

(No Model.)

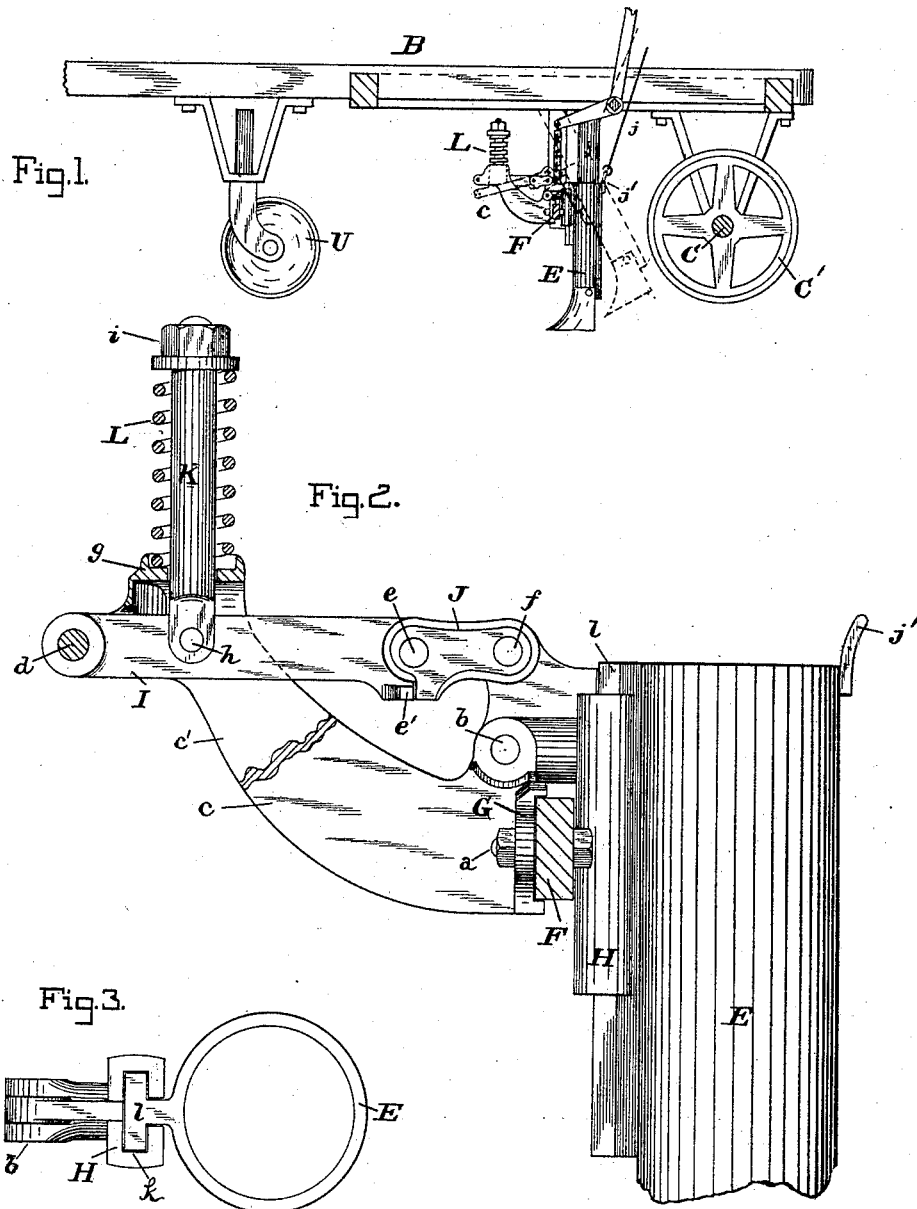
2 Sheets—Sheet 1.

T. R. CRANE.

ATTACHMENT FOR HOLDING DRILL TUBES.

No. 418,503.

Patented Dec. 31, 1889.



WITNESSES:

*John E. Morris*  
*A. O. Babendreuer*

INVENTOR:

*Thos R. Crane*

BY *Chas B. Mann*

ATTORNEY.

(No Model.)

