

(No Model.)

C. F. LEAKE.

Rolling Plastic Compositions upon Fabrics, &c.

No. 231,916.

Patented Sept. 7, 1880.

Fig. 1.

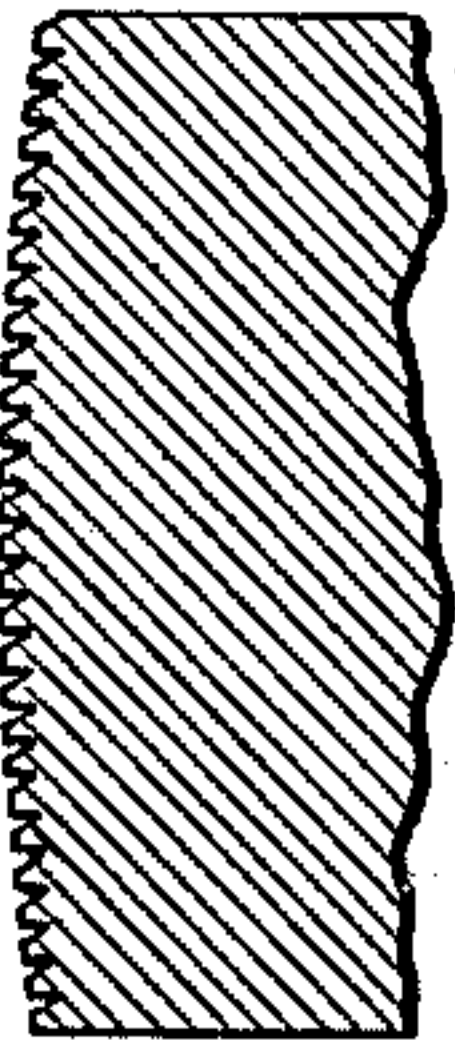


Fig. 2.

