May 17, 1927. 1,629,095

R. C. DANLY

TUNING PIN HOOKS AND METHOD OF MAKING THE SAME

Filed April 26, 1926

Fig. 1.

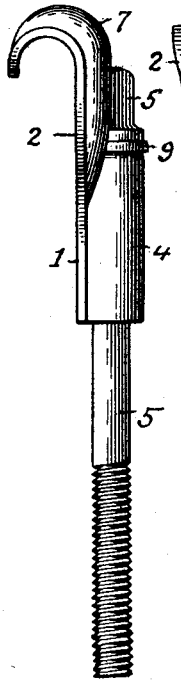


Fig. 2.

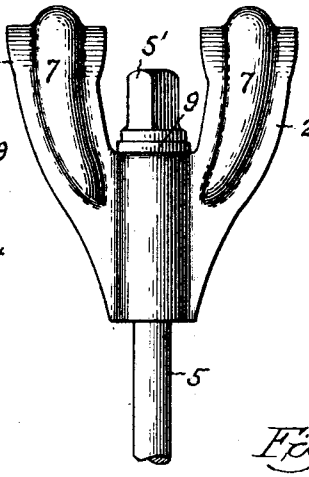


Fig. 3.

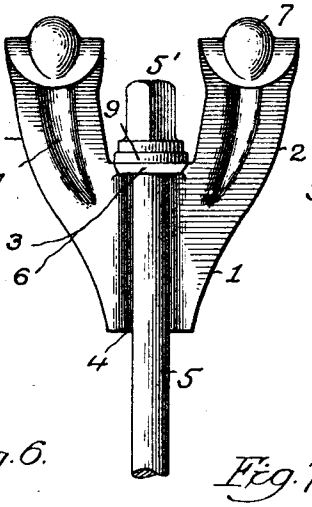


Fig. 4.

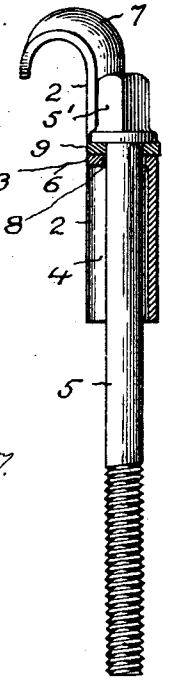


Fig. 6.

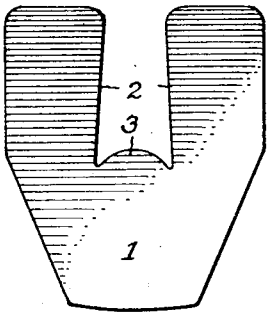


Fig. 7.

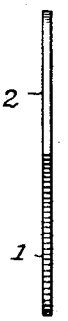


Fig. 5.

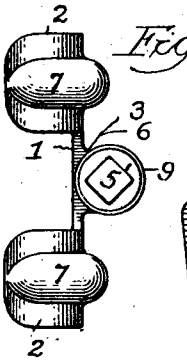


Fig. 8.

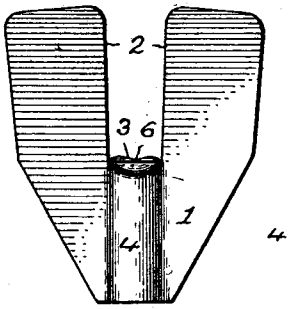


Fig. 9.

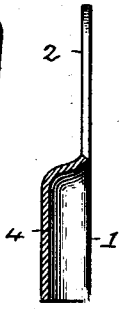


Fig. 10.

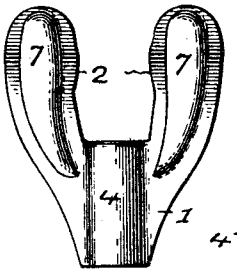
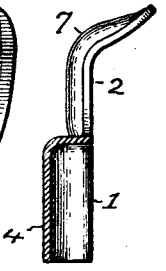


Fig. 11.



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Atty.

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UNITED STATES PATENT OFFICE.

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TUNING PIN HOOKS AND METHOD OF MAKING THE SAME.

Application filed April 26, 1926. Serial No. 104.625.

