(No Model.) 2 Sheets—Sheet 1

# M. ROTHENBÜCHER.

## METHOD OF MAKING COLLARS FOR WATER PROOF GARMENTS.

No. 422,061. Patented Feb. 25, 1890.

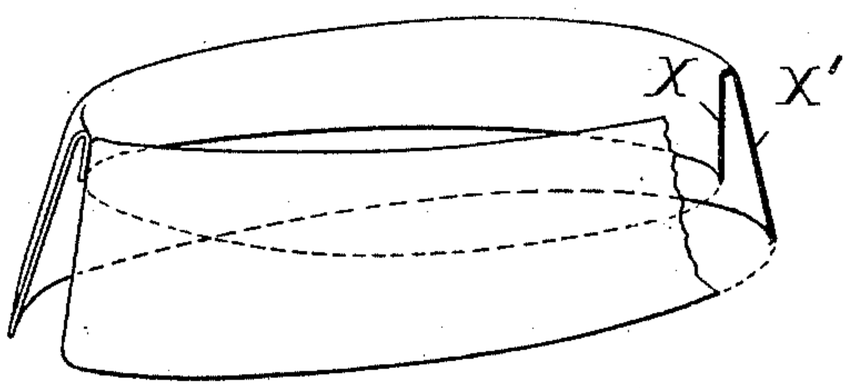



FIG. 1.

FIG. 2.

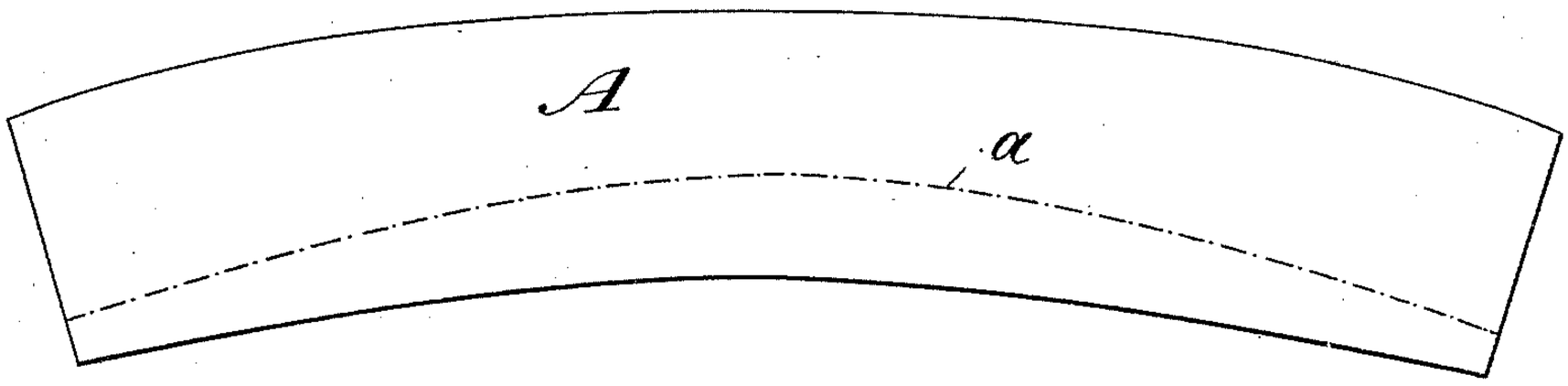



FIG. 3.

