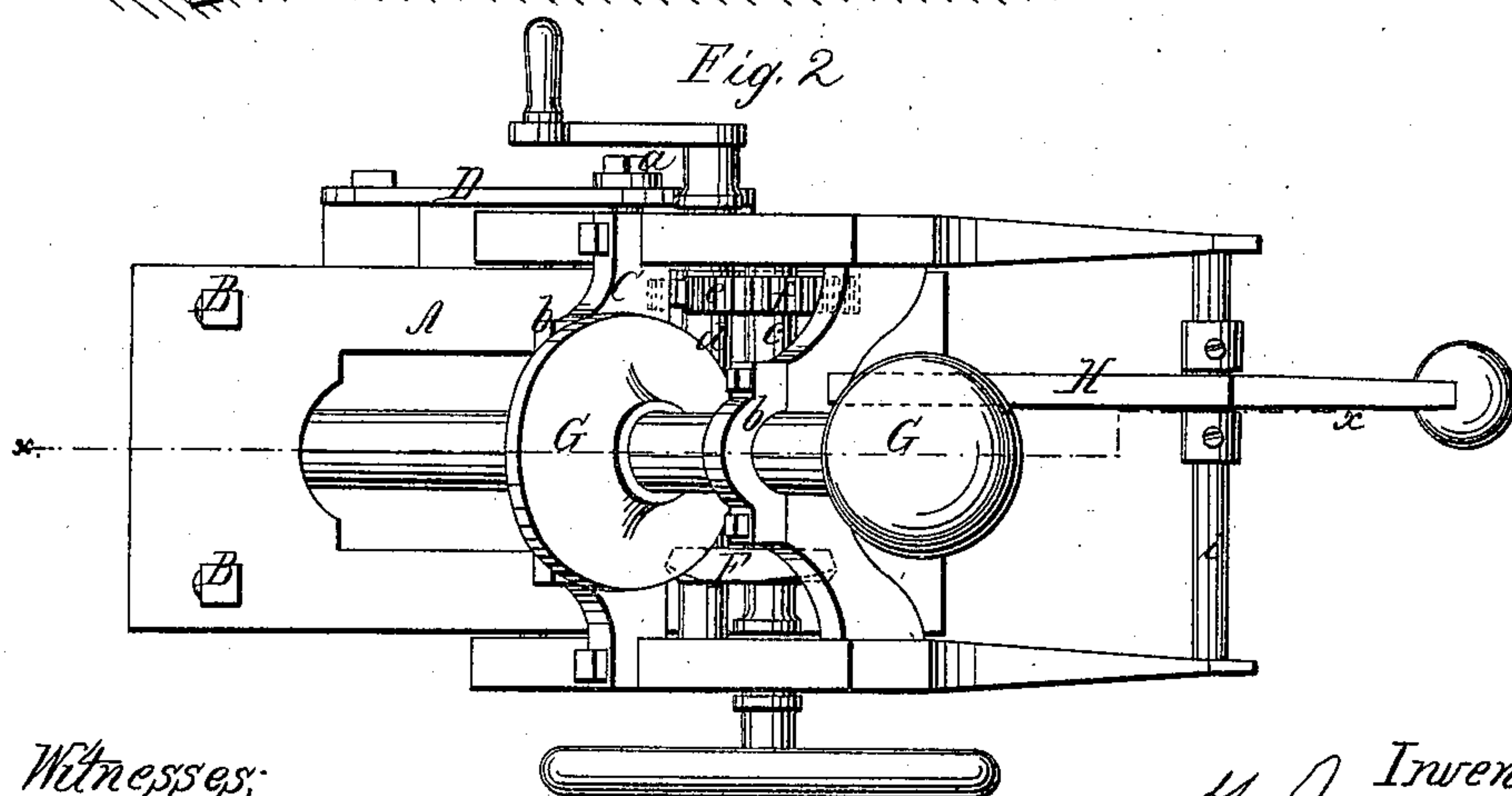
