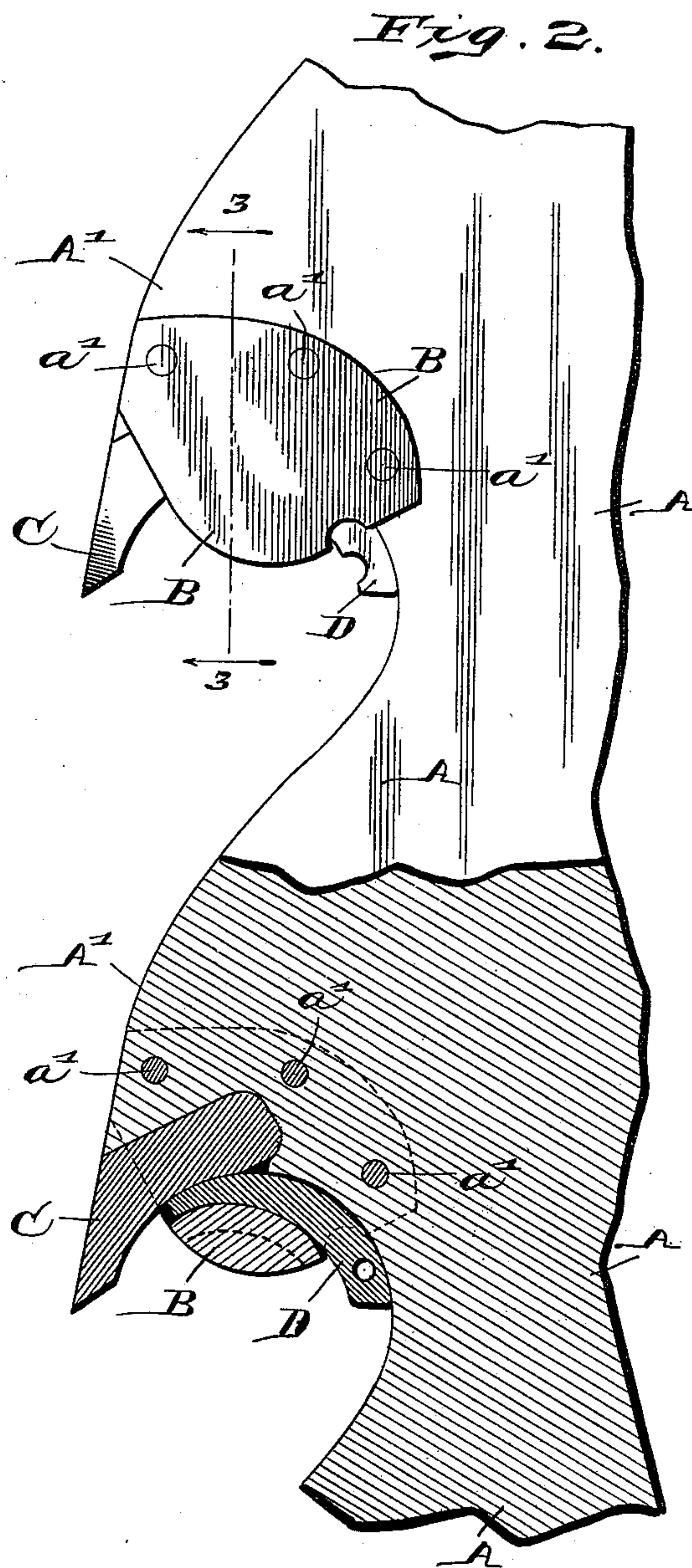
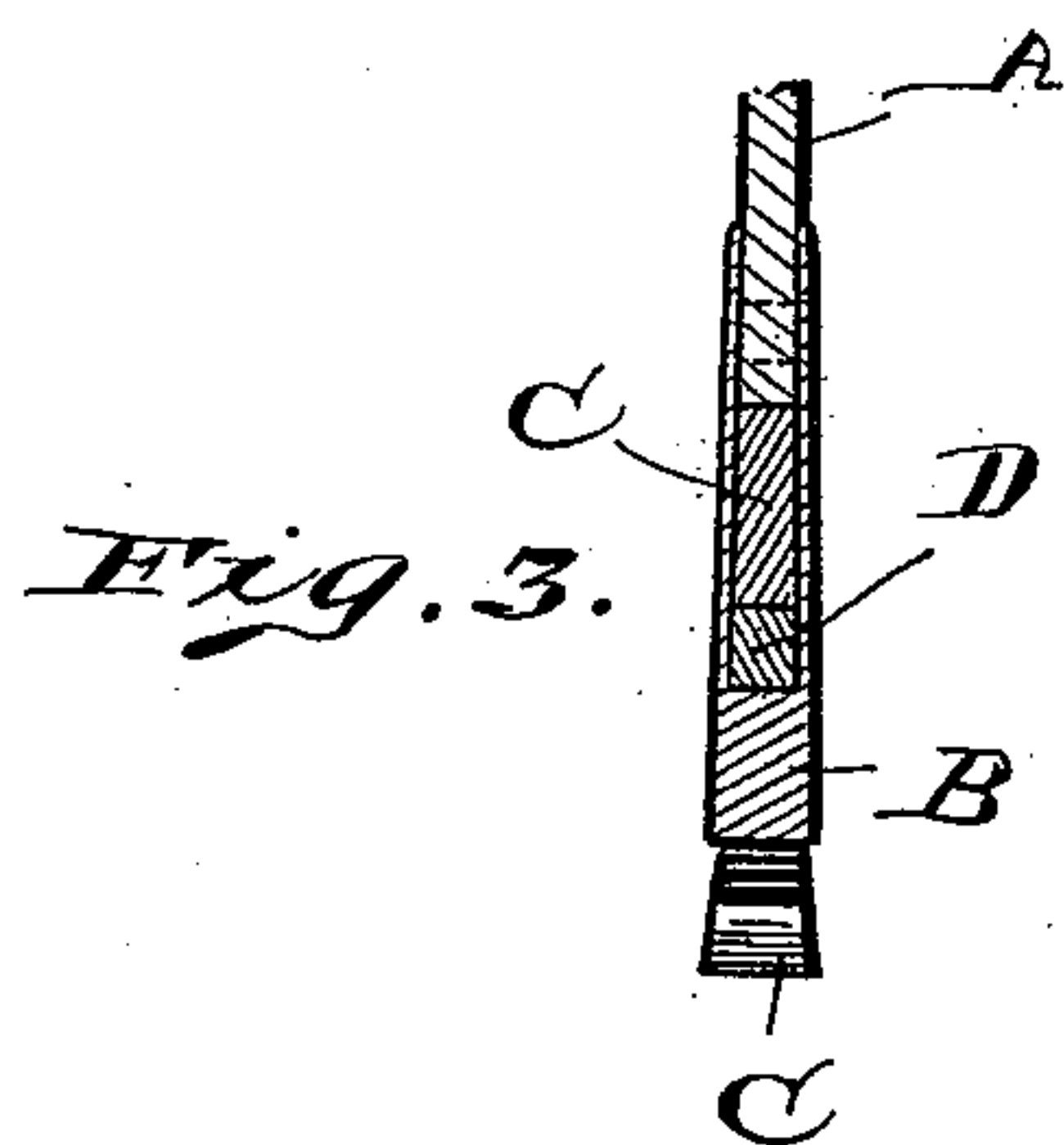
