

No. 698,886.

Patented Apr. 29, 1902.

C. W. WILLIAMS.

PAPER BAND.

(Application filed Jan. 22, 1902.)

(No Model.)

Fig. 1.



Fig. 2.

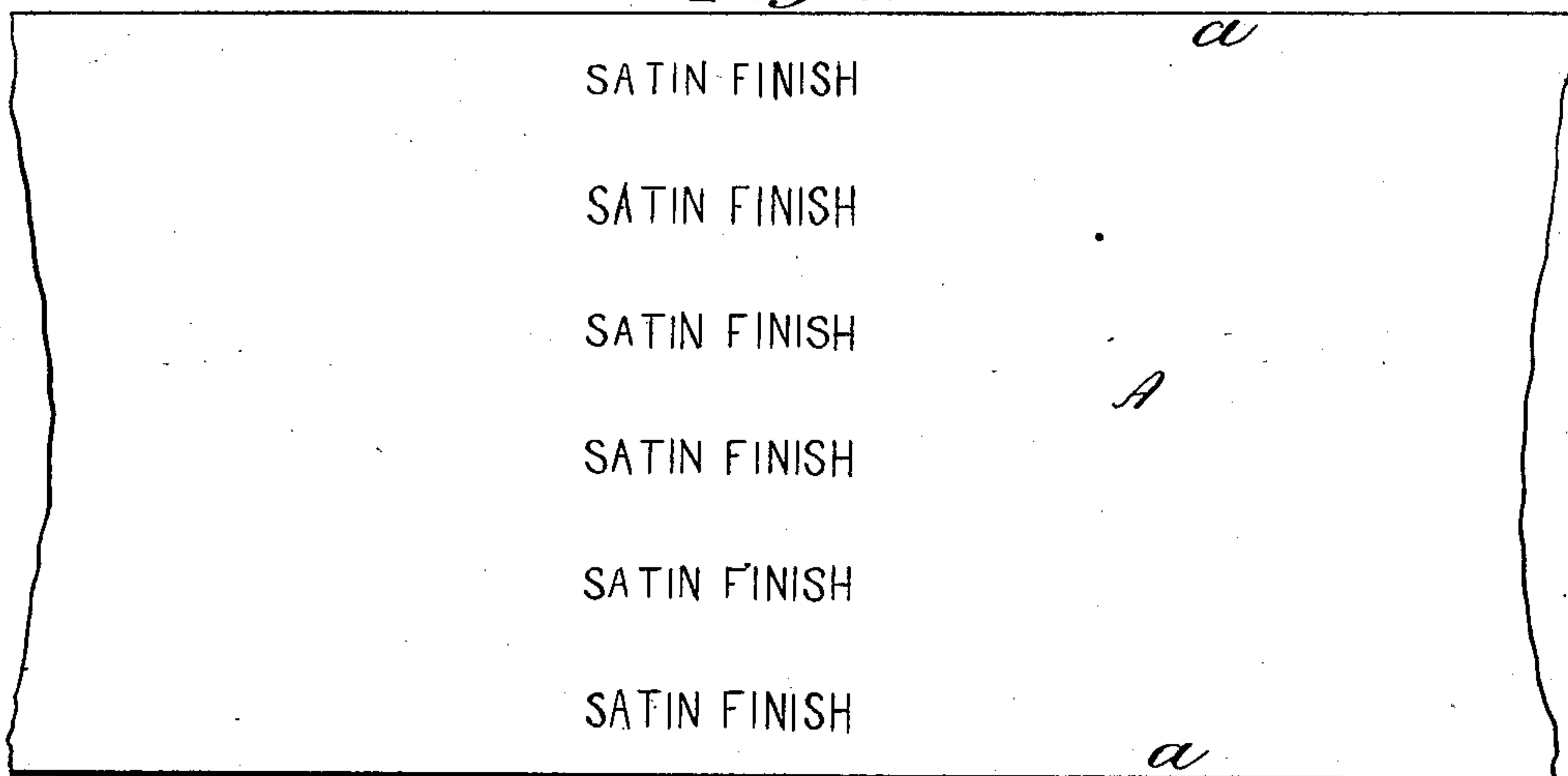


Fig. 3.

