

A. HOPFEN.
Teeth-Protector.

No. 165,584.

Patented July 13, 1875.

Fig: 1.

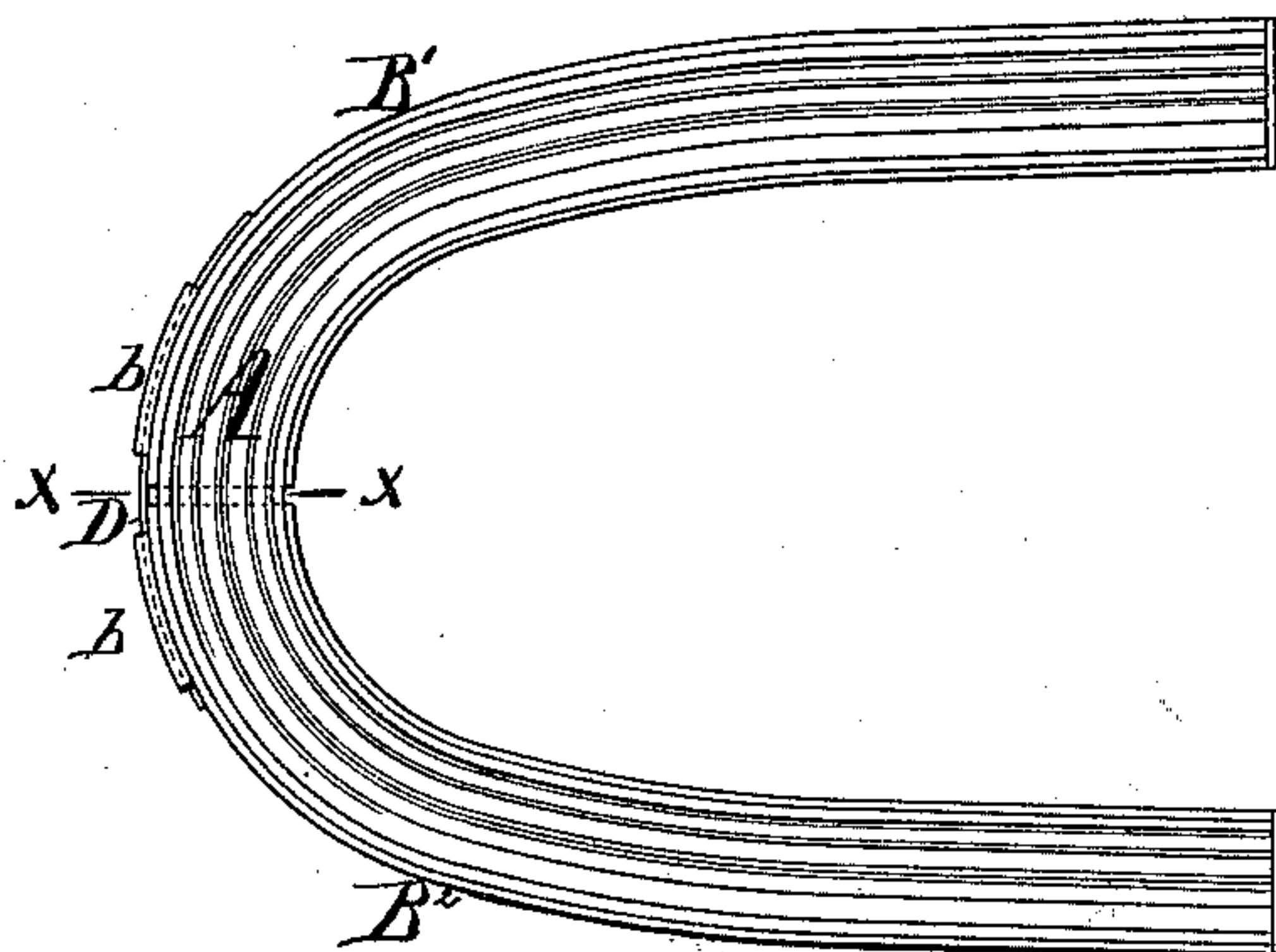
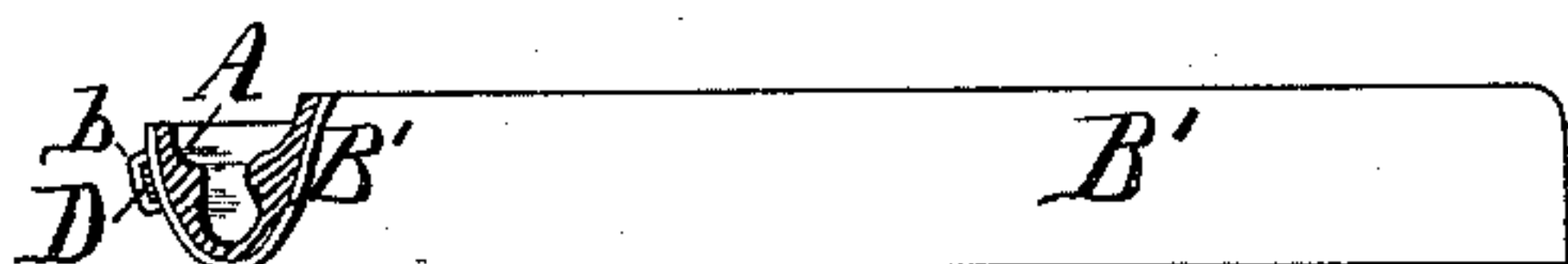


Fig: 2



Witnesses:

Henry G. Jones
The C. Day

Inventor:

Anton Hopfen
by his attorney
Thomas S. Stetson

UNITED STATES PATENT OFFICE.