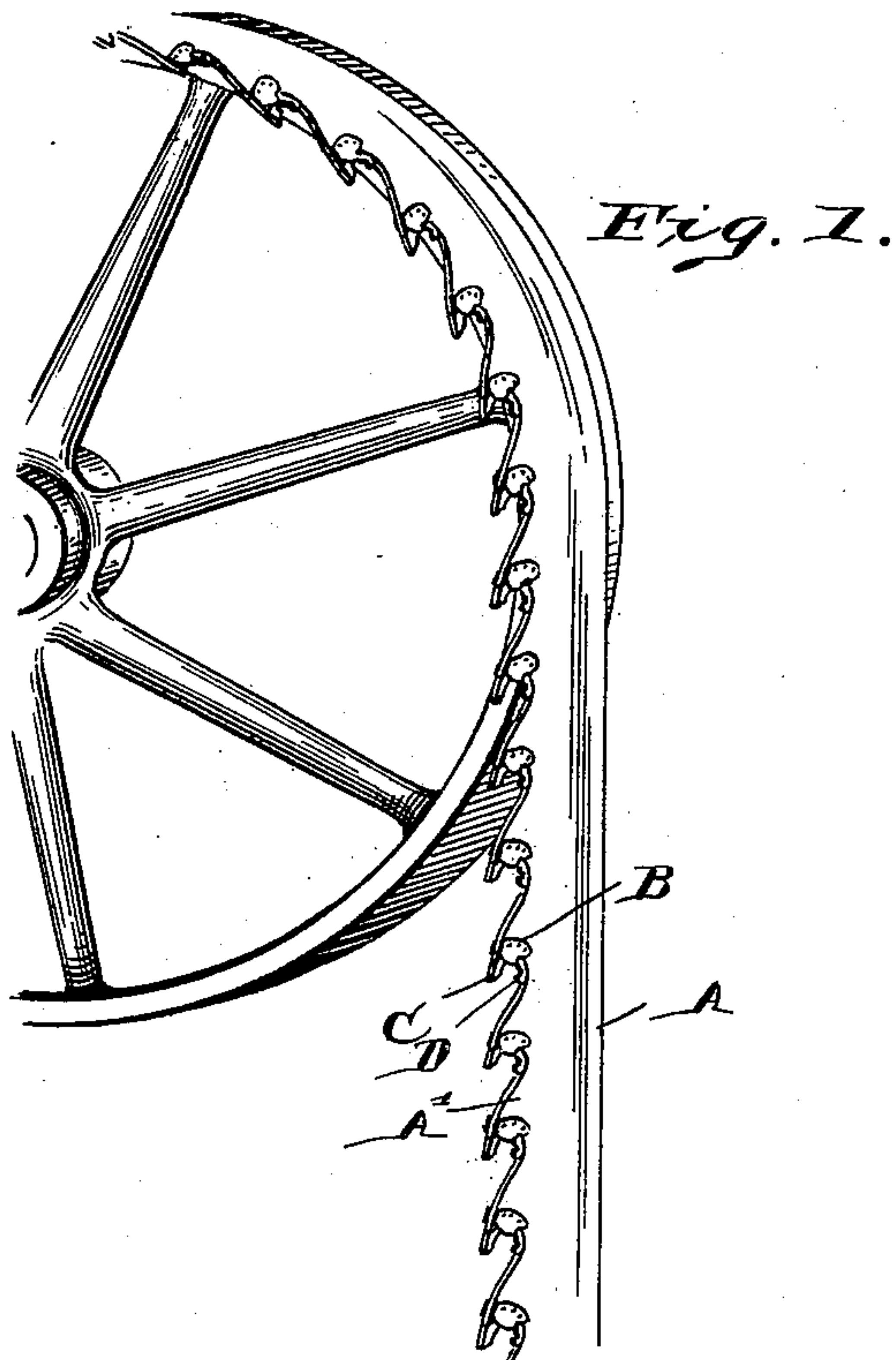


