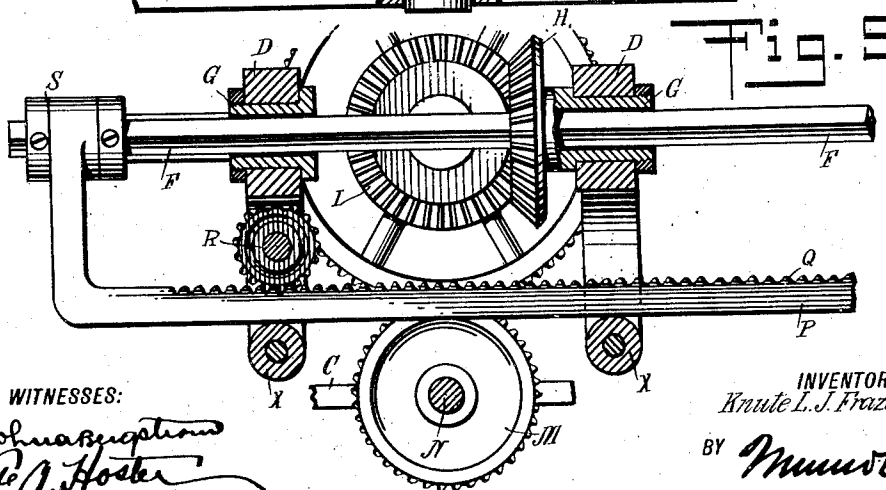
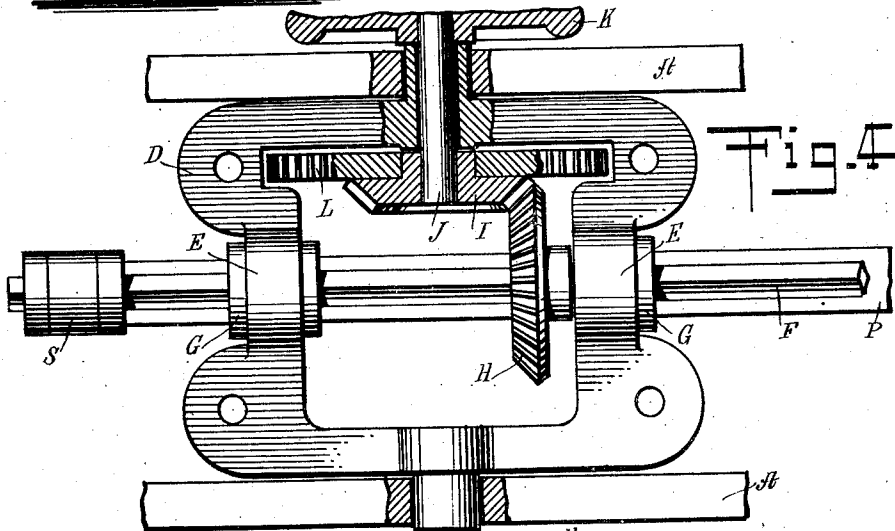
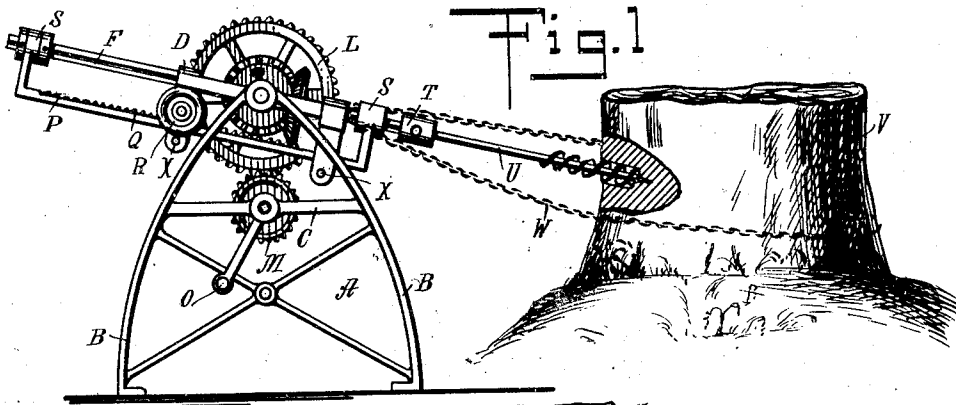


K. L. J. FRAZER.
 DRILLING MACHINE.
 APPLICATION FILED MAR. 16, 1910.

1,005,187.

Patented Oct. 10, 1911.

