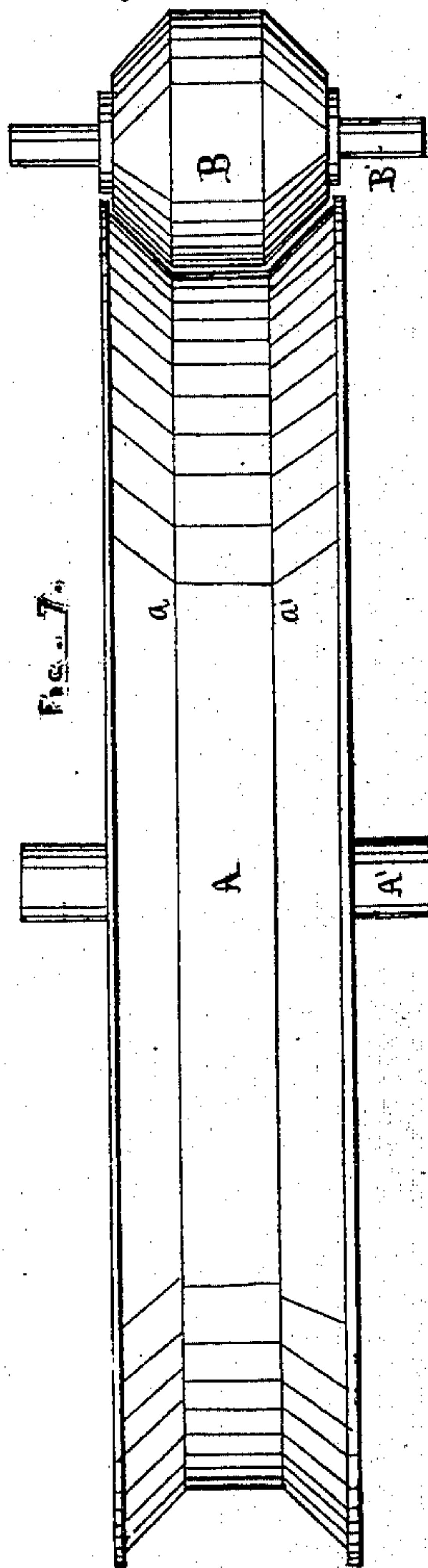
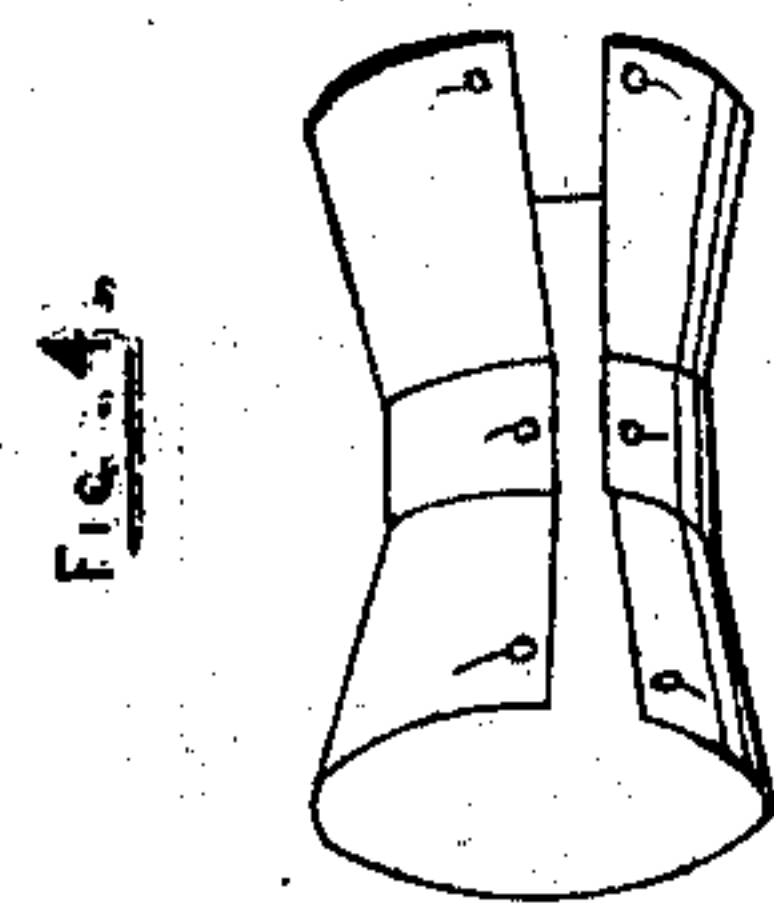