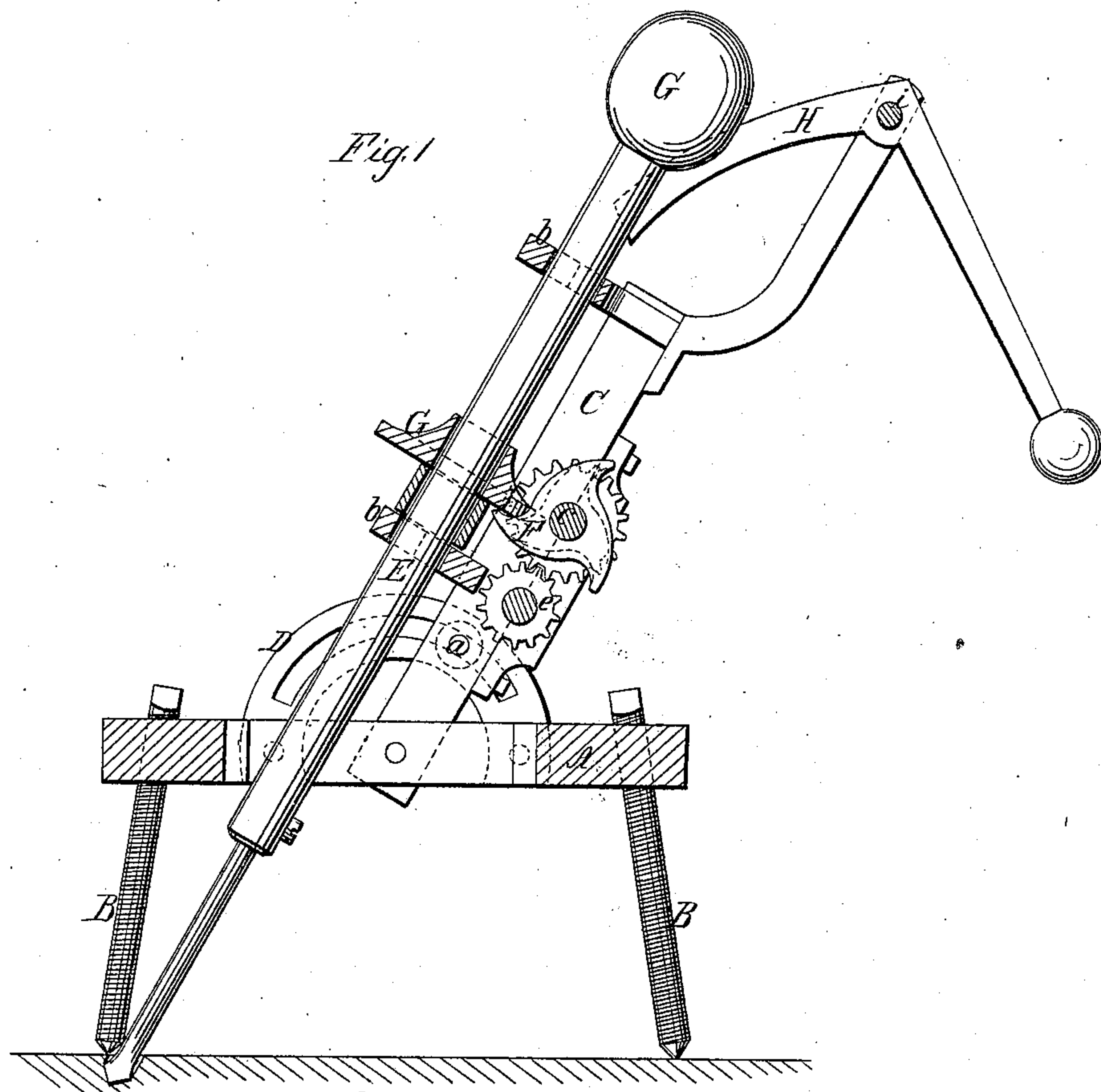


