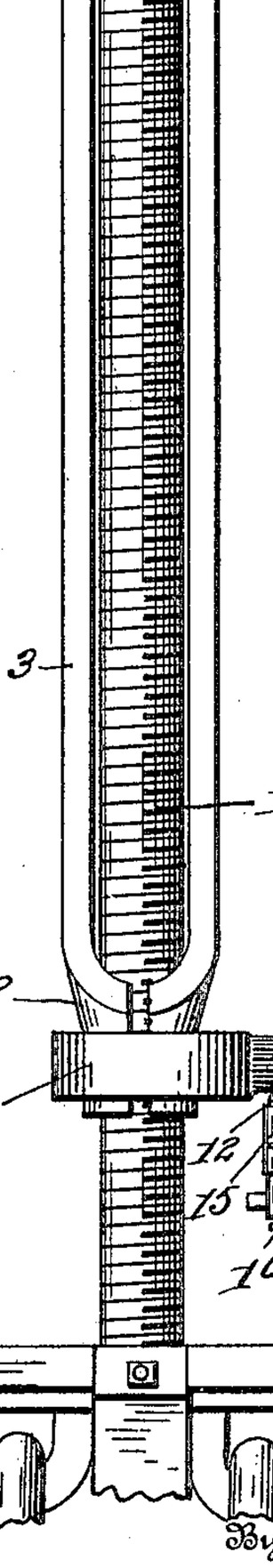
No. 812,487. PATENTED FEB. 13, 1906.

C. W. FANTON.

TEMPER SCREW.

APPLICATION FILED MAY 15, 1905.

Fig. 1.



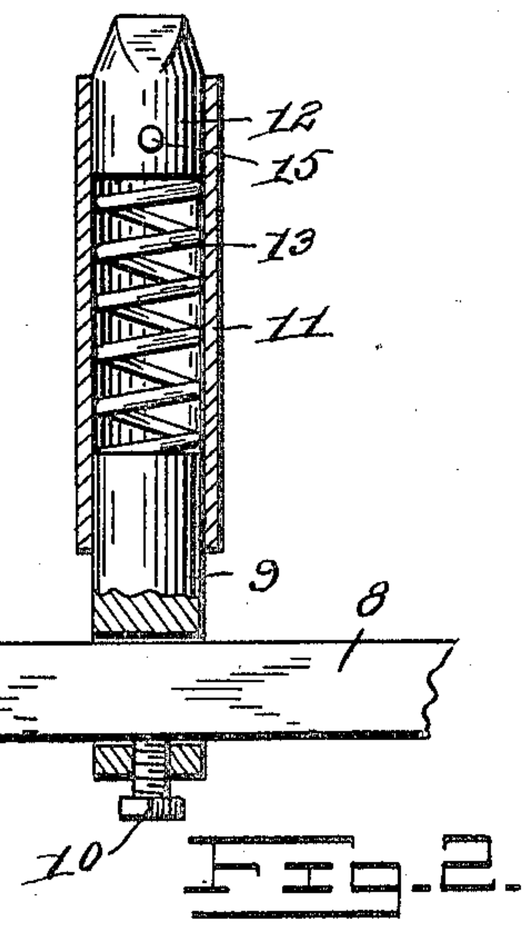


Fig. 2.

Witnesses
L. Armstrong,
M. N. Rogers.

Inventor
C. W. Fanton
By

UNITED STATES PATENT OFFICE.

CHESTER W. FANTON, OF WELLSVILLE, NEW YORK, ASSIGNOR TO THE OIL WELL SUPPLY COMPANY, OF PITTSBURG, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

TEMPER-SCREW.

No. 812,487. Specification of Letters Patent. Patented Feb. 13, 1906.

Application filed May 15, 1905. Serial No. 260,501.

To all whom it may concern:

Be it known that I, CHESTER W. FANTON, a citizen of the United States, residing at Wellsville, in the county of Allegany and State of New York, have invented certain new and useful Improvements in Temper-Screws, of which the following is a specification.

My invention relates to the construction of that class of devices employed in drilling oil and Artesian wells commonly termed "temper-screws," and which are interposed between the walking-beam or its equivalent and the drill rope or cable by which the string of tools is suspended and operated for the purpose of feeding down the tools as the drilling operation advances. This class of devices may be generally stated as comprised of a feed-screw, a split or divided nut whereby the feed-screw may be quickly released and readily adjusted without the rotation of the nut or screw, and means for securely holding the members of the divided nut in operative relation with the feed-screw, and it will be readily understood that as the entire weight of the drill rope or cable and string of tools is borne by said screw the slipping of the nut upon the screw would be attended with great danger to the operator and the apparatus.

The object, therefore, of my invention is the provision of means which will effectively hold the divided nut against accidental displacement or disengagement from the feed-screw without interfering with the quick release of the feed-screw when desired for adjustment and for like purposes. To effect this object I combine in a temper-screw a feed-screw, divided nut therefor, means for confining the divided nut in operative relation with the feed-screw, and a yielding detent for preventing the accidental disengagement of the nut and feed-screw, and such a construction embodies the main feature of my invention.

There are other minor features of invention directed to the preferred construction and to the elemental combinations, all as will hereinafter more fully appear.