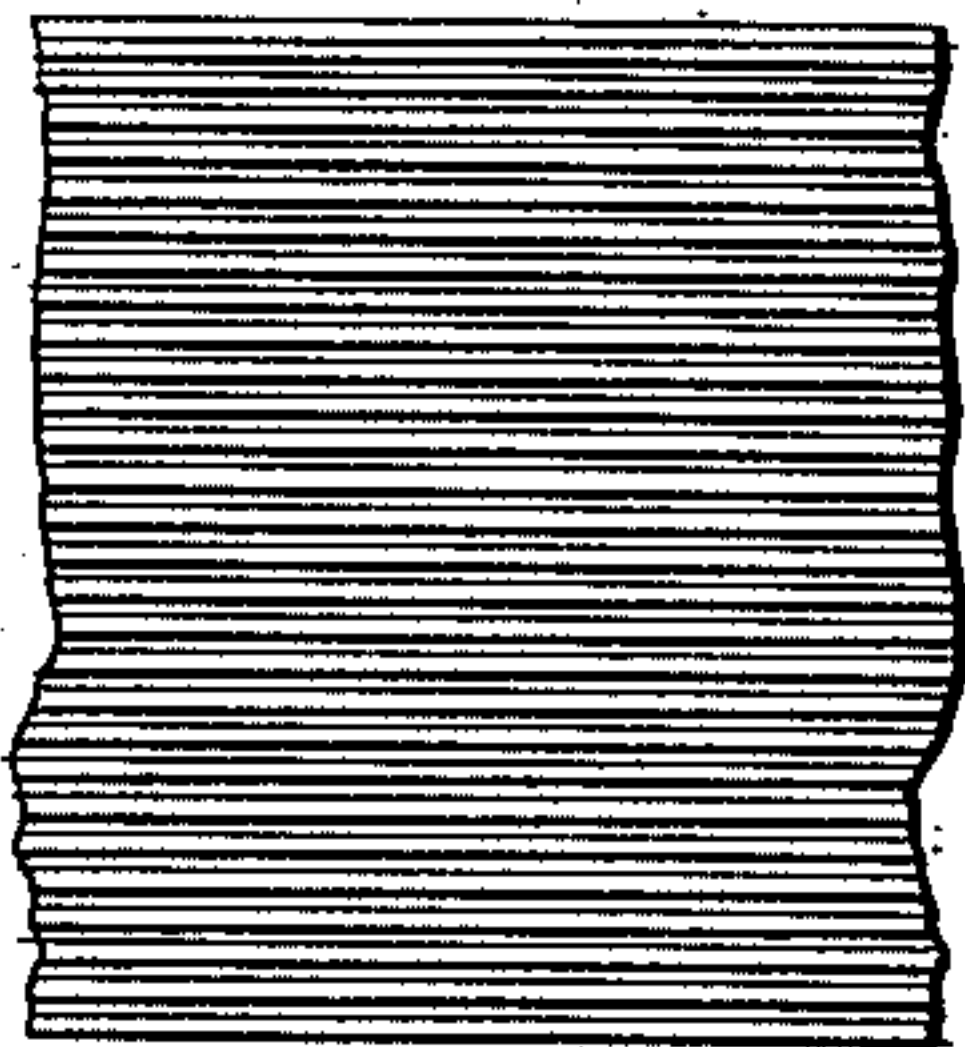


Fig. 3.

