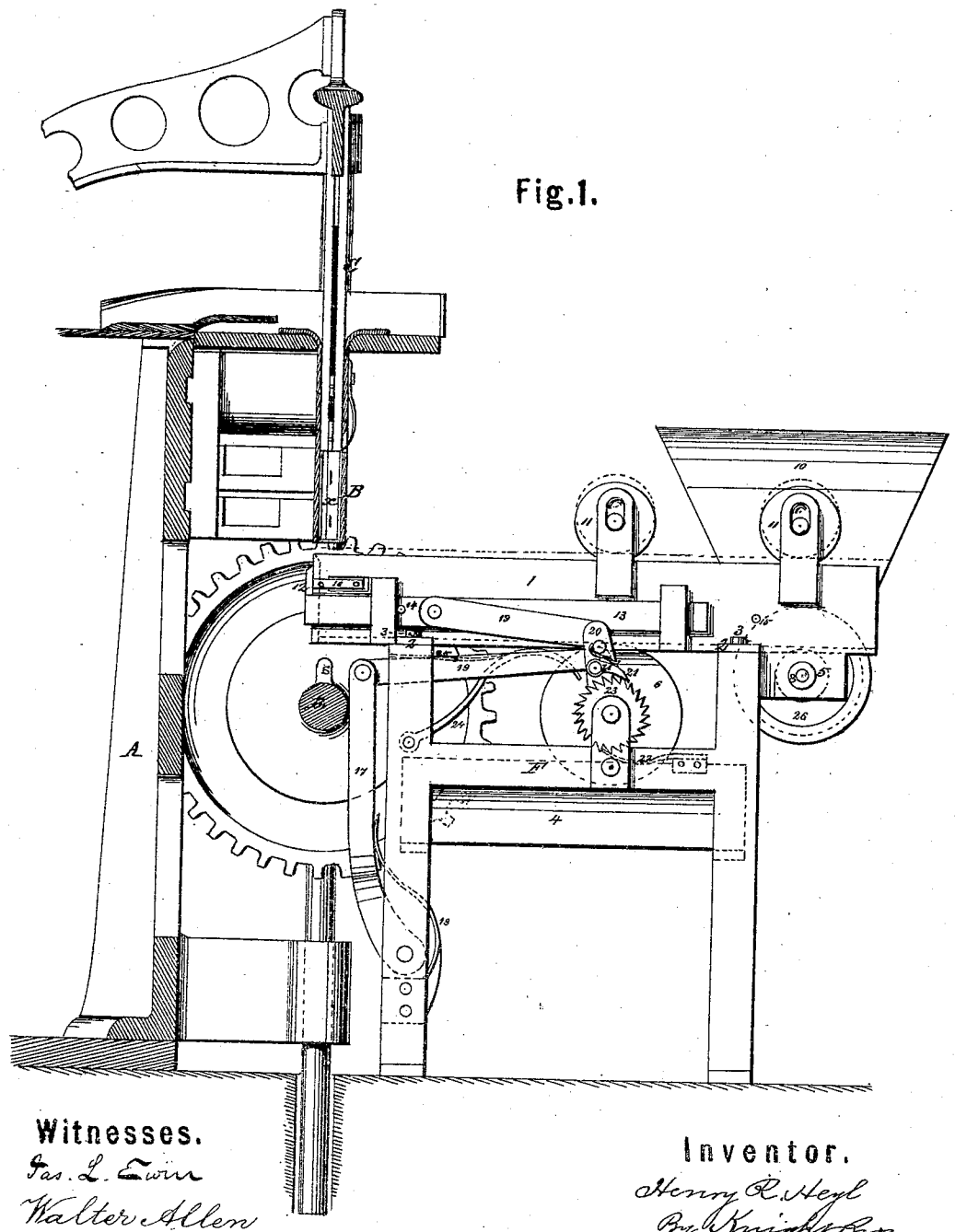
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H. R. HEYL.

Paper-Box Machine.

No. 132,076. Patented Oct. 8, 1872.

Fig. 1.



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2 Sheets--Sheet 2.

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Fig. 2.

