

J. FLEMING.

Tube-Clamps for Rock-Drills.

No. 158,168.

Patented Dec. 29, 1874.

Fig. 1.

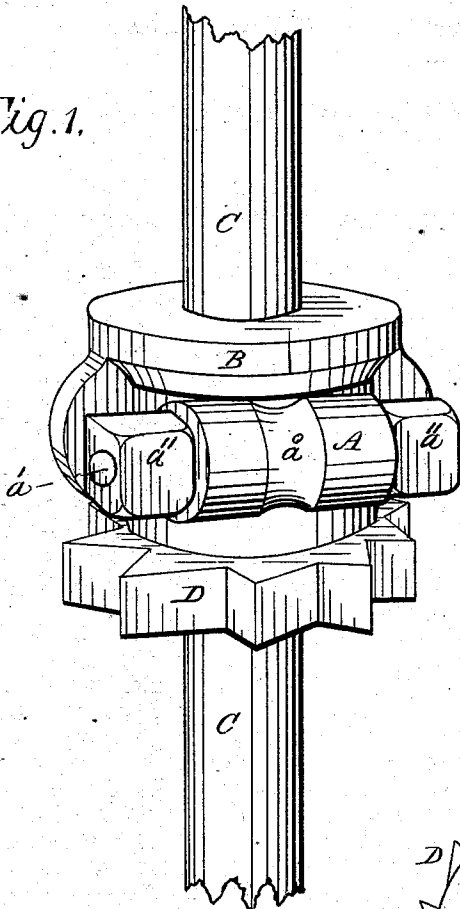


Fig. 2.

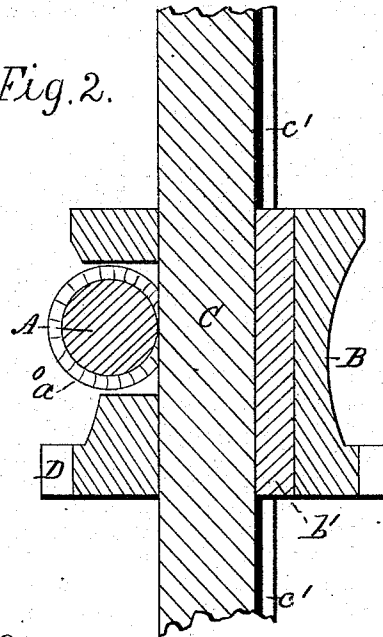
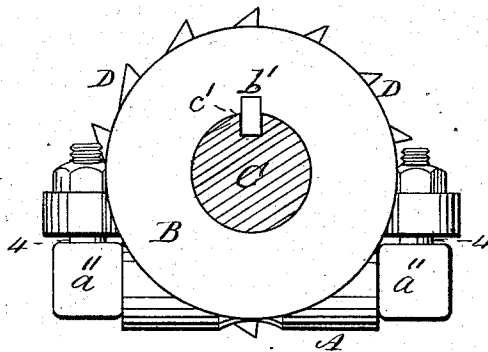


Fig. 3.



Witnesses:

Benj. Morrison
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Inventor:

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UNITED STATES PATENT OFFICE.

JOHN FLEMING, OF SPRING CITY, PENNSYLVANIA, ASSIGNOR TO SHANTZ,
KEELEY, FLEMING & CO., OF SAME PLACE.

IMPROVEMENT IN TUBE-CLAMPS FOR ROCK-DRILLS.

Specification forming part of Letters Patent No. **158,168**, dated December 29, 1874; application filed
November 20, 1874.

To all whom it may concern:

Be it known that I, JOHN FLEMING, of Spring City, in the county of Chester and State of Pennsylvania, have invented an Improvement in Rock-Drilling Machines, of which the following is a specification:

My invention relates more especially to the rock-drilling machine patented by William Weaver, of Phoenixville, Pennsylvania, dated September 16, 1873, and has for its objects the avoidance of the cutting of the drill-rod by the friction-clamp, and the provision of a more positive and reliable means of giving the requisite periodical rotary motions to the said drill-rod; and the first object I accomplish by the peculiar construction and combination of a grooved friction-roller with the clamp and drill-rod of said machine, and the second by the combination, with the said clamp and drill-rod, of a groove and feather, as will be more fully and clearly detailed herein with reference to the accompanying drawing, in which—

Figure 1 is a perspective view of a section of the machine, showing my friction-roller applied thereto; Fig. 2, a central vertical section of Fig. 1, showing the groove and feather and the transverse section of the grooved roller; and Fig. 3 a plan or top view of Fig. 1, showing more clearly the groove and feather where-by the drill-rod is carried around. The grooved friction-roller A turns upon end journals *a'*, which are supported by respective bearings *a''*, which are adjustably secured by respective screw-nuts 3 and stems 4 to the body of the clamp B, so that the pressure required of the friction-roller A upon the drill-rod C can be readily and accurately adjusted to suit the requisite movements of the clamp during the operation of the machine. The drill-rod C has a longitudinal groove, *c'*, into which enters a corresponding feather, *b'*, of steel or other metal, which is permanently fixed in a corre-

sponding groove made for the purpose in that side of the bore of the body of the clamp B which is opposite to the side which communicates with the groove *a'* of the friction-roller A, and therefore does not interfere with the rolling motions of the latter produced by the periodical sliding motions of the clamp B on the drill-rod C, as the latter falls and cuts deeper into the rock, while the said sliding motions of the clamp B are produced by the usual stop, (not shown in the accompanying drawing.) The periodical elevations and partial rotary motions of the drill-bar C are produced by the combined operations of the ratchet-toothed portion D and the usual cam, (not shown.)

It will be seen that the feather *b'* of B, projecting into the groove *c'* of the drill-rod C, will unfailingly move the said drill-rod C around with it, and that the grooved friction-roller A can be adjusted to give any degree of pressure on the drill-rod that may be required to lift the latter, while the requisite sliding motions of said rod will not be prevented by the sudden arrest of the descending motions of the clamp B, nor will there be any cutting or other injurious effects produced on the drill-rod, as heretofore.

I claim as my invention—

1. In rock-drilling machines, the combination, substantially as described, of the grooved friction-roller A adjustably secured to the clamp B, as described, with the drill-rod C, for the purpose set forth.

2. The combination, in a rock-drilling machine, substantially as described, of the feather *b'* with the clamp B and drill-rod C, as and for the purposes set forth.

JOHN FLEMING.

Witnesses:

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