# B. F. FIELD.

## Machine for Making Pasteboard.

No. 167,233. Patented Aug. 31, 1875

Fig. 2

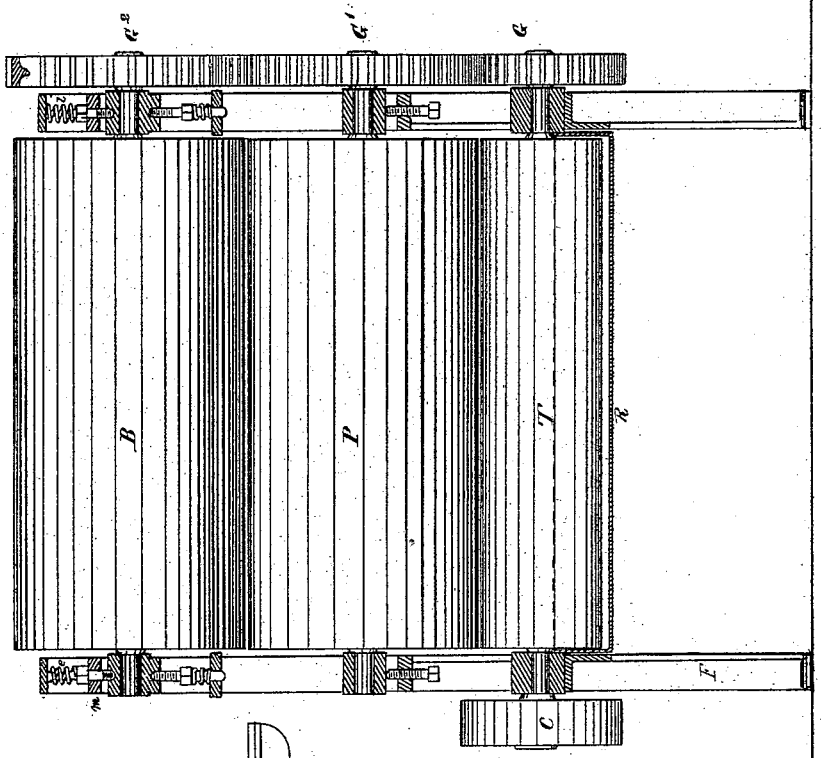
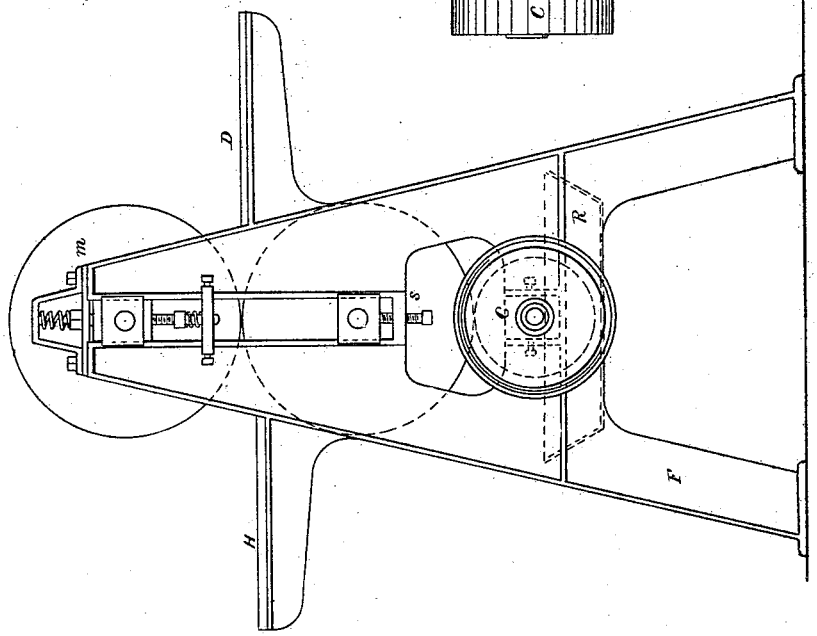



Fig. 1

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# UNITED STATES PATENT OFFICE.

BENJAMIN F. FIELD, OF LIMA, OHIO.

## IMPROVEMENT IN MACHINES FOR MAKING PASTEBOARD.

Specification forming part of Letters Patent No. **167,233**, dated August 31, 1875; application filed December 24, 1874.

