(No Model.)

# F. ACHENBACH.

## STERILIZING AND PACKING BANDAGING MATERIAL.

No. 585,645. Patented July 6, 1897.

Fig.3.

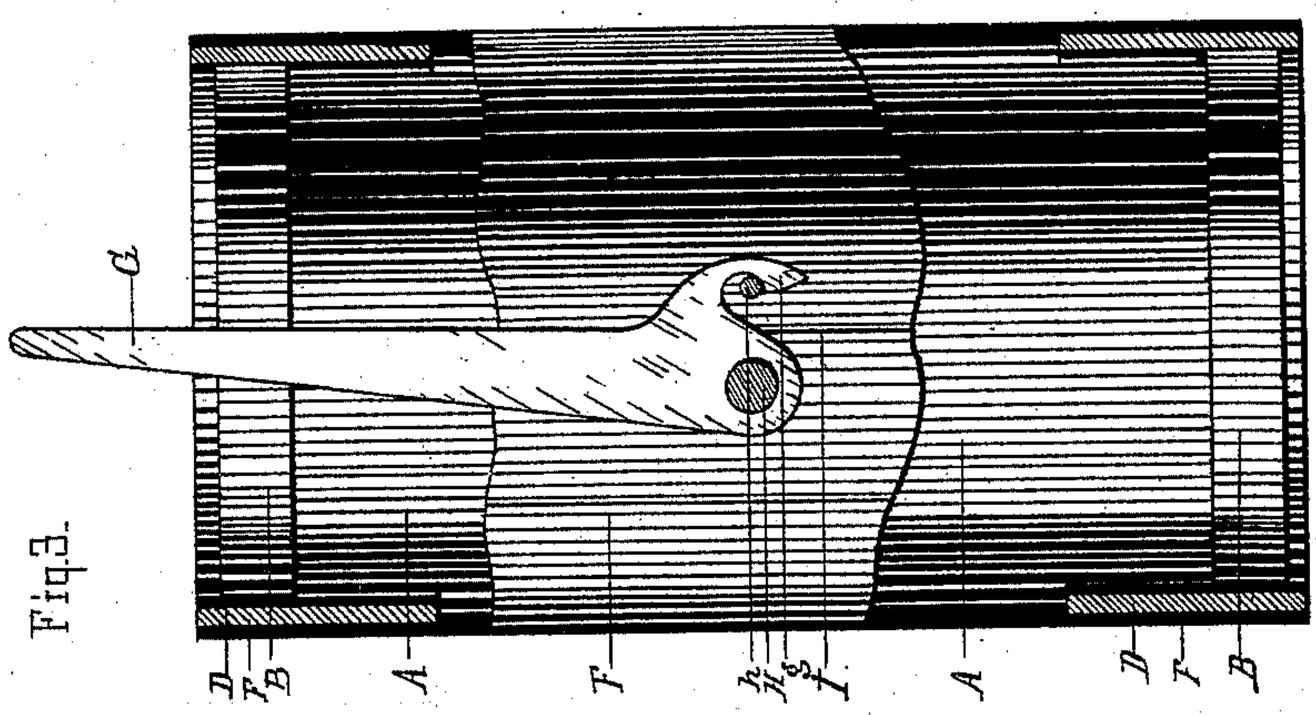


Fig.2.

