S. J. M. COX.

DRILL FOR OIL WELLS.

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1,179,284.

Patented Apr. 11, 1916.

Fig. 1.

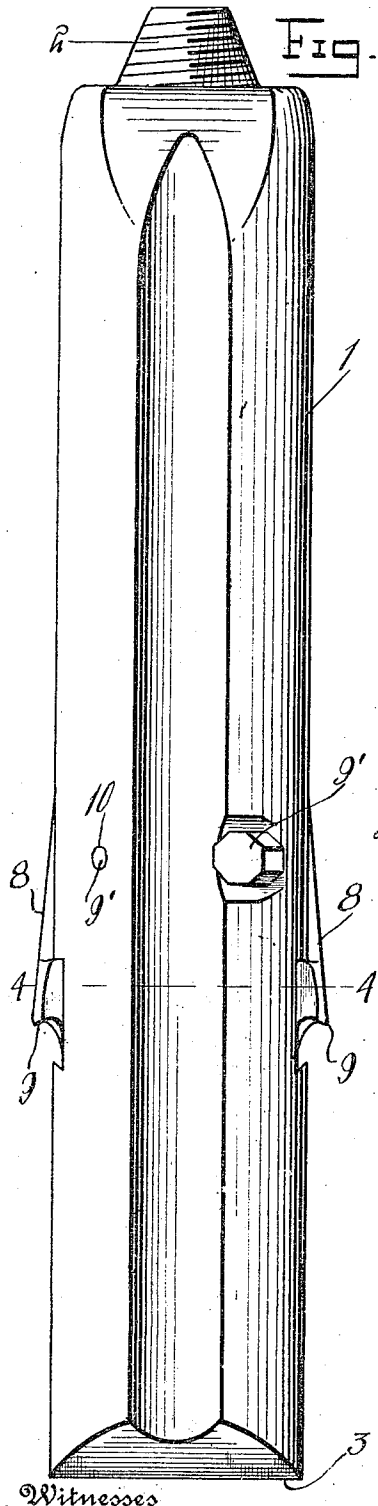


Fig. 2.

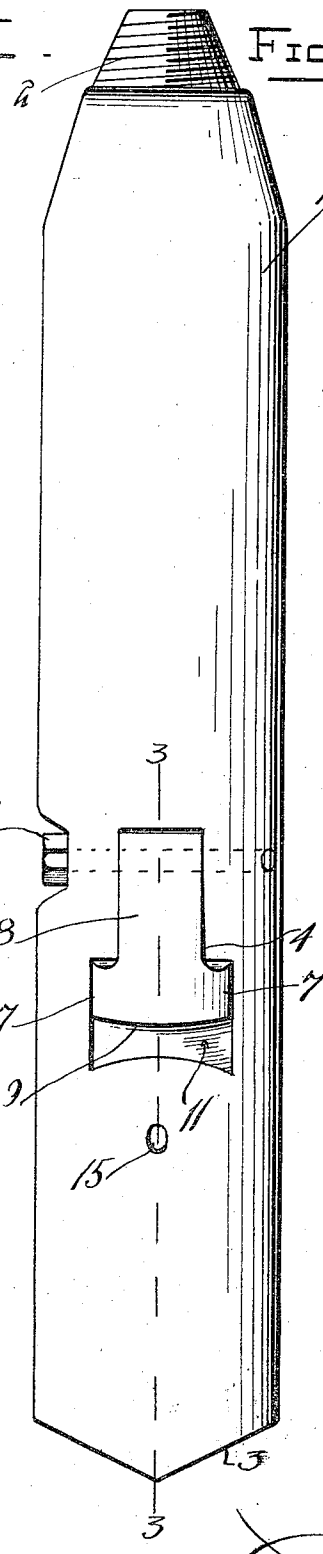


Fig. 4.

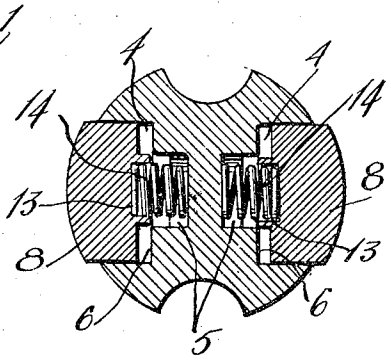
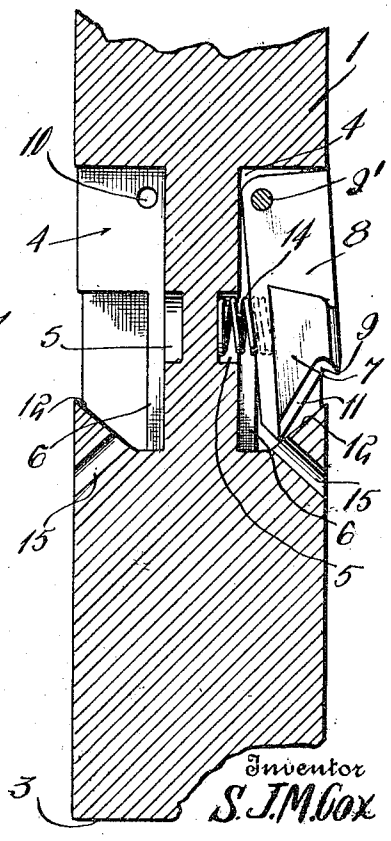