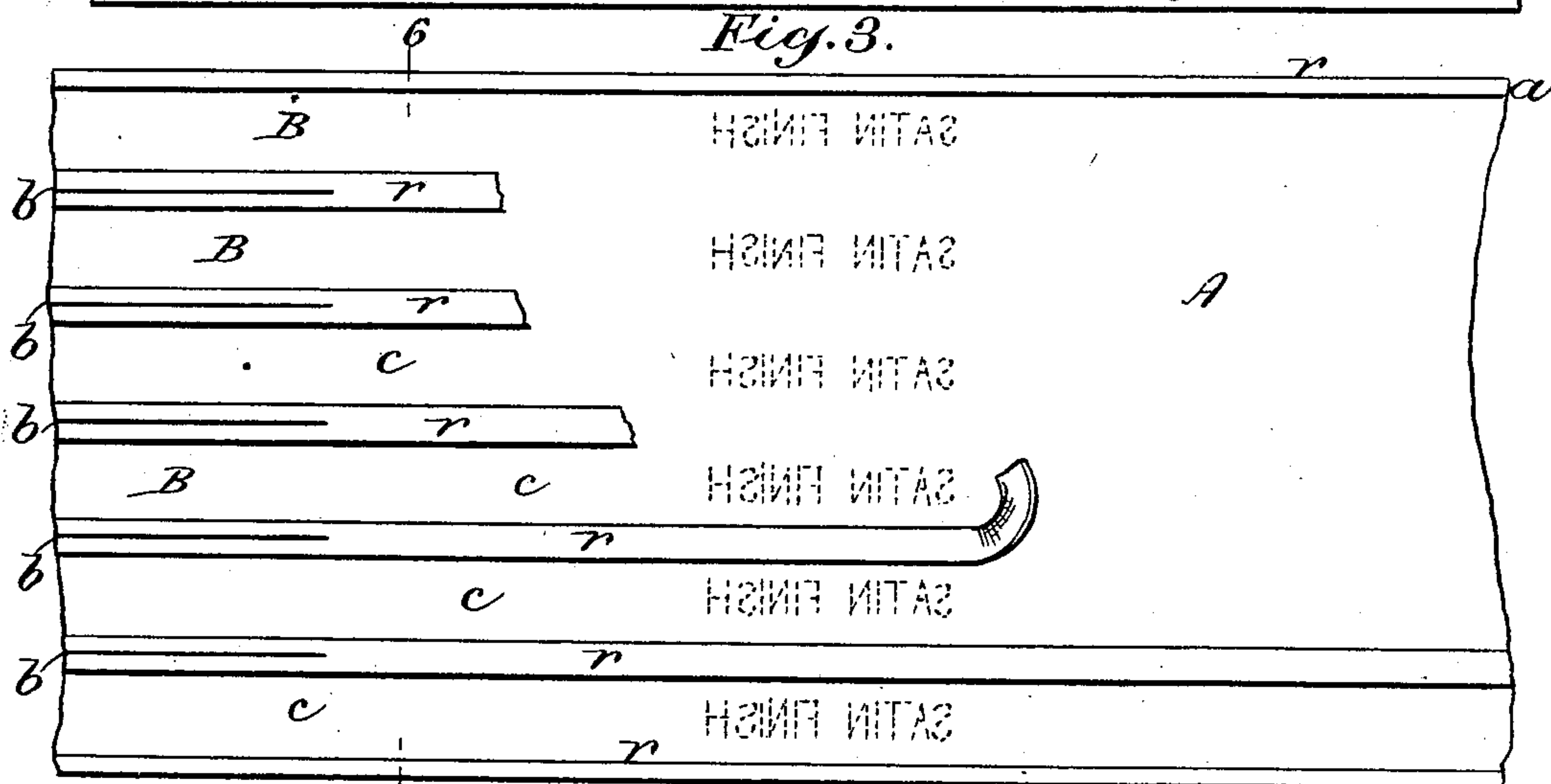


Fig. 5.