In the drawings forming a part of this specification and illustrating one application of my invention, Figure 1 is a front view of my improved attachment as applied to the usual form of temper-screw. Fig. 2 shows certain details hereinafter referred to.

Like symbols refer to like parts wherever they occur.

I will now proceed to particularly describe the embodiment of my invention shown in the drawings, so that others skilled in the art may apply said invention.

1 designates the temper-screw proper; 2, the split nut or "block" which engages the screw within the strap; 3, the spring arms or reins, the lower ends of which are formed into the respective sections of split nut 2, all as usual; 4, the strap or yoke which is fitted to and embraces loosely the nut or block; 5, a cylindrical ratchet member formed upon one side of strap or yoke 4 and having upon its periphery ratchet-teeth, preferably of equal inclination on each side thereof, whereby a spring-pawl may be snapped over the same with equal facility in either direction; 6, a transverse screw engaging a threaded perforation passing through ratchet member 5 and strap 4 to impinge upon nut 2 and close the sections thereof upon screw 1; 7, an arm extending laterally from the end of screw 6 upon either side thereof; 7′, a handle extending outwardly from one extremity of arm 7; 8, a squared prong from the other end of arm 7, extending inwardly parallel to screw 6; 9, a plug having a squared opening adapted to receive prong 8 and to be slid along same; 10, a set-screw to clamp parts 8 and 9 together upon any desired part of prong 8; 11, a hollow barrel secured to plug 9 and having in slidable engagement with its upper part a pawl 12; 12, a pawl adapted to engage the ratchet-teeth upon cylinder 5; 13, a spring inclosed by barrel 12 and arranged to urge pawl 12 against said ratchet-teeth; 14, a right-angular slot in one side of barrel 11, and 15 a pin upon pawl 12 and disposed to slide in the longitudinal part of said slot or adapted to rest against the transverse part of same and thereby hold the pawl withdrawn.

It will be obvious that the mechanism hereinbefore described is, in effect, an adjustable yielding detent or spring-dog which has for its function to prevent the accidental separation of the divided nut and in the present in-

stance acts indirectly on the nut through the medium of the yoke or strap 4 and clamp-screw 6.

It will be noted that while the screw 6 is securely held against accidental displacement still by forcible manipulation of handle 7′ it may be readily adjusted against nut 2, the pawl 12 being snapped over the teeth of ratchet 5, or that the screw 6 may be freely turned to release or engage the nut 2 by drawing the pin 15 downward and turning it into the transverse part of slot 14, thus locking the pawl in inoperative position. It will be further seen that the adjustment of plug 9 along prong 8 enables me to provide for the proper coöperation of the pawl 12 with the ratchet 5 during a considerable longitudinal adjustment of screw 6. This is a feature of considerable importance, since such adjustment must be made to take up the wear of nut 2 and also for variation in the sizes of such nuts 2, since I contemplate applying my attachment with strap 4 as a part thereof to temper-screws already in use.

I desire it to be understood that I have made use of terms in the foregoing specification in an illustrative and not in a restrictive sense.

I claim—

1. In a temper-screw, the combination of a feed-screw, a divided nut, means for maintaining an operative engagement of the nut and feed-screw, and a yielding detent for preventing the accidental disengagement of the nut and feed-screw.

2. In a temper-screw, the combination with a feed-screw, divided nut, and clamp-screw, of a yielding detent for controlling the clamp-screw.

3. In a temper-screw, the combination of a feed-screw, a divided nut therefor, means for maintaining the operative relation of the feed-screw and nut, and a yielding detent for preventing the accidental disengagement of the nut and feed-screw, said detent being adjustable with relation to the feed-screw.

4. The combination with the temper-screw, a split nut for engaging same, a strap surrounding said split nut, and a transverse screw for causing engagement of the split nut with the temper-screw, of means for preventing the accidental loosening of said transverse screw, said means consisting of a ratchet device fixed upon said strap and a pawl carried by said transverse screw to engage said ratchet device, substantially as described.

5. The combination with the temper-screw, a split nut for engaging the same, a strap surrounding said split nut, and a transverse screw operating through said strap for causing engagement of the split nut with the temper-screw, of means for preventing the accidental disengagement of said transverse screw, said means consisting of a ratchet member on one side of said strap and through which said transverse screw passes, an arm fixed to said transverse screw, and a spring-pawl secured to said arm and adapted to engage said ratchet member.

6. The combination with the temper-screw, a split nut for engaging the same, a strap surrounding said split nut, and a transverse screw operating through the strap for causing engagement of the split nut with the temper-screw, of means for preventing accidental loosening of said transverse screw, said means consisting of a ratchet-cylinder on one side of said strap and through which said transverse screw passes, an arm fixed to said transverse screw and having an angular extension projecting inward parallel to said screw, and a member adjustable upon said extension and carrying a spring-pawl to engage said ratchet-cylinder.

7. The combination with the temper-screw, a split nut for engaging same, a strap surrounding said split nut, and a transverse screw operating through the strap for causing engagement of the split nut with the temper-screw, of means for preventing accidental loosening of said transverse screw, said means consisting of a ratchet member fixed to said strap, an arm carried by said transverse screw, a spring-pawl on said arm positioned to engage said ratchet, and means for locking said pawl in inoperative position at will, substantially as described.

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

CHESTER W. FANTON.

Witnesses:

HENRY E. TRIPP,

C. L. ROGERS.