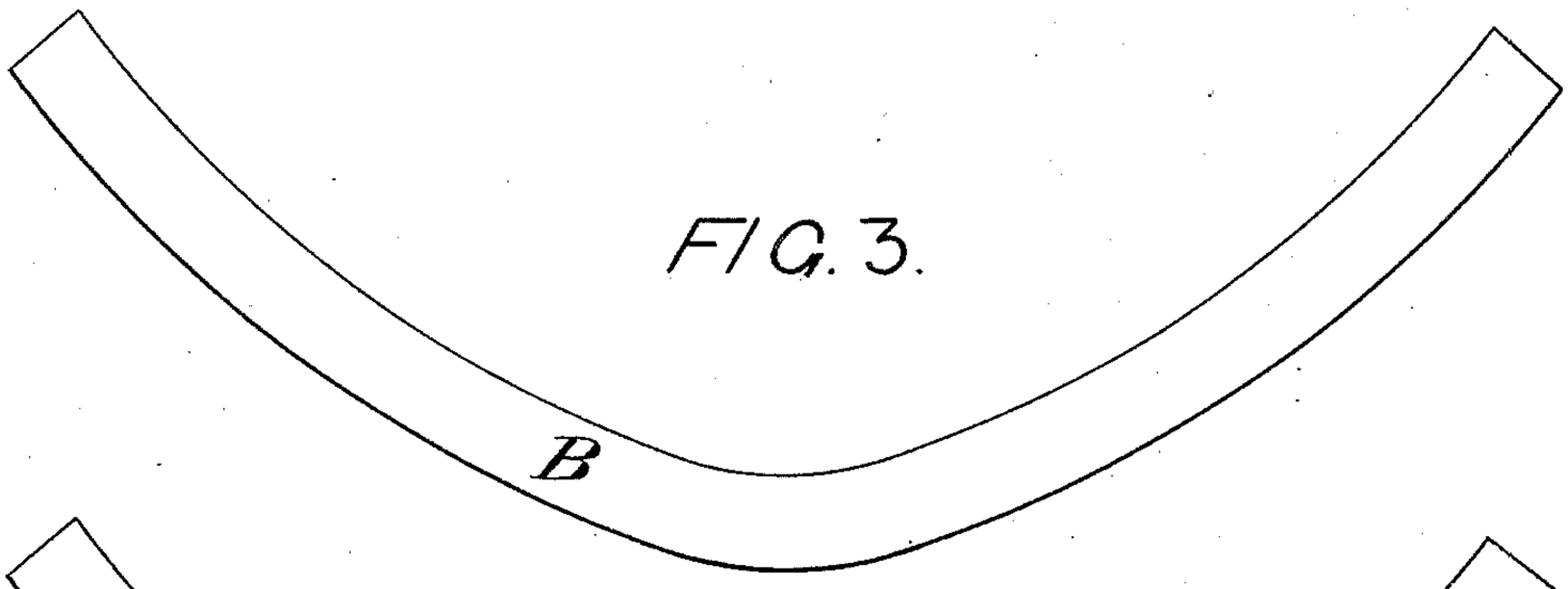
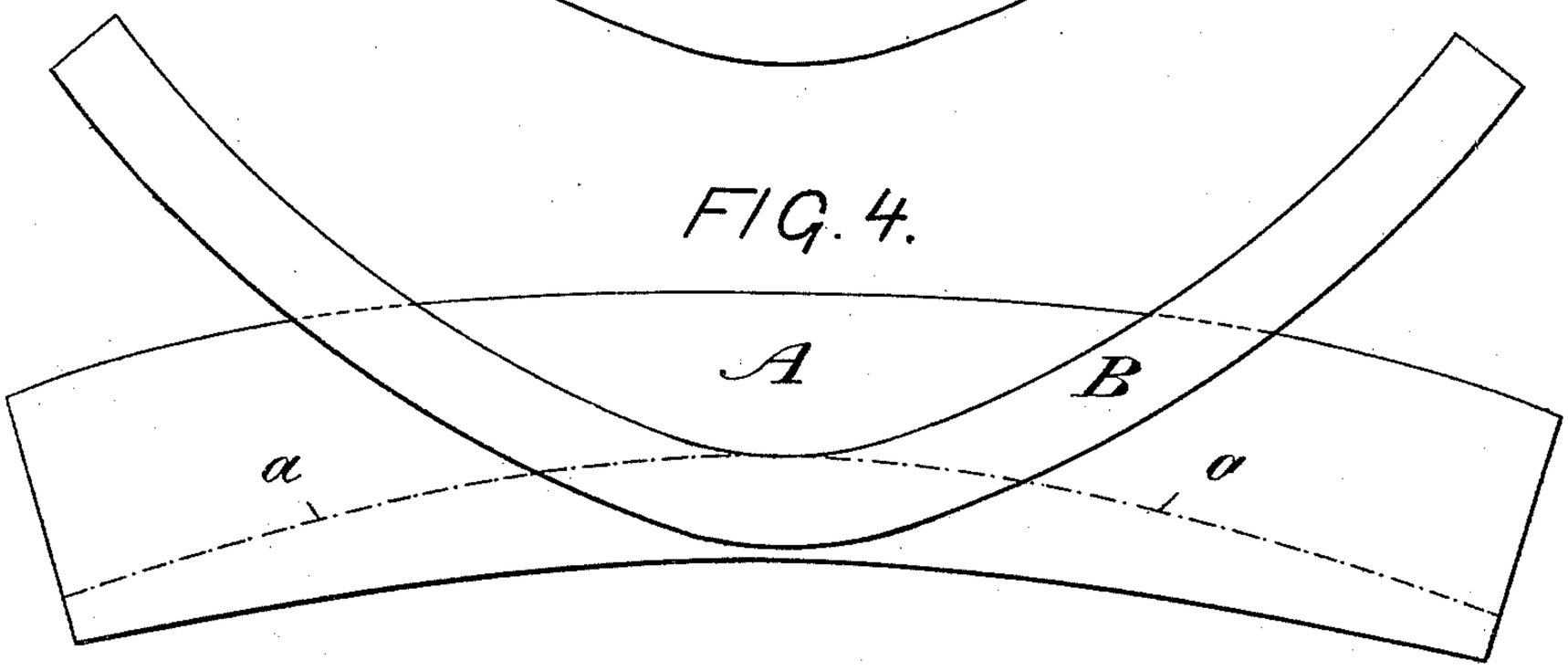