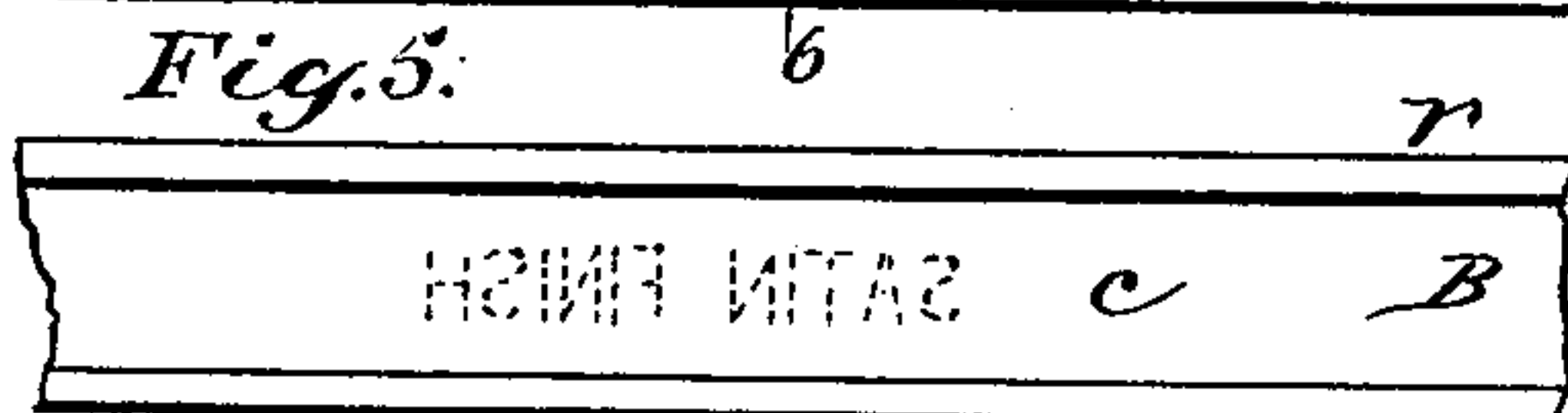


Fig. 4.

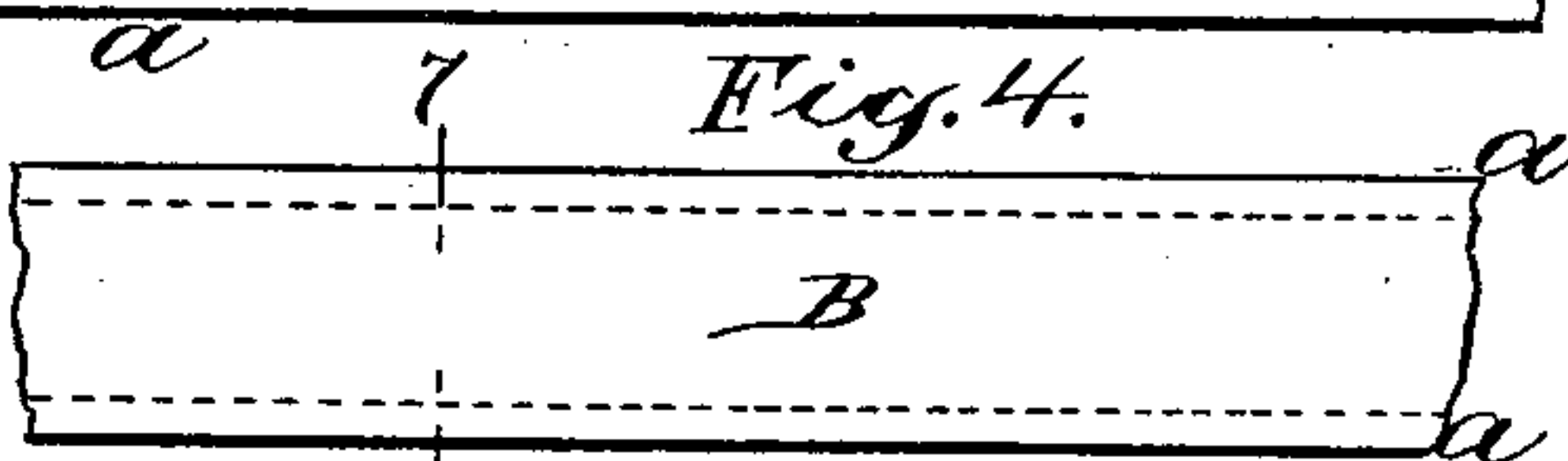


Fig. 7.

