2 Sheets—Sheet 1.

J. CALLER.

Machines for Pasting together and Drying Rolls or Continuous Sheets of Paper and other Fabrics.

No. 203,886. Patented May 21, 1878.

Fig. 1

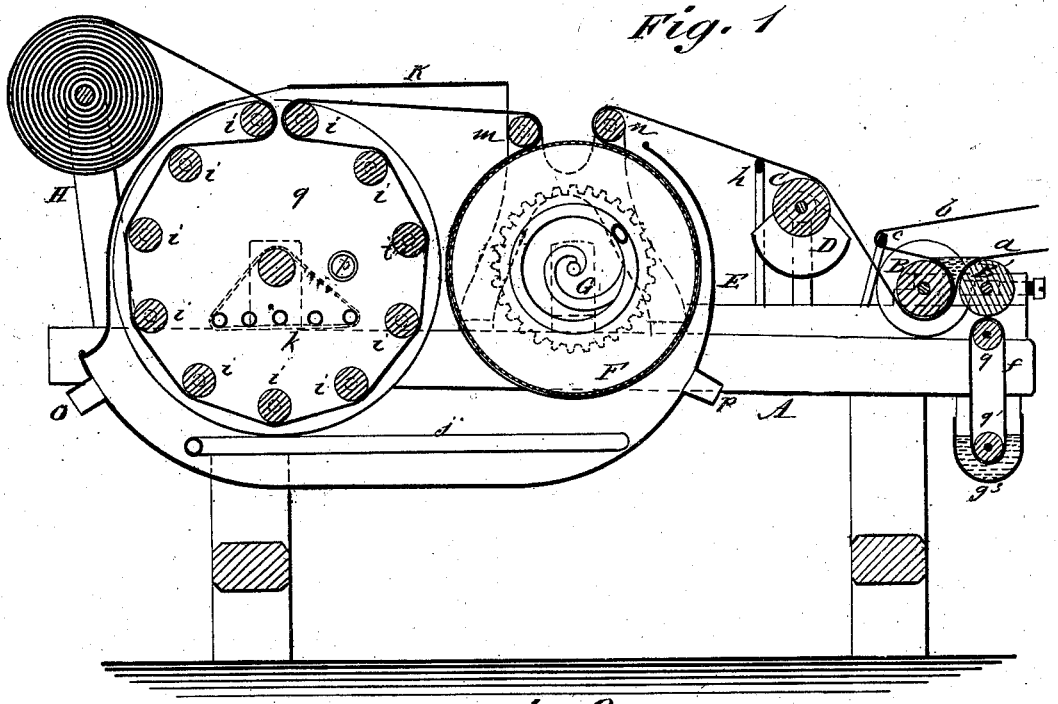
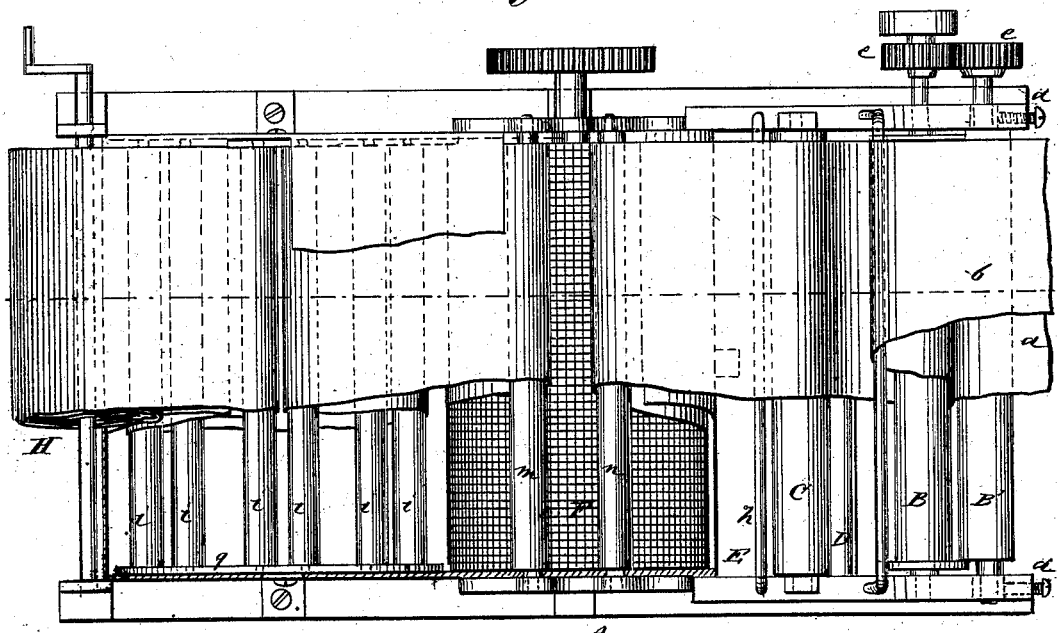


