2 Sheets--Sheet 1.

T. J. MAYALL.

Machines for Making Carpet-Linings.

No. 157,852. Patented Dec. 15, 1874.

FIG. I.

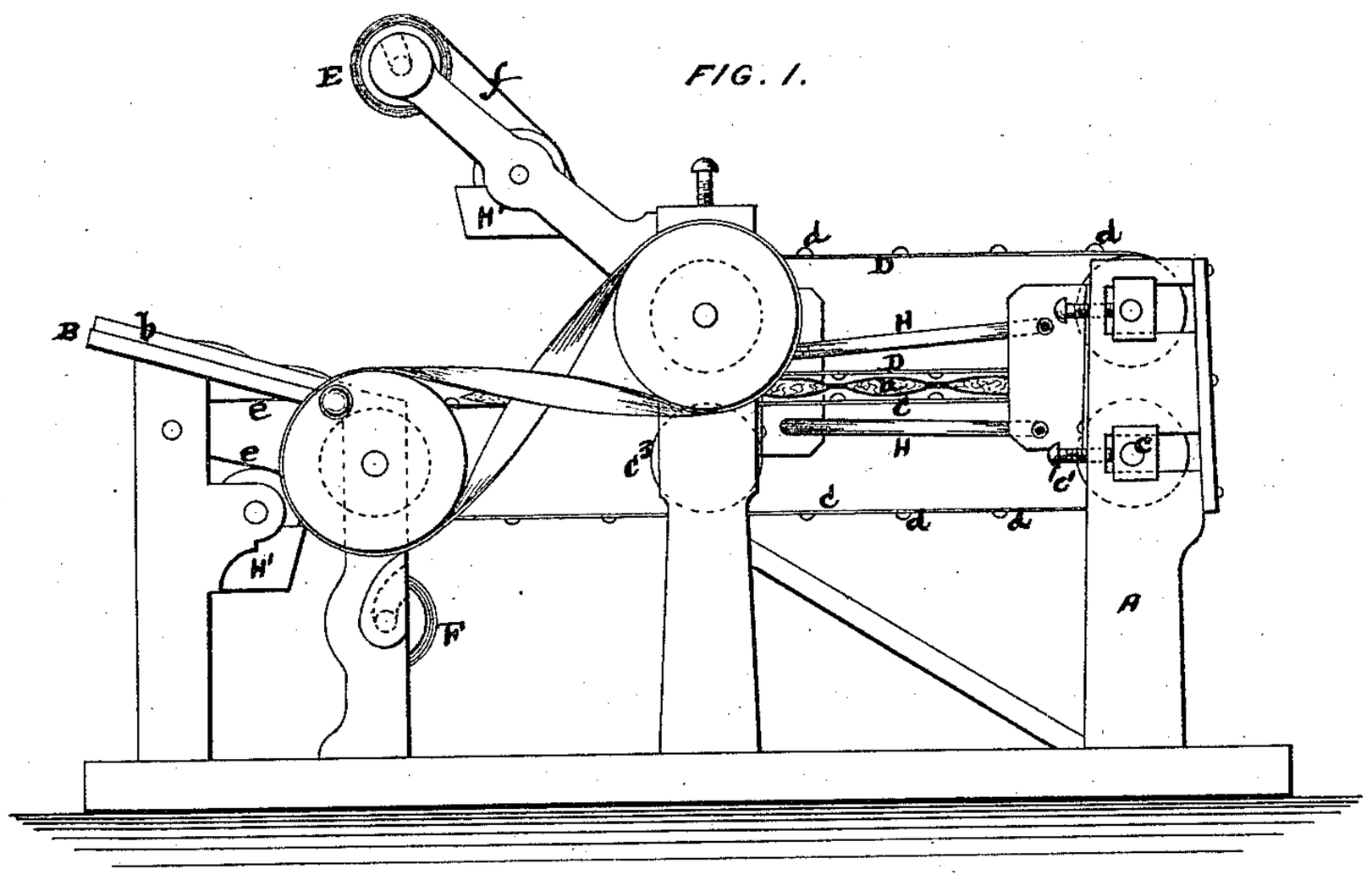
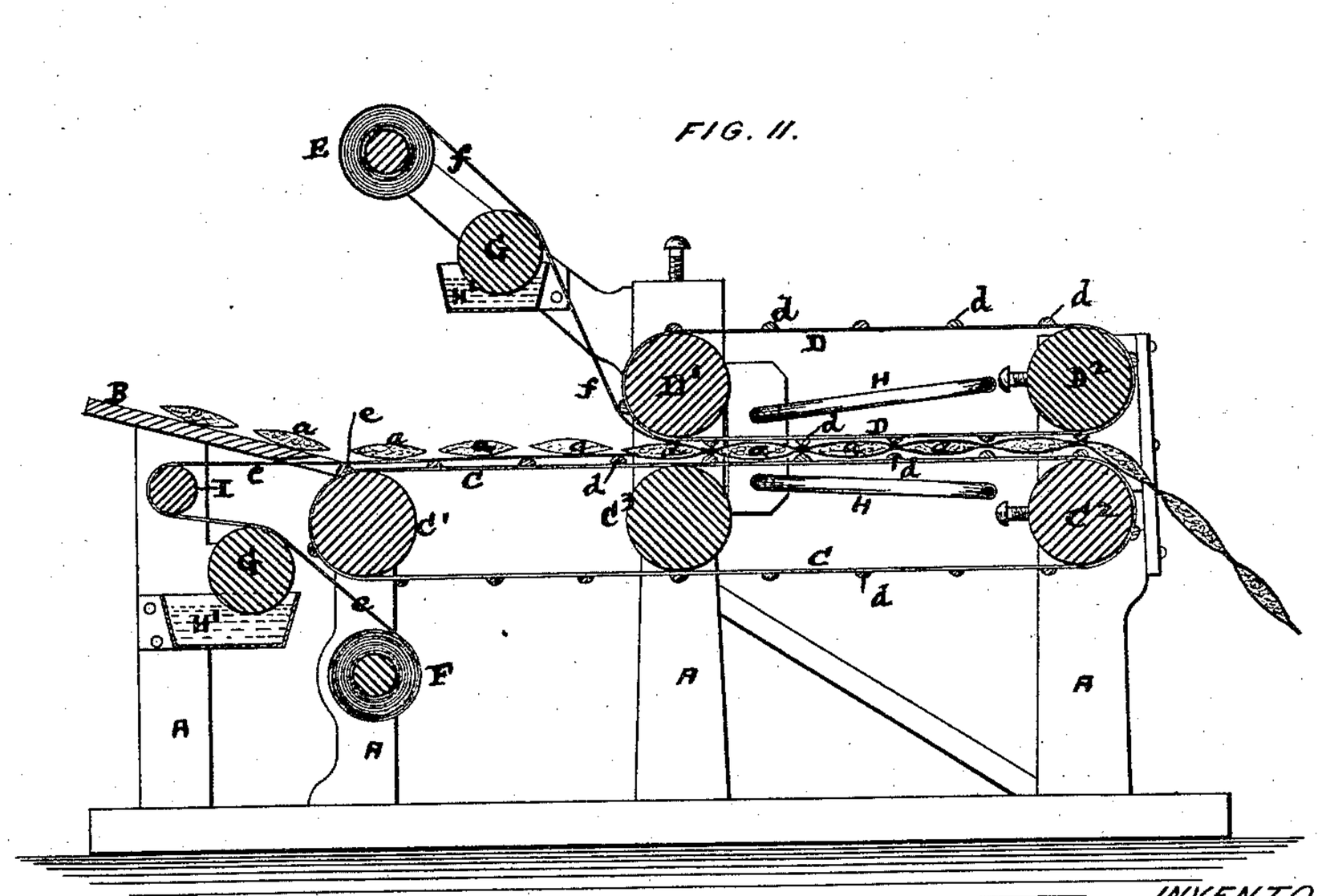


