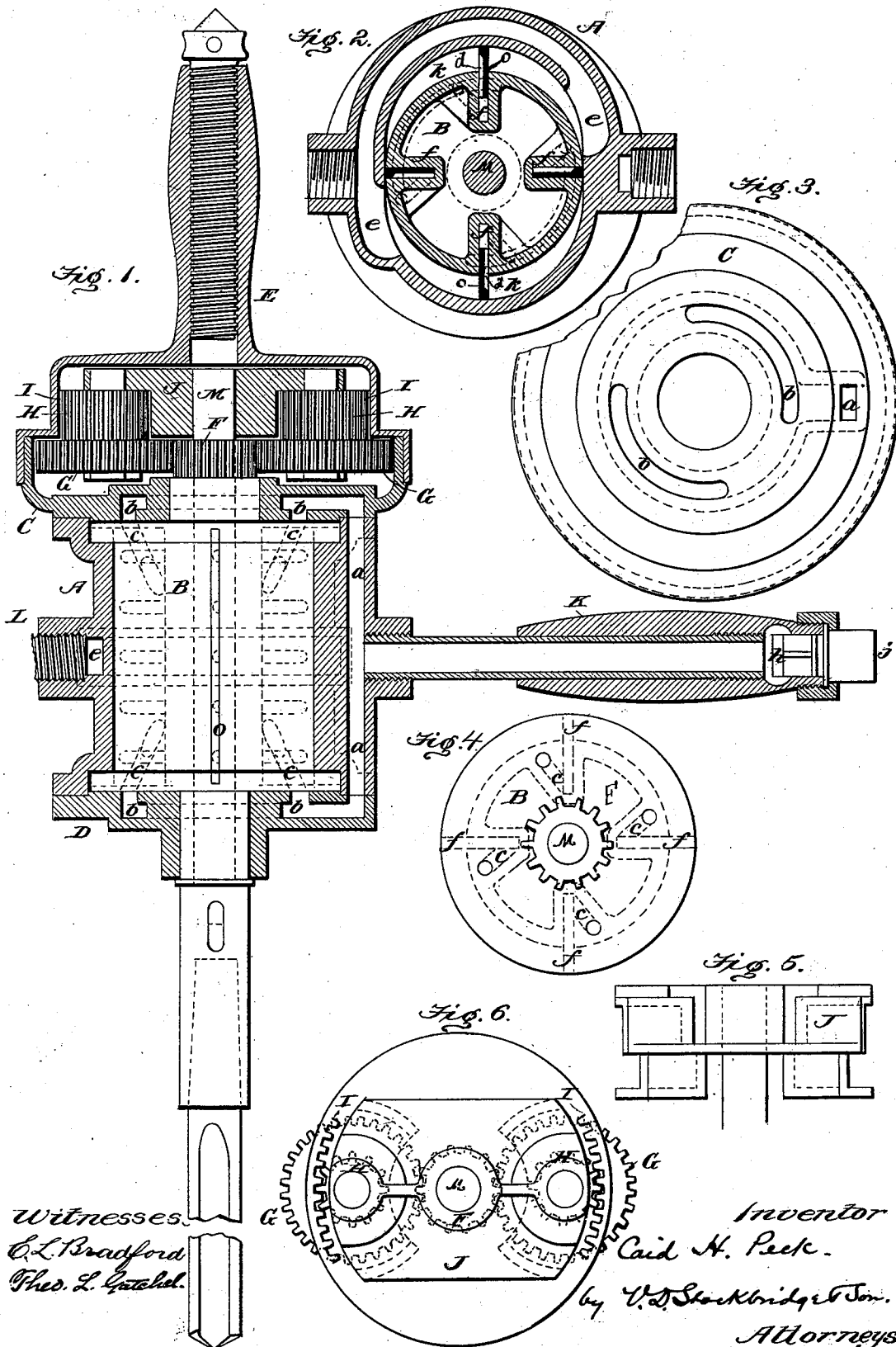


(No Model.)

C. H. PECK.
PORTABLE DRILLING MACHINE.

No. 507,752.

Patented Oct. 31, 1893.



Witnesses:
C. L. Bradford
Fred. L. Hatchel.

Inventor
Caid H. Peck.
by V. D. Stockbridge & Son.
Attorneys

UNITED STATES PATENT OFFICE.