This invention relates to the production of hook members for tuning pins of musical drums and the like by a stamping operation from blanks of plate metal. And the present improvement has for its objects:

To produce an article of the multiple hook type from a blank of plate metal and the formation of said blank by a series of forming die operations to produce an article which is much lighter, stronger and more economical of manufacture than the ordinary cast metal hook member heretofore in general use, all as will hereinafter more fully appear.

In the accompanying drawing:—

Fig. 1, is a side elevation of a hook member and associated operative screw threaded pin or bolt.

Figs. 2 and 3, are front and rear elevations, respectively, of the same.

Fig. 4, is a transverse section at the midwidth of the parts.

Fig. 5, is a top view of the same.

Fig. 6, is an elevation of the blank or stamping.

Fig. 7, is an edge view of the same.

Fig. 8, is a front elevation of the blank, in the initial formation of same, with a bearing web and with a U shape bend or rib for engagement with the tuning pin or bolt.

Fig. 9, is a transverse section at the midwidth of the blank shown in Fig. 8.

Fig. 10, is a front elevation of the blank in a succeeding formation of the same, and with reinforcing hollow ribs formed in the wing members of the blank, previous to a final formation of said wings into the hook shape illustrated in Figs. 1, 2, 3 and 4.

Fig. 11 is a transverse section at the midwidth of the structure shown in Fig. 10.

Like reference numerals indicate like parts in the several views.

In the present method of making plate metal hooks for the tuning means of musical drums and the like, a series of successive operations are employed, as follows:—

The initial formation of a flat plate metal blank or stamping, shown in Figs. 6 and 7, and comprising a main plate portion 1, preferably of a tapering shape, from the broad end of which extend a pair of flat wings 2 in spaced and parallel relation to each other and having an approximately rectangular shape. In addition the main portion 1 is formed with an extension or ear 3 of a crescent shape, located between the wings 2 and at their point of connection to the main portion 1.

The next succeeding operation on the blank or stamping above described, by suitable forming dies, consists in the production along the midwidth of the main portion 1 of the blank, a hollow rib or bend 4 of a half round or U shape, to provide a receiving channel for the shank portion of the usual tuning pin or bolt 5 with which the present hook member is associated. Simultaneously with, or in an immediately succeeding operation, as found most desirable, the extension or ear 3 of the main portion 1 of the blank is folded and drawn laterally to said main portion to constitute a closure web 6 for one end of the channel formed by the bend or rib 4 aforesaid, as illustrated in Figs. 4, 8, 9 and 11.

The next succeeding operation on the blank or stamping in its last described formation and by suitable forming dies, consists in the formation of hollow reinforcing ribs or embossments 7 at the midwidth of the wings 2 of the blank, with said ribs tapering from their midlength to their respective ends, as shown. Simultaneously with, or in an immediately succeeding operation each wing 2 is bent laterally into a semi-hook form as illustrated in Fig. 11.

The next succeeding operation on the blank or stamping in its last described formation, and by suitable forming dies, consists in bending into a complete hook shape the partially bent ends of the wings 2 as illustrated in Figs. 1 and 4.

The final operation on the blank or stamping in its last described formation and by suitable punching dies, consists in forming a central orifice 8 in the bearing web 6 aforesaid, for the passage of and engagement with the shank portion of the tuning pin or bolt 5, as shown in Fig. 4.

The usual washer 9 may be interposed between the top of the web 6 and the under face of the non-circular operating head 5' of the tuning pin or bolt.

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

1. The method of forming an article having a pair of hook shape wings in spaced relation, which comprises the blanking out of a plate metal blank having a flat main

portion, a pair of flat wings in spaced relation and an extension intermediate of said wings, forming said blank along its midwidth with a hollow rib providing a receiving channel, deflecting said intermediate extension to form a closure web for an end of the channel formed by the hollow rib, forming a central orifice in said closure web, and bending the free ends of the wings into a hook form.

2. The method of forming an article having a pair of hook shape wings in spaced relation, which comprises the blanking out of a plate metal blank having a flat main portion, a pair of flat wings in spaced relation and an extension intermediate of said wings, forming said blank along its midwidth with a hollow rib of a U shape providing a receiving channel, deflecting said intermediate extension to form a closure web for an end of the channel formed by the hollow rib, forming a central orifice in said closure web, and bending the free ends of the wings into a hook form.