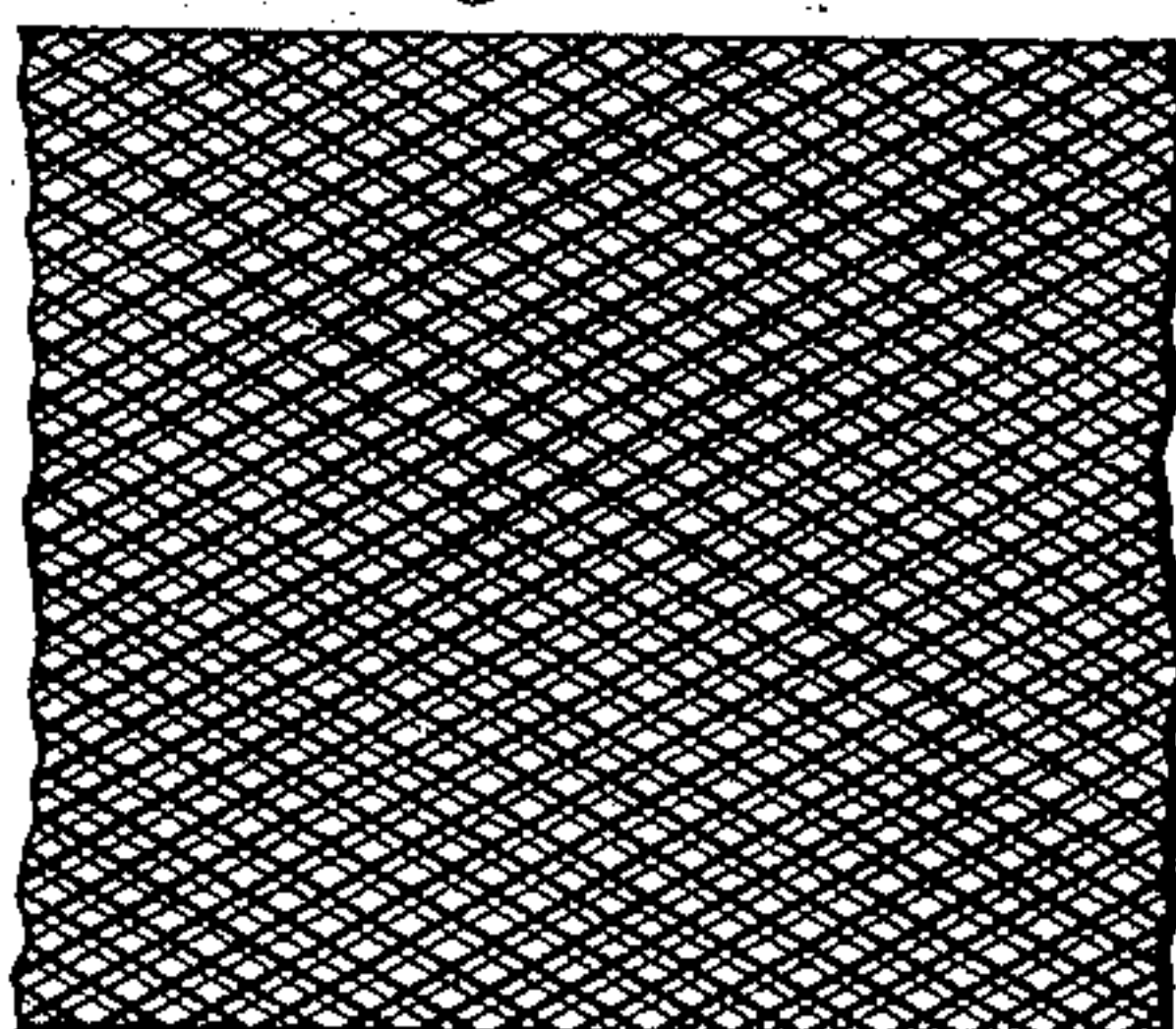


Fig. 4.

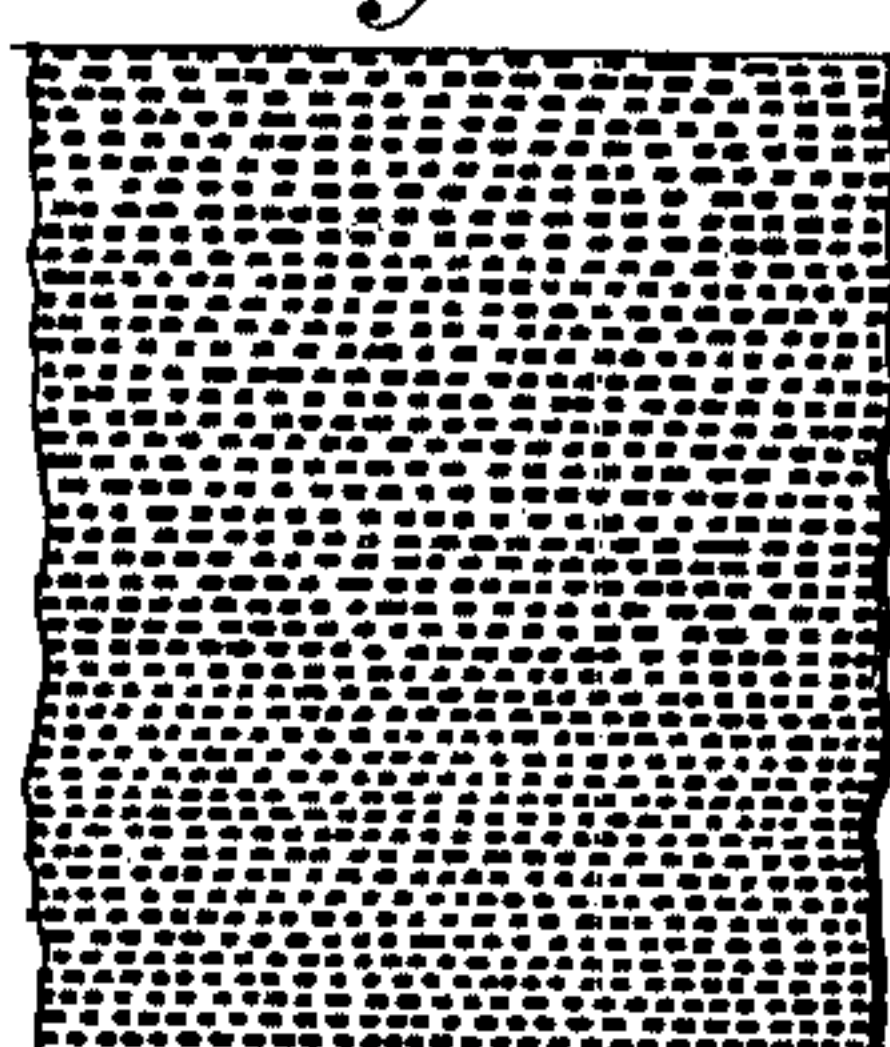


Fig. 5.

