

C. DESMARAIIS.
 ROCK EXTRACTOR FOR DRILL HOLES.
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973,013.

Patented Oct. 18, 1910.

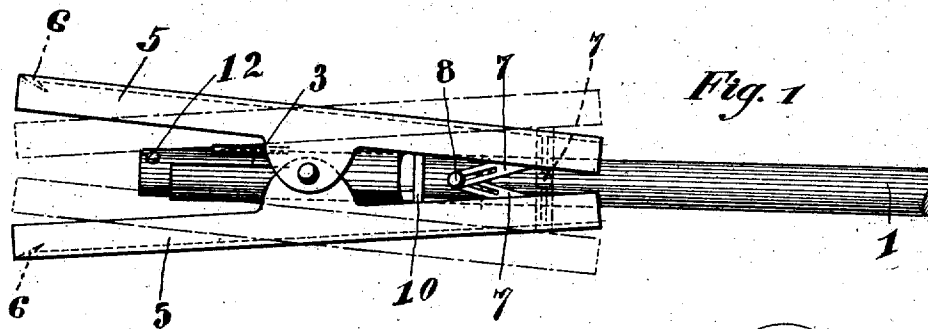


Fig. 1

Fig. 2

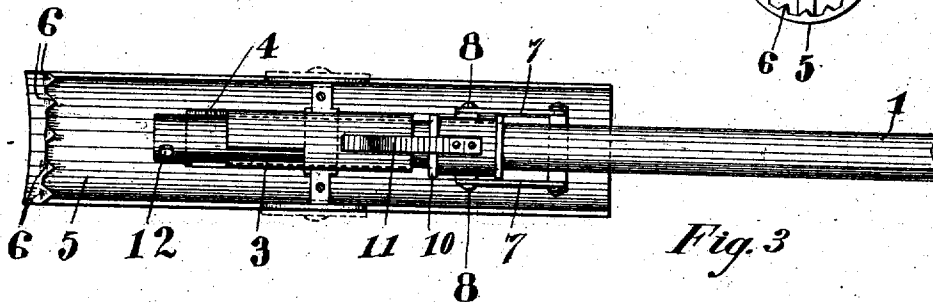
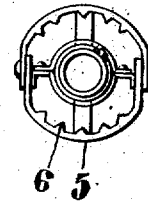


Fig. 3

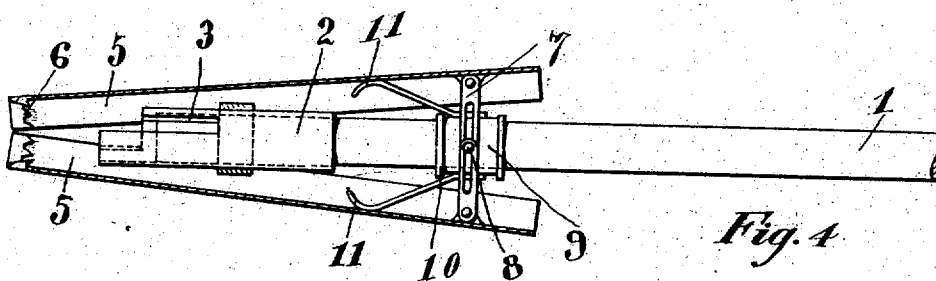


Fig. 4

Witnesses:

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UNITED STATES PATENT OFFICE.

CHARLES DESMARAIS, OF HULL, QUEBEC, CANADA.

ROCK-EXTRACTOR FOR DRILL-HOLES.

973,013.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CHARLES DESMARAIS, a subject of the King of Great Britain, residing at Hull, in the Province of Quebec, Canada, have invented certain new and useful Improvements in Rock-Extractors for Drill-Holes; and I do hereby declare that the following is 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 invention to be hereinafter described relates to core extractors for prospecting and mining drills and the like.

Broadly speaking, the device comprises a shaft or rod, a sleeve mounted to have limited rotary movement about the shaft, gripping jaws pivoted to the sleeve, a collar revolvably mounted on the shaft, links connected to the gripping jaws and having sliding connections with the collar, means for forcing the jaws to open position and hold them so, and means for forcing the jaws to closed or operative position.

In order to more clearly disclose the construction, operation and use of the invention, reference should be had to the accompanying drawings forming part of the present application.

Throughout the several views of the drawings, like reference characters designate the same parts.

In the drawings:—Figure 1 is a side elevation of the invention; Fig. 2 is a left hand view of Fig. 1; Fig. 3 is a plan view of the working parts, one of the jaws being removed; and, Fig. 4 is a vertical longitudinal section through the device as a whole.

