Nov. 24, 1931. E. O. YOUNG 1,833,194

PLUG INSERTING TOOL

Filed Jan. 22, 1926

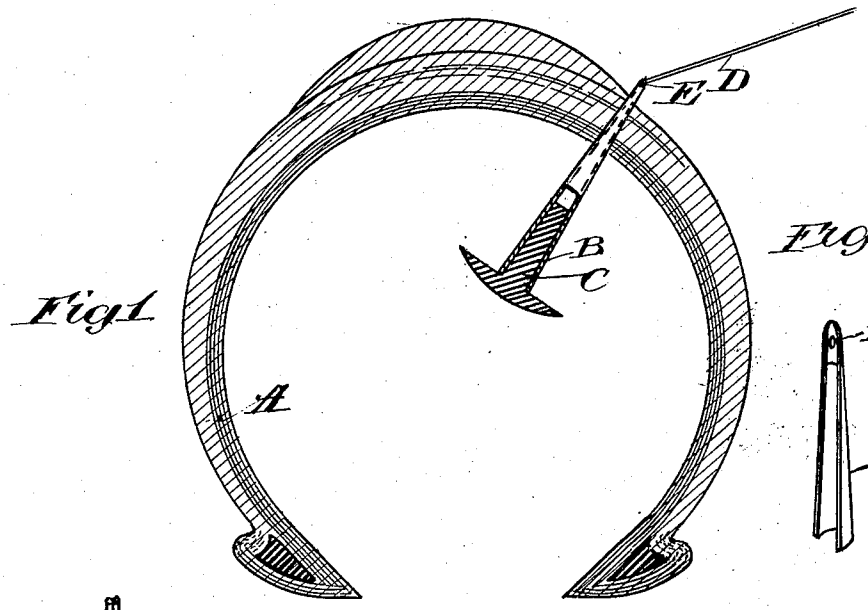


Fig. 1

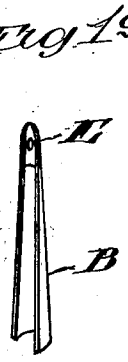


Fig. 1a

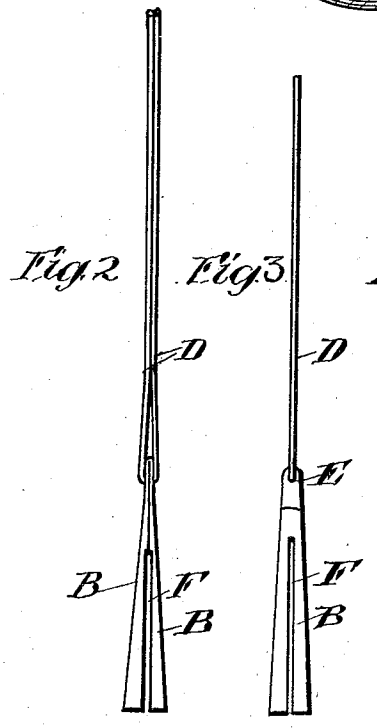


Fig. 2

Fig. 3

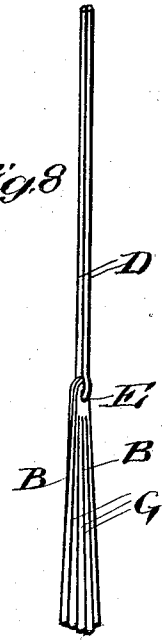


Fig. 8

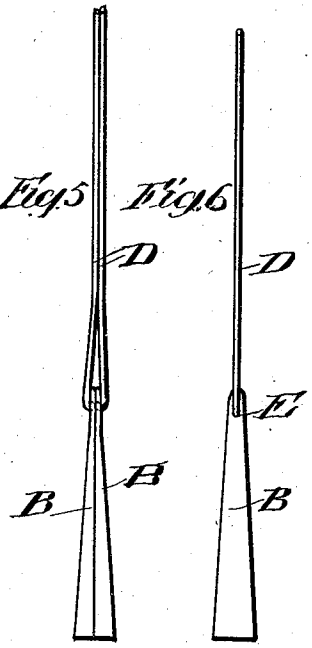


Fig. 5 Fig. 6

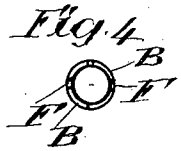


Fig. 4

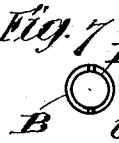


Fig. 7

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UNITED STATES PATENT OFFICE

EDWARD O. YOUNG, OF EUCLID HEIGHTS, OHIO, ASSIGNOR, BY MESNE ASSIGNMENTS, TO KEX CO., INC., OF ST. LOUIS, MISSOURI, A CORPORATION OF MISSOURI

PLUG INSERTING TOOL

Application filed January 22, 1926. Serial No. 83,022.