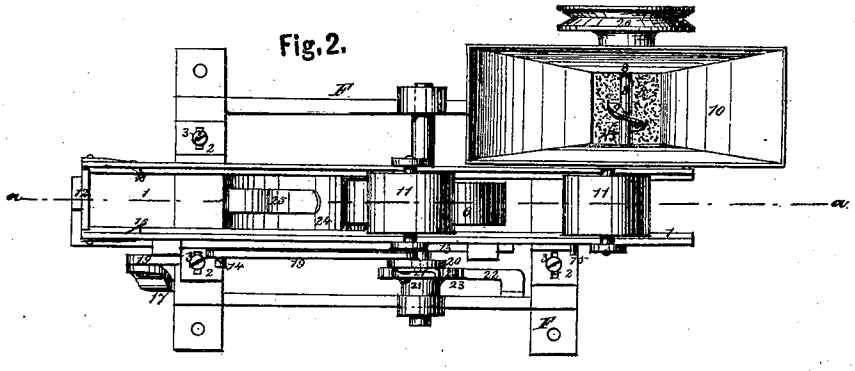


Fig. 3.

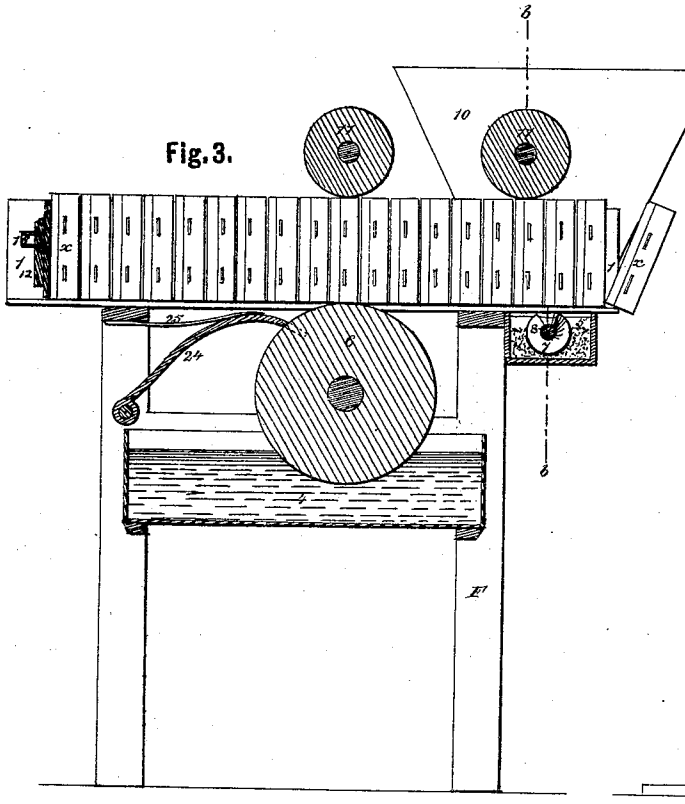
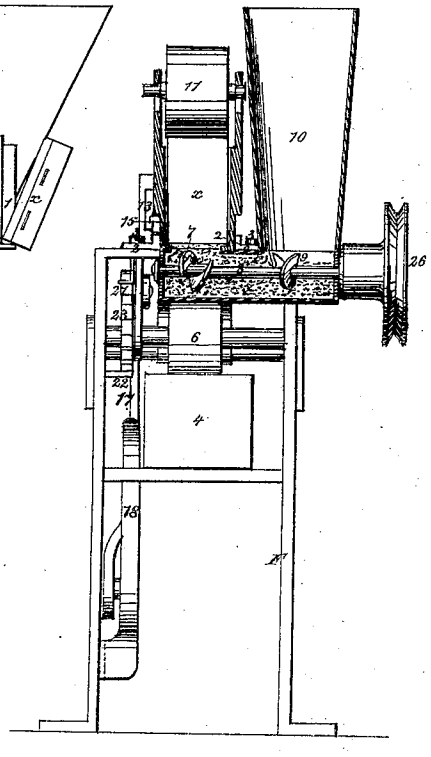


Fig. 4.



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UNITED STATES PATENT OFFICE.

HENRY R. HEYL, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO AMERICAN PAPER-BOX-MACHINE COMPANY, OF SAME PLACE.

IMPROVEMENT IN PAPER-BOX MACHINES.

Specification forming part of Letters Patent No. **132,076**, dated October 8, 1872.

To all whom it may concern:

Be it known that I, HENRY R. HEYL, of the city and county of Philadelphia, in the State of Pennsylvania, have invented a Sanding-Machine for Match-Boxes, of which the following is a specification:

This machine is primarily designed as a sanding attachment for the Heyl paper-box machine, to complete the manufacture of match-boxes. As thus employed it receives the boxes directly from the main machine, and is operated in unison therewith. The boxes are received in vertical position in a horizontal trough, and are fed, intermittently, first, over a pasting-roller and then over a sanding device, each supplied by a reservoir and suitably actuated, and then the sanded boxes are discharged, the entire operation being automatic and continuous. The invention consists in the general and particular construction of the machine, as hereinafter set forth.

