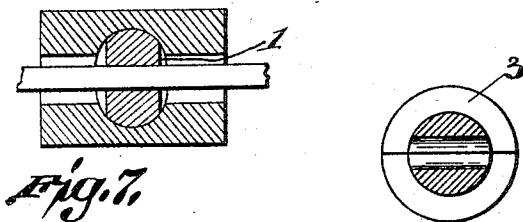
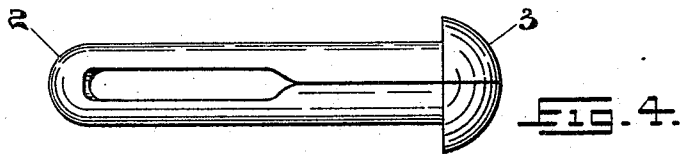
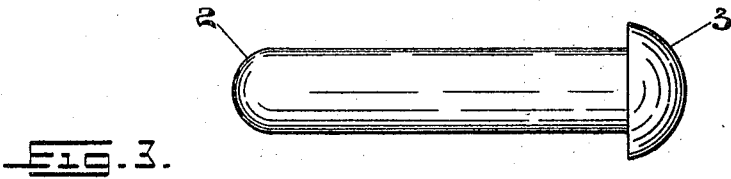
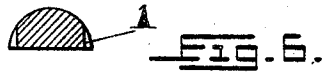
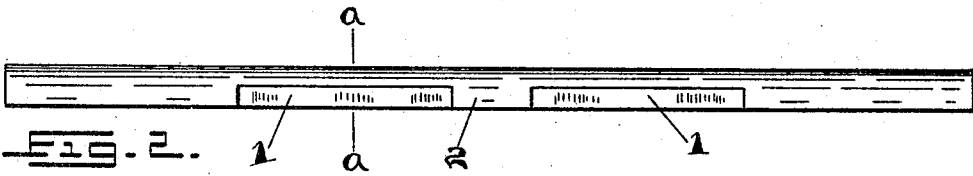
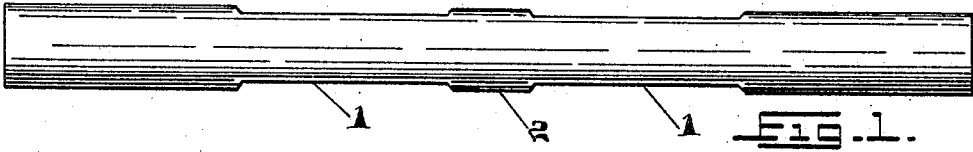


A. H. WESTON AND J. ZILLIOX.  
KEY BOLT.

APPLICATION FILED NOV. 9, 1920.

1,420,005.

Patented June 20, 1922.



*Fig. 7.*

FIG. 5.

INVENTORS.  
A. H. Weston.  
J. Zilliox.  
BY J. Edward Maybee.  
ATTY.

# UNITED STATES PATENT OFFICE.

ALONZO H. WESTON, OF BUFFALO, AND JOHN ZILLIOX, OF ORCHARD PARK, NEW YORK, ASSIGNORS, BY MESNE ASSIGNMENTS, TO THE DIAPHONE SIGNAL COMPANY, LIMITED, OF TORONTO, ONTARIO, CANADA.

## KEY BOLT.

1,420,005.

Specification of Letters Patent. Patented June 20, 1922.

Application filed November 9, 1920. Serial No. 422,906.

*To all whom it may concern:*

Be it known that we, ALONZO H. WESTON, of the city of Buffalo, and JOHN ZILLIOX, of Orchard Park, both in the county of Erie, State of New York, United States of America, have invented certain new and useful Improvements in Key Bolts, of which the following is a specification.

This invention relates to slotted bolts of the type shown and described in United States Letters Patent No. 1266334 dated May 14th, 1918, in which a slot for a wedge key is formed in the bolt by bending on itself a blank of half round section in which the center has been deformed, without removing material, to offset the flat face a distance substantially equal to half the width of the slot to be formed. This deformation of the blank results in a slight increase in the cross sectional dimensions of the blank particularly across the sides of the slot. This slight increase of diameter is not material in a railway bolt, but is objectionable in a bolt for use in drawing up ship plates to position. The object of my invention therefore is to devise means for producing a slotted bolt of the same diameter at substantially all parts of its stem by a process involving such displacement of the metal of the blank and without requiring any filling, grinding or machining of the blank or finished bolt.

We attain our object by forming a blank substantially as hereinafter described and illustrated in the accompanying drawings in which

Fig. 1 is a plan view of the blank from which the improved bolt is formed;

Fig. 2 a side elevation of the same;

Fig. 3 a plan view of the finished bolt;

Fig. 4 a similar view at right angles to Fig. 3; and

Fig. 5 a cross section through the slotted parts of the bolt;

Fig. 6 a cross section on the line  $a-a$  in Fig. 2; and

Fig. 7 a cross section illustrating the formation of the slot in the bolt by suitable dies.

In the drawings like numerals of reference indicate corresponding parts in the different figures.

The bolt is formed from the blank shown in Figs. 1 and 2. This blank is formed of

a half round bar somewhat more than twice the length of the finished bolt. The middle of the blank for a distance equal to twice the desired length of the slot to be formed in the bolt is reduced in width as indicated at 1, preferably symmetrically as shown, the amount of metal removed being approximately equal to the cubical contents of the slot to be formed. This metal may be removed either before or simultaneously with the offsetting of the flat faces of the middle portions of the blank to form the slot. When such a blank is bent upon itself to form a bolt and the metal displaced to form a slot, the displacing of the metal does not increase the cross sectional dimensions of the slotted portion of the bolt, the forming dies being such as to cause the metal to flow parallel to the flat faces of the blank into the space provided by the reduction of width hereinbefore referred to.

As there is no actual lateral displacement of metal at the middle part of the blank which forms the end of the bolt, the full width of the blank may be maintained at this point as indicated at 2 in the drawings. The head 3 of the bolt is formed in any suitable manner.

What we claim as our invention is:—

1. A process of forming a slotted key bolt which consists in forming a half round bar of reduced width at its middle for a distance equal to twice the desired length of the slot, bending said bar on itself at the middle and displacing the metal to offset the flat faces of the middle portion to form the slot.

2. A process of forming a slotted key bolt which consists in forming a half round bar of reduced width at its middle for a distance equal to twice the desired length of the slot but leaving a small portion just at the middle point of the original width, bending said bar on itself at the middle and displacing the metal to offset the flat faces of the middle portion to form the slot.

3. A blank for a slotted key bolt comprising a half round bar adapted to be bent on itself at the middle, said bar being of the same thickness from end to end and having parts thereof at each side of the middle of substantially equal length reduced in width, the parts adjacent the ends being of substantially full half round section.

4. A blank for a slotted key bolt comprising a half round bar adapted to be bent on itself at the middle, said bar being of the same thickness from end to end and having 5 parts thereof at each side of the middle of substantially equal length reduced in width, the parts adjacent the ends and at the middle being of substantially full half round section.

Signed at Buffalo, N. Y., this first day of 10 November, 1920.

ALONZO H. WESTON.  
JOHN ZILLIOX.