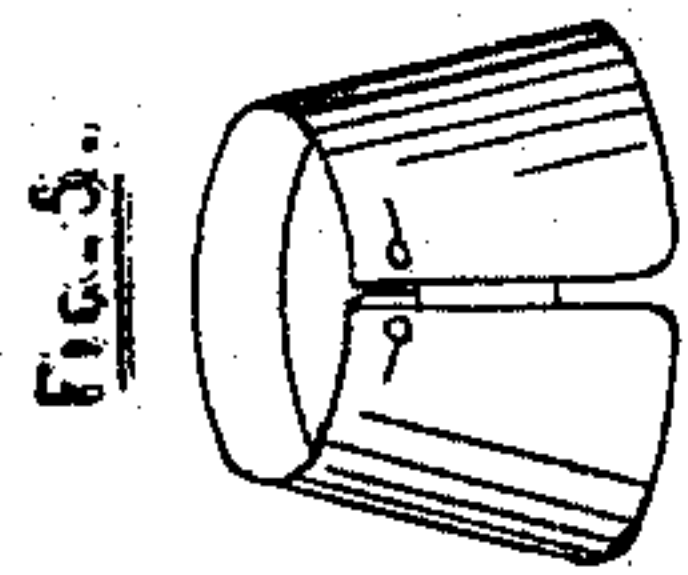
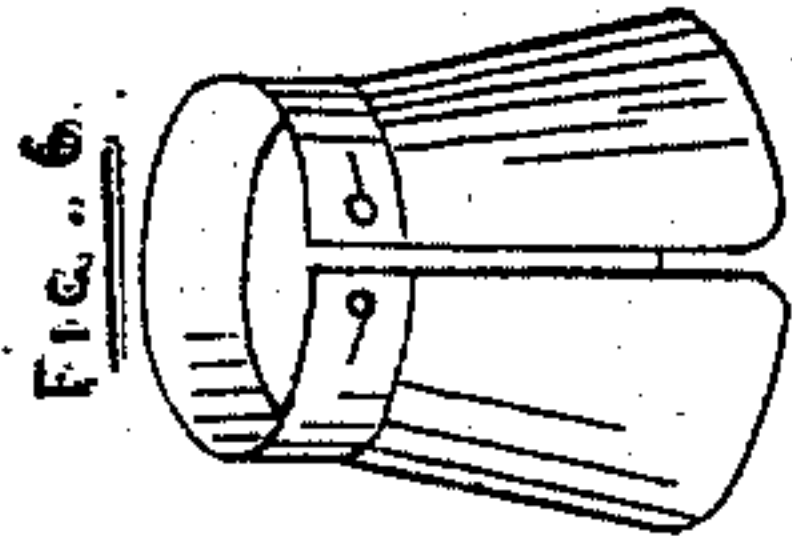