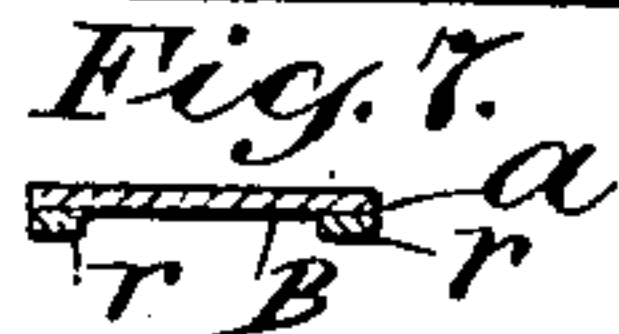


Fig. 8.

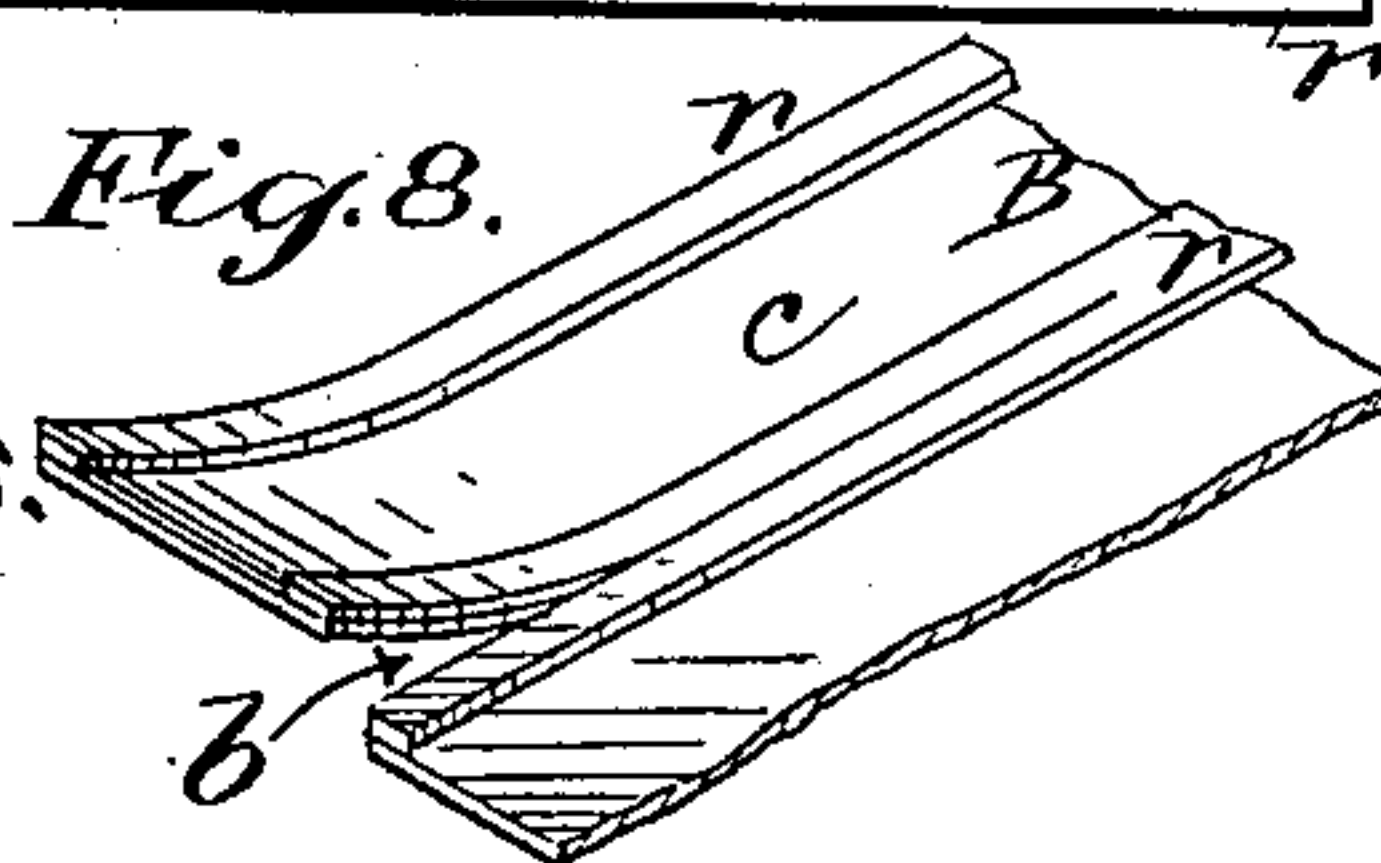
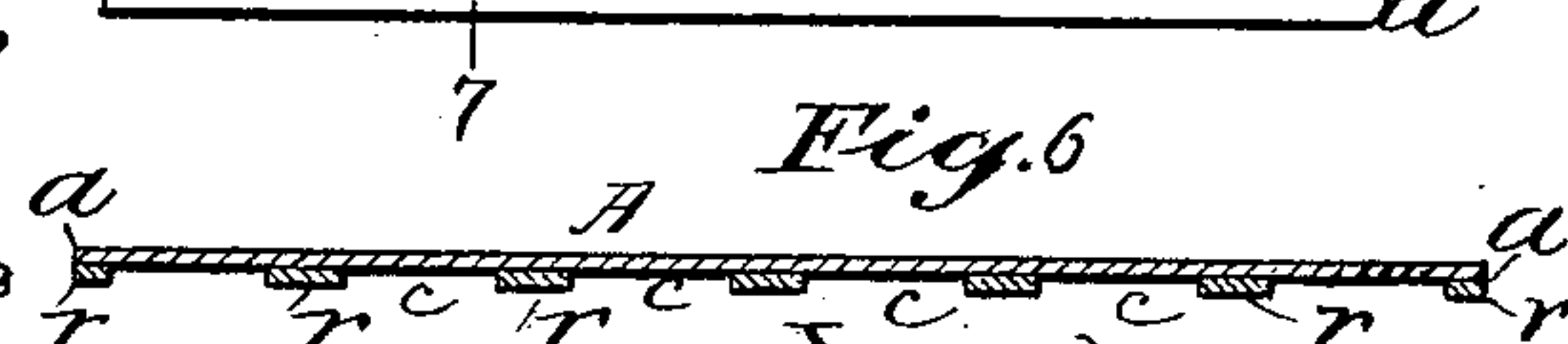


