C. S. STRAIGHT.

CASING SPEAR.

APPLICATION FILED OCT. 21, 1920.

1,427,033. Patented Aug. 22, 1922.

Fig. 1.

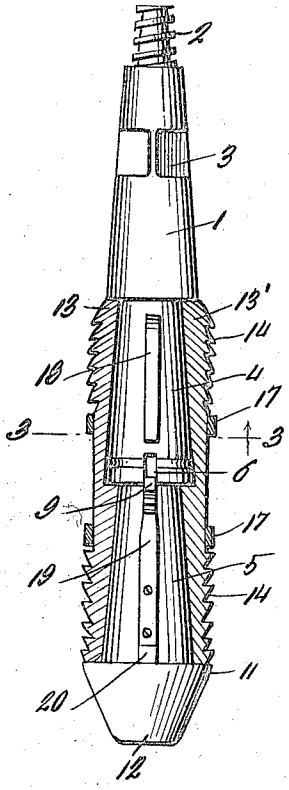


Fig. 4.

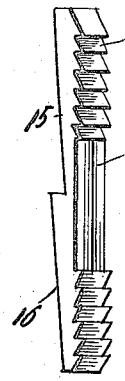


Fig. 2.

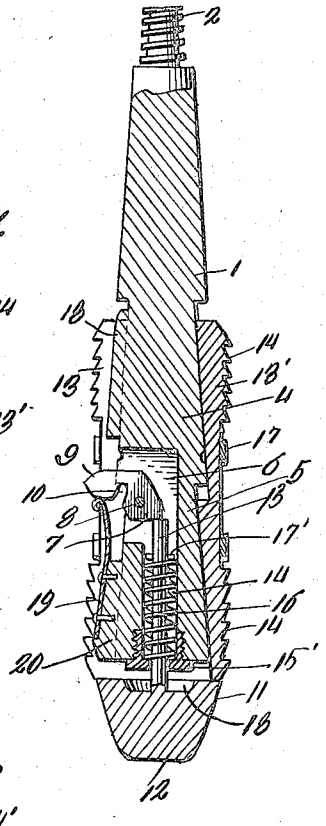
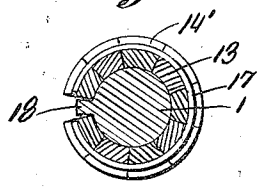


Fig. 3.



WITNESSES

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CASING SPEAR.

1,427,033. Specification of Letters Patent. Patented Aug. 22, 1922.

Application filed October 21, 1920. Serial No. 418,524.

To all whom it may concern:

Be it known that I, CHARLES S. STRAIGHT, a citizen of the United States, residing at Ranger, in the county of Eastland and State of Texas, have invented certain new and useful Improvements in Casing Spears, of which the following is a specification.

This invention relates to casing spears, and more particularly to certain improvements therein which greatly facilitate the setting or adjusting of the spear for use each time, and for use in different sizes of casing, and also facilitates the tripping or releasing thereof so that it can be removed from the casing.

A special object of the invention is to provide a casing spear constructed so as to be capable of grasping two sections of a casing which have become separated.

The invention comprises further features and combination of parts as hereinafter set forth, shown in the drawings and claimed.

In the drawing:—

Figure 1 is a side elevation of the casing spear showing portions thereof in section,

Figure 2 is a longitudinal vertical section through the spear,

Figure 3 is a section taken on the line 3—3 of Figure 1 looking in the direction of the arrow, and

Figure 4 is a detailed perspective view of one of the strips used in connection with the casing spear.

In the drawing, the invention as illustrated, comprises a body 1 having its upper end tapered and threaded as at 2, for attaching of any suitable stock, and having a squared portion 3, to receive a wrench and a pair of slipways 4 and 5. These slipways 4 and 5 are tapered upwardly and are provided with a pocket 6 situated so as to be partly in the slipway 4 and partly in the slipway 5, as is clearly seen in Figure 2 of the drawing. A latch 7 is pivotally mounted in the pocket by means of a pin 8 and is provided with a right angularly extending nose 9 and a notch 10 situated between the nose 9 and the body portion of the latch 7. A slip supporting mechanism indicated generally by the numeral 11 comprises a head 12 and a stem 13 extending upwardly therefrom so as to be slidably mounted within the bore 14 provided in the lower portion of the body portion 1. This bore 14 communicates with the pocket 6, and a nut 15′ is threaded in the lower portion thereof, and this nut is hollow and provided with an aperture through which passes the stem 13. This nut 15′ supports the expansion coil spring 16 which rests at one end upon the nut 15′ and has its other end in engagement with a pin 17′ carried in the stem 13. Thus it will be seen that this spring 16 will normally hold the head 12 of the slip supporting mechanism in abutment with the lower end of the body 1 so as to be flush therewith. A leaf spring 19 is carried upon a rib 20 situated upon the lower slipway 5 so that its end will engage the nose 9 of the latch 7. When the spring is situated as shown in Figure 2 of the drawing it will be seen that the latch 7 engages the stem 13 so as to hold the head 12 out of engagement with the lower end of the body 1. If the spring 19 is pressed inwardly so as to engage the notch 10 it will be seen that the nose 9 will be forced downwardly by the upward movement of the stem 13 caused by the tension of the coil spring 16.

