

(No Model.)

P. A. CRAELIUS.

GRAB FOR LIFTING CORES FORMED BY TUBULAR ROCK DRILLS, OR
BROKEN OR DETACHED DRILL RODS, &c., FROM BORE HOLES.

No. 529,781.

Patented Nov. 27, 1894.

Fig 1.

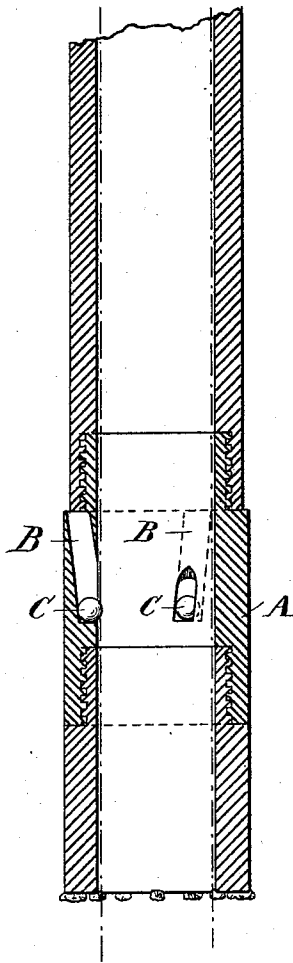
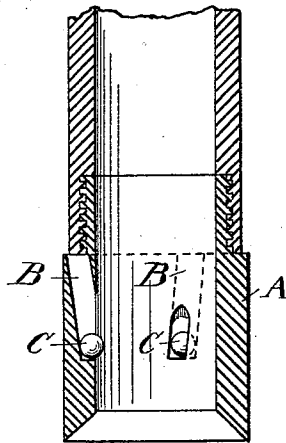


Fig 2.



Witnesses:
E. H. Sturtevant
E. A. Scott.

Inventor:
Per Anton Craelius
by *Richard P.*
attorney.

UNITED STATES PATENT OFFICE.

PER ANTON CRAELIUS, OF SMEDJEBACKEN, SWEDEN.

GRAB FOR LIFTING CORES FORMED BY TUBULAR ROCK-DRILLS OR BROKEN OR DETACHED DRILL-RODS,
&c., FROM BORE-HOLES.

SPECIFICATION forming part of Letters Patent No. 529,781, dated November 27, 1894.

Application filed June 16, 1894. Serial No. 514,761. (No model.)

To all whom it may concern:

Be it known that I, PER ANTON CRAELIUS, engineer, a subject of the King of Sweden and Norway, and a resident of Smedjebacken, in the Kingdom of Sweden and Norway, have invented a certain new and useful Improvement in Grabs for Lifting the Cores Formed by Tubular Rock-Drills or Broken or Detached Drill-Rods or Boring-Tools from Bore-Holes, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to a grab for lifting the cores formed by tubular rock-drills, from bore-holes, the grab being also applicable for lifting broken or detached drill-rods from such holes. The grab can be used in conjunction with a tubular drill for lifting the core formed thereby, or it can be used for lifting the core from a bore-hole formed by an independent drill-rod.

Figure 1 is a vertical section showing my grab as used in conjunction with a tubular drill, and Fig. 2 is a similar view showing the grab as used independently of a drill-rod.

The grab consists of a socket A adapted to be screwed on to the lower end of a boring rod and having formed therein holes or channels B extending from the upper and outer edge of the socket downward and inward, the number of which holes or channels in the example shown in the drawings being three. These channels form on the inner surface of the socket openings, the greatest width of which is less than the diameter of the channel. In each hole is a ball C of steel or other hard material which when it rests on the bottom of the hole partly projects into the socket. Rollers may be used instead of balls. These balls offer no obstacle to the lowering of the tube to which the grab is attached as they are then actuated by the core and can rise in the upper parts of the holes B and at the same time recede from the core. When on the other hand the tube is lifted the balls will descend and be clamped between the socket A and the core so that the latter can be lifted.

As shown in Fig. 1 the grab is represented as arranged in conjunction with a tubular drill, the said grab being provided with a screw-threaded socket to receive the drill. When the grab is used independently the lower edge of the socket is beveled on the inside, as shown in Fig. 2, in order that the grab may be easily brought over a core in the boring hole. When this has taken place and the socket is lifted the core follows for the reason described above. It will be easily understood that (the grab being of sufficient width) it can be passed over the drill-rod and serve to lift the same. The holes or channels B can obviously be arranged directly in the drill-rod or in the tubular drill or bit.

It will be noticed that the inclined channels extend from the interior of the socket outward and through the shoulder formed by the reduced screw threaded extension. The boring rod fits over this shoulder and thus closes the said openings against the escape of the said balls.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A grab for lifting cores or the like, consisting of a socket or tube having one or more channels inclining downwardly and inwardly to the interior bore thereof, and the balls or rollers arranged to move freely in said channels toward and from the lower ends thereof, substantially as described.

2. In combination with the socket having the screw threaded reduced extension, the inclined passages extending from the interior of the socket through the shoulder and the boring rod secured to the reduced extension and closing the inclined openings, substantially as described.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

PER ANTON CRAELIUS.

Witnesses:

ERNST GVANGVIST,
CARL TH. SUNDHOLM.