FIG. 4.

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(No Model.) 2 Sheets—Sheet 2.

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FIG. 5.

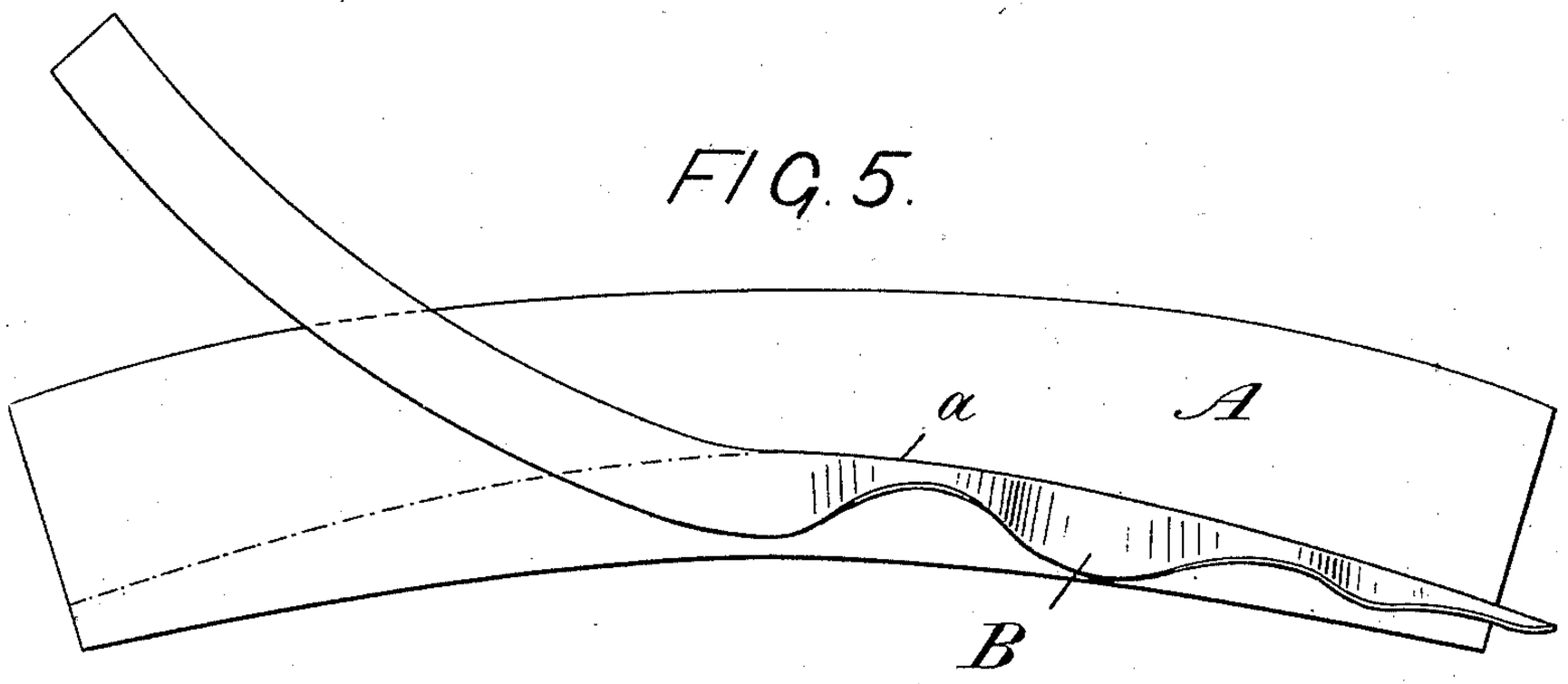


FIG. 6.

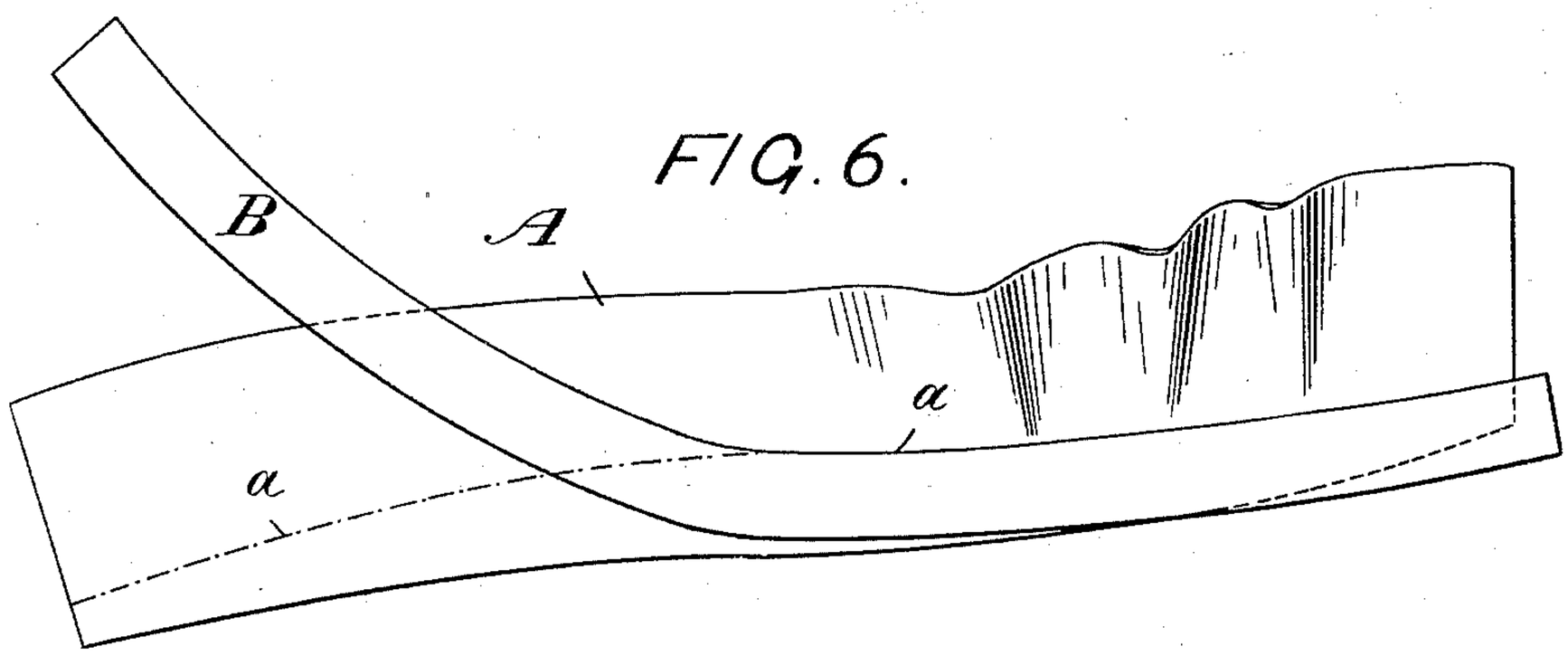


FIG. 7.

