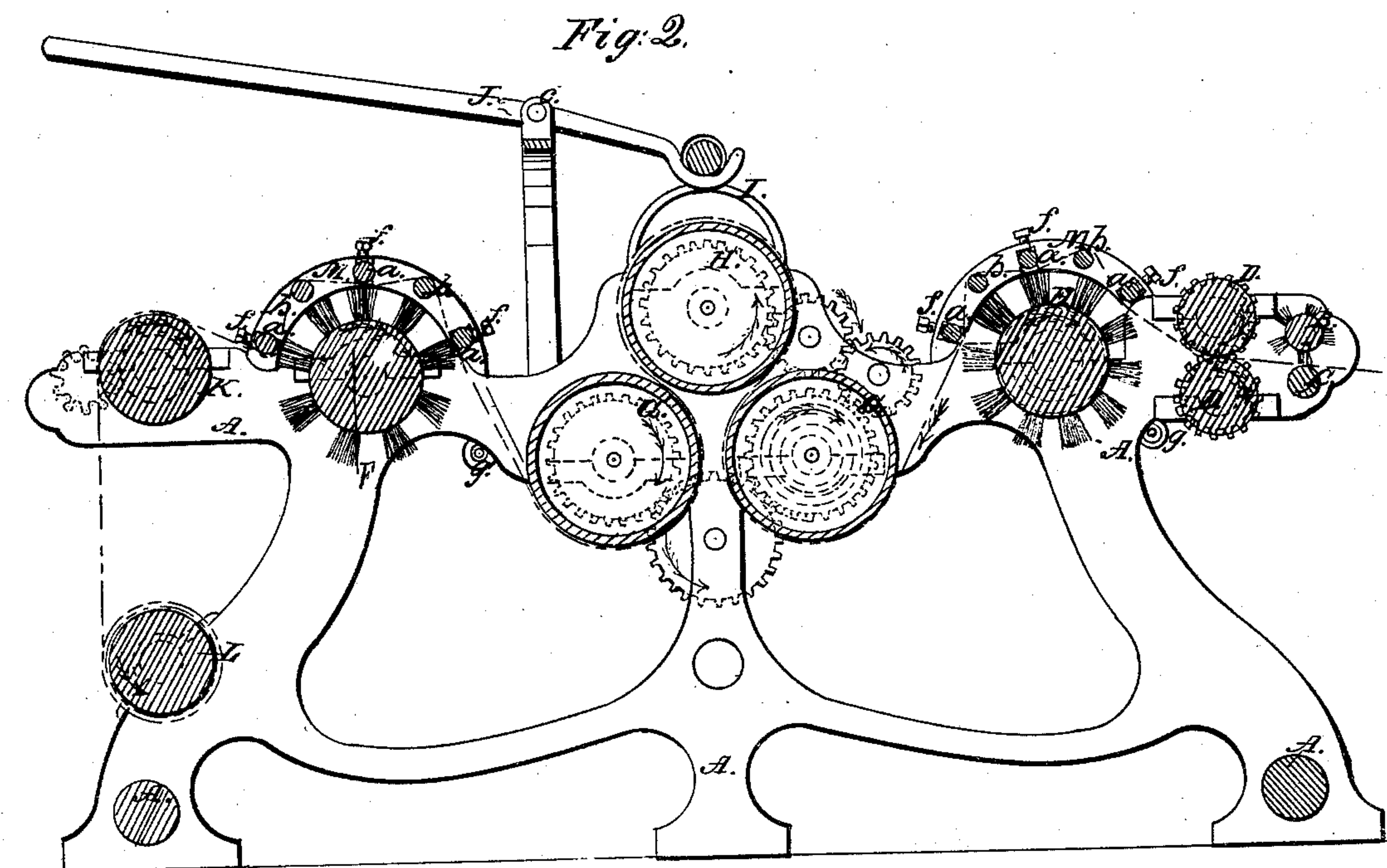