2 Sheets—Sheet 2.

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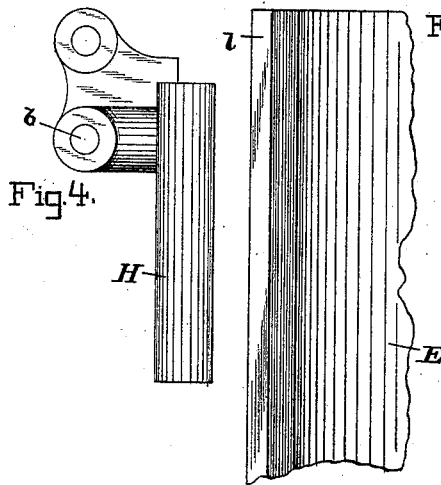


Fig. 5.

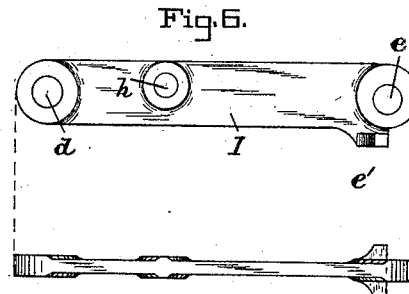


Fig. 6.

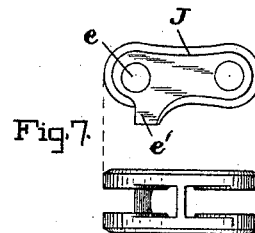


Fig. 7.

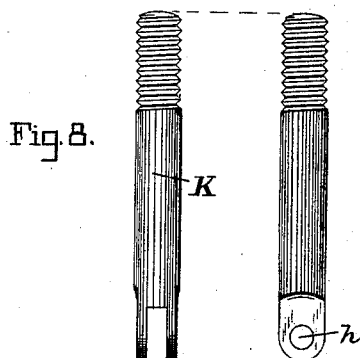


Fig. 8.

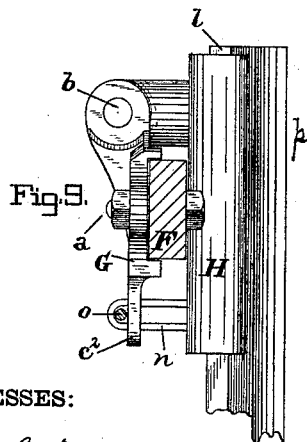


Fig. 9.

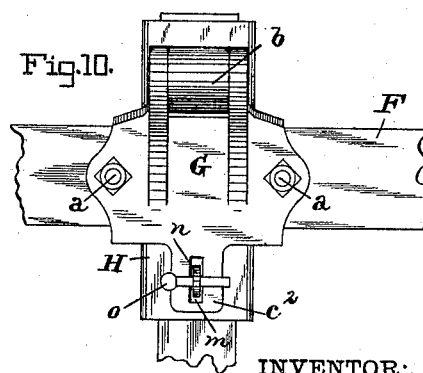


Fig. 10.

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# UNITED STATES PATENT OFFICE.

THOMAS R. CRANE, OF HEATHSVILLE, VIRGINIA.

## ATTACHMENT FOR HOLDING DRILL-TUBES.

SPECIFICATION forming part of Letters Patent No. 418,503, dated December 31, 1889.

Application filed May 9, 1889. Serial No. 310,121. (No model.)

### *To all whom it may concern:*

Be it known that I, THOMAS R. CRANE, a citizen of the United States, residing at Heathsville, in the county of Northumberland and State of Virginia, have invented certain new and useful Improvements in Attachments for Holding Drill-Tubes, of which the following is a specification.

This invention relates to a holder for drill-tubes and harrow-teeth, and will be described and then claimed.

In the drawings herewith, Figure 1 is a side view of a frame mounted on wheels, being part of a grain drill or harrow such as Letters Patent have heretofore been granted to me for. Fig. 2 is a side view, partly in section, of the holder and a drill-tube. Fig. 3 is a top view of same. Fig. 4 is a view of the movable part of the jointed holder. Fig. 5 shows a portion of the top part of the drill-tube. Fig. 6 shows two views of the tension-lever. Fig. 7 shows two views of the link. Fig. 8 shows two views of the tension-bolt. Figs. 9 and 10 show a modification in the holder, and illustrate a harrow-tooth applied thereto instead of a drill-tube.