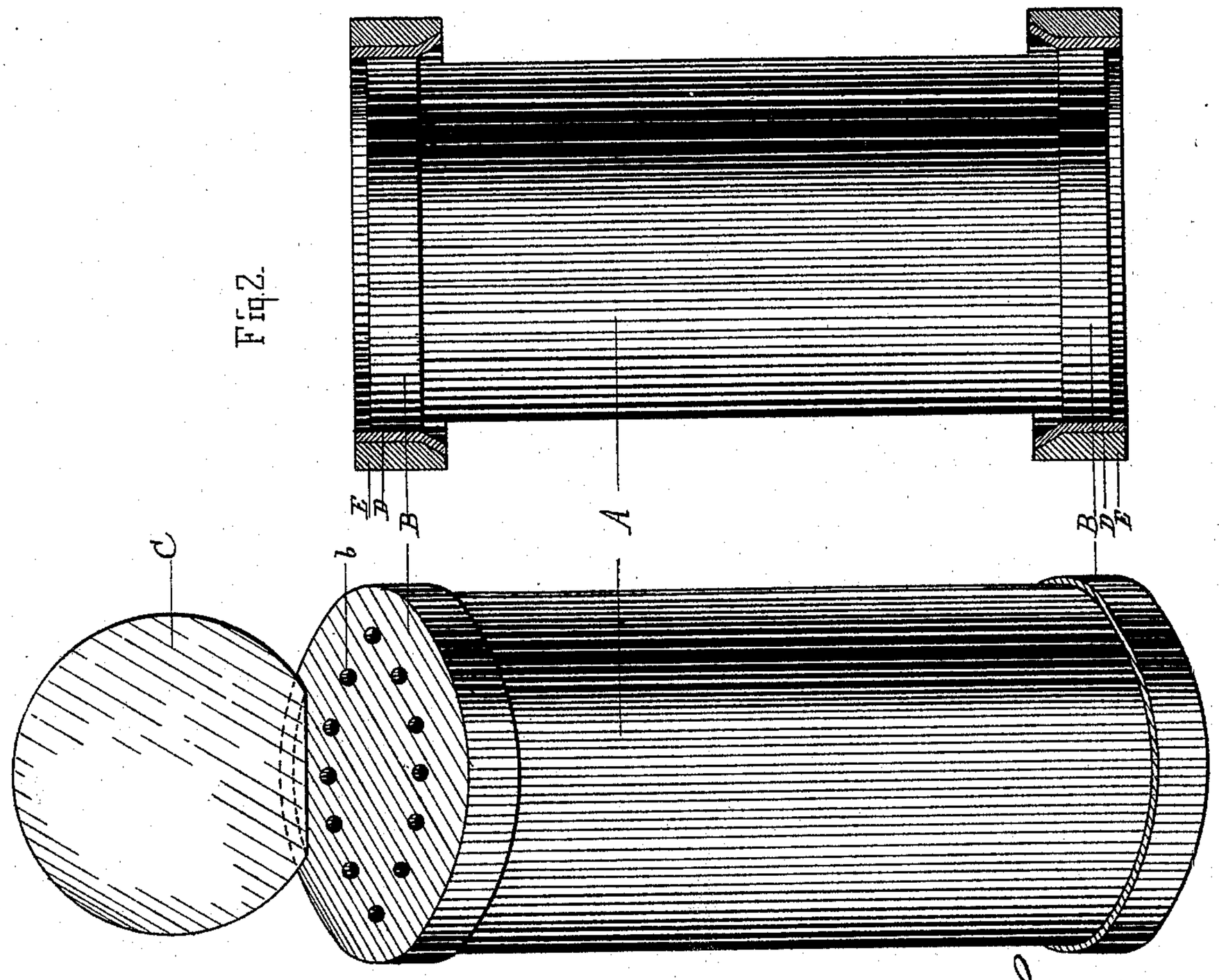


Fig.1.

Witnesses
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# UNITED STATES PATENT OFFICE.

FRIEDRICH ACHENBACH, OF FRANKFORT-ON-THE-MAIN, GERMANY.

## STERILIZING AND PACKING BANDAGING MATERIAL.

SPECIFICATION forming part of Letters Patent No. 585,645, dated July 6, 1897.

Application filed March 10, 1896. Serial No. 582,601. (No model.) Patented in Germany February 19, 1895, No. 86,214; in England October 26, 1895, No. 20,223; in France October 28, 1895, No. 251,272; in Belgium February 27, 1896, No. 120,233; in Switzerland March 2, 1896, No. 12,043; in Italy March 31, 1896, LXXX, 216, and in Austria April 24, 1896, No. 46/1,640.

*To all whom it may concern:*

Be it known that I, FRIEDRICH ACHENBACH, manufacturer, of Frankfort-on-the-Main, Germany, have invented new and useful Improvements in the Sterilization and Packing of Bandaging Material and the Like, of which the following is a specification.

The invention has been patented in Germany, No. 86,214, dated February 19, 1895; in England, No. 20,223, dated October 26, 1895; in France, No. 251,272, dated October 28,1895; in Belgium, No. 120,233, dated February 27, 1896; in Switzerland, No. 12,043, dated March 2, 1896; in Italy, LXXX, 216, dated March 31, 1896, and in Austria, No. 46/1,640, dated April 24, 1896.

