D. H. MUIR.

WELL DRILLING APPARATUS.

No. 171,406. Patented Dec. 21, 1875.

Fig. 1

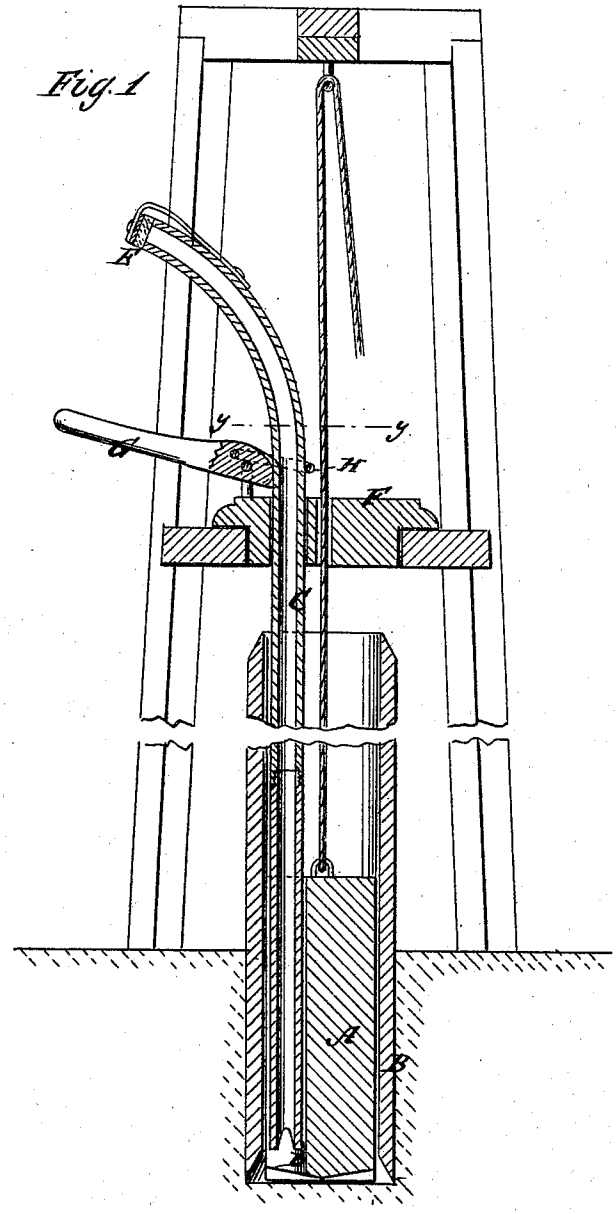
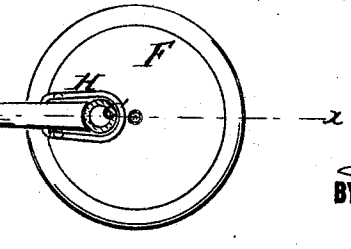


Fig. 2



WITNESSES:

E. Wolff

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INVENTOR:

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BY

ATTORNEYS.

UNITED STATES PATENT OFFICE.

DANIEL HENRY MUIR, OF RACINE, WISCONSIN.

IMPROVEMENT IN WELL-DRILLING APPARATUS.

Specification forming part of Letters Patent No. **171,406**, dated December 21, 1875; application filed November 13, 1875.

To all whom it may concern:

Be it known that I, DANIEL HENRY MUIR, of Racine, in the county of Racine and State of Wisconsin, have invented a new and Improved Well-Drilling Apparatus, of which the following is a specification:

My invention is a contrivance of a tube to extend down the bore and along a groove in the drill to within an inch or so of the bottom of the bore, as a means of removing the mud, &c., by the action of the drill, the effect of which is to drive the mud up the tube when the drill falls. The tube has a check-valve to prevent the mud from going back when the drill rises, and it is mounted in a support which turns in unison with the drill, so that the pipe will not interfere with the turning of the drill. There is also a lever contrivance in connection with the tube, to lower it from time to time, and to hold it above the bottom of the bore.

Figure 1 is a sectional elevation of my improved drilling apparatus, taken on line *x x* of Fig. 1. Fig. 2 is a section on line *y y* of Fig. 1.

Similar letters of reference indicate corresponding parts.

A is the drill; B, the tube or case for the bore, and C the tube, out of which the mud is to be discharged by the drill, the drill being grooved at D along one side to allow the tube to extend to the bottom of the bore, or so near it that mud will be forced up the tube by the drill when it falls. E is a check-valve in the tube, to hold the contents of the tube against falling back when the drill rises. F is the support for the tube C, arranged to turn with the drill, and G is the adjusting and holding lever, with a griper, H, to hold the tube at any height above the bottom of the bore. The griper holds by friction. It is lifted free of the tube to let it fall to the bottom of the bore, and then engaged so as to raise the tube off the bottom enough to allow it turn freely, and hold it while the drill works.

By this contrivance, the taking of the drill out of the bore and removing the mud with the sand-pump are avoided, making great economy of time and labor in sinking wells by the drill.

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

1. The drill A, having a groove, D, in combination with tube C and revolving support F, substantially as specified.

2. The combination of gripe-lever G with the tube C, substantially as specified.

DANIEL HENRY MUIR.

Witnesses:

M. D. MILLER,

A. D. LINN.