CAID H. PECK, OF ELMIRA, NEW YORK.

PORTABLE DRILLING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 507,752, dated October 31, 1893.

Application filed October 1, 1892. Serial No. 447,486. (No model.)

To all whom it may concern:

Be it known that I, CAID H. PECK, a citizen of the United States, residing at Elmira, Chemung county, New York, have invented certain new and useful Improvements in Portable Drilling or Reaming Machines; and I do hereby declare that the following is a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in portable drilling or reaming machines.

The object of the invention is to provide a power-driven substitute for the ordinary ratchet-drill and thereby lighten the labor and accelerate the work. My drill is attached to the work in the same way as the ratchet drill and will accomplish much more in a given time than such drill.

My invention consists essentially in the combination of a main casing, a rotary piston within said casing, a drill spindle arranged axially within the piston and reducing gearing between the rotary piston and the spindle, as hereinafter described.

It also consists in other combinations hereinafter described and pointed out in the claims.

In the drawings, Figure 1, represents a vertical central section through the machine showing one handle and the drill spindle and drill in elevation. Fig. 2, is a horizontal section through the same. Fig. 3, is an elevation of the top cylinder cover. Fig. 4, is a plan of the piston showing air or steam passages. Fig. 5, is a side elevation of a gear carrying frame, and Fig. 6, is a plan of the gears.

A is the cylinder or main casing of the machine.

B is a revolving piston having flanged ends, as shown.

C and D are top and bottom cylinder covers respectively.

E is the gear case handle and nut for the feed screw. This case is connected with the main cylinder in any suitable way, or as shown in the drawings.

F is a driving pinion made fast to one end of the piston B.

G G are gears to which are connected the pinions H H, which are intergeared with internal gear I within the gear case E.

J is a gear frame made fast to the upper end of spindle M. The spindle M passes down through the center of piston B, forming an arbor around which said piston revolves and is provided with a chuck or socket for the drill or reamer.

K and L are arms or handles by which the machine is moved about. These handles are hollow and serve as conduits for the admission and exhaust of air or steam for operating the rotary piston.

The main cylinder and the piston with their ports and passages constitute a rotary engine, which, with the reducing gearing, spindle and bit, constitute an improved portable drilling and reaming machine. The rotary piston is provided with movable vanes *o o o o*, working in suitable recesses in said cylinder, and with passages *c c* and *f f* leading from ports *a* and *b* in the cylinder covers to spaces *k k* in the cylinder behind said vanes. The vanes *o o* are provided with passages or channels *d* through which the air or steam passes from *f* to *k*. The handle K carries an induction valve *h* adapted to be opened or closed through a screw connection with the tubular port or support for said handle.

In operation, a flexible pipe or hose is connected with the handle K at *j*, through which air or steam under suitable pressure is admitted to the cylinder whence it passes by ports *a* and *b* in the top and bottom covers to passages *c c c c*, to the inner edges of vanes *o o o o*, forcing them against the inner walls of the cylinder, thence through channels *d* to spaces *k k*, causing the piston B and pinion F to revolve, and then exhausts through *e* and handle L. The pinions H H carried by intermediate gears G G, mounted in cage J, mesh with the internal gear I, and are revolved around pinion F, in the nature of a planet movement, and as the cage J is made fast to the spindle M, the drill is driven through the medium of the piston and the gearing at a speed less than that of the piston, whereby the desired motion and power are attained. Compressed air is preferred to steam, because it is cooler.

Having now described my invention, what I claim is—

- 5 1. The combination of a main casing or cylinder, a rotary piston within said casing, means for conducting a fluid under pressure to said piston, a drill spindle extending through and forming the arbor around which the piston revolves and reducing gearing between the piston and spindle, substantially as described.
- 10 2. The combination of a rotary engine, a pair of hollow arms serving as means for handling and moving the engine and as an induction pipe to, and as an exhaust from, the engine, a spindle and connecting gearing

between the engine piston and said spindle, substantially as described. 15

3. The combination of a rotary engine, a drill spindle extending through and forming the arbor around which the piston of said engine revolves and reducing gearing between 20 the engine piston and the spindle, substantially as described.

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

CAID H. PECK.

Witnesses:

JAMES M. GULICK,
CLARENCE W. PECK.