CASE A.

*To all whom it may concern:*

Be it known that I, BENJAMIN F. FIELD, of Lima, in the county of Allen and State of Ohio, have invented certain new and useful Improvements in a Machine for Making Pasteboard; and I do hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawings forming part of this specification, in which—

Figure 1 is an end elevation, and Fig. 2 a side elevation, showing the frame in section.

Similar letters of reference in the accompanying drawings denote the same parts.

This invention relates to that class of machines employed for the manufacture of pasteboard from sheets of paper or board; and consists in an improved combination and adaptation of parts, whereby the separate sheets of paper or board which are to be united together to form the desired article of manufacture can be coated with paste on either or both sides more easily, conveniently, and expeditiously than heretofore.

In the drawings, F represents the frame of the machine, which may be of any suitable shape to support and furnish ready access to the working parts. R is a paste-reservoir, supplied in any of the numerous modes adopted by manufacturers. T is the transferring-roll, which takes the paste from the reservoir and transfers it to the lower paste-roll P; and B is the upper paste-roll, between which and the lower paste-roll the paper or board is passed, being fed through from a platform, D, to a platform, H. The rolls are driven by power applied at C, and communicated from one to another by cog-gearing G $G^1$ $G^2$, the gear-wheels $G^1$ $G^2$ being of equal size. The journal-boxes of the lower or transferring roll are not adjustable, but are clamped tightly in place by lateral screws, so that if at any time the vibration of the machinery causes them to work loose to any extent they can be set firmly in place again. The journal-boxes of the middle roll are made vertically adjustable by screws *s* or other means, so that the quantity of paste transferred from the lower roll to the middle roll can be regulated and controlled at will by the attendant. The journal-boxes of the upper roll are vertically adjustable by set-screws *i i*, so that the space between rolls P B can be varied at will to adapt the machine to apply paste to paper or board of different thicknesses, and these last-named boxes are also held down by springs *e e*, which complete the adaptation of the roll as a press-roll, in addition to its function of paste-roll.

A very satisfactory mode of constructing and applying the set-screws and springs for the upper roll is represented in the drawings, which show the head of the set-screw resting on the upper surface of a plate, *m*, through which the screw hangs loosely. By turning the head of the screw the box is raised or lowered, the spring-pressure remaining the same. The upper bearing of the spring may be made adjustable by a set-screw, if desired, so that the spring-pressure may be varied at will; and the bearing of the roll may have a spring and set-screw applied underneath as well as above, to facilitate the perfect adjustment of the roll to any weight desired.

The machine is operated as follows: After supplying the paste-box the machine is started up and allowed to run until the roll T has transferred a coating of paste to the roll P, the thickness of which will be measured by the distance between the surfaces of said rolls, and until the roll P has, in its turn, transferred a coating of paste to the roll B, so that the surfaces of both rolls are covered with paste. The paper is then fed in sheets between the rolls P B, receiving therefrom a film of paste on both sides, after which the sheets are piled one upon another till the requisite number is obtained to make a sheet of board of any desired thickness, when they are removed to a press and united by pressure. In making a sheet of board out of three sheets of paper, for example, I would first lay on the table one sheet of paper without pasting it. I would then run another sheet through the machine, pasting it on both sides, and lay that sheet upon the first one. I would then place two other sheets together and run them through the machine, pasting each one on the outside, and, separating them, use one to complete my sheet of board, reserving the other to be used in completing the next sheet of board.

From this explanation of the mode of oper-

ation of my improved machine, it is obvious that the two paste-rolls B P should be so large that the circumference of each of them will be at least equal to the length of the sheets to be passed through between them; otherwise, the upper roll would not be able to apply the paste over the whole surface of the sheet on that side, since the supply of paste from the roll P to the roll B is cut off during the passage of the sheet of paper. The middle roll must, of necessity, be made of the same size as the upper roll, in order that neither roll may rub or scrape the surface of the paper.

I claim as my invention—

The combination of the platform, the frame, the paste-box, the transferring-roll T, and the two large rolls P B, of equal size, the rolls T P, and the rolls P B, being, respectively, adjustable with relation to each other, and the roll B bearing against the roll P with a yielding pressure, substantially as and for the purposes set forth.

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Witnesses:

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