Fig. 2



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2 Sheets—Sheet 2.

J. CALLER.

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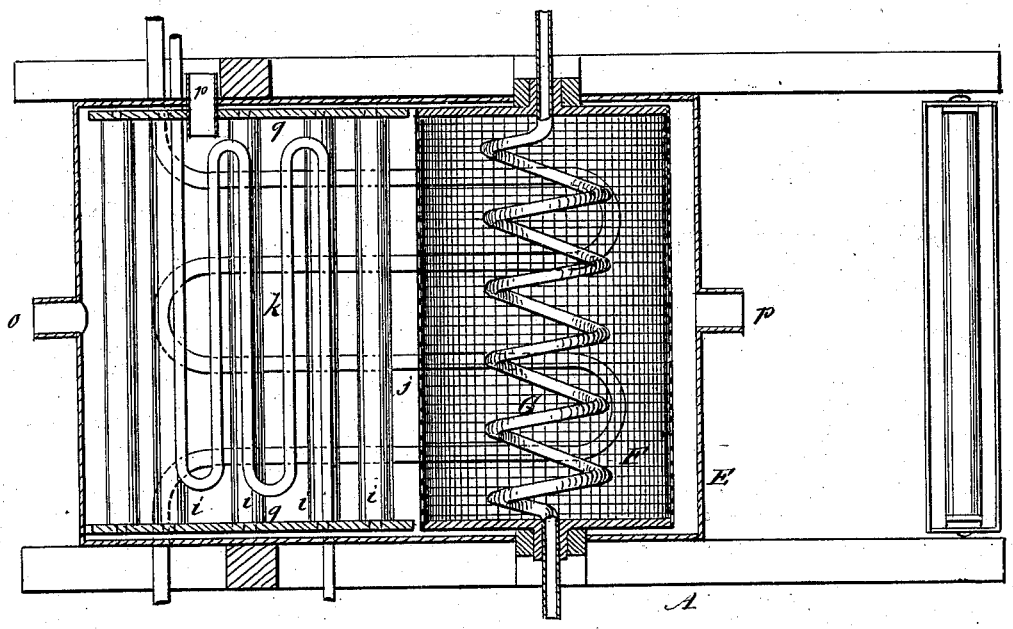
Fig. 3



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UNITED STATES PATENT OFFICE.

JOSEPH CALLER, OF CAMBRIDGE, MASSACHUSETTS.

IMPROVEMENT IN MACHINES FOR PASTING TOGETHER AND DRYING ROLLS OR CONTINUOUS SHEETS OF PAPER AND OTHER FABRICS.

Specification forming part of Letters Patent No. **203,886**, dated May 21, 1878; application filed April 13, 1878.

To all whom it may concern:

Be it known that I, JOSEPH CALLER, of Cambridge, in the county of Middlesex and State of Massachusetts, have invented a new and Improved Pasting-Machine, of which the following is a specification:

Figure 1 is a longitudinal section of my improved pasting-machine. Fig. 2 is a plan view, partly in section. Fig. 3 is a horizontal section taken on line *y y* in Fig. 1.