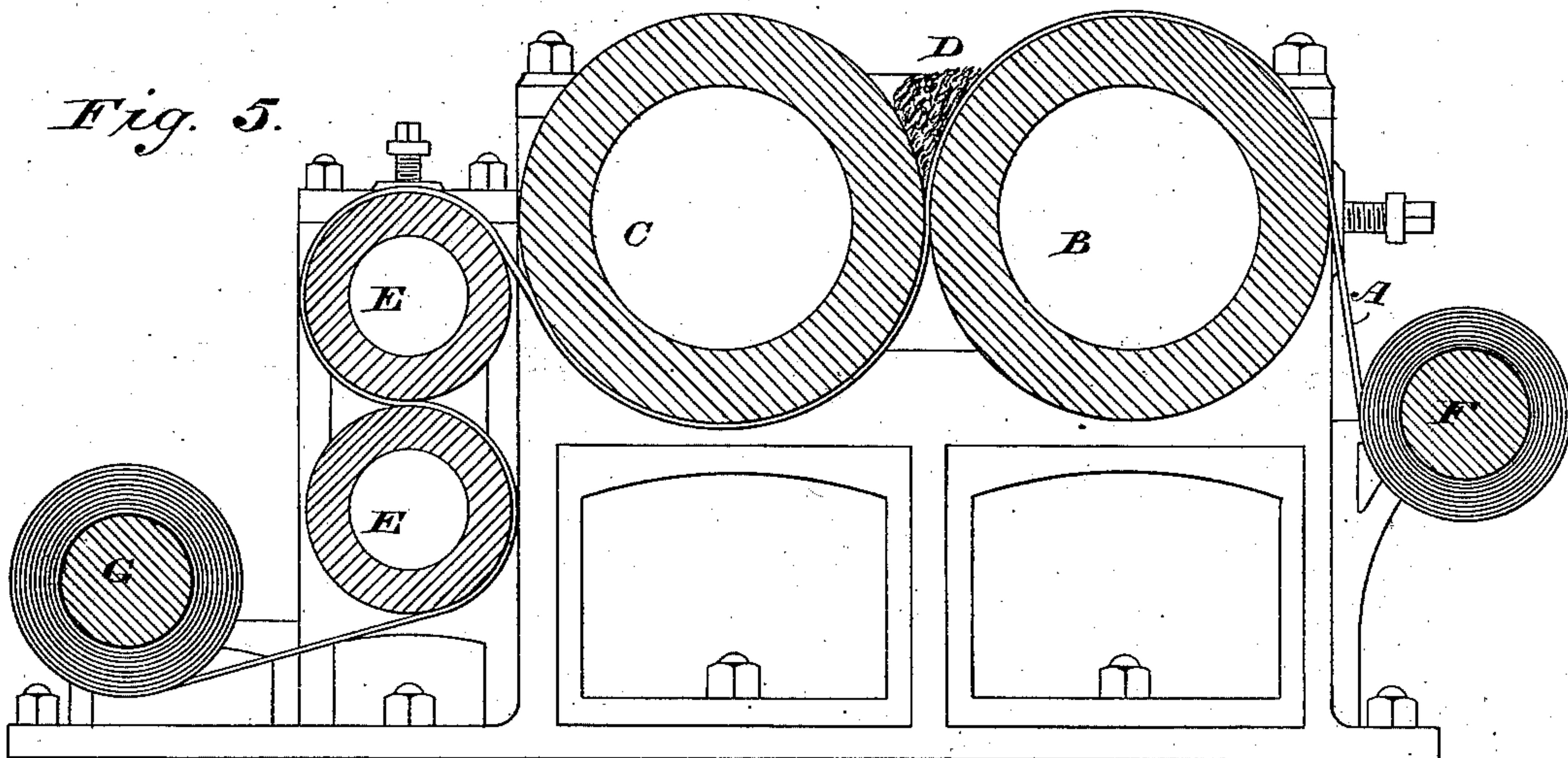