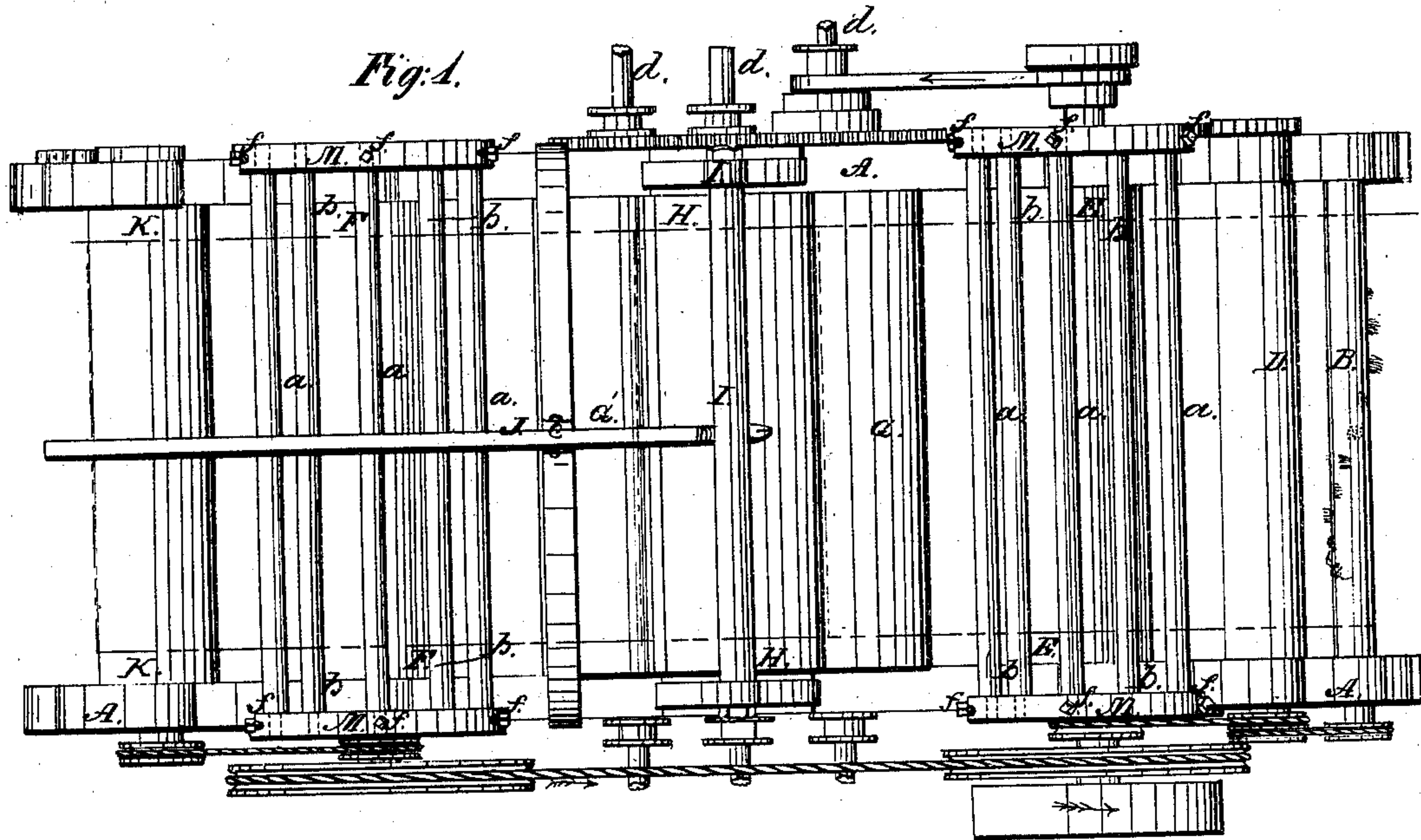