The head 12 comprises a support for a plurality of segmental slips 13′, the latter resting thereon and slidable vertically on slipways 4 and 5. The inner face of each slip 13 is formed to fit the slipways 4 and 5 while their outer surfaces are formed with serrations 14 at each end so as to leave a smooth space therebetween. The slips are downwardly tapered as shown at 15 and 16 in Figure 4 of the drawing so that the tapered portion 15 will engage the slipway 4 while the tapered portion 16 will engage the slipway 5. A pair of resilient split rings 17 are provided so as to be situated upon the smooth surfaces of the outer side of the slips 13 for holding the slips contracted when elevated upon their slipways 4 and 5, or in the position shown in Figure 1 of the drawing. It will be noted that rib 18 is situated upon the upper slipway 4 and is in alignment with the rib 20 so that the upper portions of the slips will be in snug engagement with each other when in a raised or elevated position upon their respective slipways 4 and 5.

When it is desired to use this device for grasping two sections of a casing which have become separated the leaf spring 19 will be placed in engagement with the notch 10 so that the nose 9 will extend downwardly but will nevertheless protrude a little beyond the outer surface of the slips 13. When the

latch is in a position so that the spring 19 is in engagement with the notch 10 the head 12 will be flush with the lower end of the body 1 and thus the slips 13 will be in elevated position so that the device may be easily let down into the casing. When the device has arrived at that place where the sections have become separated the nose 9 will engage the top portion of the lower section and the weight of the device now resting upon this nose will pivot the latch upon its pin 8 so that the nose will take a position substantially as shown in Figure 2 and the spring 19 will then spring outwardly and act as a prop under the nose 9 thus holding the head 12 separated from the lower end of the body 1 and allowing the slips 13 to slide downwardly upon their slipways 4 and 5. The serrations 14 upon the upper ends of the slips 13 will engage the upper section of the casing while the serrations 14 upon the lower ends of the slips 13 will engage the lower section of the casing and by now pulling upwardly upon the spear it will be seen immediately that same will operate as any well known spear now in use namely the slips 13 will have a tendency to be pulled downwardly and thus be wedged against the inner face of the casing for frictionally engaging same. When it is desired to release the spear from engagement with the casing all that will be necessary is to press the spring 19 inwardly and the head 12 will then have an immediate tendency to push the slips 13 upwardly so that by slightly pushing the spear body 1 downwardly these slips 13 will take an elevated position such as shown in Figure 1 of the drawing. The present casing spear is adapted to be used in conjunction with two casings which have become slightly separated, the upper portions of the slits 13 engage the lower ends of the upper casing while the lower portion of the slits engage the upper end of the lower casing. Any implement may be inserted through the space between the casings so as to move the spring 19 which acts as a prop for the member 7.

It will also be noted that when the spring 19 is in engagement with the notch 10 of the latch 7 that this spear may be used as any ordinary spear now commonly in use and it is thought that the operation of same will be clearly understood without a more extended explanation.

As numerous changes in form, proportion, and in the arrangement and combination of the various parts may be made without departing from the spirit of this invention, I do not wish to be limited to the construction herein shown but desire to make such changes as may fall within the scope of the appended claim.

Having thus described my invention what I claim as new is:—

In a casing spear, a body having tapered slipways, said body provided with a pocket and a bore communicating therewith in its lower end, a latch pivotally mounted in the bore, a slip supporting mechanism comprising a head and a stem, said stem slidably mounted in the bore, spring means for normally holding said head in abutment with the lower end of the body and a leaf spring situated upon the lower slipway for engaging the latch so that same will engage the stem for normally holding the head out of engagement with the lower end of the body and a plurality of slips mounted upon the slipways.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES S. STRAIGHT.

Witnesses:
C. B. Geddes,
George Garvey.