular stripe of paste.

It will be understood that the paste may be applied in any design or shape desired by making the depressions of the paste-wheel of the desired design.

For many purposes it may not be necessary to employ the removable or adjustable carrier-pieces let into the surface of the wheel, as I have shown them; but, in lieu thereof, simply cut numerous parallel cavities or depressions in the surface of the wheel B. These cuts should generally be made as short as practicable, so that they will perfectly retain the paste; and hence, in forming stripes in any direction on the face of the wheel, the cuts should run cross-wise, or nearly so, of the stripe. By this method the cuts in stripes which run (circumferentially) on the face of the wheel will lie nearly crosswise of the line of motion; and in discharging or depositing their contents onto any yielding surface the paste will, if the cuts be made close enough together, drag from one to another and form a continuous stripe. As this tendency and operation in discharging or depositing will not not be so great in the cuts of stripes running across the face of the wheel, in which the cuts run nearer parallel with the path of motion of the wheel, it is advisable to make the cuts of such stripes a little closer together.

It will be seen that in the use of such a pasting device as I have shown and described it is easy to apply the paste by means of a simple wheel directly from the box in which the wheel runs to any particular part of an object brought to bear on the face of the wheel, and to put the paste on in any exact lines and designs desired.

I am aware that paste-wheels have been used in connection with a receptacle containing the paste, and so arranged and operating as to carry and discharge a continuous deposit. I am also aware that blocks, stones, and cylindrical surfaces have been made with depressions into which printing matter has been put, and such matter then deposited upon the surface of paper and other material brought to bear against the surface of the cylinder, block, or stone; and I do not wish my invention to be confounded with any such things; but, having explained my new device or contrivance for applying paste, and not wishing to be understoood as limiting my in-

vention to the details of construction shown,

What I claim as new, and desire to secure by Letters Patent, is—

1. In an apparatus composed of a suitable paste-receptacle and paste-wheel, the removable or adjustable carriers, arranged to operate substantially as described, for the purpose set forth.

2. In combination with the hopper and paste-wheel, the spring or yielding wiper, and a means for varying and regulating its pressure on the paste-wheel, as set forth.

3. The combination, with the paste-wheel and any suitable supporting-frame, of a hopper arranged to oscillate on a pivot and a spring presser or "wiper," the whole arranged and operating substantially as described, for the purpose set forth.

In testimony whereof I have hereunto set my hand and seal this 11th day of April, 1872.

JAS. ARKELL. [L. S.]

Witnesses:

GEO. H. WATSON,

CHARLES BULLOCK.