H. James. Cloth Finishing Mach.

N: 41,581.

Patented Feb. 9, 1864.



Witnesses:
J. C. Coombs
G. W. Reen

Inventor:
H. James
per M. H. James
att'y

UNITED STATES PATENT OFFICE.

HENRY JAMES, OF NORWALK, CONNECTICUT, ASSIGNOR TO HIMSELF, N. S. SEELY, AND W. H. SEELY, OF BROOKLYN, N. Y., AND STAMFORD, CONN.

IMPROVEMENT IN MACHINERY FOR FINISHING CLOTH.

Specification forming part of Letters Patent No. 41,581, dated February 9, 1864.

To all whom it may concern:

Be it known that I, HENRY JAMES, of Norwalk, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Machinery for Finishing and Refinishing Cloth and other Fabrics; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a plan of a machine constructed according to my invention. Fig. 2 is a longitudinal vertical section of the same.

Similar letters of reference indicate corresponding parts in both figures.

It consists in a novel arrangement and combination of brush-cylinders, calendering-rollers, and guide-rollers, constituting a very effective and simple machine for finishing, embossing, and refinishing cloth and other fabrics.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A is the framing of the machine. B is a small rotating brush-cylinder, and C a roller arranged below it. This cylinder and roller are arranged in fixed bearings and the fabric passes between them on entering the machine to have its back brushed.

D D are a pair of feed-rollers arranged in advance of the brush-cylinder B and roller C, to feed the fabric to the machine.

E and F are the two main rotating brush-cylinders for brushing the face of the fabric, one arranged near the feed-rollers and the other near the other end of the machine; and *a a* and *b b* are the guide-rollers for guiding the cloth into contact with the brushes of the cylinders E F.

G G' H are the calender-rollers arranged between the two brush-cylinders E and F, the rollers G G' being arranged at a short distance apart, on the same level below the roller H, in fixed bearings, and the roller H being arranged in vertically-sliding boxes over the space between the rollers G G', so that the fabric may be pressed between it and each of the rollers G G' by the weight of the said roller H, and so be twice pressed and calendered by the

three rollers. The boxes of the roller H are connected by a yoke, I, which is suspended from one end of a lever, J, which is arranged on a fixed fulcrum, *c*, and which may be loaded at the other end to graduate the pressure of the roller H by a greater or less tendency to lift the said roller. The three rollers G G' H are severally heated, either by steam or by the flame of gas, the steam or gas being introduced into them by pipes *d d*, passing through their journals at one end.

K is a roller over which the fabric is conducted from the brush-cylinder F to a take-up roller, L. This may also constitute a measuring-roller. The several cylinders and rollers have rotary motion imparted to them by means of gearing or belts in the directions respectively indicated upon them by arrows in Fig. 2. The fabric is shown in red color in both figures, so that its course through the machine may be traced.

The rollers *a a* and *b b*, which are arranged parallel with and over the rotary brush-cylinders E F, are supported by arches M N on the sides of the framing. The rollers *b b*, over which the fabric passes, have their journals fitted to stationary bearings in the said arches, and the alternating rollers *a a*, under which the fabric passes, have their journals fitted to boxes, which are adjustable in the said arches toward or from the axis of their respective brush-cylinder by means of screws *f f* screwing into the said arches. The rollers *b b* serve to hold the fabric out of contact with the brushes, and the rollers *a a* serve to keep the fabric within the range of contact with their respective brushes at a number of places corresponding with the number of said rollers, so that the face of the fabric may be brushed several times or in several different places simultaneously in passing over the said cylinders E F. The rollers *a a b b* are all caused to rotate by the friction of the fabric passing over or under them.

g g are perforated steam-pipes for the supply of steam in small jets under the fabric to moisten its face preparatory to the action of the brushes upon it, the said pipes being so arranged as to expose the fabric to the steam as it approaches the cylinders E and F. These pipes may be used or not, as may be necessary.

The fabric is fed into the machine by the feed-rollers D D, and the take-up roller L keeps it at a proper tension in passing through. Its back is first brushed by the brush B, and its face afterward brushed twice, or more times, by the brushes on the cylinder E, whence it first passes on to and between the calendering-rollers G H and is pressed, and afterward passes between the rollers G' H, to be again pressed. From the latter rollers it passes to the cylinder F, by whose brushes its face is again brushed several times to give it a perfect finish before passing over the roller K to the take-up roller L.

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

The combination of the two brush-cylinders E F, the system of guide-rollers *a a b b*, and the three interposed calendering-rollers, the whole arranged and operating substantially as herein specified.

HENRY JAMES.

Witnesses:

WM. H. HOLLY,
S. B. GORHAM.