ANTON HOPFEN, OF NEW YORK, N. Y.

IMPROVEMENT IN TEETH-PROTECTORS.

Specification forming part of Letters Patent No. 165,584, dated July 13, 1875; application filed June 10, 1875.

To all whom it may concern :

Be it known that I, ANTON HOPFEN, of New York city, in the State of New York, have invented certain new and useful Improvements relating to Coverings for the Teeth, of which the following is a specification :

In the application of freezing-mixtures, carbolic acid, or other agents which are liable to cause injury to the tongue, or in taking medicines through the mouth into the stomach, which are liable in their passage to cause injury to the teeth, it is desirable to employ over the teeth some impermeable covering, which shall prevent or retard the transmission of the material to or from the teeth. The object of this invention is to provide such a covering, which shall be easily adjusted, and to a certain extent self-adjusting, to accommodate different jaws, and shall be capable of retaining its place upon the teeth for a sufficient time to allow its use.

The following is a description of what I consider the best means of carrying out the invention. The accompanying drawings form a part of this specification.

Figure 1 is a plan view of my device. Fig. 2 is a section in the line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts in both the figures.

A is a trough or carved channel-piece of vulcanized india-rubber. It is molded or otherwise formed in such section as allows it to match approximately against, and to cling more or less upon, the teeth, either of the upper or lower jaw, to which it may be applied. B¹ B² are metallic pieces, cemented or otherwise firmly united to the exterior of the india-rubber channel-piece A. These metallic backing-pieces, B¹ and B², are formed with socket-pieces *b*, attached by soldering or otherwise, and adapted to embrace a strip of metal, D, which, extending through the cavity under each socket-piece, forms an elastic and adjustable connection between the parts B¹ B².

Although I have shown but one channel-piece, A, and its adjuncts, it will be understood that two are provided, one a little larger than the other, to correspond with the usual proportions of the upper and lower jaw, and that in most cases both will be used, the up-

per being applied hollow side up, to cover the upper row of teeth, and the other being applied hollow side down, to cover the lower set of teeth. In case the jaw is more pointed and narrow, or more blunt and broad, than the average, the device is capable of being correspondingly bent, so as to approximate easily to the form. In case a jaw is very wide, the parts B¹ B² should be previously set a little distance apart by forcibly separating them with the hand, causing the slide D to move a little in one or both the socket-pieces *b*. In thus widening the device, the india-rubber A, at or near the joint or line of connection between the parts B¹ B², must stretch itself longitudinally. It is usually easy to thus extend the device sufficiently to accommodate mouths of all ordinary sizes. Having been thus set approximately to the right size, the device will spring by the elastic yielding of the connecting-slide D, and the elastic yielding of the rubber A, so that the device can become more straight to accommodate wide jaws, or more curved to accommodate narrow ones.

I believe that rubber is a peculiarly desirable material for the channel-piece A, by reason of the facility with which it may be molded, its great elasticity, its insolubility and cleanliness, and especially its highly frictional qualities. The use of rubber not only allows the device to be readily sucked to its place when its purpose is simply to protect the teeth against some injurious agent outside, but by its frictional clinging upon the teeth tends to maintain its position with considerable force when properly pressed home, independent of any suction. Gums or slightly yielding materials varying in many of their qualities from rubber may be used with advantage under some circumstances.

Some features or parts of my invention may be used with advantage without the others. Thus I esteem it practicable to use my inner material in the form of a sufficiently thick channel-piece or trough without any backing. In such case it may be a little thicker than is here shown, but one continuous piece of material may serve for the whole.

I claim as my invention—

1. The channel-piece A, of rubber or analo-

gous material, adapted to form a covering for the human teeth, substantially as and for the purposes herein specified.

2. The channel piece A, of rubber or analogous material, in combination with a backing of metal or analogous strengthening material, as herein specified.

3. An expansible covering for the teeth, composed of a soft fitting lining, A, two or more stiffening and supporting pieces, B¹ B², and connecting means D, adapted to allow the

device to fit upon jaws of different sizes, and formed substantially in the manner and for the purposes herein set forth.

In testimony whereof I have hereunto set my hand this 27th day of May, 1875, in the presence of two subscribing witnesses.

ANTON HOPFEN.

Witnesses:

WM. C. DEY,

HENRY GENTNER.