(No Model.)

J. E. EMERSON.  
SAW.

No. 561,098.

Patented June 2, 1896.



**WITNESSES:**

H. G. Neely.  
J. A. Walsh.

**INVENTOR**

James E. Emerson,  
BY  
Chester Bradford,  
ATTORNEY.



# UNITED STATES PATENT OFFICE.

JAMES E. EMERSON, OF BEAVER FALLS, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO THE E. C. ATKINS & COMPANY, OF INDIANAPOLIS, INDIANA.

## SAW.

SPECIFICATION forming part of Letters Patent No. 561,098, dated June 2, 1896.

Application filed June 10, 1895. Serial No. 552,316. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES E. EMERSON, a citizen of the United States, residing at Beaver Falls, in the county of Beaver and State of Pennsylvania, have invented certain new and useful Improvements in Saws, of which the following is a specification.

My invention relates to that class of saws commonly known as "inserted-tooth" saws, and its object is to so construct the various tooth portions and attaching devices that the tooth-points may be readily and conveniently attached and detached as the necessity therefor arises resulting from wear and breakage.

While my invention is not limited to any particular form of saws, it is especially designed to be used with band-saws in which, from their nature, if detachable tooth-points are to be used at all they must be of comparatively small size and occupy but a comparatively small space longitudinally of the saw, owing to the constant flexure of the saw-blade as it passes over the wheels or pulleys which carry it. Such teeth or tooth-points have heretofore been produced, but the means of securing them to the saw-blade has commonly included rivets or equivalent devices; but in the sawmill, where the greater portion of such work has to be done, these have been difficult to remove and replace.

By my present invention, as will be hereinafter more particularly described and claimed, I am enabled to secure the tooth-points in place without the use of rivets.