FIG. II.



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THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

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FIG. III.

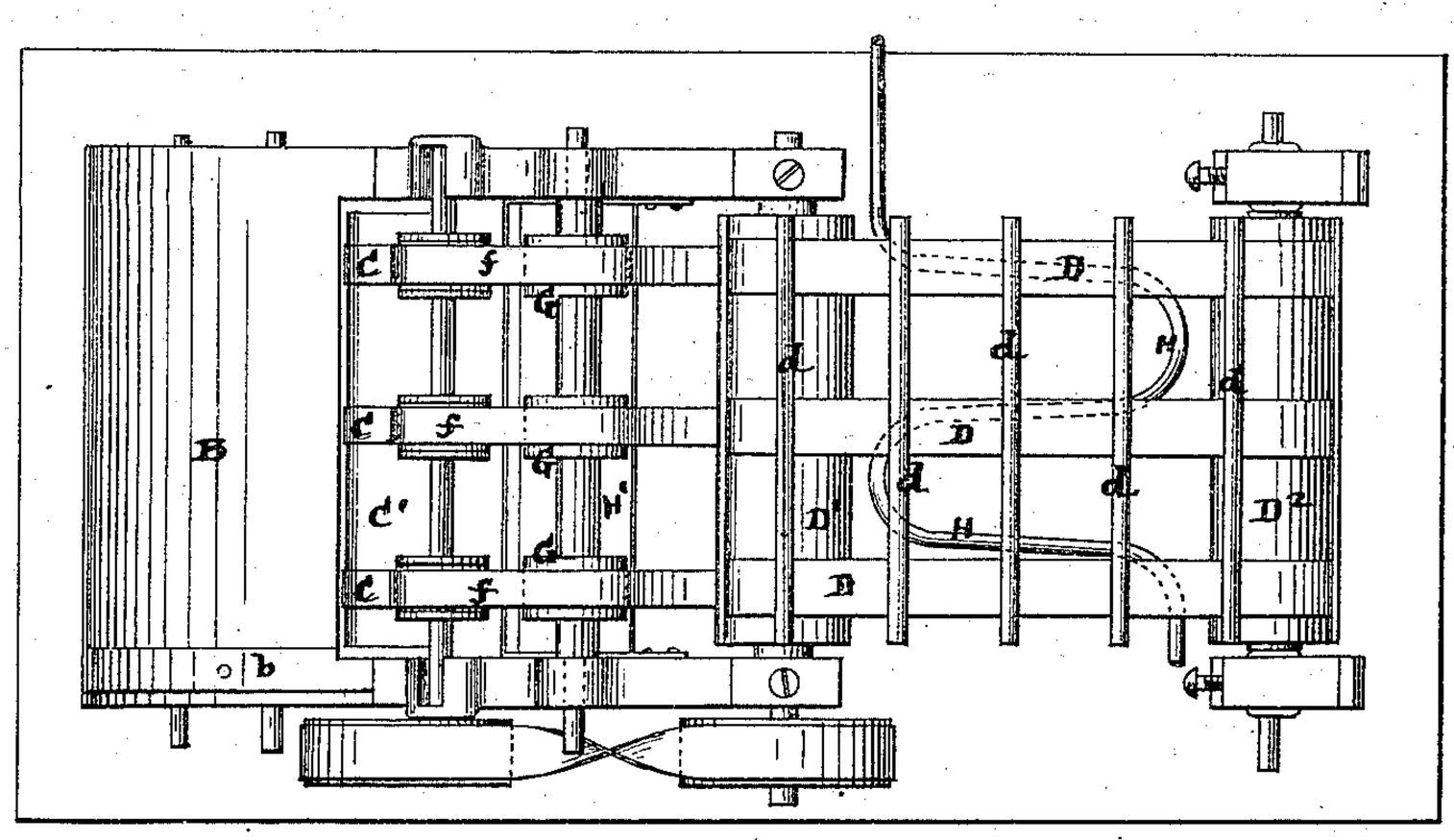
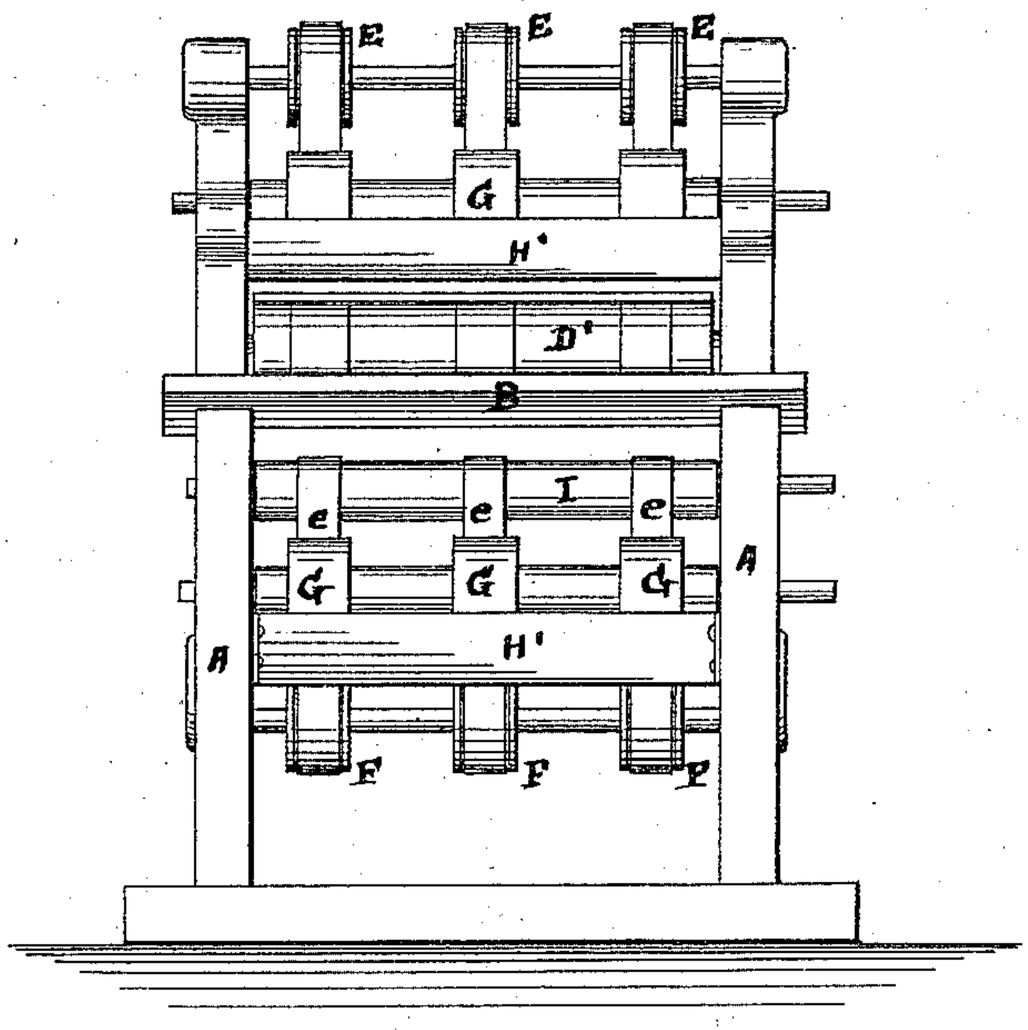