In the accompanying drawing, Figure 1 is a side elevation of the apparatus as applied to a paper-box machine, a portion of the latter being shown in vertical longitudinal section; Fig. 2 is a plan of the sanding-machine; Fig. 3 is a vertical longitudinal section of the same on the line *a a*, Fig. 1; and Fig. 4 is a vertical transverse section on the line *b b*, Fig. 3.

The machine is represented as in operation in Figs. 3 and 4, and by dotted lines in Fig. 1.

A, Fig. 1, represents a portion of the framing; B, the folding tube or mold; C, the plunger; and D, the main shaft of a paper-box machine. *s* represents a fixed stud or cam on the driving-shaft D, and *x* a box ready to be discharged from the mold B. F represents a light metallic frame to furnish proper support and bearings for the operative parts of the sanding-machine. The boxes *x* are fed, preferably, by the discharge of the box-machine into a horizontal trough, 1, adapted to receive the same in proper position, and to conduct them to the final discharge. This trough is composed of vertical sides, with flanges to support the boxes at bottom, the same being adjustable by means of slotted knees, 2, and set-screws 3, or their equivalent, to accommodate boxes of different sizes. Beneath the open bottom of this trough is a paste or glue reservoir, 4, and a sand-box, 5. The reservoir 4 is occupied by a vertical pasting-roller, 6, and from the box 5 the sand is thrown or forced against the pasted surfaces of the boxes by a sectional or continuous spiral flange or screw, 7 9, on a shaft, 8, which also serves, by spiral flange 9, to feed the sand from a hopper, 10. Pressure-rollers 11 are arranged over the pasting and sanding devices. For feeding the boxes within the trough 1 the receiving end of the same is provided with a sliding head, 12, guided by a stem, 13, and controlled as to length of strokes by stops 14 15. The boxes are prevented from springing back or following the slide 12 during its return movement, by spring catches or pawls 16 in the sides of the trough 1. These yield to the boxes in their forward movement, and engage behind the last one, so as to secure a clear space for the reception of the next box. For operating the feeding-slide 12 from the box-machine a vertical lever, 17, is arranged at the receiving-end of the sanding-machine so as to engage with the stud or cam *s* on a shaft, D, of the main machine, from which it receives an impulse at each revolution, its return movements being accomplished by a spring, 18, or a weight, which may be applied at any convenient point. This lever is connected to the stem 13 of the feeding-slide 12 by means of connecting-rods 19 19 and an interposed rocking-lever, 20. The latter carries also one of a pair of pawls, 21 22, engaging with a ratchet-wheel, 23, on the shaft of the pasting-roller 6. The pawl 21 does not begin to act until the last box is first closed up against the column and the latter moves. The pawl 22 holds the ratchet so as to insure this action. The pasting-roller is thus actuated in correspondence with the movements of the boxes, remaining at rest during the return movements of the feeding-slide, and until the latter begins to act on all the boxes. By these means the boxes are pasted by simple contact with the pasting-roller instead of a scraping or wiping action, as would be the case if the pasting-roller did not move at the same time and speed with the boxes. A scraper, 24, with spring 25, is applied to the pasting-roller 6 to remove the surplus paste or glue and to regulate its action. The shaft 8 of the sander is furnished with a pulley, 26, and is driven from

any convenient rotary shaft, the supply of sand being regulated by its speed. At each rotation of the driving-shaft a box is received in the trough 1, another is pasted, another sanded, and a sanded box is discharged at the delivery end of the machine. The trough may be of any preferred capacity.

Claims.

The following is claimed as new:

1. A machine for sanding match-boxes, composed of a box-trough, 1, pasting-roller 6, sander 8, and feeding-slide 12, with proper appurtenances, arranged and operating substantially as herein shown and described.

2. The sander-shaft 8, with spiral flanges 7 9, operating as described, for applying and feeding the sand.

3. The combined arrangement of the pasting-roller 6, sander 8, and pressure-rollers 11, substantially as shown and described.

4. The combination of the lever 17, connecting-rods 19 19, rocking-lever 20, pawl 21, and ratchet 23, or their substantial equivalents, for operating the feeding-slide 12 and pasting-roller 6 in unison or correspondence, as set forth.

HENRY R. HEYL.

Witnesses:
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