(No Model.)

# J. W. LYON.

## MANUFACTURE OF BANJO BRACKETS.

No. 360,534. Patented Apr. 5, 1887.

Fig. 1.

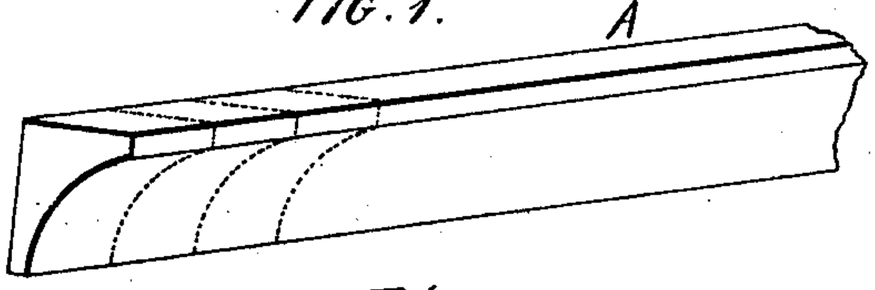



Fig. 2.

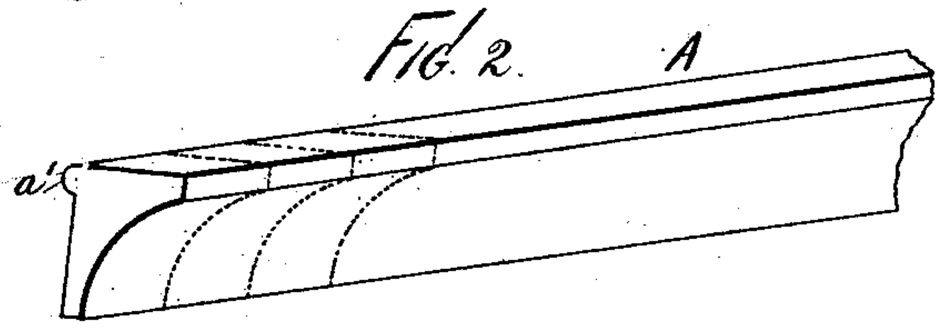



Fig. 3.

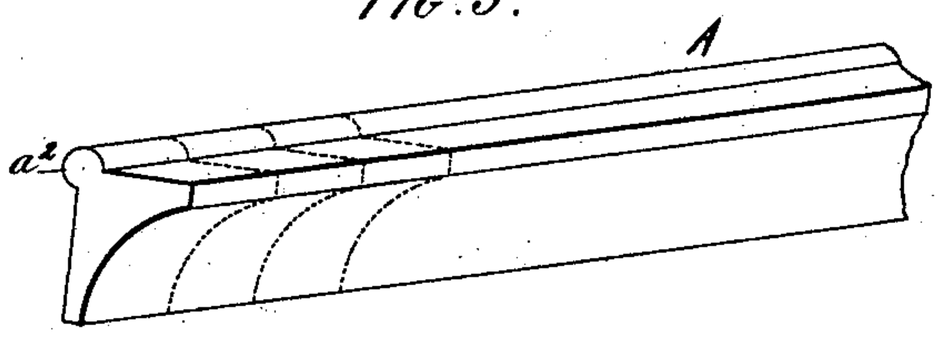



Fig. 4.

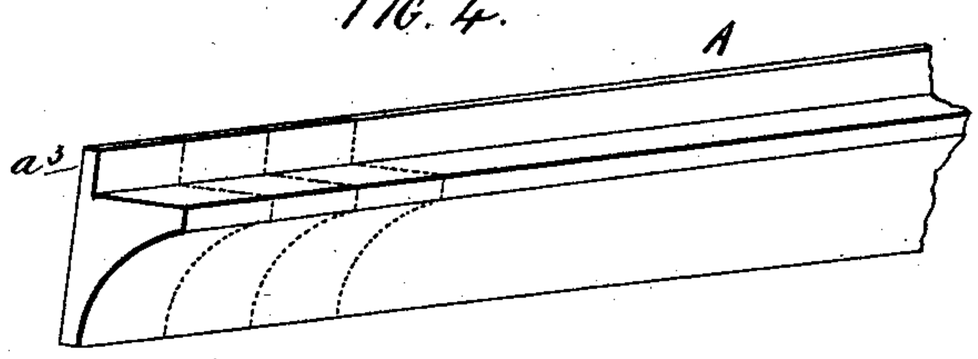



Fig. 5.

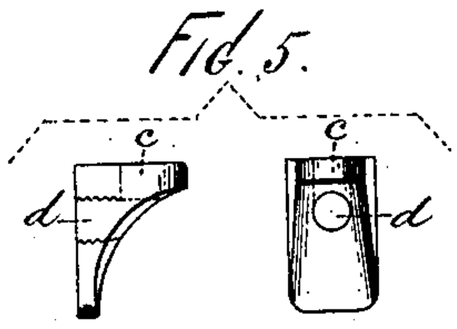



Fig. 6.

