

UNITED STATES PATENT OFFICE.

EDWARD NORTH, OF LOS ANGELES, CALIFORNIA.

WELL-CASING SWAGE.

SPECIFICATION forming part of Letters Patent No. 716,466, dated December 23, 1902.

Application filed March 17, 1902. Serial No. 98,661. (No model.)

To all whom it may concern:

Be it known that I, EDWARD NORTH, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Well-Casing Swage, of which the following is a specification.

An object of this invention is to provide a well-casing swage the wearing parts of which may be made of highly-tempered steel, while the body of the tool is made of cheaper and more easily worked material.

Another object of the invention is to provide simple means for changing the size of the swage at a nominal expense of time and appliances.

A further object is to provide for readily renewing the wearing parts at small expense, thereby greatly increasing the length of service of the tool.

The accompanying drawings illustrate this invention.

Figure I is an elevation of this newly-invented well-casing swage, showing a part thereof in longitudinal mid-section. Dotted lines indicate the use of a larger swaging-collar in place of the collar shown. Fig. II is a cross-section on line II II, Fig. I. Fig. III is a cross-section on plane indicated by III III, Fig. I.

1 designates the body of the mandrel, having a stop or shoulder 2 and below the same a screw-threaded portion 3, below which is a cylindrical portion 4.

5 designates a removable tapering swaging-collar having an internally-screw-threaded portion 6 to screw upon the external screw-threaded portion 3 of the mandrel and having an internal cylindrical portion 7 to fit on the external cylindrical portion 4 of the mandrel. The upper end of the collar 5 preferably conforms to the shape of the cylindrical shoulder 2 and slopes outward therefrom at the beveled portion 8 to the full diameter of the swage. At the lower end the collar 5 tapers inwardly to the body of the mandrel, as indicated at the beveled portion 9.

The beveled portions 8 and 9 may be conical or oval, at the pleasure of the constructor. In the drawings said beveled faces are shown conical. The upper end 10 of the collar is

preferably blunt, being square, as shown in Fig. I, to give a solid seat for the collar against the force of any downstroke of the swage, and in practice the collar 5 will be screwed with considerable force against the shoulder 2, so that the strain exerted on the collar by the downward stroke of the swage will be all sustained by the shoulder 2 and not by the thread. The lower cylindrical faces at 4 and 7 preferably fit tightly for the purpose of perfect support of the collar and to keep dirt and water out of the threaded portion.

In practical use one or more swaging-collars will be provided, the same being of different diameters required for different sizes of well-casing; but all the collars will fit the same mandrel, so that all that is necessary in order to adapt the tool for a different-size casing is to unscrew the collar from the mandrel and substitute therefor the collar of the appropriate size.

Preferably after the collar has been screwed into place it and the mandrel will be bored and a pin 11 inserted therethrough to prevent the collar from accidentally unscrewing.

The pin or key 11 may be readily driven out by a punch (not shown) when it is desired to remove the collar.

In Fig. I dotted lines at 51 indicate the collar 51, (shown in Fig. III,) and which may at pleasure be applied in place of the collar 5.

The cylindrical portion of the collar intermediate the bevels is of considerable length, as shown, so that when the swage passes any bends or dents in the pipe the material thereof will be held straight long enough to allow the same to set in a straight position and not simply spring out and in again.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. A well-casing swage comprising a mandrel having a shoulder and a screw-threaded portion below the shoulder; and a beveled swaging-collar screwed onto said mandrel and against the shoulder.

2. A well-casing swage comprising a mandrel having a shoulder, a screw-threaded portion below the shoulder and a cylindrical portion below the screw-threaded portion; and an internally-threaded collar screwed onto the screw-threaded portion of the mandrel and against the shoulder and furnished with

an internal cylindrical portion which fits on the cylindrical portion of the mandrel.

3. A well-casing swage comprising a mandrel having a shoulder and a screw-threaded portion below the shoulder; and an internally-screw-threaded collar screwed on the mandrel and having a blunt top conforming to the shoulder in cross-section and fitting against the same and sloping outward and downward therefrom.

4. A well-casing swage comprising a mandrel having a shoulder and a screw-threaded portion; and a swaging-collar beveled at its ends and screwed onto the mandrel and against the shoulder.

5. A well-casing swage comprising a mandrel having a shoulder; a screw-threaded

portion; a swaging-collar beveled at its ends and screwed onto the mandrel and against the shoulder; and a pin through the collar and the mandrel.

6. A well-casing swage comprising a mandrel; a tapering collar screwed thereon; and a pin inserted through the collar into the mandrel.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, at Los Angeles, California, this 31st day of January, 1902.

EDWARD NORTH.

Witnesses:

JAMES R. TOWNSEND,
F. M. TOWNSEND.