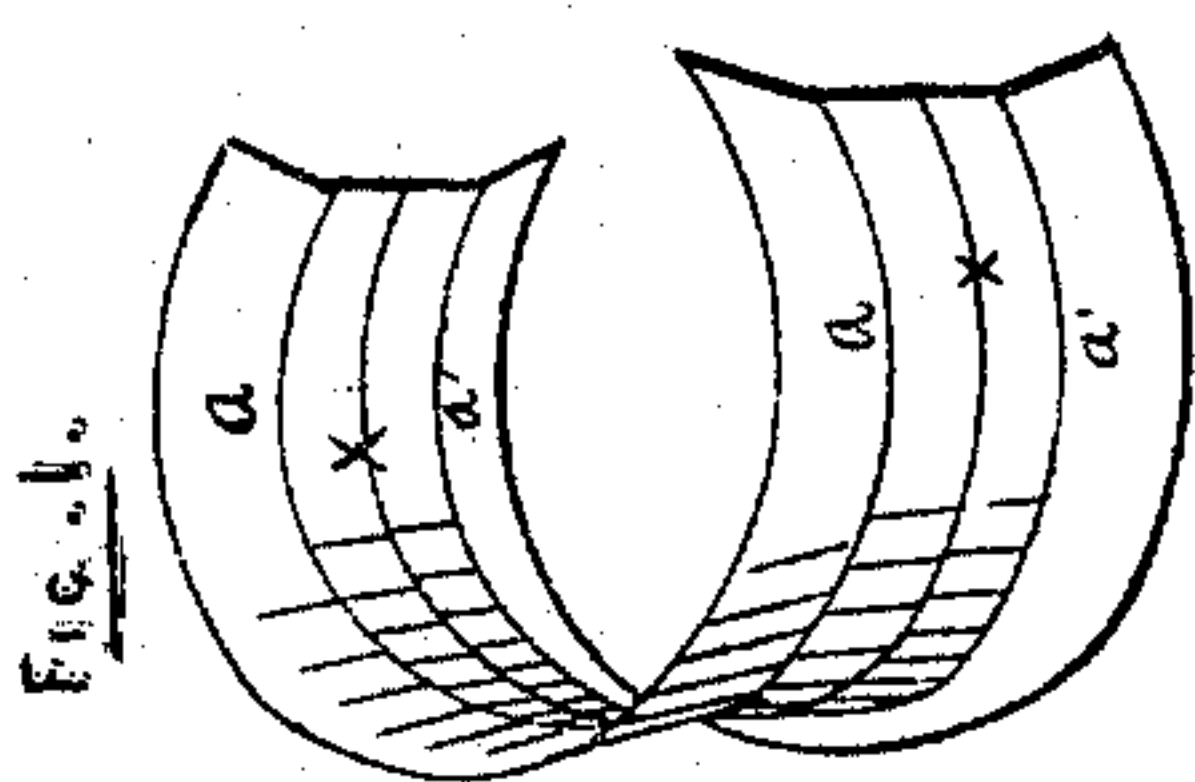
