Oct. 26, 1926. 1,604,736

F. I. DE FOREEST

CASING SWAGE

Filed Dec. 12, 1925

Fig. 1.

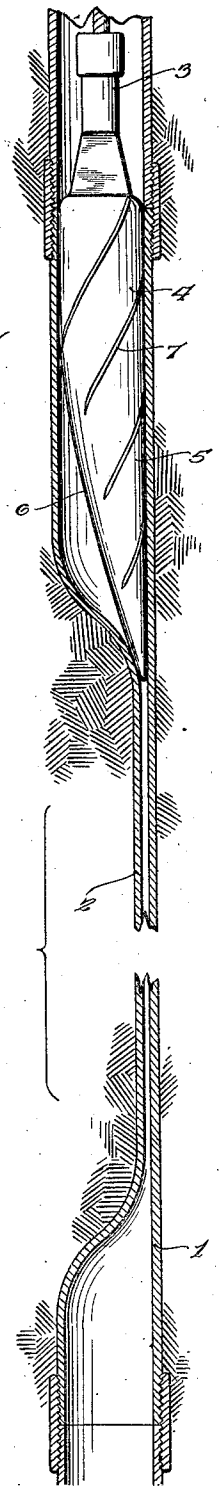


Fig. 2.

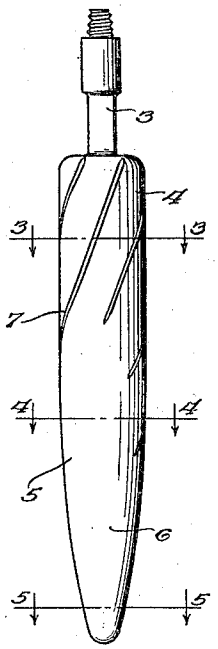


Fig. 3.

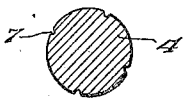


Fig. 4.



Fig. 5.



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FRED I. DE FOREEST, OF WINFIELD, KANSAS.

CASING SWAGE.

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This invention relates to a tool for restoring collapsed or heavily dented casings, pipes and tubes to their original shape without injury thereto or a weakening thereof.

The invention provides a tool, of the character specified which is easily operable, efficient, and rapid in action and which may be depended upon to perform the work without impairing or in any manner injuring the casing or tube operated upon.

While the drawings illustrate a preferred embodiment of the invention it is to be understood that in adapting the means to meet specific needs and requirements the design may be varied, and such other changes in the minor details of construction may be resorted to within the scope of the invention as claimed, without departing from the spirit thereof.

For a full understanding of the invention and the merits thereof, reference is to be had to the following description and the drawings hereto attached, in which,—

Figure 1 is a side view of a tool embodying the invention showing the same applied, a length of well casing being shown in section and a portion thereof collapsed to demonstrate the application of the tool.

Figure 2 is an elevational view of the tool as seen from the working face, and

Figures 3, 4 and 5 are detail sectional views on the line 3—3, 4—4 and 5—5, respectively, of Figure 2.

Corresponding and like parts are referred to in the following description and designated in the several views of the drawings by like reference characters.

The numeral 1 designates a line of well casing having a portion collapsed, as indicated at 2, and within the casing is located a tool embodying the invention, the same being disposed above the collapsed portion 2 which, in the operation of the tool, is pressed outwardly and restored to its original position, as will be readily appreciated.

The tool comprises body and shank portions, the latter being designated by the numeral 3 and adapted to have a drill jar or other operating part coupled thereto in any determinate way. The body of the tool or swage comprises an upper cylindrical portion 4 and a tapered end portion 5 which has one face in a straight line with the cylindrical portion 4 and the opposite face inclined, as indicated at 6, the same inclining in three directions, as indicated most clearly in Figures 1 and 2, whereby the part 5 tapers at the front and opposite sides to form an inclined working face having the rear side straight to form a backing for supporting the tool when in operation. The point of the swage is blunt and broad, as indicated most clearly in Figures 3 and 5, whereby to pass in the rear of the collapsed, or dented portion of the casing, or tube, as indicated most clearly in Figure 1, to press the same outwardly and restore it to its original position. The cylindrical portion 4 of the tool is of a diameter to move freely within the casing, tube, or like part to be restored to its original shape, the tool being operated by a reciprocating movement, whereby the tapered end is forcibly entered in the rear of the collapsed portion of the casing and presses the same outwardly to the position which it originally occupied. The grooves 7 extend helically and provide channels for the passage of fluid when the tool is in action.

It is observed that the swage is preferably of tool steel which is tempered or, if preferred, the tool may be case hardened and, in any event, a tool will be provided for each size of casing, or tube, to be operated upon. In the operation of the tool it is attached to a drill jar, or other operating part, and is introduced into a line of casing, or other part which has collapsed or become dented and which it is desired to restore to original shape, and has a reciprocating movement imparted thereto whereby it is gradually advanced and restores the misshapen part to the original outline, as will be readily understood.

Having thus described the invention, I claim:

1. A swage for well casings, tubes, pipes, and the like comprising a body having a cylindrical portion and a tapered portion, the latter having a side in line with the cylin-

drical portion and having the opposite and intermediate side portions tapered.

2. A swage for well casings, tubes, pipes and the like, comprising a body, having a cylindrical end portion and a tapered portion, the latter having a straight side in line with the cylindrical portion, and having the opposite and intermediate sides tapered to form a blunt broad point in line with the straight side of the tool, said body having grooves to provide passages for the flow of a fluid.

In testimony whereof I affix my signature.

FRED I. DE FOREEST. [L. S.]