FIG. IV.



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UNITED STATES PATENT OFFICE.

THOMAS J. MAYALL, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN MACHINES FOR MAKING CARPET-LININGS.

Specification forming part of Letters Patent No. **157,852**, dated December 15, 1874; application filed November 20, 1874.

To all whom it may concern:

Be it known that I, THOMAS J. MAYALL, of Boston, Suffolk county, and State of Massachusetts, have invented certain new and useful Improvements in Machinery for Making Carpet-Lining, of which the following is a specification:

The object of my invention is to manufacture, in a speedy and economical way, carpet-lining composed of flattened paper tubes provided with a filling of cotton, batting, or lap, or other suitable material, said tubes being placed parallel with one another, and united by strips or tapes extending crosswise of the tubes.

The carpet-lining itself is not here claimed, but is made the subject of a distinct application for Letters Patent.

My present invention relates to mechanism for making one variety of this lining, in which the flattened tubes extend crosswise of the length of the completed lining, and are united by longitudinal strips or tapes. To this end I employ endless aprons and pressure-rolls, which serve to carry along the flattened tubes and to press together the same and the binding-tapes, in combination with tape-rolls that deliver the tapes or binding strips between the two aprons, and above and below the flattened tubes, and a pasting, gumming, or cementing mechanism, by which said tapes, before coming in contact with the tubes, are coated with paste or some adhesive material that, when the tapes are pressed upon the tubes by the action of the apron or pressure-rolls, will cause the said tapes and tubes to be firmly united together.

