

W. S. Bell, Jr.
Collar.

No. 48,148.

Patented June 13, 1865.

FIG. III



FIG. I

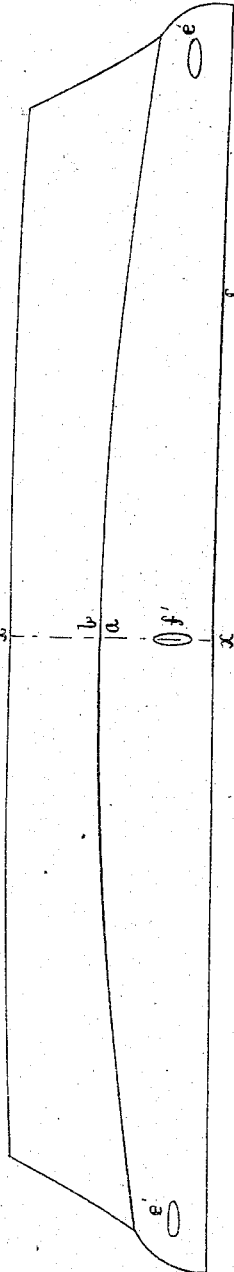
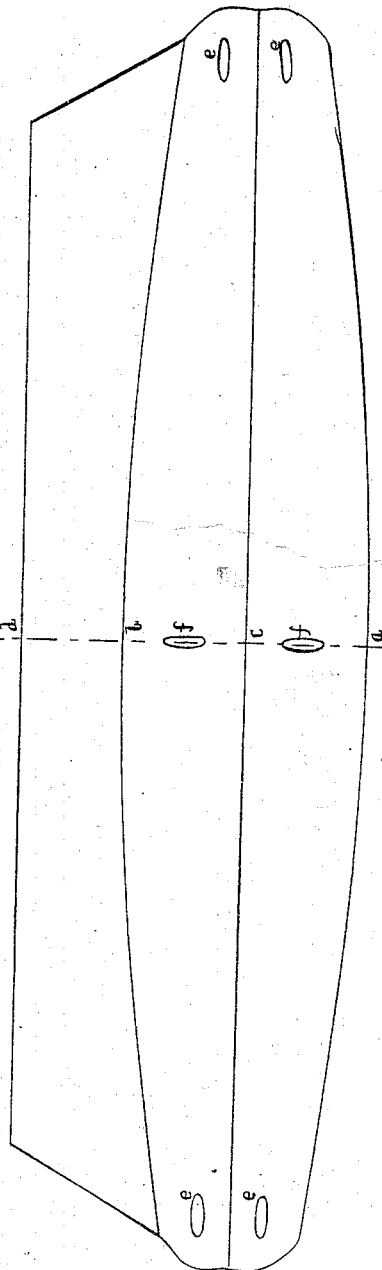


FIG. II



Attest
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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN PAPER-COLLARS.

Specification forming part of Letters Patent No. 48,148, dated June 13, 1865.

To all whom it may concern:

Be it known that I, WILLIAM S. BELL, JR., of the city of Boston, county of Middlesex, State of Massachusetts, have invented a new and Improved Mode of Constructing Paper Shirt-Collars; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Since the introduction of paper-collars many improvements have been made to enable them to be formed to fit the neck of the wearer as satisfactorily as the ordinary linen or cotton collar. Paper not having the elasticity of these textile fabrics, requires a great deal more care in the construction of collars made of it than if made of these fabrics. Another difficulty in paper collars arises from the effect of moisture from perspiration. In summer or in warm climates this is a serious matter, so far as the use of this portion of a garment is concerned. Paper, it is well known, absorbs moisture with great facility, destroying its stiffness and gloss. In ordinary paper collars there is but one thickness of paper in the neck-band or inner fold, and as there is nothing to prevent the action of the perspiration from the neck upon it this band or fold is liable at all times to become wet and flaccid, destroying its comeliness and annoying the wearer, and so reducing the strength of the material that the button-holes are torn out by the slightest strain upon them. Heretofore, owing to the nature of the paper used in making collars, it is been found impossible to fold over smoothly the outer band upon the neck or inner band without machinery.

The nature of my invention is such that I lessen the liability of the neck-band to be saturated with the moisture from the neck, and form, by means of the material itself, a line along which the outer band can be turned over smoothly without any other appliance than the hand of the operator.

In the drawings hereto attached, forming a part of this specification, Figure 1 represents a collar finished and as prepared for use. Fig. 2 is called a "blank," and represents the form of the paper before it assumes that represented in Fig. 1. Fig. 3 is a section of the collar shown in Fig. 1 through the line *x x*.

In all the figures the same letters refer to the same parts.

Fig. 2 in the outline represents, as above stated the blank or the form of the paper as at first cut from the sheet or roll. It shows in irregular outline, the upper edge, *d*, straight or curved as the taste or wish may require, the ends of irregular outline, and the lower edge, *a*, curved more or less, as represented. The oblongs or ovals *e e* make the button-holes at the ends of the collar, as shown at *e' e'*.

Fig. 1, *f f* are the ovals which form the central or back button-hole. (Shown at *f'* in Fig. 1.) Equidistant between the ovals *e e* and *f f* there is shown a straight line, along which the blank is bent over upon its upper portion, and the lower curve, *a*, then corresponds to the curve shown at *b*, and the ovals *e e*, at each end, and *f f*, in the center, come precisely together, so as to show in the completed collar, Fig. 1, only the ovals *e' e'*, at each end, and *f'*, at the center. The lower portion of the blank, being turned over, as described, along the line *c*, is then pasted down upon the middle portion, thus forming a double thickness of the material in all that part, which forms what is called the "neck-band," as seen in Fig. 3. This gives, of course, greater stiffness to this part than when only one thickness of the material is used in forming it, and to the same extent lessens its liability to be affected by the moisture or sweat of the neck; and if a water-proof cement—such as a solution of shellac or other gum insoluble in water—be used for the two surfaces of the paper, the outer fold will remain dry even after the inner or one next the skin is saturated with moisture. By this plan the button-holes, becoming doubled in the thickness of their edges, are also so much increased in strength as to be much less liable to be torn out.

As the line *c* is a straight or right line, there is no difficulty in turning over the lower part of the blank along it. No machinery is required in this operation; it can be done entirely by hand, as in folding any paper of a similar kind, without any previous marking or creasing a line for the fold. Almost the only care necessary is to make the fold so that the double orifices or holes *e e*, at each end, the central ones, *f f*, to come together so as to form the button-holes *e' e'* at the ends and *f'* in the middle, as shown in Fig. 1.

The next step is to turn that part of the blank between *b* and *d*, Fig. 2, down or over, as seen at *g* in Fig. 3. This has been found very diffi-

cult, if not impossible, to do so as to make a smooth fold of the turn-over part when the paper is used dry and of only one thickness throughout and maintain a regular curve along the line of folding while the turn-down part shall remain smooth. By thickening up the neck part of the collar as I do this part becomes a former, the lower edge, *a*, of the blank making the desired curve *b*, along which the turn-over part *g*, Fig. 3, can be bent regularly and smoothly by hand without any previous creasing or marking the line for the fold or the use of machinery of any kind.

Having thus fully set forth the nature of my invention, and without claiming a straight or a curved line, what I claim, and desire to secure by Letters Patent of the United States, is—

1. Doubling the thickness of this band and cementing the folds together, substantially in the manner set forth.

2. Folding the collar upon the line *b* by making the edge *a* the guide in such operation.

W. S. BELL, JR.

Witnesses:

H. KING,

I. L. JOHNSON.