Similar letters of reference indicate corresponding parts.

My invention relates to a machine for pasting and combining two or more strips of textile or fibrous material and drying the same.

The invention consists in an arrangement of pasting-rolls, a sizing-roll, and drying-cylinders, for simultaneously drying both sides of the paper.

Referring to the drawing, A is the frame, which contains all of the parts of the machine, and B B′ are rollers, between which the two continuous strips *a b* pass from their respective rolls. These strips may both be cloth or paper, or one may be cloth and the other paper, or they may consist of any other fibrous or textile material. The strip *a* passes directly over the roller B′, and the strip *b* passes under a rod, *c*, that is supported above the frame A, and above the plane of the upper side of the rollers B B′, thence over the upper surface of the roller B, thence around the under surface of the said roller, and upward over the sizing-roll C.

The roller B is flanged at each end, and its flanges overlap the ends of the roller B′, and the roller B′ is set up against the roller B by set-screws *d*, that bear against its boxes. The rollers B B′ are made to rotate together by spur-wheels *e* on their respective shafts, which are of the same diameter at their pitch-line as the rollers.

Paste is put between the rollers B B′, and is confined by the flanges and by the close contact of the rollers.

The paste is prevented from drying and accumulating on the rollers B′ by an endless cloth apron, *f*, which runs around the rollers *g g*^{1}, and is kept closely in contact with said roller. The apron *f* dips in water contained by the trough *g*^{3}, and keeps the roller B′ constantly moistened.

The sizing-roller C turns in a trough, D, which contains the sizing, and the paper or cloth by touching it receives the sizing, which, together with the paste, requires to be dried. A rod, *h*, is supported behind and above the roller C, to guide the combined strips and to remove the surplus sizing, which drops into the trough D.

Beyond the sizing-roller there is a casing, E, which contains the drying apparatus, which consists of a wire-gauze cylinder, F, a series of rollers, *i*, and the steam-pipes *j k*.

The wire-gauze cylinder F is provided with hollow journals, and contains a steam-coil, G, which receives and discharges steam through the journals.

Two small rollers, *m n*, are journaled above the cylinder F, at opposite sides of an opening in the casing E, and the paper passes from the sizing-roll C to the roller *n*, thence around the wire-gauze cylinder F, and around the roller *m* to the series of rollers *i*, passing around one of the upper rolls of the series, thence around the entire series, and over one of the upper rolls to the receiving-rolls H. Below the wire-gauze cylinder F there is a convoluted steam-pipe, *j*, and within the series of rollers *i* there is a similar steam-pipe, *k*.

The casing E has a removable upper portion, K, which is slotted to permit the paper to pass out, and it is provided with a pipe, *o*, for the admission of hot air from a blower, and has a pipe, *p*, for the escape of air and moisture.

One of the heads *q*, which support the series of rollers *i*, is also provided with a hot-air supply-pipe, *r*. The combined fabric is by means of this device acted upon from both sides by the heat and heated air, but does not come into contact with any surface sufficiently hot to injure the sizing or paste. The rotating parts of the machine receive their motion through suitable gearing from any convenient motor.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The roll B, having flanged ends, and the plane-roll B′, in combination, for containing

paste and combining two or more fabrics, substantially as shown and described.

2. The combination of the endless apron *f* with the roll B′, substantially as and for the purpose herein shown and described.

3. The combination, in a pasting-machine, with the pasting and sizing rolls, of means, substantially as described, that simultaneously steam-dry the stock on both sides.

4. The wire-gauze cylinder F, the steam-coil G, the casing E, and steam-coil *j*, in combination, for applying heat to the inside and outside of the strip simultaneously, substantially as shown and described.

5. The combination of the rollers *i*, inside coil *k*, outside coil *j*, and the casing E, substantially as shown and described.

JOSEPH CALLER.

Witnesses:
GEO. M. HOPKINS,
C. SEDGWICK.