Fig. 6.



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# UNITED STATES PATENT OFFICE.

CHARLES W. WILLIAMS, OF MONTCLAIR, NEW JERSEY.

## PAPER BAND.

SPECIFICATION forming part of Letters Patent No. 698,886, dated April 29, 1902.

Application filed January 22, 1902. Serial No. 90,756. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES W. WILLIAMS, a citizen of the United States, residing at Montclair, Essex county, and State of New Jersey, have invented certain new and useful Improvements in Paper Bands, of which the following is a specification, sufficient to enable others skilled in the art to which the invention appertains to make and use the same.

My invention relates to bands made of fibrous material, as paper, and used to encircle various articles or goods—as, for instance, bolts of cloth—to which my structure is particularly adapted, and although I do not confine myself to such use I shall herein describe the invention as applied to the manufacture of such bolt-bands. Such bands have heretofore been made of paper; but if made wholly of paper and of sufficient thickness and strength to withstand the conditions of use they are necessarily heavy and expensive, since they are frequently utilized as a means of lifting and handling the bolt which they bind, and hence have to endure considerable strain, which can only be met and sustained by a relatively high grade of thick strong paper.

In order to attain the necessary degree of strength and tenacity with cheaper grades of paper, the latter has heretofore been reinforced by a backing of muslin or other woven fabric. The edges of the paper bands have also been folded and secured over a fibrous cord for a like reason; but both these methods have practical objections, especially when printed bands are desired; for the reason that in order to get a good print on a muslin-backed paper a very heavy grade of paper and a very fine muslin of small mesh must be used, an inferior paper and coarse mesh of fiber backing rendering the print imperfect, uneven, and unsatisfactory, whereas in the case of the bands with corded edges if the printing is done on the paper prior to the formation of the bands the register between the printing and the cording and folding machine is imperfect, and to do the printing after the formation of the bands handling and printing each band separately would be so expensive as to be prohibitory in a commercial sense.

The object of my invention is to obviate

these difficulties; and the invention consists, primarily, in a paper band the edges of which are strengthened by reinforcing-strips, preferably of woven fabric, the portion of the band between the reinforcing-strips being free and uncovered, and, secondarily, in certain features in the manufacture of the band hereinafter set forth and claimed specifically.

