A. S. DONZE & B. L. WALTON.
STEM HOLDER FOR WELL DRILLING MACHINES.
APPLICATION FILED SEPT. 7, 1915.

1,162,144. Patented Nov. 30, 1915.

[Diagrams of the stem holder for well drilling machines]

Inventors

A. S. DONZE
B. L. WALTON

By

Watson E. Coleman

Attorney
To all whom it may concern:

Be it known that we, ADDISON S. DONZE and BIRT LEE WALTON, citizens of the United States, residing at St. Marys, in the county of Pleasants and State of West Virginia, have invented certain new and useful Improvements in Stem-Holders for Well-Drilling Machines, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to an improved drill stem holder and guide for well drilling machines and the invention has for its primary object to provide a simple and effective supporting device which may be quickly adjusted to hold the drill stem out of the way when the well hole is being pumped or bailed out during spudding of the hole.

Still another object of our invention is to provide a drill stem holder and guide which is exceedingly simple in its construction, highly serviceable and convenient in practical use and may be easily and quickly mounted in operative position.

With the above and other objects in view, our invention consists in the novel features of construction, combination, and arrangement of parts to be hereinafter more fully described, claimed, and illustrated in the accompanying drawing, in which,

Figure 1 is a side elevation showing our improved drill stem holder and guide raised in its normal operative position, with respect to the drill stem; Fig. 2 is a horizontal section taken on the line 2—2, of Fig. 1; Fig. 3 is a section taken on the line 3—3, of Fig. 2, the ring or collar being shown in dotted lines in its lowered position to hold the drill stem or tool at one side of the well hole.

In bailing or spudding an oil well, it is necessary to entirely remove the drill stem which is frequently forty to forty-five feet in length, and when this stem comes in contact with the ground after being lifted from the well, the same will fall over unless a support is provided for the stem at the upper end thereof.

It is, therefore, the purpose of the present invention to devise such a supporting means for the drill stem which shall be simple in its construction and very effective for the desired purpose, said support holding the drill stem above the ground in such position that it may be readily replaced within the well.

To this end, we shall herein disclose an embodiment of the invention which has been found very reliable in practical use, the construction of which we shall now proceed to set forth in detail.

Referring in detail to the drawing, 5 designates the spaced standards or uprights which constitute a part of the frame structure of a well drilling machine, said uprights being connected by a transverse rod 8.

Our improved stem holder and guide in its preferred construction includes a ring or collar 7, said collar having a movable latch section 8 permanently pivoted as at 9 to one end of the body section of the collar. This latch section closes an entrance opening or throat in the collar, whereby said collar may be disposed around the drill stem or tool, indicated at 8. The free end of the latch section 8 of the collar is adapted to be detachably connected to the other end of the body of the collar, by means of a removable locking pin 10.

The body section of the collar 7 is provided with diametrically opposite points upon its periphery with the outwardly projecting rectangular lugs 11.

12 indicates a pair of arms, each of which has a square opening in one extremity to receive one of the lugs 11. The other ends of the arms 13 are loosely engaged upon the projecting bolt 6 between the uprights 5 so that said arms may freely swing in a vertical plane. Intermediate of their ends and at a point adjacent the collar 7, the arms 12 are connected by the transverse rod 13.

14 designates an adjusting bar loosely engaged at one of its ends upon the rod 13. This bar is formed with a longitudinal slot 15 through which a stud bolt 16 fixed in one of the uprights 5 is disposed. 17 designates a clamping nut threaded upon said bolt whereby the adjusting bar 14 may be securely clamped in position upon the upright.

As illustrated in Fig. 1 of the drawing, in the normal position of the collar 7, the same serves as a guide for the stem S in the operation of the drill. In spudding the well hole, or in the operation of a bailer or pump, it is necessary to support the drill stem or tool in position at one side of the well hole so that it will not constitute an obstruction. In such instances, the clamping nut 17 is loosened and the bar 14 is moved downwardly upon the bolt 13, there by drawing the collar or ring 7 downwardly and inwardly toward the upright 5 and en-
gaging said collar at diametrically opposite points with the stem. Thus the stem is securely held at its upper end against any excessive movement and the lower end of the stem or tube will also be held relatively stationary so that it will not be in the way of the movement of the spudding tool or the bailer. After spudding or bailing out the well hole the bar is again shifted upwardly to return the drill stem or tool to its normal position, so that the drilling operation may be continued.

From the foregoing description taken in connection with the accompanying drawing, it will be seen that we have produced a simply constructed, serviceable and efficient drill stem holder and guide which may be readily set up in position for use upon the ordinary well drilling machine. The ring or collar 7 may be very easily and quickly arranged in position upon the drill stem by opening the latch section 8 and as readily removed therefrom. It is apparent, of course, that if preferred, two of the adjustable bars 14 might be provided, one of the same being mounted upon each of the uprights 5. For all ordinary purposes, however, we have found that a single one of these adjustable bars is sufficient for the accomplishment of the desired end.

While we have disclosed in the accompanying drawing, a guide ring or collar of circular form, it is apparent that this collar may be constructed in various other shapes and also of any desired size. It might also be found desirable to employ other means than that herein disclosed for enabling the ring to be clearly and quickly arranged in circumscribing relation to the drill shaft. It is, therefore, to be borne in mind that while we have specifically described one modification of our invention, the device is, nevertheless, susceptible of considerable modification therein and we therefore reserve the privilege of resorting to all such minor changes as may be fairly embodied within the spirit and scope of the invention, as claimed.

Having thus described this invention, what we desire to claim as new and secure by Letters Patent, is:

1. In combination, a guide collar provided with means for enabling the same to be arranged in circumscribing relation to a drill stem, arms fixed at one of their ends to relatively opposite sides of the collar and pivotally mounted at their other ends for vertical swinging movement, and means connected to said arms for adjusting the collar and disposing the same at an angle with respect to the axis of the stem and in binding contact therewith to hold said drill stem against movement.

2. In combination, a guide collar adapted to be arranged in circumscribing relation to a drill stem, arms fixed at one of their ends to diametrically opposite sides of the collar and pivotally mounted at their other ends for vertical swinging movement, and means for holding the arms in an adjusted position and against such swinging movement, whereby said collar may be retained in an angular position upon the drill stem and in binding engagement therewith to hold said stem against movement.

3. In combination, a collar adapted to be arranged in circumscribing relation to a drill stem, arms fixed at one of their ends to diametrically opposite sides of said collar, spaced uprights, a rod connecting the uprights, said arms being mounted upon said rod at their other ends for vertical swinging movement, and means adjustable upon one of the uprights and connected to said arms for holding the same against swinging movement, and to retain the collar in an angular position with respect to the axis of the drill stem and in binding engagement therewith to hold said stem against movement.

4. In combination, a collar provided with a movable latch section, whereby said collar may be arranged in circumscribing relation to a drill stem, arms fixed at one of their ends to diametrically opposite sides of the collar, spaced uprights, said arms being mounted between the uprights at their other ends for vertical swinging movement, a rod connecting said arms and an adjusting bar loosely engaged at one of its ends on said rod, and means for adjustably securing said bar upon one of the uprights to hold the arms against swinging movement and dispose said collar in a horizontal position to act as a guide for the stem or in an angular position with respect to the axis of the stem and in binding engagement therewith to hold said stem against movement.

In testimony whereof we hereunto affix our signatures in the presence of two witnesses.

ADDISON S. DONZE.
BIRT LEE WALTON.

Witnesses:
ROSS WELLS,
C. P. CRAIG.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D.C."