No. 682,813. Patented Sept. 17, 1901.

E. PORTER.

SAFETY TEMPER SCREW.

(Application filed Mar. 9, 1901.)

(No Model.)

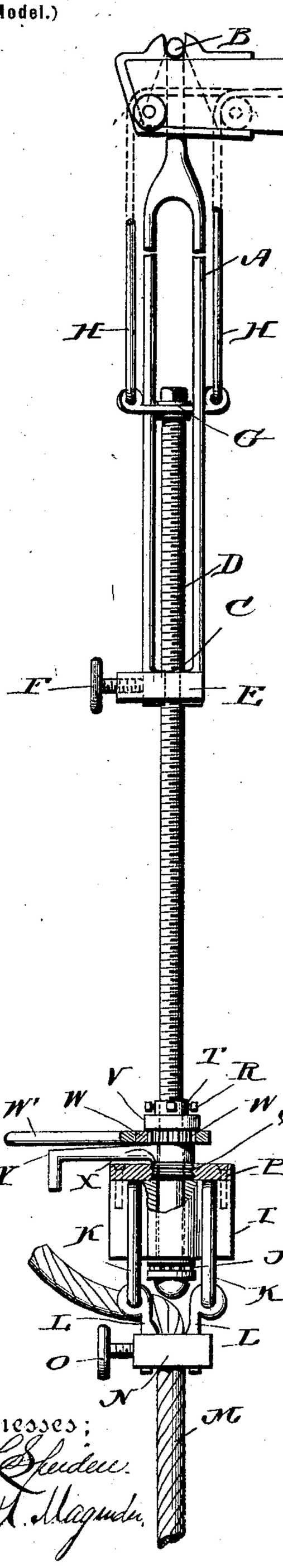

Fig. 1.

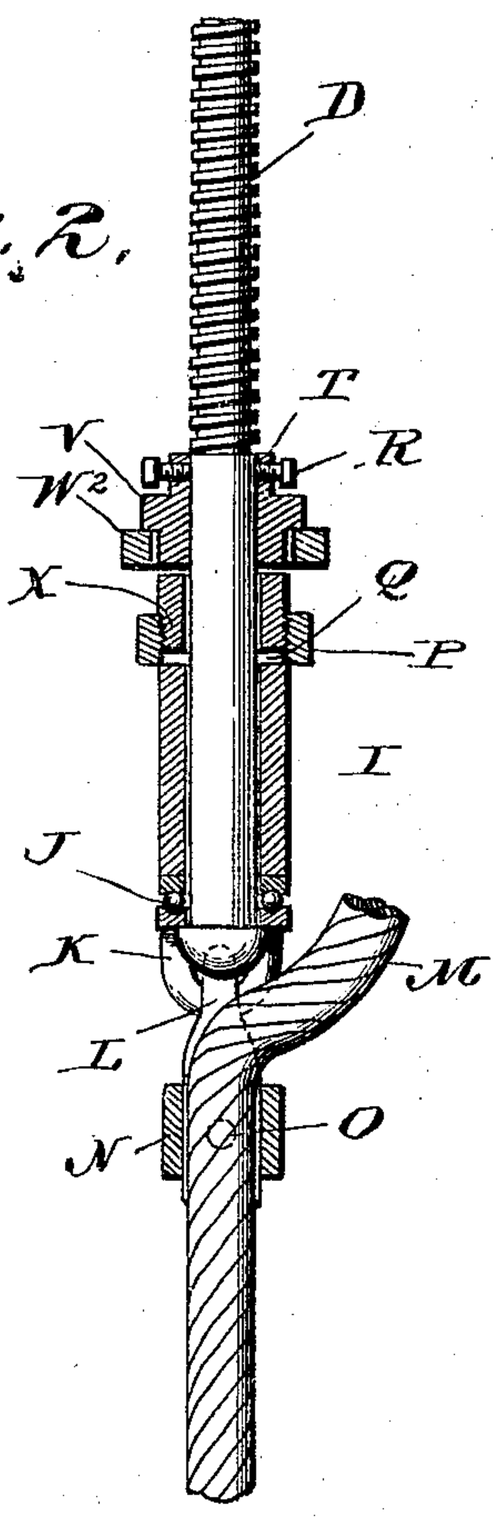

Fig. 2.

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UNITED STATES PATENT OFFICE.

ERNEST PORTER, OF WALLACE, WEST VIRGINIA.

SAFETY TEMPER-SCREW.

SPECIFICATION forming part of Letters Patent No. 682,813, dated September 17, 1901.

