Feb. 22, 1927. 1,618,569

G. M. CHENEY ET AL

SHUTTLE TIP

Filed June 23, 1921

Fig.1.

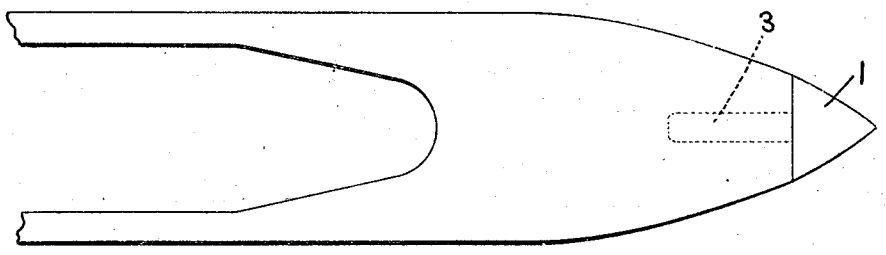
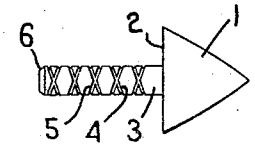


Fig.2.



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UNITED STATES PATENT OFFICE.

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SHUTTLE TIP.

Application filed June 23, 1921. Serial No. 479,789.

This invention relates to improvements in the conoidal metal device, usually of steel, with which shuttles are universally provided and which is adapted to receive the force of the blow of the picker and avoid injury to the wooden body of the shuttle.

The present invention is in some respects an improvement upon the invention set forth in the patent to Coolidge, 1,239,085, Sept. 4, 1917, in which patent the problems involved in this feature of the loom shuttle are quite fully set forth.

The object of the present invention is to provide a tip of the general character disclosed in the aforesaid patent so constructed that there will be no tendency for the tip to unscrew or work loose from the wooden body of the shuttle.

The object of the invention is more particularly secured by providing the stem of the tip with symmetrical reversely disposed helical grooves formed therein so that any tendency of the tip to unscrew in one direction is opposed by the tendency to unscrew in the opposite direction with the result that the tip is firmly held in place under all conditions of use.

These and other features and objects of the invention will appear more fully from the accompanying description and drawings and will be particularly pointed out in the claim.

In the drawings:

Fig. 1 illustrates one end of a loom shuttle provided with a tip embodying the invention.

Fig. 2 is a side elevation of a preferred form of tip embodying the invention.

The shuttle tip comprises the usual solid conoidal body "1" having a shoulder or base 2 at right angles to the axis of the conoidal body and a stem 3 extending from the base with its axis coincident with the axis of the conoidal body.

The stem 3 is provided with two helical grooves, one of which 4 runs in a right-handed direction and the other of which 5 runs in a left-handed direction around the stem. These two helical grooves are symmetrically disposed and being right and left handed are reversely disposed on the stem. In order to insure absolute accuracy of alignment of the stem of the shuttle tip with the axis of the tip and of the shuttle body, the tip and its stem are preferably formed by a drop forging process and the stem is then passed successively between corrugated rollers which roll into the metal of the stem, the two helical grooves 4 and 5. The tip thus formed may then be placed in a suitable chuck and the surface accurately ground in any well known manner, or if desired, the tip may first be ground and the grooves afterwards rolled into the stem. In order that the stem may readily enter the hole in the body of the shuttle, the end of the stem is preferably slightly tapered at 6 and this may be done during the rolling operation.

When the tip is inserted in the shuttle body the shank is preferably moistened or the inside of the hole in the shuttle body is moistened. When the tip is driven in place, this slight moistening of the wood of the shuttle body causes it to shrink as it dries out and draws the wood into the helical grooves.

This construction of tip does not weaken the metal portion and presents a structure which, when the tip is driven in place, is firmly gripped in the helical grooves by the wood of the shuttle body.

It is found in practice that a most efficient and durable structure is thus formed. No matter what blow or force may be applied to the shuttle tip or body in the operation of the loom, there is no tendency to dislodge the tip from the shuttle body. The special point is that there is no tendency for the tip to unscrew from the body of the shuttle because of the symmetrical reversely disposed helical grooves.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent, is:

A metal shuttle tip comprising a conoidal

body having a flat base at right angles to the axis thereof and a central stem extending axially from said body, said stem having symmetrical reversely disposed helical grooves therein, whereby when the tip is driven into a wooden shuttle and the wood closed into said grooves, there will be no tendency for the tip to unscrew from the body.

In testimony whereof, we have signed our names to this specification.

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