

No. 832,096.

PATENTED OCT. 2, 1906.

J. T. TABOR.
COAL DRILL ATTACHMENT.
APPLICATION FILED JAN. 22, 1906.

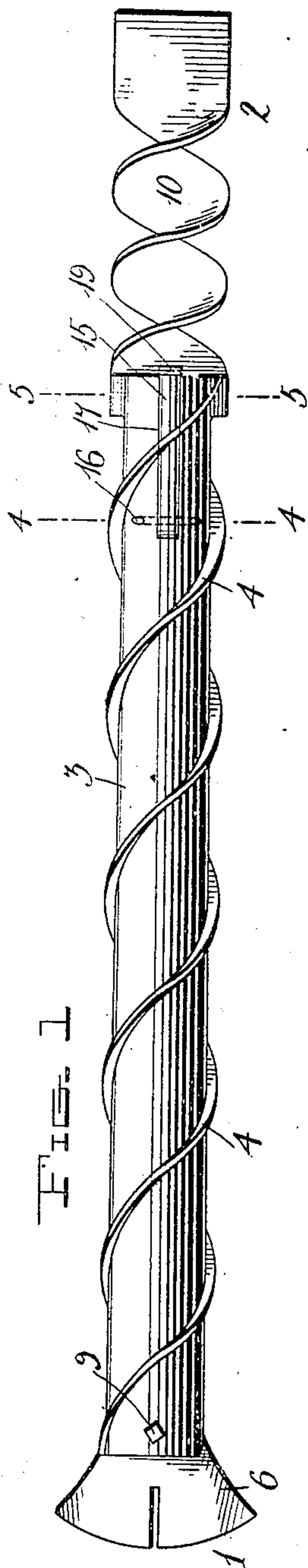


Fig. 1

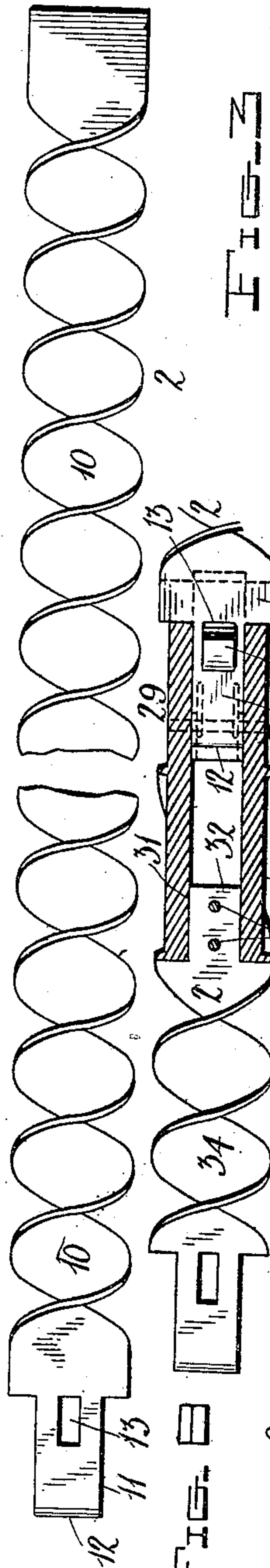


Fig. 2

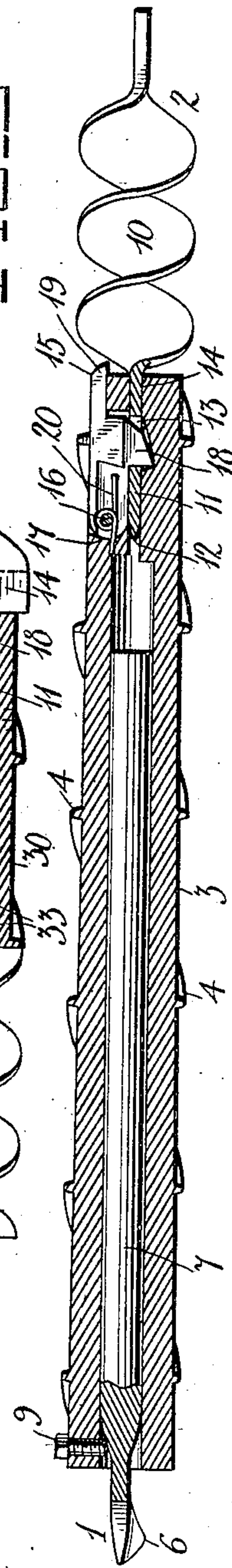


Fig. 3

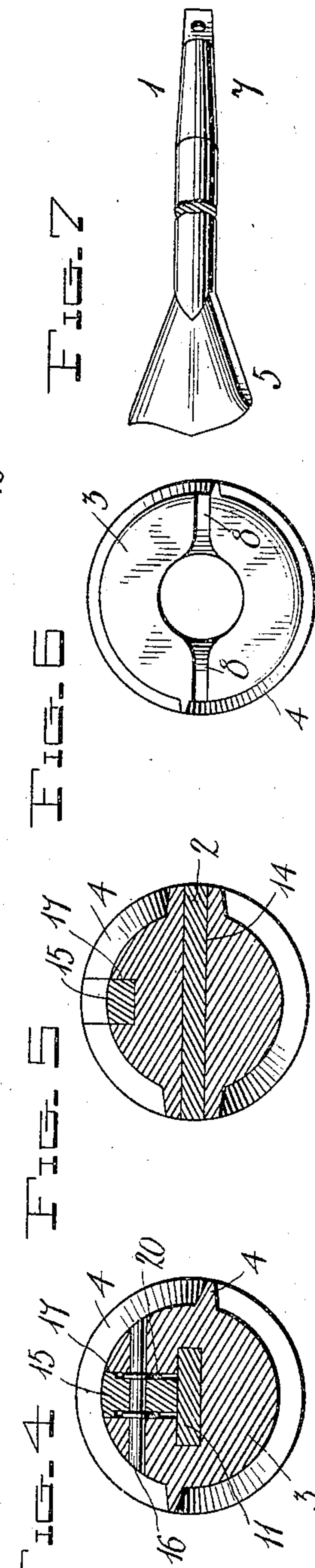


Fig. 4

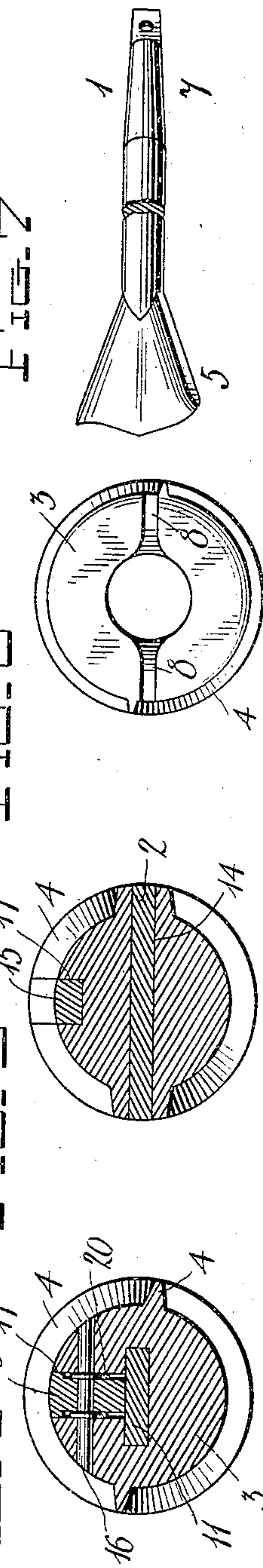


Fig. 5

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COAL-DRILL ATTACHMENT.

No. 832,096.

Specification of Letters Patent.

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Application filed January 22, 1906. Serial No. 297,290.

To all whom it may concern:

Be it known that I, JAMES THOMAS TABOR, a citizen of the United States, residing at Athens, in the county of Menard and State of Illinois, have invented certain new and useful Improvements in Coal-Drill Attachments; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in attachments for machines for drilling coal and the like; and it consists in the novel construction, combination, and arrangement of devices hereinafter described and claimed.

The object of the invention is to provide a simple and efficient means whereby short bits or cutting-tools may be detachably secured upon feed-bars or extension-bars of any length, so that when one of the bits or points is broken or becomes dulled it may be replaced by a new one without delay or inconvenience.

Heretofore it has been common to make the bits or drills of different lengths, according to the depth of the hole to be bored, and it has been necessary in drilling holes of great depth or length to use a series of such drills, each one of greater length than the one preceding. When this is done, it is evident that should one of the bits or drills become broken or dulled the same must be repaired or sharpened before the drilling can be continued. With my invention the bits or drill-points are made short and detachably secured to bars which may be of any length and which are mounted in the usual threaded box of a hand or power drilling machine of any form and construction.

The above and other objects, which will appear as the nature of the invention is better understood, are accomplished by means of the construction illustrated in the accompanying drawings, in which—

Figure 1 is a side view of my improved attachment for coal-drills. Fig. 2 is a similar view of an extension or feed bar similar to the one shown in Fig. 1, but of greater length than the same. Fig. 3 is a longitudinal sectional view through the parts shown in Fig. 1. Figs. 4 and 5 are transverse sectional views taken, respectively, on the lines 4-4 and 5-5 of Fig. 1. Fig. 6 is an end view of the coupling for connecting the extension-bars and drill-bits. Fig. 7 is a detail view of a slightly-modified form of a drill-bit, and Fig. 8 is a

longitudinal sectional view through a coupling similar to the one shown in Figs. 1 and 3.