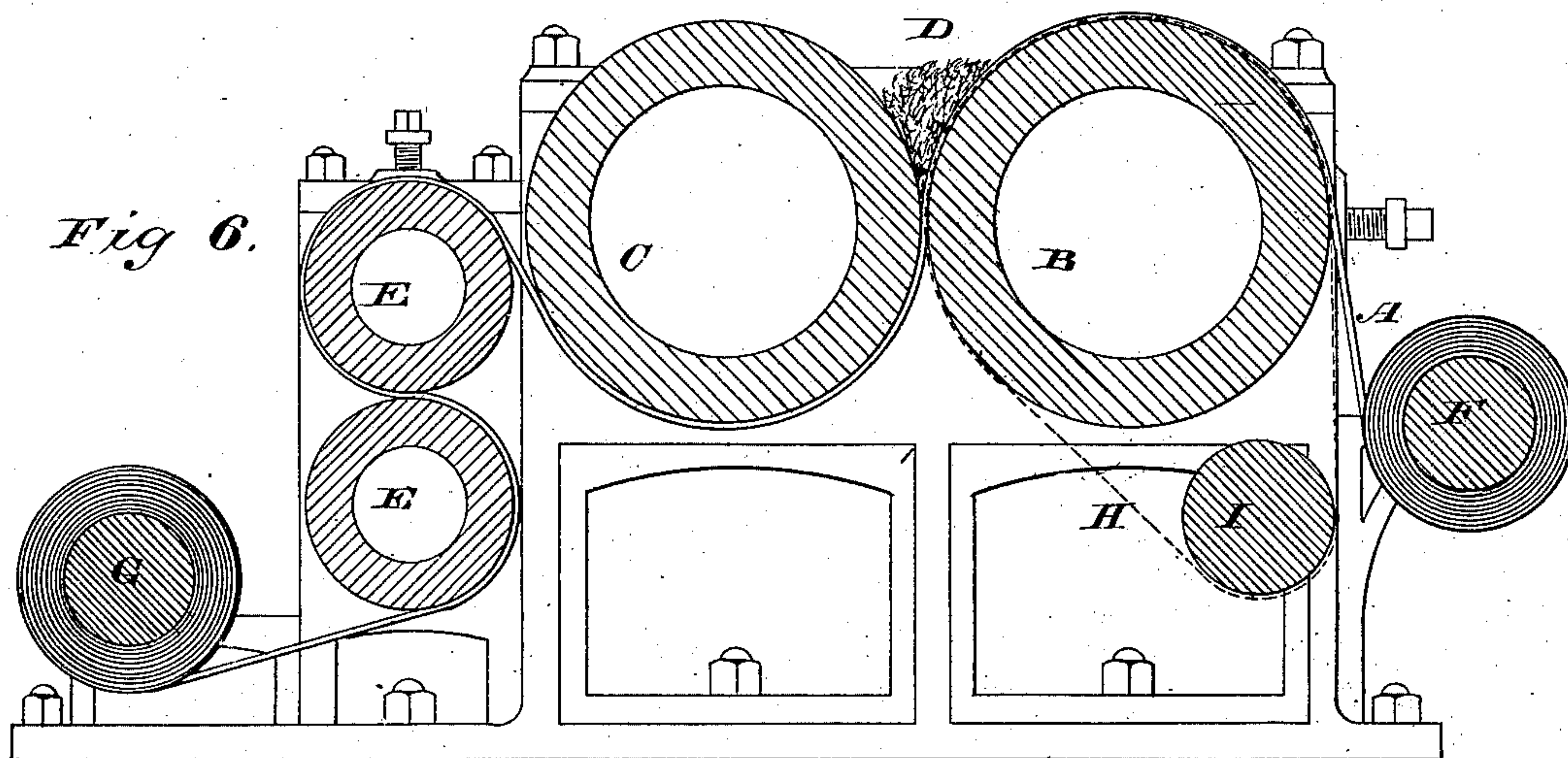