This invention relates to self-adjusting, plug inserting devices for use in repairing punctures in pneumatic tires or casings, and the preferred form of the device includes, a hollow tapered piercing tool adapted to be drawn through the puncture, said tool being made in a multiple number of collapsible portions, between which the stem of a rubber plug tire patch is compressed and drawn into the opening in the casing.

The device is simple in construction, inexpensive in its initial cost, and efficient and practical in use, and also being made in separate parts is easily kept clean and free from deposits of cement.

The device comprises the longitudinally divided conical tube, adapted to grasp the stem of the plug between its portions, and a draw means pivotally attached in the smaller ends of these parts.

These sections may have smooth, external surfaces or may be longitudinally corrugated if desired.

The invention is hereinafter more fully described, illustrated in the accompanying drawings, and specifically pointed out in the claims.

In the accompanying drawings Fig. 1 is a transverse section of a casing showing the mode of operation of the plug inserting tool. Fig. 1*a* is a perspective of one portion of the device. Fig. 2 is a side elevation of the tool, showing a looped draw wire attached; Fig. 3 is an elevation taken at right angles thereto; Fig. 4 is an end plan thereof; Figs. 5 and 6 are side elevations of the preferred form of tool; Fig. 7 is an end plan thereof; and Fig. 8 is a perspective of a longitudinally corrugated form.

In these views A, represents the tire formed of alternate layers of fabric and rubber. B, B, represent the portions of the tool, which may be halves for convenience in operation.

The two portions, when their longitudinal edges are brought together form hollow, conical, grasping arms, between which the stem C of the plug is secured tightly, when the tool is drawn thru the puncture.

Draw means D, such as a loop of flexible wire, is attached to these parts by threading through the eye E formed in each part, the parallel straight portions of the wire serving as an elongated draw section and the loop of the wire serving as a pivot for the parts of the shell. In this manner the parts of the shell are also held together, and when the stem of the plug is embraced between them, it can be readily drawn into the opening in the tire, and as the shell with its enclosed stem is drawn through on the exterior side of said casing said pivoted shell parts may separate or move outwardly out of frictional engagement with said stem, from which it may be readily removed.

In Figs. 2 and 3, additional, longitudinal slots F, F, serve to give increased resiliency to the parts of the tool, so as to grasp the plug at all parts equally.

In Fig. 8 the sides of the parts of the tool are longitudinally corrugated at G to provide additional, grasping edges.

By means of this tool, plugs of several sizes can be grasped by the same tool, thus adding to its advantages.

Other modifications of the structure may be made without departing from the character of the device, and within the scope of the claims.

Having described the invention, what I claim as new and desire to secure by Letters Patent is:

1. An inserting device for tire-casing repair plugs of mushroom shape, comprising a pair of complementary halves forming when juxtaposed a tapered substantially conical shell within the interior of which the stem of the repair plug may be engaged, the tip ends of said halves being provided with alined apertures, and a wire engaged through said apertures and forming an eye adjacent thereto about which said halves may pivot, and having an elongated draw section for insertion through a puncture aperture preliminary to drawing the shell and associated plug stem into said puncture aperture, and thereafter removing said shell outwardly therefrom.

2. An inserting device for tire-casing repair plugs of mushroom shape, comprising

a pair of complementary halves forming when juxtaposed a tapered substantially conical shell, formed with longitudinally extending corrugations at its lower end, within the interior of which the stem of the repair plug may be engaged, the tip ends of said halves being provided with alined apertures, and a wire engaged through said apertures and forming an eye adjacent thereto about which said halves may pivot, and having an elongated draw section for insertion through a puncture aperture preliminary to drawing the shell and associated plug stem into said puncture aperture, and thereafter removing said shell outwardly therefrom.

In testimony whereof I affix my signature.

EDWARD O. YOUNG.