*H. Jung,*  
*Stone Drill,*  
*N<sup>o</sup> 52,292.*      *Patented Jan. 30, 1866.*



*Witnesses;*  
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# UNITED STATES PATENT OFFICE.

HEINRICH JUNG, OF PORTCHESTER, NEW YORK.

## IMPROVED ROCK-DRILL.

Specification forming part of Letters Patent No. 52,292, dated January 30, 1866.

*To all whom it may concern:*

Be it known that I, HEINRICH JUNG, of Portchester, in the county of Westchester and State of New York, have invented a new and Improved Rock-Drilling Machine; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a longitudinal section of this invention, the line *xx*, Fig. 2, indicating the plane of section. Fig. 2 is a plan or top view of the same.

Similar letters of reference indicate like parts.

This invention relates to a rock-drilling machine in which the drill-rod is placed loosely in guides which are secured to a hinged adjustable frame which is so arranged that it can be brought in an upright or inclined position. On the drill-rod is placed loosely a circular flange, and by the action of a suitable tappet on this flange the drill-rod is raised and turned, the tappet being made to bear on the flange at such points that by its pressure said flange is caused to bind on the drill-rod and to carry the same up and at the same time a revolving motion is imparted to it, causing the drill to strike in different directions. The force of the blow is given by a weight secured to the top of the drill-rod if the drill-frame stands in a perpendicular position, or by a weighted lever if the drill-frame stands in an inclined or horizontal position, and the drill-frame is pivoted to a table or platform the legs of which can be lengthened or shortened, so that the same will accommodate themselves to the surface on which the machine is to be put up.

A represents a platform, made of iron or any other suitable material, and supported by four (more or less) legs, B, which may be provided with screw-threads throughout their whole length, as shown in Fig. 1 of the drawings, or which may be arranged in any other suitable manner, so that their length can be adjusted according to the surface on which the machine has to stand.

C is the drill-frame, which is hinged to the edges of the table A by screw-bolts or any

other suitable means, so that it can be set to any desired inclination, a slotted arc, D, being provided, in the slot of which a set-screw, *a*, travels in such a manner that by the action of said set-screw the drill-frame can be retained in the desired position.

The drill-frame C is provided with two guides or boxes, *b*, for the drill-rod E, which slides freely in the same, being allowed to descend until the point of the drill strikes the ground. Said drill-rod is raised by the action of a tappet, F, on a circular flange, G, which is placed loosely on the drill-rod.

The tappet F is mounted on a shaft, *c*, which has its bearings in the uprights of the drill-frame, and to which a revolving motion is imparted from the driving-shaft *d*, the motion of said driving-shaft being transmitted to the tappet-shaft by cog-wheels *e f*, or in any other suitable manner. The tappet F may be provided with three (more or less) teeth or cams, according to the velocity with which said shaft is revolved, and whenever one of the cams of the tappet comes in contact with the flange G it causes the same to bind on the drill-rod and compels the same to rise, and at the same time in sweeping through under said flange in a tangential direction each cam imparts to the drill-rod a revolving motion, causing the drill to strike in different directions, the same as is done in hand-drilling. The force of the blow is regulated by the weight of the drill-rod and by an adjustable weight, G', secured to the upper end of the same if the drill-frame stands in an upright or nearly upright position; but if the drill-frame is brought in an inclined position, and particularly if it approaches a horizontal position, the weight G' is taken off and the force of the blow is regulated by a weighted elbow-lever, H, which has its fulcrum on the top cross-bar, *i*, of the drill-frame, and which is so arranged that it can be shifted so that one of its arms bears on the drill-rod, or it may be pushed on one side so that it clears the drill-rod and the weight G secured on its top.

In boring in a horizontal or nearly horizontal direction it is necessary to place a weak spring above the flange G, which will compel said flange to follow the motion of the drill-rod after being released by the tappet.

What I claim as new, and desire to secure by Letters Patent, is—

1. The arrangement of the loose flange G and tappet F, applied in such manner as to elevate and rotate the drill simultaneously, in the manner and for the purpose set forth.

2. The adjustable hinged drill-frame C, carrying the loose drill-rod E, with a loose flange, G, in combination with the weighted elbow-

lever H, constructed and operating substantially as and for the purposes set forth.

The above specification of my invention signed by me this 23d day of September, 1865.

HEINRICH JUNG.

Witnesses:

M. M. LIVINGSTON,  
W. HAUFF.