The frame B, axle C, wheel C', caster-wheel U, and vertically-movable crosswise bar F below the frame are all well known, and may be like those parts described in Letters Patent heretofore granted me.

This invention comprises a drill-tube holder to be attached to the crosswise bar F for holding the tube E.

The object of the improved holder is to retain the drill-tube E in its normal position for work at all times, except when it is subjected to undue strain, as when the point at the lower end of the drill-tube strikes an obstruction, as a root or stone that is immovable. Then it is the design that the holder will yield to allow the drill-tube to swing back out of the way of the said immovable obstruction.

The holder comprises the stationary part G, which is secured by bolts *a* to the crosswise bar F, and the movable part H, which is connected to said stationary part by a joint *b*. With these two parts is combined a retaining device, which will hold the movable part until undue strain is applied, and which

will then yield. The drill-tube E is attached in any suitable way to the said movable part.

In Figs. 2 to 8 details are shown for one form of retaining device. The stationary part G has an upward-curved arm *c c'*, consisting of two plates. A tension-lever I is jointed by one end *d* to the said upward-curved arm, and from said joint projects back toward the movable part H, with which a link J connects it by joints *e f*. The joint *e*, which connects the tension-lever I and link J, has shoulders *e'*, and forms an elbow-joint which allows the parts to bend one way only. The upward-curved arm *c c'* has a seat *g*, and a tension-bolt K is jointed at *h* to the tension-lever I and projects loosely through the said seat, and a spiral spring L surrounds the bolt, one of its ends bearing on the said seat and the other against a nut *i*, screwed onto the bolt. The tension of this spring L, acting on the bolt, draws on the lever I and keeps said lever and the link J straight or in line with each other, as shown in Fig. 2, which is the normal position for retaining the movable part H of the holder where it will serve for work. When a severe strain comes on these parts, as will be the case if the drill-tube point meets an immovable obstruction in the ground, the tension-lever I and link J will give way at the elbow-joint *e* and allow the movable part H to turn on its joint *b* and the drill-tube to swing back as soon as the obstruction has been passed. The tension of the spring L by drawing on the lever I will restore the elbow-joint *e* to its normal position.

As already stated, the drill-tube E may be attached to the jointed part H of the holder in any desired way. In the present instance I have shown a tongue and groove for this purpose. The groove *k* is here shown on the holder part H, and the tongue *l* is on the drill-tube. This construction allows a chain *j* to be attached to the ring *j'* on the drill-tube, and thereby each tube may be raised and lowered vertically.

A modification of the retaining device is shown in Figs. 9 and 10. Here the stationary part G of the holder has no upward-curved arm, but instead has a short arm *c<sup>2</sup>*, provided with a slot *m*, and the movable part H of the

holder, which is jointed at *b*, has a staple *n*, which passes below the crosswise bar *F*, and through the said slot *m* a wood pin *o*, passed through the staple, retains the parts to this  
5 normal position. When severe strain comes, the wood pin *o* will break, and movable part *H* will turn on its joint *b*.

Figs. 9 and 10 illustrate a harrow-tooth *p* as being attached to the holder.

10 It is obvious that the construction of this device may be varied. My invention, therefore, is not limited to the precise construction shown.

Having described my invention, I claim—

15 1. A holder for drill-tubes or harrow-teeth, comprising the stationary part *G*, a movable part *H*, connected by a joint to said stationary part, an arm attached to the stationary part and projecting forward and having a  
20 seat *g*, with a hole, a lever *I*, jointed to the arm and connected by a link *J* with the said

movable part, a bolt *K*, jointed to the said lever, projecting loosely through the hole in the seat, and having at its extremity a nut *i*, and a spiral spring *L*, resting on the seat of  
25 said arm and bearing against the bolt-nut.

2. The combination of the crosswise bar *F*, the stationary part *G* of a holder attached to said crosswise bar, a movable part *H*, connected by a joint to the stationary part and  
30 provided with a vertical groove *k* for a drill-tube or harrow-tooth, and a yielding retaining device which holds the said movable part to the normal position except when undue strain is applied.

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

THOMAS R. CRANE.

Witnesses:

JOHN E. MORRIS,  
JNO. T. MADDOX.