Referring to the drawings by numeral, 1 denotes a drill-bit, 2 a feed or extension bar, and 3 a coupling which detachably connects said bit and bar. This coupling 3 is tubular in form, and upon its longitudinally-tapered outer surface is formed a spiral rib 4, which is adapted to feed the coal-dust rearwardly out of the hole, but by the bit 1. The latter may have a tapered point 5, as shown in Fig. 7, for cutting extremely hard substances, or a broad, flat, and slightly-twisted point 6, as shown in Figs. 1 and 3. The stem or shank 7 of the drill is cylindrical in form and adapted to enter the bore in the tubular body 3 of the coupling, as seen in Fig. 3. The bit is prevented from turning in the coupling by the engagement of the flared portion of its outer end with notches or recesses 8, formed in the outer end of the said coupling, as clearly shown in Fig. 6 of the drawings. The bit is held against longitudinal movement by means of a set-screw 9, which passes through a threaded opening in the outer end of the coupling and has its inner end bearing against the flattened or tapered outer portion of the bit, as shown. By loosening or removing the set-screw 9 the bit 1 may be readily removed and replaced by a similar one or one of any desired form and construction.

The extension or feed bar 2 is preferably formed of a flat strip or bar of metal by twisting the same so as to form a spiral body which has at one of its ends a reduced tongue 11. The latter has a tapered end 12 and a slot or recess 13, as clearly shown in Figs. 2 and 3. This tongue is adapted to enter a socket 14, formed in the inner end of the coupling 3, said socket being substantially T-shaped and having its longitudinal portion adapted to receive said tongue and being broadened at the outer end to form the transverse portion to receive the shoulders formed by the end of the extension-bar on opposite sides of the tongue, to thereby strengthen the connection between the extension-bar and the coupling. The tongue is retained in said socket by a latch 15, which is pivoted at its inner end, as shown at 16, in a recess 17, formed in said coupling, and has adjacent to its free end an inwardly-projecting tongue 18, which is adapted to enter the slot or opening 13 formed in the tongue 11, as clearly shown in Fig. 3. The latch 15 is forced inwardly to its closed position by a spring 20,

as shown. When the latch 15 is elevated by pulling upwardly upon its projecting outer end 19, the tongue 18 is removed from the slot 13, and the extension-bar 2 may be readily removed. The latch engages the tongue automatically when the latter is inserted in the socket 14, owing to the bevel upon the tongues 11 and 18. The extension-bars 2 may be made of any length. If desired, I may provide an extension device 29 (shown in Fig. 8 of the drawings) for coupling one of the extension-bars 2 to the coupler 3. This device 29 consists of a coupling member 30, which is very similar to the coupler 3, and a short extension-bar 34, which is similar to the short extension-bar shown in Figs. 1 and 3 of the drawings. The bar 34 has a slotted tongue at one end, and its opposite end is formed with a reduced tongue 32, which is secured in the opening 31 formed in the coupler 30 by means of bolts, rivets, or the like 33. The opposite end of the coupler 30 is constructed similar to the rear end of the coupler 3, so that it is adapted to receive the slotted tongue 12 of one of the extension-bars 2.

The construction, use, and advantages of the invention will be readily understood from the foregoing description, taken in connection with the accompanying drawings. It will be seen that when my improved coupling 2 is employed to connect short bits or cutting-tools 1 to extension-bars 3 of different lengths the bits may be readily removed and replaced by new or sharpened ones when they become broken or dulled, and extension-bars of different lengths may be successively used, so that little or no time will be wasted

because of broken or dulled bits. A number of sharpened bits may be kept constantly on hand, so that they may be readily placed in the coupling when needed.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

A tubular coupling of the class described, having an external spiral feed-thread extending from end to end thereof and further provided at its inner end with a longitudinal T-shaped socket and a recess intersecting said socket, a latch pivotally mounted in said recess and having a beveled engaging edge, and a spring to normally close said latch, in combination with a bit at the outer end of the coupling and having a stem in the bore thereof, and a feed-bar having a tongue at its outer end in the longitudinal portion of the T-shaped socket of the coupling and provided with an opening engaged by the latch, and shoulders at the opposite sides of the inner end of the tongue, engaging the widened portion of said T-shaped socket.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JAMES THOMAS TABOR.

Witnesses:

WILLIAM FRANKLIN WILLIAMS,
CHARLES WILLIAMS.