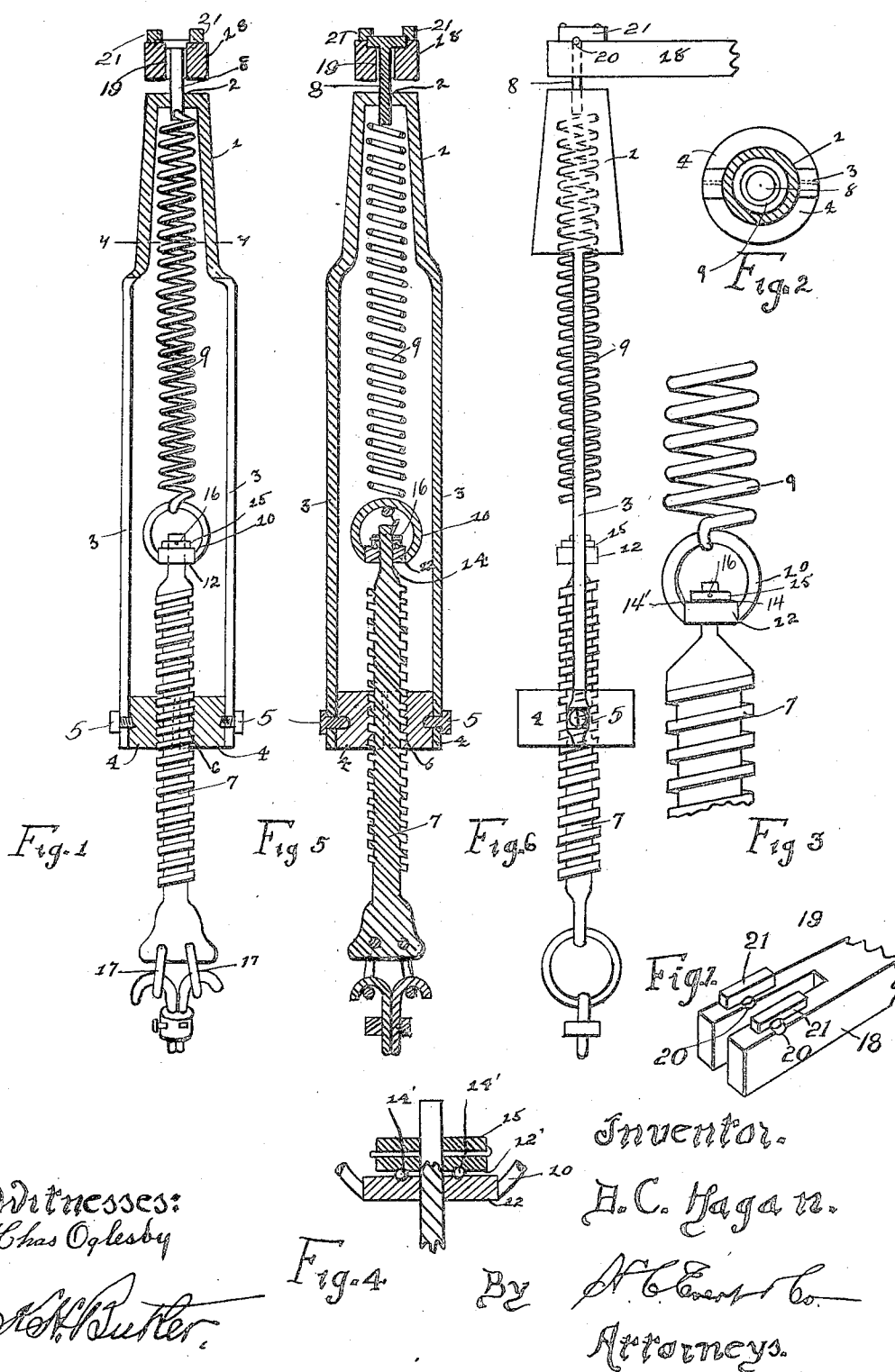


No. 813,378.

PATENTED FEB. 20, 1906.

B. C. HAGAN.  
TEMPER SCREW

APPLICATION FILED MAY 20, 1905.



Witnesses:  
Chas Oglesby

*Wm. H. Butler*

Fig. 4

Inventor.

H. C. Hagan.

By *W. C. Hagan & Co.*  
Attorneys.

# UNITED STATES PATENT OFFICE.

BARRET C. HAGAN, OF WEST MONTEREY, PENNSYLVANIA, ASSIGNOR OF  
ONE-HALF TO C. M. HAGAN, OF WEST MONTEREY, PENNSYLVANIA.

## TEMPER-SCREW.

No. 813,378.

Specification of Letters Patent.

Patented Feb. 20, 1906.

Application filed May 20, 1905. Serial No. 261,352.

*To all whom it may concern:*

Be it known that I, BARRET C. HAGAN, a citizen of the United States of America, residing at West Monterey, in the county of Clarion and State of Pennsylvania, have invented certain new and useful Improvements in Temper-Screws, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in temper-screws, and more particularly to that type of screw employed in connection with well-drilling tools, the temper-screw being used to attach a drill-rope to a working beam.

