

W. E. THRASHER.

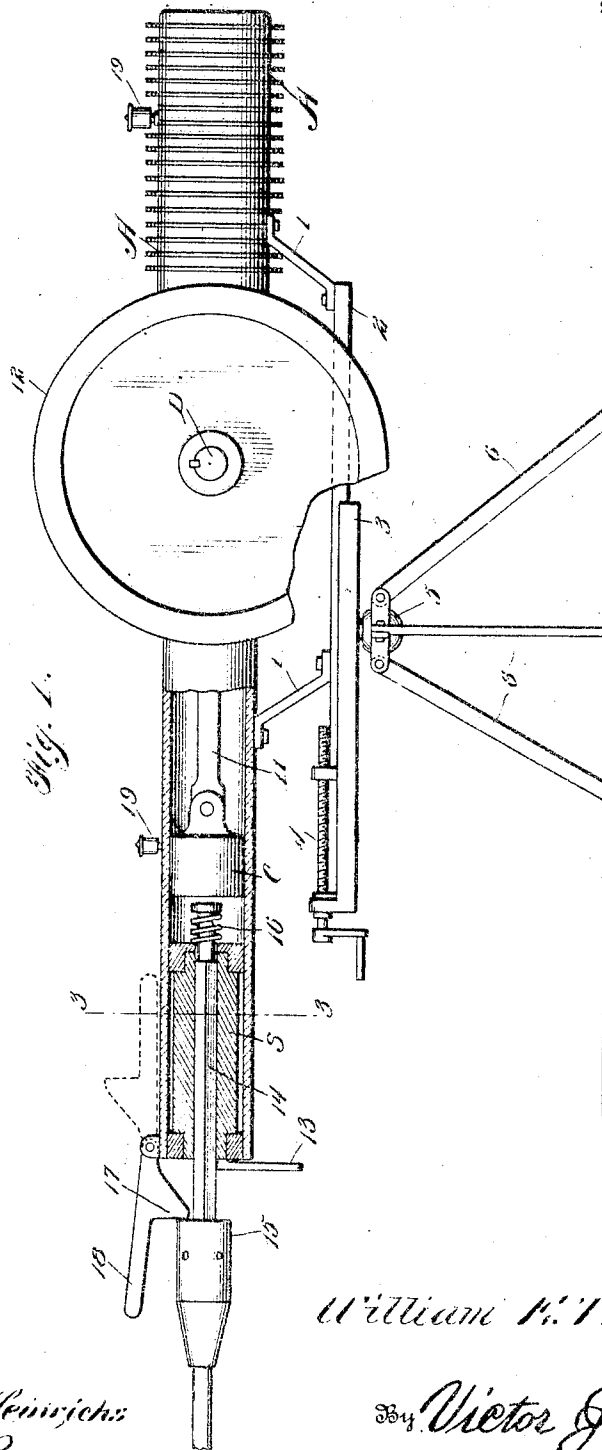
DRILL.

APPLICATION FILED DEC. 2, 1911.

1,037,082.

Patented Aug. 27, 1912.

2 SHEETS—SHEET 1.



Witnesses

Louis P. Heinrichs
Wm. Bagger

Inventor
William E. Thrasher

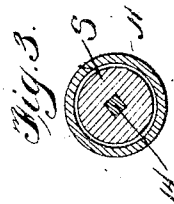
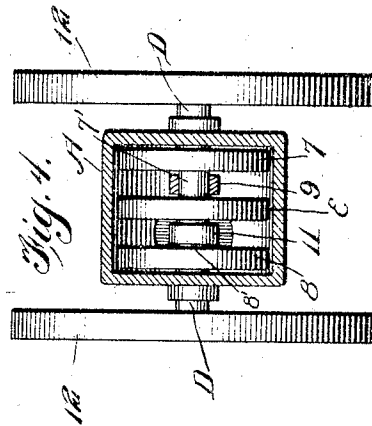
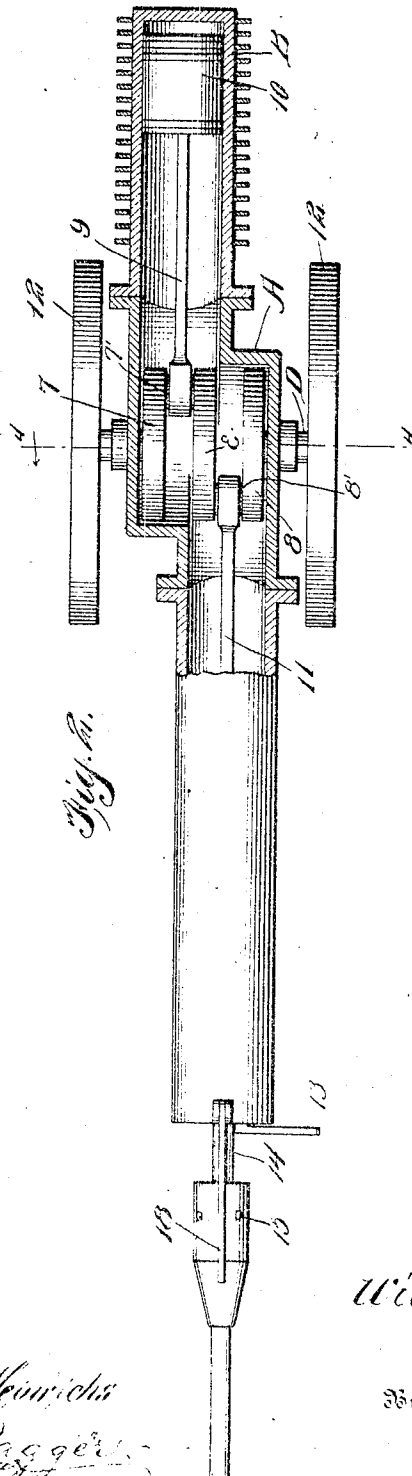
By Victor J. Ennis

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UNITED STATES PATENT OFFICE.