Fig. 6.



WITNESSES

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ROLLING PLASTIC COMPOSITION UPON FABRICS, &c.

SPECIFICATION forming part of Letters Patent No. 231,916, dated September 7, 1880.

Application filed July 29, 1880. (No model.) Patented in England March 15, 1880.

To all whom it may concern:

Be it known that I, CHARLES FREDERICK LEAKE, a subject of the Queen of Great Britain, residing at Hale Street, Staines, in the county of Middlesex, England, have invented certain new and useful Improvements in Rolling or Spreading Plastic Compositions upon Fabrics for the Manufacture of Linoleum and other Floor-Cloths, and for other purposes, (for which I have received Letters Patent in England No. 1,111, dated March 15, 1880;) and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

This invention has for its object improvements in rolling or spreading plastic compositions upon fabrics for the manufacture of linoleum and other floor-cloths, and for other purposes.

In the ordinary or usual method of rolling linoleum or other similar floor-cloths or fabrics powerful rolls are used, which are ground up perfectly true and smooth. The woven fabric which it is intended to use as a groundwork or base is then passed partly round and between the rolls, which are then closed up or adjusted, so that the distance between the rolls shall represent the thickness which the fabric is required to be when finished. The composition, which has been previously prepared, is then placed in the feed or gripe of rolls, to which motion is given in the usual way.

In practice it is found difficult to procure canvas or other woven fabric of an even or uniform texture, strength, or flatness, and by the usual methods of rolling the weak or defective portions of the canvas or other fabrics accumulate and are forced or driven back by the wedge of composition which is formed in the feed or gripe of rollers, the result of which is that the finished goods are more or less buckled and will not lie flat upon a floor or other surface. To overcome and prevent this evil I propose to roughen the surface of the back or under roll. Various methods may be adopted for giving a roughened surface to the roll. For example, the surface of the roll may be milled by a tool, as ordinarily practiced in lathe-work; or the roughening may be pro-

duced by cutting with tools such as are used in file-cutting, or by cutting in a screw-cutting lathe spiral lines, both right and left hand, crossing each other at such angles that they form small squares or lozenge shapes, or by matting the surface all over with matting-punches, or by preparing the surface with etching-wax and biting in the surface to a suitable pattern with acids. I however prefer to give the roughened surface to the roll in the following manner, viz: When the roll has been turned and ground perfectly true I fix a slide-rest in parallel juxtaposition to it, and with a suitable tool cut fine lines at regular intervals or distances, preferably from one-sixteenth inch to one thirty-second inch, apart the whole length of the roll, and continue this until the whole surface is covered. The action or effect of this roughness is that it allows the canvas or other fabric to be firmly pressed into the interstices by the composition, and thereby grips and prevents it driving or slipping backward, and also allows the composition to be forced more firmly and perfectly through the canvas or base fabric than is possible with smooth rolls.

Another way of roughening the surface of the back-roll is to fasten a band of wire-gauze firmly around the roll, or to pass around it an endless band of wire-gauze, using a straining-roll to keep the endless band tight.

In addition to the above I drive the second or face roll at a greater speed than the under or back roll by proportioning the wheels so as to make the surface of face-roll slip or travel, say, for example, about one in thirty faster than the cloth or than the under roll. The effect of this is that the material rolled in the above manner receives a much superior finish than similar goods rolled by the ordinary equal-speed rolls. The surface of the lower roll being roughened, as above explained, allows of the one roll being thus driven faster than the other without risk of tearing the fabric.

Figure 1 shows a section of part of the circumference of a roller with a number of grooves parallel with the axis of the roller cut from one end of it to the other. Fig. 2 shows a face view of the same. These views show the way in which I prefer to roughen the surface of the lower roll. Fig. 3 shows a portion of the surface of a roll having its surface roughened

with diagonal grooves cut around it. Fig. 4 shows a portion of the surface of a roll having its surface roughened by numerous small indentations being made in it with the point of a punch. Fig. 5 shows, in cross-section, the general arrangement of spreading-rolls which it is preferred to use.

In Fig. 5, A is the fabric to be covered, led over the back-roll B and under the face-roll C. D is the composition with which the fabric A is to be coated. E E are other rollers around which the coated fabric passes, as shown, and which assist in drawing the fabric forward. F is a roll of fabric to be coated, and G a roll onto which the fabric is wound up after being coated.

The rolls B, C, and E are driven by gearing, and, as before stated, the roller C is, by preference, driven at a speed of about one in thirty faster than the roller B.

The back-roll B can be roughened in any of the ways above described, or by other equivalent means.

At Fig. 6 I have shown the arrangement of rolls, together with an endless band, H, of

wire-gauze, for giving a roughened surface to that portion of the back-roll B over which the fabric to be covered is led.

I is a roll for keeping the band H stretched tightly.

What I claim is—

1. The employment, for spreading plastic compositions onto fabrics, of a pair of rolls, one—the back-roll, by which the fabric is supported—having its surface roughened, while the other, which is the face-roll, and which serves to compress the composition onto the face of the fabric, has a polished surface, substantially as described.

2. Driving the polished face-roll of such a pair of spreading-rolls at a slightly greater surface-speed than the back-roll, which has its surface roughened.

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Witnesses:

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