

No. 773,112.

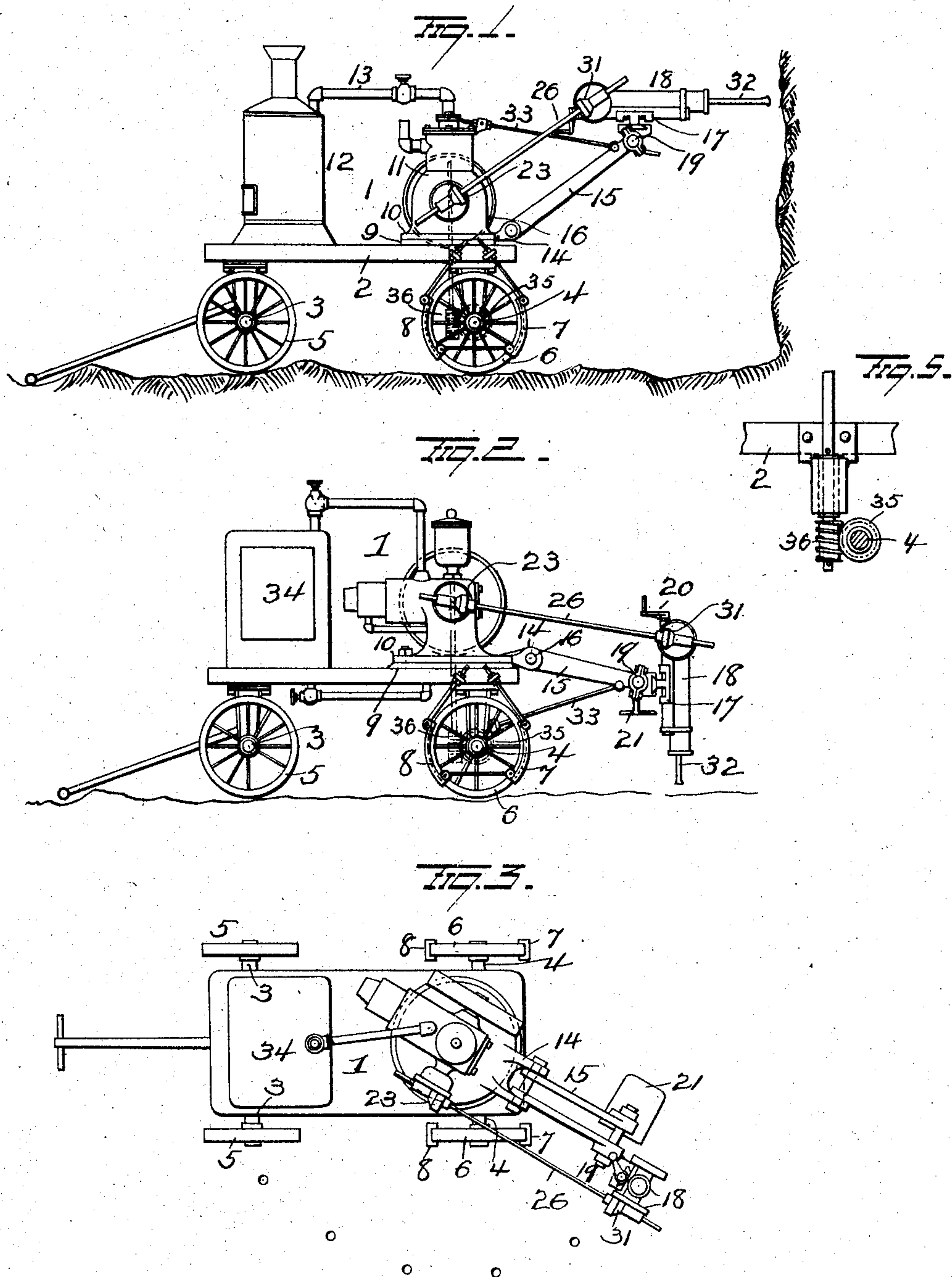
PATENTED OCT. 25, 1904.

T. E. ADAMS.
ROCK DRILL.

APPLICATION FILED JUNE 29, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



WITNESSES
E. Nottingham
G. F. Downing

INVENTOR
T. E. Adams
By H. A. Seymour
Attorney

No. 773,112.

PATENTED OCT. 25, 1904.

T. E. ADAMS.
ROCK DRILL.

APPLICATION FILED JUNE 29, 1903.

NO MODEL.