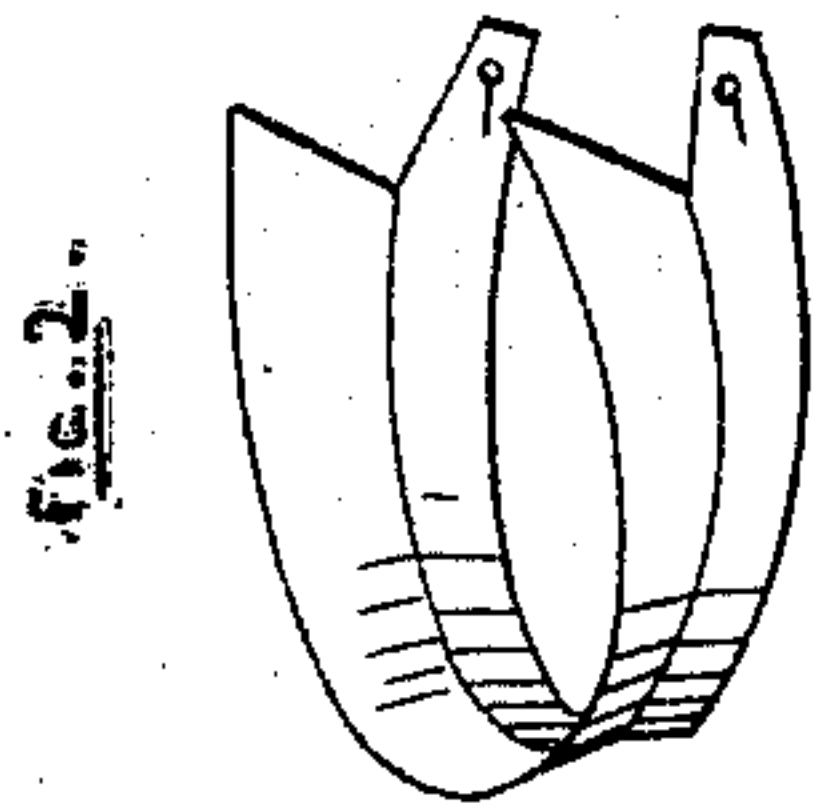
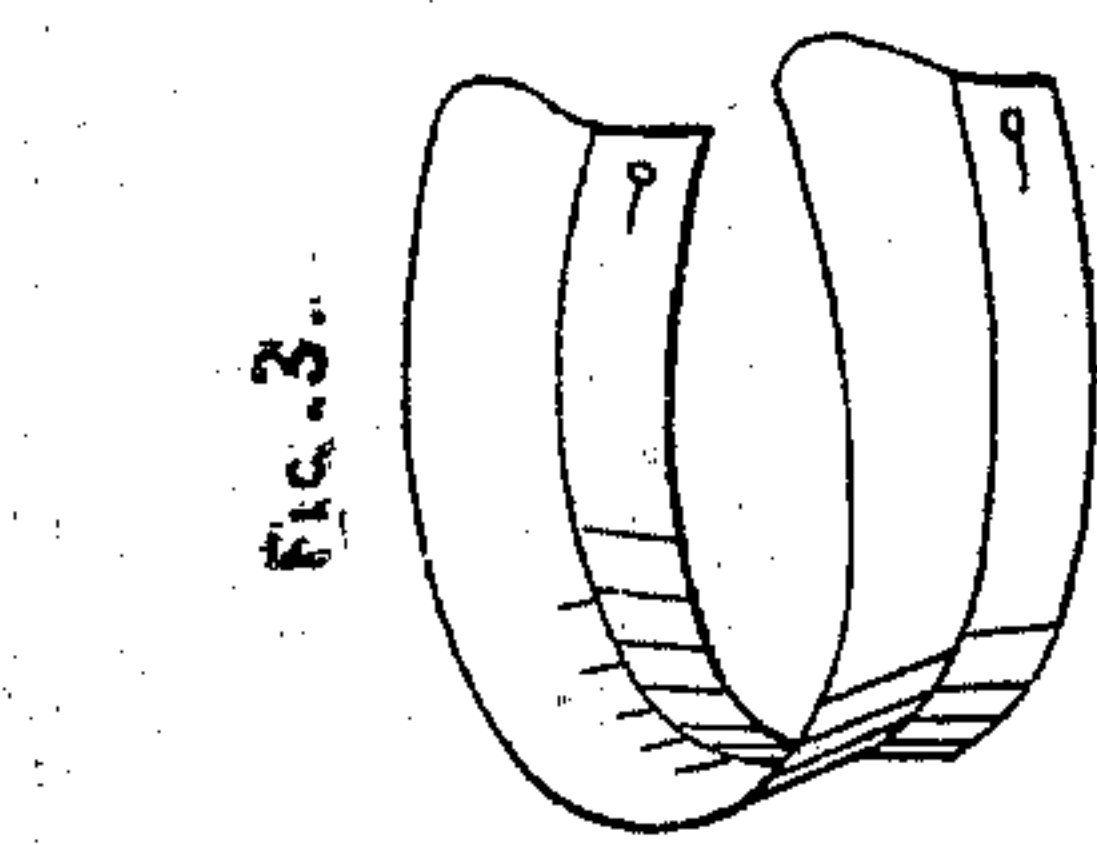