3. The method of forming an article having a pair of hook shape wings in spaced relation, which comprises the blanking out of a plate metal blank having a flat main portion, a pair of flat wings in spaced relation and an extension intermediate of said wings, forming said blank along its midwidth with a hollow rib providing a receiving channel, deflecting said intermediate extension to form a closure web for an end of the channel formed by the hollow rib, forming the said wings along their length with hollow reinforcing ribs which are tapered from their midlength to their respective ends, bending the free ends of said wings into a hook form, and forming a central orifice in said closure web.

4. The method of forming an article having a pair of hook shape wings in spaced relation, which comprises the blanking out of a plate metal blank having a flat main portion, a pair of flat wings in spaced relation and an extension intermediate of said wings, forming said blank along its midwidth with a hollow rib of a U shape providing a receiving channel, deflecting said intermediate extension to form a closure web for an end of the channel formed by the hollow rib, forming said wings along their length with hollow reinforcing ribs which are tapered from their midlength to their respective ends, bending the free ends of said wings into a hook form, and forming a central orifice in said closure web.

5. As an article of manufacture, a hook member of the character described made of plate metal and comprising a flat main portion formed with a hollow rib midway of its width providing a receiving channel, with a pair of integral wings extending in spaced relation and having their free ends formed into hooks, and with an extension between the bases of said wings, said extension being deflected laterally to form a closure web for an end of the channel formed by the aforesaid hollow rib of the main portion, said web being formed with a central orifice for an associated tuning bolt.

6. As an article of manufacture, a hook member of the character described made of plate metal and comprising a flat main portion formed with a hollow rib of a U shape midway its width providing a receiving channel, with a pair of integral wings extending in spaced relation and having their free ends formed into hooks, and with an extension between the bases of said wings, said extension being deflected laterally to form a closure web for an end of the channel formed by the aforesaid hollow rib of the main portion, said web being formed with a central orifice for an associated tuning bolt.

7. As an article of manufacture, a hook member of the character described made of plate metal and comprising a flat main portion of a tapering shape and formed with a hollow rib midway its width providing a receiving channel, with a pair of integral wings extending in spaced relation and having their free ends formed into hooks, and with an extension between the bases of said wings, said extension being deflected laterally to form a closure web for an end of the channel formed by the hollow rib of said main portion, said web being formed with a central orifice for an associated tuning bolt.

8. As an article of manufacture, a hook member of the character described made of plate metal and comprising, a flat main portion formed with a hollow rib midway of its width providing a receiving channel, with a pair of integral wings extending in spaced relation and formed with hollow reinforcing ribs which taper from their midlength to their respective ends, with the free ends of the wings bent into a hook form, the main portion having an extension between the bases of said wings which is deflected laterally to form a closure web for an end of the channel formed by the hollow rib of said main portion, said web being formed with a central orifice for an associated tuning bolt.

9. As an article of manufacture, a hook member of the character described made of plate metal and comprising a flat main portion formed with a hollow rib of a U shape midway its width providing a receiving channel, with a pair of integral wings extending in spaced relation and formed with hollow reinforcing ribs which taper from their midlength to their respective ends with the free ends of the wings bent into a hook form, the main portion having an extension between the bases of said wings

which is deflected laterally to form a closure web for an end of the channel formed by the hollow rib of the main portion, said web having a central orifice for an associated tuning bolt.

10. As an article of manufacture, a hook member of the character described made of plate metal and comprising a flat main portion of a tapering shape and formed with a hollow rib midway its width providing a receiving channel, with a pair of integral wings extending in spaced relation and formed with hollow reinforcing ribs which taper from their midlength to their respective ends, with the free ends of the wings bent into a hook form, the main portion having an extension between the bases of the wings which is deflected laterally to form a closure web for an end of the channel formed by the hollow rib of the main portion, said web having a central orifice for an associated tuning bolt.

Signed at Chicago, Illinois, this 24th day of April 1926.

ROBERT C. DANLY.