2 SHEETS—SHEET 1.



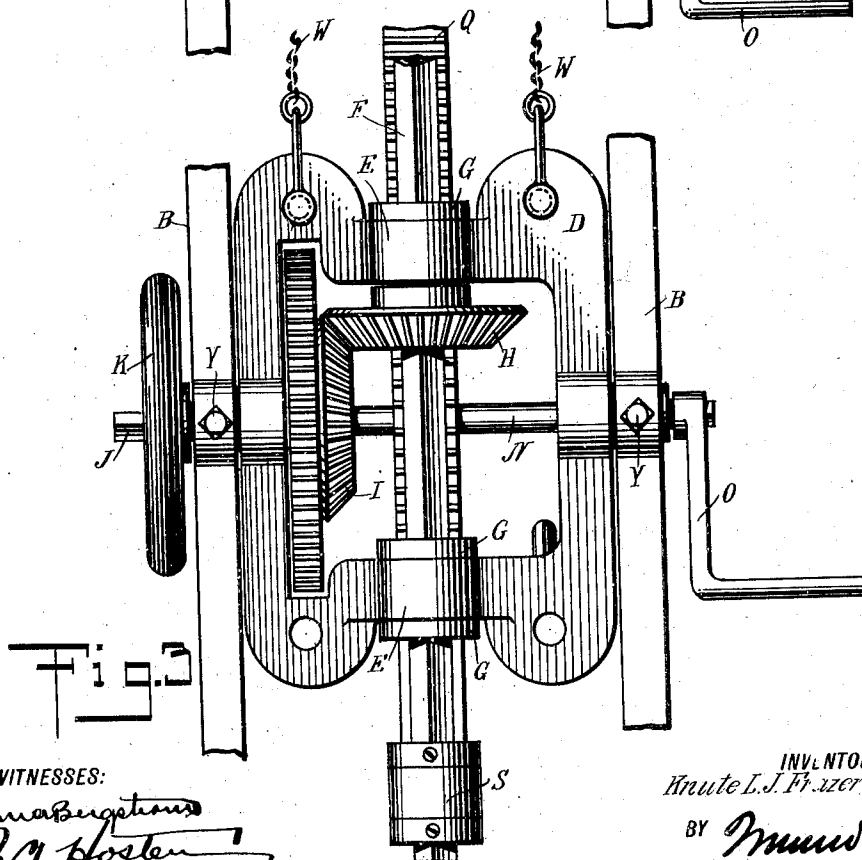
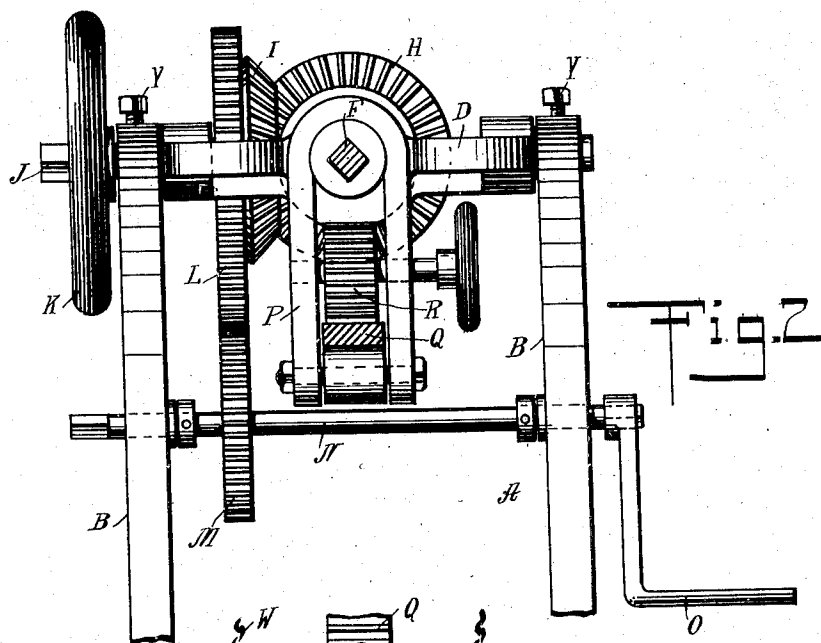
WITNESSES:

John A. Hester
P. A. Hester

INVENTOR
K. L. J. Frazer
 BY *Munroe*
 ATTORNEYS

1,005,187.

2 SHEETS—SHEET 2.



WITNESSES:

Johna Bergstrom
P. A. Foster

INVENTOR
Knut L. J. Frazer

BY *Munster*

ATTORNEYS

UNITED STATES PATENT OFFICE

KNUTE L. J. FRAZER, OF SANDPOINT, IDAHO, ASSIGNOR TO WESTERN DRILL MANUFACTURING COMPANY.

DRILLING-MACHINE.

1,005,187.

Specification of Letters Patent.

Patented Oct. 10, 1911.

Application filed March 16, 1910. Serial No. 549,638.