The object of this invention is to provide a novel form of temper-screw wherein novel means is employed for retaining the screw to its elevated position within the reins of the device, thereby dispensing with the use of manual labor to accomplish this result.

Briefly described, my improved temper-screw comprises a head or T carrying depending reins, to the ends of which are detachably connected blocks through which the screw proper is adapted to operate. The one end of the screw is adapted to be clamped to the drill-rope, while the other end of the screw is rotatably connected to a spring mounted in the head or T of the temper-screw.

The above construction will be hereinafter more fully described and then specifically pointed out in the claims, and, referring to the drawings accompanying this application, like numerals of reference designate corresponding parts throughout the several views, in which—

Figure 1 is a vertical sectional view, partly in side elevation, of my improved temper-screw. Fig. 2 is a transverse sectional view taken on the line *yy* of Fig. 1. Fig. 3 is an enlarged detail view of the swiveled connection between the screw and the spring of my improved device, and Fig. 4 is an enlarged detail view of the swivel connection. Fig. 5 is a vertical sectional view of my improved temper-screw. Fig. 6 is a side elevation of the same, taken from a position at right angles to that from which Figs. 1 and 5 are taken. Fig. 7 is a detail view in perspective of the support for the temper-screw.

In the accompanying drawings I have illustrated a temper-screw consisting of a head 1, having a vertically-disposed recess

2 formed therein. The head carries depending reins 3 3, to the lower ends of which are detachably connected blocks 4 4 by suitable set-screws 5 5. The confronting faces of the blocks 4 4 are threaded, as indicated at 6, forming a screw-threaded aperture through which a screw 7 passes.

In the head 1 is secured by a suitable bolt 8 the one end of a coiled spring 9, the lower end of the spring being provided with a ring 10, supporting an annular head 12. This head is provided with an aperture 14, through which the upper end of the screw 7 is adapted to pass, and is revolubly secured therein by a collar 15, which is preferably secured in engagement with the upper end of the screw by a suitable key 16. The head 12 is provided with an annular race 12', in which are mounted balls 14'. The lower face of the collar 15 is also provided with a race 16', which engages the balls 14'. The lower end of the screw 7 is provided with the ordinary links 17 17, commonly employed for securing the lower end of the screw to the drill-rope clamp.

The reference-numeral 18 designates the walking-beam of a suitable well-drilling machine which is adapted to transmit and apply power to the drill. This walking-beam has the ordinary stroke of beams commonly used and may be secured to the temper-screw by any desired means. The bolt 8 passes through a slot 19 in the end of the walking-beam 18, and said bolt is formed with a T-head which rests in notches 20 20, that are formed in top of the walking-beam 18 and is secured therein by means of blocks 21 21.

In operation the screw 7 is adapted to slowly feed through the blocks 4 4, the feeding of the screw being effected by turning the same, which operation may be performed by the operator grasping the links 17 17 in his hands or by putting a crowbar through the same and then turning the screw until the swiveled end of the screw has reached the blocks, at which time it is necessary that the reins be moved outwardly sufficient to permit of the screw being returned to its normal position. The reins are moved outwardly by the operators who grasp the reins in their hands and pull them apart, this operation drawing the blocks 4 4 apart and permitting the screw to be pulled upwardly by the spring. Heretofore the elevating of the

screw has been done manually, and for this reason I have devised the spring 9, which is adapted to return the screw 7 to its normal position when released by the blocks 4 4.

5 The downward movement of the screw 7 places the spring under tension, and the spring is adapted to be made of sufficient strength and tension to lift the screw when released. The head or T 1 of the temper-  
10 screw is adapted to form a cushion and prevent any displacement of the spring during its return movement.

While I have herein described the preferred manner of constructing my improved  
15 temper-screw, it is obvious that various changes may be made in the details of construction without departing from the general spirit and scope of the invention.

What I claim, and desire to secure by Letters Patent, is—

20 1. In a temper-screw, the combination with a walking-beam, of a head carried by said walking-beam, depending reins carried by said head, blocks detachably connected to  
25 the lower ends of said reins, a screw operating through said blocks, a suspension-spring mounted in said head and swivelly connected to the upper end of said screw, substantially as described.

30 2. In a temper-screw, the combination

with a walking-beam, of a head connected to said walking-beam, depending reins carried by said head, a screw operating between said reins, a spring mounted in said head and swivelly connected to said screw, substantially as described. 35

3. In a temper-screw, the combination with a hollow head, having depending spring-reins, screw-threaded blocks detachably connected to the lower ends of said reins, a screw  
40 arranged between said blocks, a collar carried by said screw, an annular head surrounding the screw below said collar, antifriction-balls arranged between said annular head and said collar, a ring attached to said annular head  
45 and a suspension-spring connected to said ring and to said hollow head, substantially as described.

4. In a temper-screw, the combination with a hollow head having depending reins,  
50 of a screw operating between said reins, a spring mounted between said reins and extending into the said head, and connected to said screw, substantially as described.

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

BARRET C. HAGAN.

Witnesses:

P. A. STEWART,  
C. M. HAGAN.