*D. A. Alden,*  
*Collar.*

*No. 59,938.*

*Patented Nov. 27, 1866.*



WITNESSES.

*Jos. L. Morris*

*Edw. F. Brown*

SIGNATURE.

*D. A. Alden*

*Inventor.*



# United States Patent Office.

## IMPROVEMENT IN PAPER COLLARS AND CUFFS AND THE MANUFACTURE THEREOF.

DAVID A. ALDEN, OF ROXBURY, MASSACHUSETTS.

*Letters Patent No. 59,938, dated November 27, 1866.*

### SPECIFICATION.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, DAVID A. ALDEN, of Roxbury, in the county of Norfolk, and State of Massachusetts, have invented a new and useful Improvement in Paper Collars and Cuffs; and the Manufacture thereof; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon:

In the manufacture of paper collars it has been a great desideratum to give that portion of the collars above what constitutes the neck band an outward flare, so as to give the collar a proper set on the neck and jaws, if a standing collar, or, if a turn-down collar, to permit its being turned down smoothly, leaving sufficient space between the standing portion and the turned-down portion for the reception of a cravat or neck-tie. Attempts have been made to mould collars, cut from plane paper by means of dies and pressure, into the desired form to effect these objects, but it has been found impracticable to give the requisite flare by such means. A similar flare is desirable in cuffs for ladies' wear.

My invention consists in making the collar or cuff of the proper shape or conformation, directly from the pulp, so that no stretching, swedging, or moulding will be required after the paper fabric has been formed. I effect this object by forming the paper fabric from which the collars or cuffs are to be cut upon a drum with its periphery so formed as to give the paper the necessary flare to produce the desired "set" in the collar or cuff.

In the accompanying drawings,

Figure 7 is a view of the drum on which the paper fabric is formed directly from the pulp, with one of a series of pressing rollers so formed as to mesh into the concave periphery of the drum, and press the pulp into a compact sheet so corrugated as to produce collars with the requisite flare without moulding, stretching, stamping, or swedging. A is the main drum on which the paper fabric is formed, and A' the axis upon which it rotates. B is one of the pressing rollers, and B' its axis. It will be seen that the central portions of both the drum and pressing roller are cylindrical, while the sides or ends are conical, forming a concavity in the periphery of the drum, and a corresponding convexity in the periphery of the pressing roller; so that when a sheet of paper is formed on the drum it will be concave on one side and convex on the other, having two angles or corrugations at *a* and *a'*.

Figure 1 is a section of the sheet or strip of paper as formed on the drum A.

Figures 2 and 3 are different styles of finished collars made in pursuance of my invention.

Figures 5 and 6 are different styles of ladies' cuffs made in pursuance of my invention; and

Figure 4 is a reversible cuff, also made in pursuance of my invention.

The sheet or strip of paper formed on the drum A is of the proper form and width to be divided in its longitudinal centre, on line *x x*, fig. 1, forming two strips suitable to be cut into flaring collars, or forming a double or reversible cuff, as shown in fig. 4, without severing. After the paper fabric has been formed directly from the pulp on drum A, it is to be finished by passing over another drum and under other rollers, precisely as plane paper is finished, except that every drum and roller over or under which it passes is to be formed like the drum and roller A and B. In short, the whole process of manufacturing the paper, from the beginning to the end, is the same as on other cylinder machines, except that the drums and rollers over, under, and between which it passes, are to be made concave and convex, as shown in fig. 7. Hence it is deemed unnecessary to give any description of any other part of the machine for the manufacture of this paper, except the form of said drums and rollers. When the sheet of paper formed on said drum A, as shown in fig. 1, has been severed into two strips by cutting on the line *x x*, fig. 1, said strips are to be cut into the proper lengths for collars or cuffs, trimmed into the desired shape, the button holes cut, and imitation stitches, hems, or embroidery stamped or embossed thereon, by any suitable means, and the flaring portion of a collar may be turned down on any desired line to produce a turn-down collar. The paper may be polished, glazed, or enamelled, by any known processes, either in the machine or after being removed therefrom.

In this application I do not claim the machine on which the paper is produced, nor any part thereof, nor do I claim any particular mode of cutting, stamping, or embossing the collars, or of glazing, polishing, or enamelling the paper; but what I do claim as my invention, and desire to secure by Letters Patent, is—

1. The method herein described of manufacturing flaring paper collars and cuffs by forming paper directly from the pulp so corrugated that it may be cut into collars or cuffs with the requisite flare, without subsequent moulding, swedging, or stretching, substantially as described.

2. I also claim, as a new article of manufacture, a flaring paper collar or cuff, in which the flare is produced by the form given to the paper in its manufacture from the pulp, substantially as described.

3. I also claim, as a new article of manufacture, paper so formed and corrugated in its manufacture from the pulp that it may be cut into flaring collars or cuffs, substantially as described.

D. A. ALDEN.

Witnesses:

Jos. L. COOMBS,

Edm. F. BROWN.