Application filed March 9, 1901. Serial No. 50,463. (No model.)

To all whom it may concern:

Be it known that I, ERNEST PORTER, a citizen of the United States, residing at Wallace, in the county of Harrison and State of West Virginia, have invented a new and useful Safety Temper-Screw, of which the following is a specification.

This invention relates to improvements in drilling devices for wells, and particularly to temper-screws, one object being to provide said screw with an improved handle for rotating the same which will remain stationary in event of the "running away" of the screw, thereby obviating the liability of inflicting injury upon the operator, which is so often the case with the ordinary construction.

Another object is to provide the screw with an improved brake or lock, which is located in close proximity to the operating means for the screw, so that the screw may be locked from rotation without the necessity of using the clamp now in use, which is not so convenient or effective.

With these objects in view the invention consists in the peculiar construction of the several parts and in their novel combination or arrangement, all of which will be fully described hereinafter and pointed out in the claim.

Figure 1 is an elevation, partly in section, of a temper-screw provided with my improvements; and Fig. 2, a longitudinal sectional view on an enlarged scale.

The temper-screws now in general use are provided with an operating handle or handle-bar which is rigidly attached thereto and by means of which it is rotated. Owing to the large weight supported by the screw the latter frequently becomes uncontrollable and "runs away," causing the handle-bar to strike the operator and very often seriously injuring him. My invention is directed to the obviation of this serious defect in the present construction of temper-screw and also to the provision of an improved locking means, as above stated.

Referring now more particularly to the accompanying drawings, A designates the forked frame of the temper-screw, having at its upper end a T portion B, which fits in the forks of the walking-beam. The forked frame carries at its lower end a divided nut C, which receives the temper-screw D, the latter being threaded to take the threads of the nut, through which it is movable longitudinally. Surrounding the nut is a clamping-band E, which is provided with a clamping-screw F, which causes the clamping-band to force the sections of the divided nut together, holding the temper-screw from longitudinal movement excepting by rotation. At the upper end of the temper-screw is a cross-bar G, having at each end eyes to which the lower ends of elevating-ropes H are attached, said ropes serving to quickly elevate the screw when the clamp is operated to release the divided nut. At the lower end of the temper-screw is a swivel I, which rotates upon ball-bearings J. This swivel has links K, to which the clamp-sections L for the rope M are loosely attached, said clamp-sections being held together in position clamping the rope by a pivoted stirrup N, carrying a clamping-screw O. Secured to the top of the swivel by screws or other securing devices is a cap-plate P, formed with a central opening Q, which is larger than the diameter of the temper-screw and is screw-threaded, the threads being left-hand threads. This cap-plate holds the links in the swivel and is provided with the screw-threads to coöperate with my improved brake or clamping device, presently to be described. Secured to the temper-screw above the swivel by means of set-screws R is a collar T, having an enlarged annular toothed portion W, formed at its upper end with a circumferential retaining-flange V. Coöperating with this toothed collar is a ratchet W^2, provided with a suitable handle W', which may be either a single or double handle, as may be desired. By means of this handle-bar the temper-screw may be conveniently rotated to effect the downward movement of the same, and at the same time should said screw, by reason of the weight supported thereby, become uncontrollable and move downwardly with great rapidity the operating-handle would remain stationary in the hand of the operator and not rotate with the screw, so that the operator would not be injured thereby.

My improved clamping device or brake consists of a handle portion Y, which when in position is disposed beneath and parallel with the operating-handle W' and is pro-

vided at its inner end with a boss X, having a bore of such size as to permit the temper-screw to move freely therethrough, while upon its exterior and at its lower end it is formed with screw-threads to take the threads of the cap-plate P, in which it fits. By turning the brake-handle to the right or in the direction of the rotation of the screw the boss will bind against the ratchet-collar, making the swivel stationary, and this, with the slack rope attached to one side of the derrick, will stop the screw without the necessity of closing the clamp F, which is not so convenient to the operator.

From the above description it will be seen that I have produced a very great improvement in temper-screws, whereby injury to the operator is prevented in event of the running away of the screw, and also in which an improved brake or clamping device is provided, which is located in close proximity to the operating means for the screw, whereby it may be conveniently operated.

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

In a temper-screw, the combination with the screw proper, of a swivel carried thereby and having the cap thereof formed with a screw-threaded opening surrounding the temper-screw, an adjustable boss exteriorly screw-threaded to take the threads of said cap and through which the temper-screw passes and having an operating-handle, and a stop disposed adjacent to said boss and against which the latter abuts when adjusted in one direction, substantially as described.

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Witnesses:
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