Referring to the drawings in detail, 1 indicates a rod or shaft about the lower end of which is revolvably disposed a sleeve 2 provided with a longitudinal slot 3 and having a portion cut away to leave a shoulder 4. To this sleeve are pivotally connected jaws 5 having inwardly inclined gripping teeth 6. These jaws may be formed with ears, if desired, through which pins may be passed to connect them with the sleeve. To the inner upper ends of the jaws are pivotally connected slotted links 7. The slots of these links are adapted to freely receive pins 8 projecting from the sides of a collar 9 revolvably mounted between shoulders 10 on the shaft 1. To this collar are also connected leaf springs 11 which bear against the inner faces of the jaws 5 and keep their

gripping ends normally closed. The extreme lower end of the shaft 1 is provided with a pin or stud 12 adapted to be seated in the cut away portion of the sleeve 2 to hold the jaws open or to slide upward in the slot 3 with shaft 1 to allow the jaws to be closed.

The tool is adapted to be used to extract broken rock and other granular material from the bore made by a prospecting or mining drill.

Assuming the parts to be in the position shown in Fig. 4 the operation of the invention is as follows:—The shaft 1 is forced downward through the slotted sleeve 2 until the pin 12 passes out of the slot 3 and then it is turned to the right until the pin 12 engages the shoulder 4. As the shaft moves downward through the sleeve 2 it will carry with it the collar 9. As the collar 9 moves downward it will, of course, retract the links 7 and so draw in the upper ends of the jaws 5 against the action of the springs 11. As the upper ends of the jaws are drawn in the lower ends, of course, will be spread open or thrown to operative position. The pin 12 while moving in the cut away portion of the sleeve 2 prevents upward movement of the shaft 1 relatively to the sleeve and so locks the jaws open. When the broken rock in the bore made by the drill is hard to get into the jaws of the extractor it may be found convenient to give the extractor a rotary movement as it is being forced downward to assist in the downward movement of the extractor about the broken rock. This may be accomplished by turning the shaft 1 to the right so that the pin 12 will engage the right hand wall of the cut away portion of the sleeve 2. When the extractor has been forced downward with the jaws open about the granular material in the bore the shaft 1 will be turned back to the left until the pin 12 engages the left hand wall of the cut away portion of the sleeve 2 and then the shaft will be raised, the pin 12 sliding freely upward in the slot 3 until it reaches the end of the same. As the shaft 1 moves upward, it will carry with it the collar 9, the pins 8 sliding freely in the slots of the links 7, thus allowing the springs 11 to spread the upper ends of the jaws 5 and force the lower toothed ends of the same to closed or operative position.

It is clear that changes may be made in the construction, arrangement and disposi-

tion of the several parts of the invention and it is meant to include such changes within this application wherein only a preferred form has been disclosed.

5 Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. A device of the character described comprising a rod, a sleeve movably mounted
10 on the rod, jaws pivotally connected to the sleeve, means for opening the jaws, means for locking the jaws in opened position and means carried and actuated by said rod for closing the jaws or forcing them to operative
15 position.

2. A device of the character described comprising a shaft, a sleeve movably mounted on the shaft, jaws pivotally connected to the sleeve, a second sleeve revolubly mounted
20 on the shaft and movable therewith, and connections between the second sleeve and the jaws for opening the jaws.

3. A device of the character described comprising a shaft, a sleeve mounted to have
25 limited rotary movement on the shaft and provided with a cut away portion having a shoulder, jaws pivotally connected to said sleeve, a pin carried by the shaft and adapted to play in the cut away portion, a second
30 sleeve revolubly mounted on the shaft and movable therewith, and connections between the second sleeve and the aforesaid jaws for opening the jaws.

4. A device of the character described
35 comprising a shaft, a slotted sleeve provided with a cut away portion having a shoulder and mounted upon said shaft to have lim-

ited rotary and longitudinal movement relatively to the shaft, a pin on said shaft adapted to play in the cut away portion and the
10 slot of said sleeve, jaws pivotally connected to said sleeve and means for forcing said jaws to open position.

5. A device of the character described comprising a shaft, a sleeve mounted there-
45 on and having a shoulder, jaws pivotally connected to said sleeve, a pin carried by said shaft and adapted to engage the shoulder on said sleeve to lock the jaws in opened position, means for opening the jaws and
50 means for closing the jaws.

6. A device of the character described comprising a shaft, a slotted sleeve mounted on said shaft to have limited rotary and longitudinal movement relatively to the shaft
55 and provided with a cut away portion having a shoulder, a pin carried by the aforesaid shaft and adapted to engage the shoulder of the cut away portion to rotate the sleeve with the shaft, jaws pivotally connected
60 to said sleeve, a second sleeve mounted to have rotary movement about said shaft and to be carried longitudinally with said shaft, links connected to the aforesaid jaws
65 and said second sleeve respectively, and means for forcing said jaws to closed or operative position.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

CHARLES DESMARAIS.

Witnesses:

F. ALBERT LABELLE,
ALEXIA GAMBY.