The accompanying drawing represents the manner in which my invention is or may be carried into effect.

Figure 1 is a side elevation of the machine. Fig. 2 is a longitudinal vertical section, Fig. 3 a plan, and Fig. 4 an end elevation, of the same.

The various parts of the machine are supported in a frame, A, of any suitable structure and formation. The flattened tubes shown at *a* are fed to the machine preferably from a feed-table, B, provided with a suitable adjustable gage, *b*. This feed-table meets the lower horizontal traveling-apron C, which is an endless band passing around end drums C^1 C^2, the latter of which has its bearings in boxes *c*, adjustable by means of set-screws *c'*, so as to maintain the apron at the proper tension. Above the lower apron, and beginning at a point preferably in advance of the feed-table, is a second apron, D, traveling around drums D^1 D^2. The two aprons travel in contact with one another, and their drums C^2 D^2 act as pressure-rollers. Under the drum D^1 is another drum, C^3, located below the upper face of the lower apron, and this drum and the upper drum D^1 act also as pressure-rollers. The journals of drum D^2 are mounted in bearings, adjustable like those of the drum C^2, and for the same purpose. The aprons on their exterior faces have a series of transverse ribs or bars, *d*, which are spaced so that the distance from one to the next shall about equal the width of the flattened tube. The ribs or bars on the upper and lower aprons register or come together, so that when the tubes and tapes pass into the machine, the upper and lower ribs will come together upon those parts of the tapes intervening between the flattened tubes. The tape-rolls are shown at E for the upper tape-rolls, and F for the lower tape-rolls. There may be as many rolls in each set as it is desired there shall be longitudinal binding-strips. Three rolls are shown in the drawing. The rolls of each set are represented as mounted on a single shaft; but in practice I prefer to mount each roll on a separate axis or bearing stud, from which it may be removed and replaced by a new one without interference with the others. The tapes pass over cylinders G, which revolve in troughs H' containing paste or other adhesive material. The cylinders are, of course, provided with doctors to remove surplus paste. The lower tapes *e* pass up over the cylinder G and around a roller, I, whence they pass under the feed-table to and just above the lower feed-apron, as indicated in Fig. 2. The upper tapes *f* pass from their paste-cylinder G to and under the drum D^1. The various drums of the aprons may be geared or belted together, so as to revolve in unison.

The operation of the machine is fully shown in Fig. 2. The flattened tubes, which are fed one after the other from the feed-tables onto

the lower traveling-apron, rest on the lower tapes *e*, and when they reach the rolls or drums D^1 C^3 they meet the upper tapes *f*, and by the action of said rolls, the tapes are pressed upon the flattened tubes, and the whole are caused to adhere together. The tubes lie in the spaces between the ribs on the apron, and said ribs on the upper and lower aprons come together, so as to compress and stick together those portions of the tapes intervening between the tubes.

Between the two sets of pressure drums or rolls are arranged steam-pipes H above and below the carpet-lining, so that the latter, by the time it emerges from the machine, may be thoroughly dried and completed. This feature is desirable, because it both facilitates the work and prevents liability of the tapes getting loose from the tubes.

I have used the word tape-rolls to distinguish the rolls that carry the binding-strips; but it will be understood that the binding-strips may be not only tape, but any other suitable material, such, for instance, as paper.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The described combination of the two traveling-aprons, the pressure drums or rolls, the feed-table, and the tape-rolls, and pasting devices, arranged and operating together as set forth.

2. The combination of the tape-rolls, the traveling aprons, the pressure drums or rolls, and the drying or heating pipes, for operation as shown and set forth.

3. In machinery for making carpet-lining such as described, two traveling aprons provided with transverse ribs or bars, which register or meet on the contiguous faces of the two aprons, substantially as and for the purposes set forth.

In testimony whereof I have hereunto signed my name this 20th day of November, A. D. 1874.

THOS. J. MAYALL.

Witnesses:

EWELL A. DICK,

HENRY R. ELLIOTT.