To all whom it may concern:

Be it known that I, KNUTE L. J. FRAZER, a citizen of the United States, and a resident of Sandpoint, in the county of Bonner and State of Idaho, have invented a new and Improved Drilling-Machine, of which the following is a full, clear, and exact description.

An object of my invention is to provide a drilling machine, more particularly adapted for drilling holes in tree stumps and the like, preparatory to blasting the same.

A further object of my invention is to provide a drilling machine mounted to swing on a frame, so that the drill can be used at various angles and positions, depending wholly upon the work to be drilled.

For the purpose mentioned I provide a frame mounted to swing on a vertical frame, with a squared shaft slidably and turnably mounted on the frame and provided with a coupling member adapted to removably hold a drilling tool or the like, the said shaft being connected with suitable driving mechanism and means for operating the drill to move it toward or from the work.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views, and in which—

Figure 1 is a side elevation of my invention, showing the same in operation to drill a hole in a tree-stump, parts being broken away to disclose the underlying structure; Fig. 2 is a partial end view of my invention, disclosing various operating means and connections; Fig. 3 is a fragmentary plan view showing the frame and parts adjacent and connected thereto; Fig. 4 is a fragmentary plan view showing in section the manner in which the frame is mounted on the vertical frame, and Fig. 5 is a partial sectional elevation, showing the means for feeding the drill toward or from the work.

In a large number of drilling machines now generally used, a feed screw is employed, which not only limits the length of the feed but it is an expensive article of manufacture, and great trouble is often experienced when using the same. In my device I employ feeding means which enable the drill to be fed into the work a great distance, depending entirely upon the length of the frame mounted on the vertical frame.

Referring more particularly to the various figures, I provide a vertical frame A, having suitable standards B and a cross bar C, and mounted to swing on the frame A at the intersection of the standards B is a frame D. The frame D is provided with suitable bearings E, adapted to support a squared shaft F, having collars G thereon engaging the bearings E, so that the shaft F can be easily turned in the bearings E. A bevel gear wheel H is slidably mounted on the shaft F and meshes with a second bevel gear wheel I, mounted on a shaft J, journaled on the frame A, with a suitable fly-wheel K on the end of the shaft J, as will easily be seen by referring to Fig. 2. A gear wheel L is also keyed to the shaft J and meshes with a second gear wheel M mounted on a shaft N on the cross bar C, and secured to the shaft N is a handle O, for operating the various parts of the operating mechanism, as will be hereinafter more fully explained. The frame D is provided with a depending portion P, having a rack Q in engagement with a pinion R mounted on the frame D, and the depending portion P is mounted on the shaft F by suitable collars S.

At one end of the shaft F a coupling member T is provided and adapted to removably hold a drill U for drilling a hole in a stump V, and mounted on the frame D and adapted to removably engage the stump V for holding the drill in position, is a chain W. The depending frame portion P is adapted to slide on rollers X mounted on the frame D, and suitable adjusting screws Y are provided for adjusting the shaft J.

When the device is to be employed to drill a hole, as shown in Fig. 1, the chain W is secured around the work V with the ends of the chain engaging the frame D to hold the drill in position and prevent the same from tilting backward. To drill the hole in the work or stump V, the handle O is turned, thereby operating the gears and bevel gear wheels to turn the shaft F and the drill U. To feed the drill into the work, the pinion R is turned by means of a handle secured thereto, and the pinion engaging the rack Q gradually feeds the drill into the work, as will be readily seen by referring to Fig. 1.

By the above description it will readily be seen that the shaft F, having thereon the tool or drill U, can be swung to any conven-

ient angle, and it will be understood that various sizes and shaped drills can be employed on this device. It will be still further understood that I do not limit myself to the construction shown, the scope of my invention being clearly set forth and defined in the appended claim.

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

In a drill, the combination of a portable frame normally stationary, a second frame mounted to swing upon said portable frame, a plurality of bearings carried by said second frame, a shaft supported by said bearings and adapted to turn and also to move in the general direction of its length, a gear wheel slidably mounted upon said shaft and adapted to turn, a second shaft mounted upon said portable frame and extending in a direction crossing the length of said first mentioned shaft, a second gear wheel mount-

ed upon said second mentioned shaft and meshing with said first mentioned gear wheel, means for rotating said second mentioned gear wheel so as to rotate said first mentioned gear wheel and its shaft, a rack carried by said second mentioned frame, said rack being journaled at its ends to said shaft, a gear member disposed between said rack and said shaft and engaging said rack for the purpose of feeding said rack in the general direction of the length thereof in order to advance said shaft as the latter turns, and means for mounting a cutting tool upon said shaft.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

KNUTE L. J. FRAZER.

Witnesses:

WM. T. MANN,
A. K. BOWDEN.