In the accompanying drawings, Figure 1 represents the upper side of a finished strip. Fig. 2 shows the top of a portion of a printed sheet from which my improved bands are made. Fig. 3 shows the under side of the same, illustrating the application of the reinforcing-strips. Figs. 4 and 5 represent upper and under sides of the central portion of a finished strip. Fig. 6 is a section upon plane of line 6 6, Fig. 3. Fig. 7 is a section upon plane of line 7 7, Fig. 4. Fig. 8 is a perspective view illustrating the subdivision of the sheet into strips.

A strip of paper A, of suitable width for subdivision into a prescribed number of bands B, is first printed upon one side as for six bands in widths, as shown, by way of illustration, in the drawings. To the reverse side of the paper are then applied the strips *r r* of reinforcing material, preferably, though not necessarily, made from woven fabric, as muslin. The strips applied to the edges *a a* of the sheet of paper A are one-half the width of the other intermediate strips, which are applied to the paper in parallel lines between the printed matter, so that when these broader strips are cut in two the resulting strips will correspond in size and appearance with those applied to the edges *a a* of the sheet A. In other words, the severance of the broader reinforcing-strips *r r* and the paper A upon the lines *b b* results in the formation of a series of independent bands B, the edges of each of which are reinforced by strips of equal width, as will be understood by reference to Figs. 3, 4, 5, 7, and 8.

By cutting both the muslin and the paper at the same time a perfect edge is attained.

The reinforcing-strips *r r* are gummed or pasted to the sheet of paper A by automatic means, and the cuts *b b*, by which the bands are separated, are also made automatically and simultaneously, so that the manufacture of the bands is rendered simple and inexpensive.



sive, aside from the saving effected in backing or reinforcing material by the uncovered central spaces *c c* of the bands as compared with those heretofore mentioned as having  
5 been made with a full backing of muslin or similar material. Furthermore, in the case of printed bands particularly I can use a cheaper grade of both paper and muslin backing than has heretofore been practical for the reason  
10 hereinbefore referred to. Again, my method of reinforcing the edges of the bands is obviously simpler and less expensive than folding the edges over cords, a method which can only be applied to single bands one at a time and  
15 which practically precludes any preliminary printing of the bands, owing to the fact that perfect register between the printing and the folding machinery is very difficult to maintain, whereas I print, apply the reinforcing-  
20 strips, and subdivide a sheet of paper of any desired length and width, and since all this can be accomplished automatically and rapidly and with perfect register I attain with the minimum of labor an article of manufac-  
25 ture which is of commercial importance in that inferior and cheaper materials may be utilized in the production of the band.

It will thus be seen that by my invention I facilitate and cheapen the manufacture, while  
30 producing a printed band of perfect register fulfilling all the requirements of use—that is, of sufficient strength and durability to sustain the wear and strain of handling, transportation, &c.

35 I have herein shown and described my invention as applied to the manufacture of a printed band, although I do not restrict myself to a printed band, since it is obvious that the invention is equally adapted to the man-

ufacture of unprinted bands, which are largely 40 in use in the trades.

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

1. A sheet of paper for the purpose designated to the edges of which are attached 45 strips of reinforcing material of a prescribed width, and to the body of which are attached at parallel lines strips of reinforcing material double the width of those applied to the edges of the sheet, whereby when the paper and 50 the wider strips of reinforcing material are cut along the central longitudinal lines of said wider strips, a series of independent bands having reinforcing-strips of equal width at the edges with a free uncovered 55 space of paper between, will be formed, substantially as herein set forth.

2. A sheet of paper for the purpose designated, printed upon one side in parallel lines, having narrow strips of reinforcing material 60 attached to its edges on the opposite, unprinted side, to which is also attached strips of reinforcing material double the width of those applied to the edges, said wider strips being applied in parallel lines between the 65 lines of printing on the other side of the paper, whereby when the paper and the wider strips of reinforcing material are cut along the central longitudinal lines of said wider strips, a series of independent bands printed centrally 70 upon one side and having reinforcing-strips of equal width on the edges of the other side with a free uncovered space of paper between, will be formed, substantially as set forth.

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