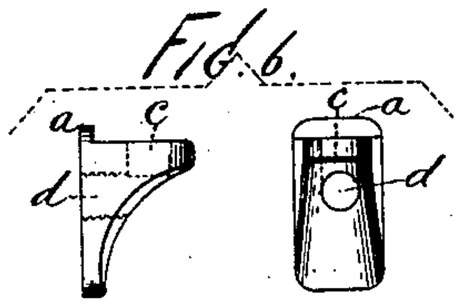



Fig. 7.

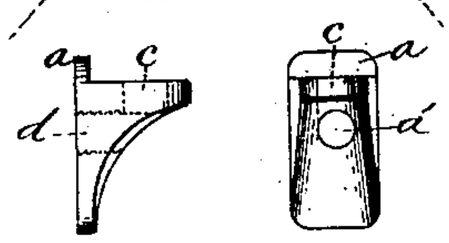



Fig. 8.

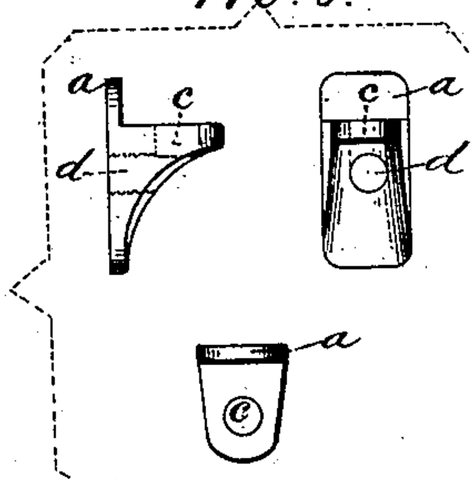



Fig. 9.

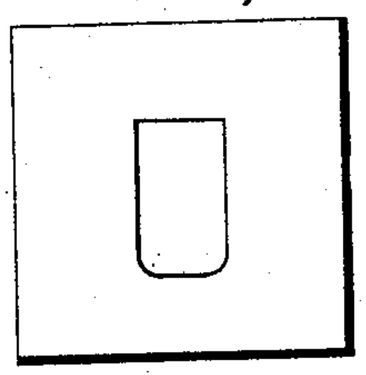


Fig. 10.

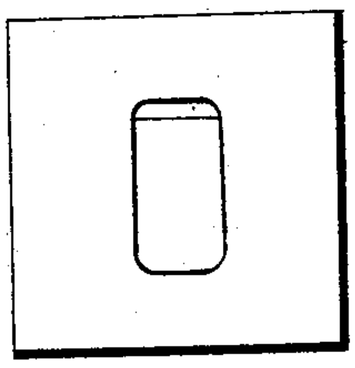


Fig. 11.

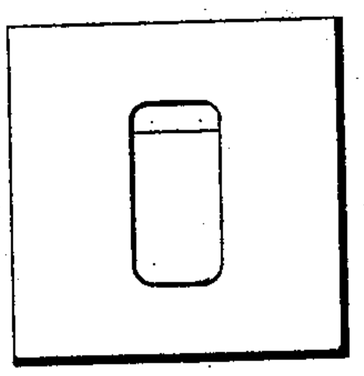
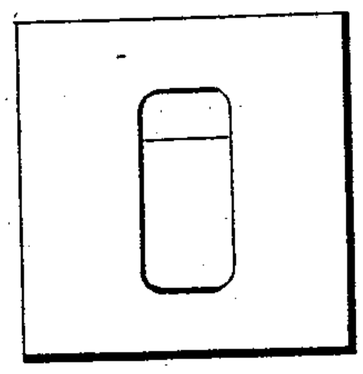


Fig. 12.



Witnesses:
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L. H. Osgood,

James W. Lyon,
Inventor,
By Wm. H. Osgood
Attorney.

# UNITED STATES PATENT OFFICE.

JAMES W. LYON, OF BROOKLYN, NEW YORK.

## MANUFACTURE OF BANJO-BRACKETS.

SPECIFICATION forming part of Letters Patent No. 360,534, dated April 5, 1887.

Application filed June 9, 1886. Serial No. 204,683. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES W. LYON, of Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in the Manufacture of Banjo-Brackets, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention has relation to the manufacture of metallic brackets such as are employed upon the shells of banjos, drums, and like instruments for securing one end of each of the rods which serve to strain or tighten the head. These brackets are ordinarily known as "banjo-brackets," and are now made in considerable quantities.