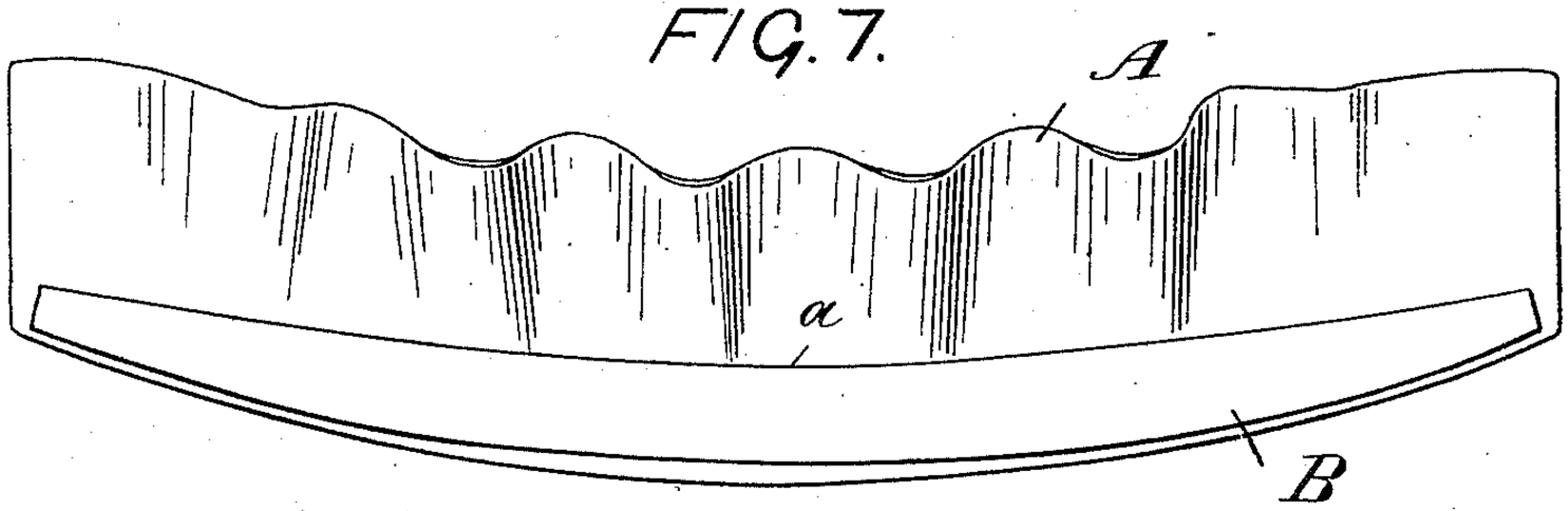


FIG. 8.

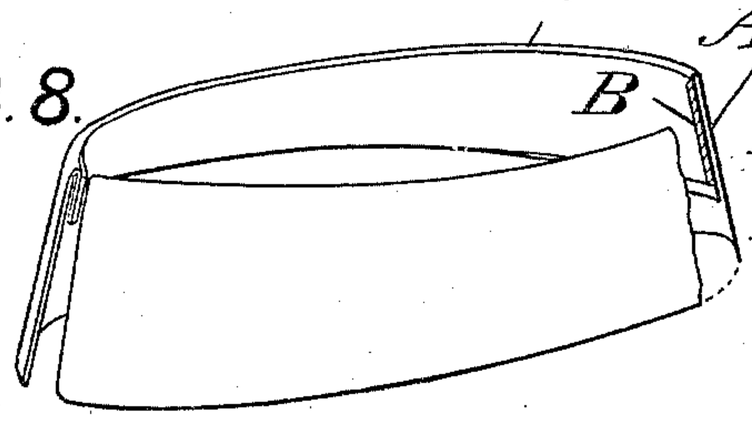


FIG. 9.


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# UNITED STATES PATENT OFFICE.

MAX ROTHENBÜCHER, OF HAMBURG, GERMANY.

## METHOD OF MAKING COLLARS FOR WATER-PROOF GARMENTS.

SPECIFICATION forming part of Letters Patent No. 422,061, dated February 25, 1890.

Application filed December 16, 1889. Serial No. 333,863. (No model.) Patented in England November 19, 1886, No. 15,058.