This invention has for its object an improved apparatus to be used for the sterilization and packing of dressing or bandaging material in such a way that the cost of this packing is reasonably proportionate to the cost of the dressing or bandaging material packed, and for this object the process is so arranged that papier-mâché, cardboard, or the like cases may be employed as packing vessels.

In the accompanying drawings, Figure 1 is a perspective view. Figs. 2 and 3 are a section and elevation partly in section showing arrangements for preserving the cases from damage during the sterilizing process.

The case A, which may be round, square, or other suitable shape, is provided with holes *b* in its upper and lower ends B B′, and on the ends a thin paper cover or flap C is attached by one of its edges, as at *c*, by means of a suitable gum or adhesive substance insoluble in steam. The other edge of this cover or flap C or the ring in which this edge rests on the end B or B′ of the case is also provided with a gum or adhesive substance soluble in circulating steam.

The packing of the bandages, &c., takes place in the following manner: After the case A, on which already one end B′ has been securely fixed, so as to exclude germs, &c., has been filled with the dressing or bandaging material the other end B is also fitted on in a similar manner to the end B′. The covers or flaps C are then turned back, and the cases are placed side by side and one above the other in a suitable sterilizing vessel in such a way that the perforated sides are vertical and the fixed ends of the covers on the upper side. By this arrangement an uninterrupted passage of the steam through the holes *b* of the several ends of the cases and through the cases A themselves, and thus through the dressing or bandaging material in the cases, is secured. The gum or the like on the edge of the cover or flap C or on the ends B B′ thereby becomes soft, so that at the end of the sterilizing operation the cover or flap C of each case A may be pressed flat against the end B or B′, as the case may be, by means of the hand, which is covered with a sterilized glove, and also by means of a sterilized instrument. If, however, the cases are placed as indicated above and the steam is allowed to be condensed, the covers will close themselves by the so-generated vacuum. The softened gum of the cover or flap C then immediately effects a germ-tight closing of the case. In order to protect the cover or flap from damage, it may be afterward covered with a suitable cap or lid.

As, however, the edges of the ends BB′ would have a tendency to warp or curl up by the long detention of the cases A in the circulating steam of the sterilizing apparatus, thereby endangering the germ-tight closing of the case, clamp-rings E, Fig. 2, are placed over the edges of the ends B B′ to prevent said warping or curling. These clamp-rings E are conically extended on each inner side in order to allow of their being more easily fitted on, and in order to firmly secure them and also to prevent the damaging of the ends B B′ they are provided with an elastic insertion or washer D.

Fig. 3 shows a modification of a protecting device for protecting the whole outer surface of the case A against the action of the steam. This device consists of a cylinder F, which incloses the entire surface of the case and is provided at the top and bottom with an elastic insertion or washer D and divided longitudinally at I. By this arrangement the cyl-

inder F may be conveniently placed round the case A, then drawn together by means of a suitably-arranged tightening or straining device G *g* H *h*, by which means the elastic insertions D at the top and bottom of the case tightly inclose the case A, so that the whole outer surface of the case is protected against or shut off from the circulating steam. There is nothing in the arrangements shown in Figs. 2 and 3 to impede or prevent the fastening down of the flaps or covers C on the ends B B'.

Any common gum, paste, or size may be used as the insoluble material, as the insolubility is necessary only in so far that the flap does not fall off when in the steam-chamber.

The soluble gum consists of ordinary gum having sugar added thereto.

Now what I claim is the following:

1. As a new article of manufacture a box having perforated ends and paper pieces fastened with a gum insoluble in steam, and having a lining of a gum soluble in steam, substantially as described.

2. A case for holding bandages and the like for sterilization and afterward, comprising a body having perforated sides, flexible covers hinged to each perforated side, by paste at one side of each cover and a lining of soluble gum to seal the cover to the body when it is pressed thereto.

3. A case for holding bandages and the like for sterilization and afterward, comprising a body having perforated flat sides, flexible flaps pasted to the sides at one edge of the same and extending over them in an inclined plane, and adapted to close the perforated side, if the pressure inside the body is reduced, and a lining of paste soluble in steam intervening between each flap and the corresponding side of the body, to seal the flap, if it is pressed to the body.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRIEDRICH ACHENBACH.

Witnesses:

CARL ACHENBACH,

CARL ROTH.