The object of my invention is to simplify and cheapen the cost of production, to improve and perfect the desired finish, to render the brackets hard and durable, and to make them of uniform weight and size. To accomplish all of this my improvements involve the production of a rolled strip or molding, from which the blanks for the brackets may be cut in uniform size, and the production of a bracket having certain peculiarities or qualities, as will be herein first fully described, and then pointed out in the claims.

Heretofore and before my invention these brackets have been cast usually of brass, the cast pieces being required to be separated, filed or smoothed off by hand process, and then polished ready to receive the plating, each bracket passing separately through a variety of processes. The castings are frequently defective, and many are wasted as being unfit to be worked up, and many after the finishing processes have been more or less applied. The castings vary much in size, weight, and hardness, and are always softer than is desired, so that they do not well withstand the wear and strain to which they are subjected.

In the accompanying drawings, forming part of this specification, I have indicated, so far as practicable or necessary, the method and means embraced in my invention.

Figures 1, 2, 3, and 4 are perspective views showing the general form of rolled moldings or strips from which the bracket-blanks may be cut. Figs. 5, 6, and 7 show each a side and face view of a finished bracket made from blanks cut from the moldings shown, respectively, in Figs. 1, 2, and 3; and Fig. 8 represents a finished bracket in side face and plan views, such as may be formed of a blank cut from the molding or strips shown in Fig. 4. Figs. 9, 10, 11, and 12 show in plan dies within which the brackets of Figs. 5, 6, 7, and 8 are finished.

In all the figures like letters of reference, wherever they occur, indicate corresponding parts.

The brackets preferably have each an upwardly-projecting piece, as at *a a a*, for bearing against the shell of the instrument to which they are applied, this piece being intended to give an increased bearing-surface and adding to the security or immovability of the bracket, as will be readily understood; but many are formed without this extension, as indicated in Fig. 5.

According to my invention I first form a strip or molding, as A, of any convenient length and of proper size and shape, depending upon the form which the finished bracket is to assume. This strip is preferably rolled or drawn after the usual manner of rolling or drawing ductile metals; but under some circumstances it might be cast. The rolling or drawing process is preferable, because of its cheapness, because it increases the hardness of the metal, obviates considerable waste, and produces a strip of uniform size, smoothness, weight, and density. The strip or molding, however formed, is cut, preferably, by sawing into suitable lengths, as through the dotted lines, Figs. 1 to 4. This cutting is done to accurate gage, and affords blanks of uniform length or size and weight, and without the usual projecting portions, which require to be filed or cut away before the finishing can be proceeded with.

To form the blank for the bracket shown in Fig. 5, the strip or molding is fashioned like that indicated in Fig. 1—that is, without any protuberance at the back or top. In Fig. 2 the molding is shown as having a slight protuberance, as at *a'*, the same being located entirely at the rear, and intended to form the slight bearing-piece *a* of Fig. 6, being ample for that purpose. To make the bearing-piece or extension a little larger, as in Fig. 7, the

molding A may have a beading, as at $a^2$, Fig. 3, extending a little to the rear and a little above the body of the molding; and to form a still larger bearing-piece the molding may be fashioned as in Fig. 4, wherein the extension $a^3$ is entirely above the body of the molding. These various forms are sufficient to indicate how or to what extent the general contour of the molding may be modified.

The blanks cut from the form shown in Fig. 1 are placed in a suitable die, as shown in Fig. 9, and those cut from forms as Figs. 2, 3, and 4 in corresponding dies, as at Figs. 10, 11, and 12. The dies are preferably so shaped as to round the corners and round up the front faces of the brackets, or so that when the pieces leave the dies there is no further finishing left to be done. The blanks, being dropped into the dies, are subjected to the action of a drop press or hammer, and with one blow are completely finished, so far as their exterior form is concerned. They are then ready to be drilled, as at *c*, to receive the straining-rod, and drilled and tapped, as at *d*, to receive the screw by which they are secured in place upon the shell of the instrument, and may then receive whatever plating may be deemed desirable.

The article produced is uniform in size, weight, and smoothness, and may be readily distinguished by its superior hardened surface.

Brass is most commonly employed; but other metals might be used.

If it be desired that the back of the bracket be curved so as to fit snugly against the curved shells, the striking-hammer may be shaped accordingly, so as to finish the piece at one blow.

When the bracket is applied, the straining-nut comes under the flat face.

For convenience of illustration, the brackets in the drawings are shown in position reversed from that which they occupy when in use.

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

1. The herein-described strip or molding of uniform thickness rolled or formed, as explained, into general shape of the bracket, and having the smooth surfaces, substantially as and for the purposes set forth.

2. The herein-described banjo-bracket having the smooth and hardened surfaces, the projecting bearing-piece, the rounded corners, and the perforations for receiving the holding-screw and the straining-rod, substantially as explained, and for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand in the presence of two witnesses.

JAMES W. LYON.

Witnesses:
CHARLES G. SUMMERS,
JAMES J. ROGERS.