*To all whom it may concern:*

Be it known that I, MAX ROTHENBÜCHER, of Hamburg, in the Empire of Germany, have invented a new and useful Improvement in the Manufacture of Collars for Water-Proof and other Garments, (for which I have obtained Letters Patent of Great Britain, No. 15,058, dated November 19, 1886,) of which the following is a specification.

This invention relates principally to the manufacture of the collars of water-proof garments, but is also applicable to collars of garments of other material and to collars in general. It has for its purpose to provide a collar which shall set well on the garment to which it is applied. Such collars have not heretofore been produced in water-proof material. In the manufacture of collars from ordinary (unwaterproofed) cloth the necessary stretching of the inner part of the cloth bent over is performed by the tailor while hot-ironing this part. This, however, cannot be done with material prepared with india-rubber, as the hot iron would injure the rubber, and the elasticity of the rubber would pull the cloth back to its original shape. In the present invention hot-ironing is entirely dispensed with and a collar of good set is produced by means of a band of stout material, which is shaped in a curve, as will now be described with reference to the accompanying drawings.

Figure 1 is a perspective view, partly in section, of a collar made in the old way, represented only to make a comparison between it and my improvement. Fig. 2 represents the piece of cloth, waterproofed or not, from which the collar has to be manufactured. Fig. 3 represents the curved band aforesaid. Figs. 4, 5, 6, and 7 represent the mode of combining this band to the cloth during different and succeeding stages of manufacture. Fig. 8 shows in perspective, partly in section, the collar completed according to my invention by bending over the cloth after attachment of the band. Fig. 9 represents a transverse section corresponding with Fig. 1, illustrating a modification.

Similar letters of reference designate corresponding parts in all the figures.

It may be seen by reference to Fig. 8 how the inner part of the collar lies close against the outer turned-over part of the same, so that it will fit close to the neck when put on. Prior to my invention such a close fit could not be attained in the collars of water-proof garments, for the reason hereinafter stated. Such collars had hitherto more or less the shape of Fig. 1, as the inner part was too short in comparison with the outer part.

The piece of cloth A (represented separately in Fig. 2, and also represented in Figs. 4, 5, 6, and 7) of which the collar proper is formed is of curved form, substantially like that of the blank from which turned-down collars are commonly formed. The curved band B is preferably of stouter material, and has a greater curvature than the said piece A.

The manufacture of the collar according to my invention is as follows: After having marked out by chalk or suitable material on the cut-out piece of cloth A, Fig. 2, the line *a*, on which the cloth has to be folded or turned over, which line varies with the higher or lower close of the collar, the gummed band B, Fig. 3, is placed upon the piece A with its curvature in the reverse direction to that of the said piece and with its inner edge on said line *a* of said piece A, and pressed down and fastened onto said piece at the center of the length of the said line, as shown in Fig. 4. Now one of the ends of band B—for example, the right-hand end—is bent down along the corresponding part of line *a*, but only the inner edge of the band is pressed down on and accordingly fastened to the piece A, as shown in Fig. 5. The operator now begins to stretch out the inner longitudinal marginal portion of the piece A that is inside of the line *a* and is now underneath the attached part of the band B, and this stretching is continued so far until during the pressing down of the right-hand part of the band B this part connects smoothly with the lower right-hand part of A, as shown in Fig. 6. In a similar manner the left-hand part of B is attached to A, giving both parts now the shape of Fig. 7. The piece A is next bent in the line *a* over the upper edge of the band B, as will be understood from Fig. 8, giving a well-setting collar that may afterward be finished with an overlining or outer facing R of cloth to give it a good outer appearance, as will be understood by reference to Fig. 9.

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

In the manufacture of a garment-collar composed of a piece A, which forms the collar proper and is folded to form the turn-over, and a band B, said band and piece being of curved form in their normal conditions, the herein-described method of uniting the said piece and band, consisting in first determining upon the said piece A the line in which it is to be folded to form the turn-over, next placing the said band B upon the said piece A with its curvature in a direction the reverse of that of said piece and with its inner edge on said line, next uniting the said edge to the said piece along said line only, then stretching the inner marginal portion of said piece A until it will lie smoothly against the inner surface of said band, and afterward uniting the opposed surfaces of said piece and band, substantially as herein described.

MAX ROTHENBÜCHER.

Witnesses:
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A. SCHAPER.