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

SEBERON J. M. COX, OF BRISTOW, OKLAHOMA, ASSIGNOR OF ONE-HALF TO JOSEPH ABRAHAM AND B. H. GREENWOOD, BOTH OF BRISTOW, OKLAHOMA.

DRILL FOR OIL-WELLS.

1,179,284. Specification of Letters Patent. Patented Apr. 11, 1916.

Application filed March 13, 1913. Serial No. 754,045.

To all whom it may concern:

Be it known that I, SEBERON J. M. COX, a citizen of the United States, residing at Bristow, in the county of Creek, State of Oklahoma, have invented certain new and useful Improvements in Drills for Oil-Wells; and I do hereby 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.

The present invention is directed to improvements in drills for oil wells or the like, and has for its object to so construct a device of this character that the bits are permitted to contract when in the usual well tube, and to expand at the desired point.

A further object of the invention is to provide a device of this type exceedingly simple in construction, efficient in operation, and one which may be manufactured at a minimum cost.

With these and other objects in view, this invention resides in the novel features of construction, formation, combination and arrangement of parts to be hereinafter more fully described, claimed and illustrated in the accompanying drawing, in which:

Figure 1 is a front view of the device. Fig. 2 is a side elevation. Fig. 3 is a sectional view on line 3—3 of Fig. 2. Fig. 4 is a similar view on line 4—4 of Fig. 1.

Referring to the drawing, the numeral 1 designates the stock, which is cylindrical in cross section and has its upper end provided with a conical extension 2 for threaded engagement with the lower end of the usual drill rod, the lower end of said stock being provided with a drill edge 3.

Formed near the lower end of the stock 1 are oppositely disposed recesses 4, the bases of which are provided with sockets 5, the purpose of which will appear later. Each recess 4 has its base formed with shoulders 6 which engage the lateral extensions 7 carried by the bits 8. The bits 8 are formed with cutting edges 9, which may be of any configuration, to suit work of different classes, and extend the width of the bit and extensions 7. The bits are pivotally supported in the recesses by set screws 9′ which pass through perforations 10 formed in the stock 1. The lower ends of the bits 8 are formed with beveled faces 11, which have their lower edges adapted to engage the beveled walls 12 formed in the lower ends of the recesses 4, thus limiting the swinging movement of the bits. The inner faces of the bits are formed with sockets 13, and in which the outer ends of the coil springs 14 engage, the inner ends of which engage the sockets 5, thus normally holding the bits expanded so that their cutting edges 9 will be positioned slightly beyond the plane of the outer surface of the stock 1 so as to insure proper cutting.

Diagonally arranged ducts 15 are formed in the stock 1 and have their upper ends opening into the lower ends of the recesses 4, said ducts serving to allow earth, or particles of stone to pass from the recesses so as to not hinder the effectual operation of the bits.

From the foregoing description it will be seen that a drill has been provided with bits which may be readily contracted for entering the usual well tube, and will automatically expand when reaching the desired point of operation.

What is claimed is:

In combination, a stock provided at its upper end with means for attachment to a rod and at its lower end with a cutting face, the said stock being provided intermediate its ends with longitudinally disposed recesses, a longitudinally disposed shoulder formed to project into each recess at the lateral sides thereof adjacent its bottom wall, each of said recesses being provided with an upwardly and outwardly inclined end wall, a bit of substantially the same thickness and width as the depth and width of said recess pivoted at its upper end in each of said recesses to be wholly inclosed therein, the said bits being slightly less in length than the said recesses and being inclined upwardly and outwardly from the extreme lower edge thereof, longitudinally disposed extensions on the end faces of each of said bits for engagement with said shoulders, the bottom wall of each recess and the adjacent face of said bits being provided with alined sockets disposed intermediate the lateral edges of said sockets and bits,

springs seated at their opposite ends in said sockets, for normally holding said bits projected with their inclined edges engaged against the inclined walls of said recesses, and each of said recesses having its lower end communicating with the exterior of said socket by an outwardly inclined duct.

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

SEBERON J. M. COX.

Witnesses:
W. R. Fox,
A. L. Randall.