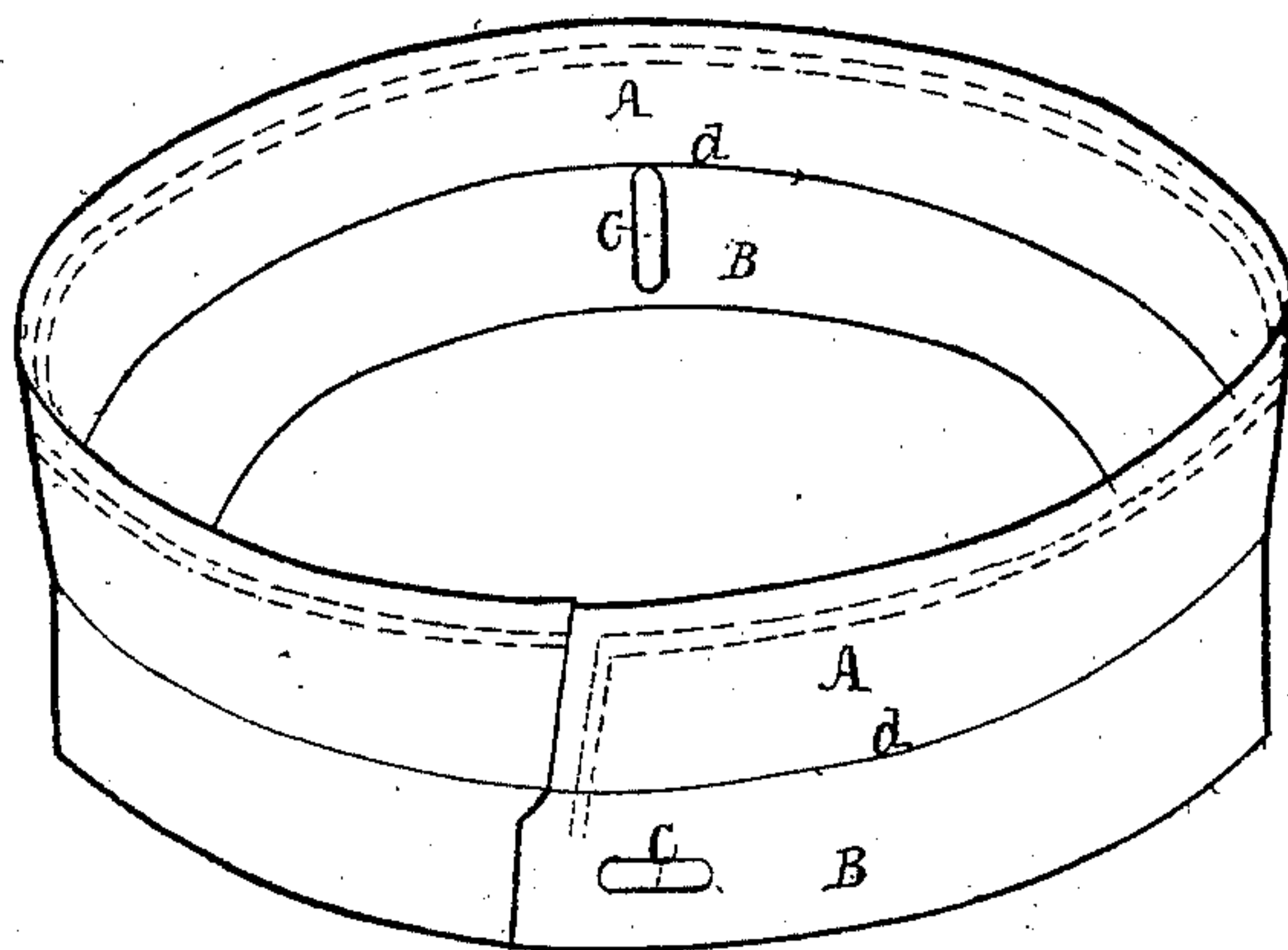


*S. S. Gray,*  
*Collar.*

*No. 38160.*

*Patented April 14, 1863*



*Solomon S. Gray*  
*Inventor.*

*Witnesses* { *N. Ames*  
*Almond*

# UNITED STATES PATENT OFFICE.

SOLOMON S. GRAY, OF BOSTON, MASSACHUSETTS.

## IMPROVEMENT IN PAPER SHIRT-COLLARS.

Specification forming part of Letters Patent No. 38,160, dated April 14, 1863.

*To all whom it may concern:*

Be it known that I, SOLOMON S. GRAY, of Boston, in the county of Suffolk and Commonwealth of Massachusetts, have invented a new and useful Improvement in Paper Shirt-Collars; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawing, forming a part of this specification.

The drawing represents a perspective view of the collar as fastened round a person's neck.

To enable others skilled in the art to make and use my improvement, I will now proceed to describe its construction and operation.

All paper shirt-collars hitherto constructed have been flat strips of paper having neither curve nor angle in their sides, and the great objection to such collars is that (their sides being straight) they fit too closely around a person's neck, and their upper edges cut and chafe the skin; and, moreover, for the same reason—*i. e.*, the straightness of the sides of the collar—a necktie or handkerchief round the collar is apt to slip up unless confined by a pin.

The nature of my invention therefore consists in making paper shirt-collars with a curve or angle in their sides, in order that the upper part may be flaring, so as neither to fit too close nor cut and chafe the wearer's neck, while at the same time the angle or curve in the side will prevent a necktie or handkerchief from slipping up, being in this latter respect equal to the best of linen collars.

I make my collars of any of the various kinds of paper suitable for such a purpose, and of any desirable fashion, and confine them to the shirt by means of button-holes *c* in the usual manner. In the first place, I take a flat strip of paper, and with suitable dies or knives cut out the collar and button-holes, which operation leaves the collar with straight sides, like all the paper-collars in general use. The

lower part, B, of the collar is flat; but in order to make the top part, A, flare out a little, and for the objects specified above, I press, roll, or hammer out the paper from the line *d* to the upper edge, as represented in the drawings; and to perform this operation most effectually and rapidly I make use of a die or former, such as is generally used for "striking up" or forming tin and other metals. Thus the cut-out collar being placed in the proper position in the machine, a single blow or pressure of the die permanently expands the upper part, A, of the collar, leaving it "struck up" and in the most desirable shape. It is obvious, however, that the side of the collar may have a gradual curve in place of the angle shown in the drawing. The bottom part, B, may also be made a little flaring, if desirable, at the same operation. I am thus enabled to produce a paper collar shaped exactly like the nicest linen collars, in which the lower part, B, is a flat piece of straight cloth sewed to the upper part, A, which is concave at the bottom, in order to give the requisite flare to the collar, so that it may stand out from the wearer's neck, and keep the necktie or handkerchief from slipping up. "Striking up" the collar also compresses the paper, and thereby renders it considerably harder and stiffer than a paper collar of the usual construction.

Having thus described the construction and operation of my improvement, what I claim as new, and desire to secure by Letters Patent, is—

As a new article of manufacture, a paper shirt-collar struck up or pressed from a flat piece into any desirable form, substantially as described, and for the objects specified.

SOLOMON S. GRAY.

Witnesses:

N. AMES,

N. EVANS, Jr.