WILLIAM E. THRASHER, OF BISBEE, ARIZONA.

DRILL.

1,037,082.

Specification of Letters Patent. Patented Aug. 27, 1912.

Application filed December 2, 1911. Serial No. 663,557.

To all whom it may concern:

Be it known that I, WILLIAM E. THRASHER, a citizen of the United States, residing at Bisbee, in the county of Cochise and State of Arizona, have invented new and useful Improvements in Drills, of which the following is a specification.

This invention relates to drills, riveting machines and the like, and it has for its object to produce a machine of this class which shall be operated directly by a gasoline or other internal combustion engine to take the place of pneumatic drills and riveters such as are now ordinarily employed.

A further object of the invention is to produce a drilling and riveting machine which may be manufactured and operated at a comparatively moderate expense and which may be efficiently utilized above ground and under ground in places where the supply and circulation of air is sufficient to warrant its use.

A still further object of the invention is to produce a drilling and riveting machine which shall be complete in itself and which may be operated without the installation of air compressors and allied machinery.

With these and other ends in view which will readily appear as the nature of the invention is better understood, the same consists in the improved construction and novel arrangement and combination of parts which will be hereinafter fully described and particularly pointed out in the claim.

In the accompanying drawings has been illustrated a simple and preferred form of the invention, it being, however, understood that no limitation is necessarily made to the precise structural features therein exhibited, but that changes, alterations and modifications within the scope of the claim may be resorted to when desired.

In the drawings—Figure 1 is a side elevation, partly in section, of a machine constructed in accordance with the invention. Fig. 2 is a top plan view of the same with parts broken away to expose the interior construction. Fig. 3 is a transverse sectional detail view taken on the line 3—3 in Fig. 1. Fig. 4 is a transverse sectional view taken on the line 4—4 in Fig. 2.

Corresponding parts in the several figures are denoted by like characters of reference.

A suitably constructed frame A is provided with downwardly extending braces 1 supporting a guide 2 which slidably en-

gages a base member 3 carrying a feed screw 4 whereby the frame may be adjusted longitudinally of the base member. The latter is mounted by a ball and socket joint or other suitable universal joint 5 upon a foldable support which may be provided with three or four legs 6 to enable the device to be suitably adjusted and leveled.

The frame A carries at one end thereof a suitably constructed motor, conventionally indicated at B, said motor being an air-cooled gasoline engine or other internal combustion engine of any suitable and approved construction. The opposite end of the frame carries a slide C constituting a hammer. The frame A is provided intermediate the engine B and the slide C with a transverse shaft D having crank disks 7 and 8 with oppositely disposed wrist pins or cranks 7' and 8', the former of which is connected by a pitman 9 with the engine piston 10, while the wrist pin or crank 8' is connected by a pitman 11 with the slide C that constitutes the hammer. The shaft D may also be provided with fly wheels 12 of suitable size and weight, said fly wheels being, however, made as compactly as possible to occupy as little space as possible. By making the crank disks 7 and 8 sufficiently heavy and using a center disk E, the fly wheels may probably be entirely dispensed with.

The end of the frame adjacent to the slide constituting the hammer C carries a cylindrical sleeve S which is suitably supported for rotation and which is equipped with a handle 13 whereby it may be oscillated about its axis. The sleeve S carries a longitudinally movable stem 14 provided at its outer end with a tool holding chuck 15. The stem 14 is forced inwardly in the direction of the hammer C by the action of a suitably arranged spring 16. A cam member 17 is pivoted upon the frame or casing A, said cam member being provided with a handle 18, whereby it may be manipulated to place said cam member in engagement with the chuck 15 for the purpose of holding the stem 14 projected against the tension of the spring 15, thereby retaining the stem out of range or engagement with the hammer when it shall be desired to temporarily suspend the operation of the drill or other tool carried by the chuck associated with the stem. The portion of the stem engaging the sleeve S is non-circular; thus, when the sleeve is rocked

or oscillated by the handle 13, the tool carried by the stem will be correspondingly turned or rocked in the bore formed thereby. It is obvious that when the cam member 17 is moved out of the path of the handle 13, as shown in dotted lines in Fig. 1, the sleeve with the tool carrying stem may be completely rotated.

Lubricating devices 19 are to be provided wherever needed for the purpose of lubricating the parts of the device which are subject to friction. The carbureter and the sparking device of the engine are to be arranged in such a manner as to permit the engine to be tilted to various positions during the operation, but the detailed construction and arrangement of these parts is not herein shown or claimed.

It will be seen from the foregoing description that I have provided an organized machine including a motor and a tool, such as a drill or a riveting tool associated therewith, the whole being supported in such a manner as to enable the tool to be utilized

under conditions and substantially in the same manner as drills and riveters operated pneumatically, as is now customary.

Having thus described the invention, what is claimed as new, is:—

In a device of the character described, a frame, an internal combustion motor at one end of the frame, a movably supported hammer adjacent to the other end of the frame, a sleeve supported for rotation about its axis at the end of the frame adjacent to the hammer, a spring actuated tool carrying stem associated with the sleeve and lying in the path of the hammer, a cam member associated with the frame to engage the stem to retain the latter in projected position, and means for transmitting motion from the motor to the hammer.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM E. THRASHER.

Witnesses:

P. V. COLDWILL,
JOSEPH WATERS.