A saw provided with teeth embodying my said invention is shown in the accompanying drawings, in which—

Figure 1 is a perspective view of a fragment of a band-saw and one of the wheels over which it commonly runs in the position they occupy when such band-saw is in use; Fig. 2, a view, partly in side elevation and partly in central section, of a fragment of the saw-blade and two of its teeth on an enlarged scale about double the actual size such teeth are commonly made; and Fig. 3, a detail sectional view on the dotted line 3 3 in Fig. 2.

In said drawings the portions marked A represent the body of the saw-blade; B, the tooth-point holders attached to projections

on said saw-blade, which projections are the bases or body portions of the teeth; C, the tooth-points, and D wedges by which said tooth-points are held in place.

The saw-blade A has the usual tooth projections A', which form the bases or bodies of the saw-teeth, and these projections are formed to suit the particular style of tooth-point holders and tooth-points and wedges hereinafter described.

The tooth-point holders are substantially U-shaped vertically, as shown most plainly in the sectional view, Fig. 3, and are adapted to embrace the tooth-points and wedges, as shown. Said tooth-point holders are adapted to be permanently attached to the tooth projections A' either by the rivets *a'* or by brazing, or otherwise, as may be desired. I prefer that three rivets, as shown, be used, as this means of attachment is inexpensive and quite efficient. As will be noticed, especially by the lower portion of Fig. 2, the inner surfaces of the transverse portions of these tooth-point holders are curved to conform to the requirement of the curved wedge. The outer surface may be as desired. I have shown the front convex in full lines; but it may obviously be concave, as shown in dotted lines, or otherwise.

The tooth-points C are in themselves not greatly dissimilar to formerly-produced tooth-points, except that the extreme lower ends are widened or swelled out, so that when the wedges are inserted they are held in place by their own formation, the wider portions being below the engaging parts of the wedges, as shown.

The wedges D are of the same thickness as the saw-blade and the lower portions of the tooth-points in one direction and are curved and tapered somewhat in the other direction. They are adapted to be driven in after the tooth-points are inserted, and thus lock said tooth-points firmly in place. They are capable of being driven in from the lower sides of the tooth-point holders or throats of the saw-teeth, and thus so situated as not to project up near the cutting-points, while such centrifugal or outward force as may be exerted tends to force the wedges in rather than out, which is of considerable importance when



the invention is applied to circular saws, to which, of course, it may be applied without departing from my invention. As shown, these wedges are so formed that at the heel  
 5 they bear most strongly against the lower portions of the tooth projections and at the point against the tooth-point on one side, while they first come against the inner side of the U-shaped tooth-holder in the middle on the  
 10 other side, thus giving somewhat of a spring as well as a wedge force in locking the tooth-points in place. At the lower end they either have a notch or a perforation, as shown, so that they may be easily driven out whenever  
 15 desired. When driven entirely in, they fit tightly and hold the tooth-points as securely as would be done by rivets or any other means, while they are capable of being easily removed when desired and of repeated use.  
 20 These wedges, too, can be removed and replaced much more quickly than rivets can. There is no danger of their being accidentally misplaced, because whatever pressure comes upon their exposed ends from the saw-  
 25 dust or otherwise tends rather to drive them in than to force them out.

Having thus fully described my said invention, what I claim as new, and desire to secure by Letters Patent, is—

30 1. The combination, with a saw-blade having tooth projections or bases thereon, of tooth-point holders embracing said projections and formed to constitute three walls of a socket to receive the tooth-point and secur-  
 35 ing-wedge, the fourth wall of said socket

being the edge of said tooth-base, said tooth-points mounted in said sockets, and the securing-wedges inserted in said sockets to bear against and secure said tooth-points, substantially as set forth. 40

2. The combination of a saw-blade having tooth projections or bases, tooth-point holders secured to said projections and forming sockets for the tooth-points and the securing-wedges, said sockets being open at the bottom next the throats of the saw-teeth, tooth-points adapted to be inserted in said sockets, and wedges also adapted to be inserted in said sockets through said openings at the lower ends thereof, substantially as set forth. 45 50

3. The combination of a saw-plate having tooth projections or bases, tooth-point holders secured to said projections and thus forming sockets for the tooth-points, tooth-points adapted to be inserted in said sockets, and 55 curved tapered wedges formed to bear against the saw-blade at one end and the tooth-points at the other end on one side, and against interior surfaces of the tooth-point holders on the other side, whereby a spring as well as a 60 wedge lock is provided for the tooth-points, substantially as shown and described.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 8th day of June, A. D. 1895.

JAMES E. EMERSON. [L. S.]

Witnesses:

CHESTER BRADFORD,  
 JAMES A. WALSH.