28 SHEETS—SHEET 2.

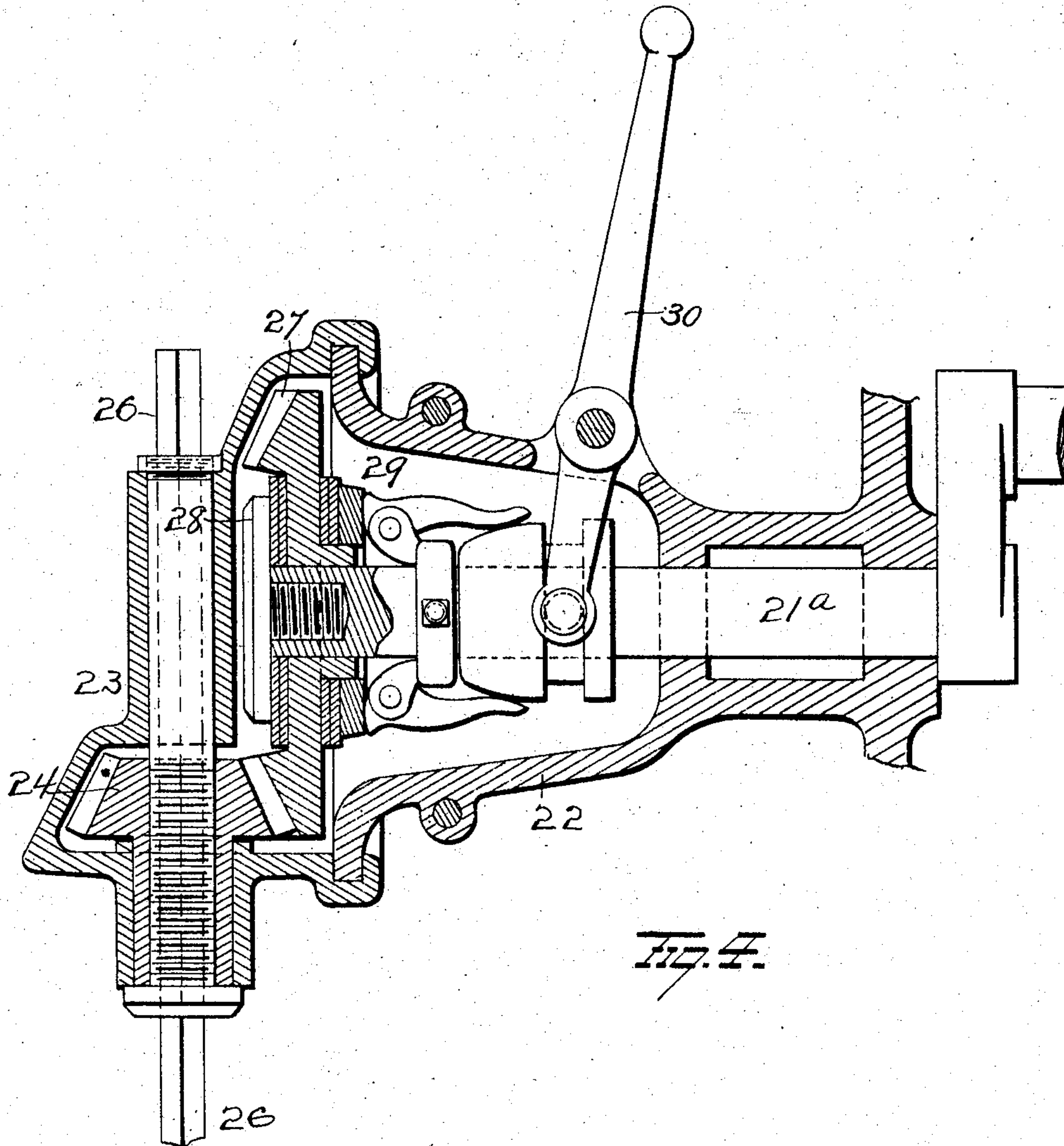


Fig. 4.

WITNESSES

E. J. Nottingham
G. F. Downing

INVENTOR

T. E. Adams
By H. A. Seymour
Attorney

UNITED STATES PATENT OFFICE.

THOMAS EDGAR ADAMS, OF CLEVELAND, OHIO, ASSIGNOR TO THE
ADAMS DRILL COMPANY, OF CLEVELAND, OHIO, A CORPORA-
TION OF OHIO.

ROCK-DRILL.

SPECIFICATION forming part of Letters Patent No. 773,112, dated October 25, 1904.

Application filed June 29, 1903. Serial No. 163,600. (No model.)

To all whom it may concern:

Be it known that I, THOMAS EDGAR ADAMS, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and
5 useful Improvements in Rock-Drills; and I do hereby declare the following to be 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.

10 My invention relates to improvements in rock-drills, the object of the invention being to so construct such apparatus that the drilling mechanism and also the motor or engine and the generator of motive power shall be
15 portable.

A further object is to construct and arrange a portable rock-drill and its portable operating mechanism that the position of the drill can be readily changed or adjusted with-
20 out moving the carriage on which the various mechanisms are mounted and without the necessity of stopping the engine.

A further object is to produce a portable drilling apparatus which shall be simple in
25 construction, easy to operate and control, and which shall be effectual in all respects in the performance of its functions.

With these objects in view the invention consists in certain novel features of construc-
30 tion and combination and arrangements of parts, as hereinafter set forth, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of a portable drilling appa-
35 ratus, showing the application of my invention with a steam-engine. Fig. 2 is a similar view showing the application of an oil or gas-olene engine. Fig. 3 is a plan view of the structure shown in Fig. 2. Fig. 4 is a detail
40 sectional view showing the manner of connecting the driving-gearing with the engine. Fig. 5 is a view showing the connection of the motor with the axle.

1 represents a wagon comprising a platform
45 2, provided with front and rear axles 3 4, mounted on front and rear wheels 5 6, the front axle being pivotally supported at its center to facilitate the steering of the wagon.

Wheel-brakes 7 8 of any suitable construction will be provided for locking or chocking
50 the wagon when the drill carried thereby is in operation.

A base-plate 9 for a turn-table 10 is secured upon one end of the platform 2, and upon this turn-table a steam-engine 11 of any preferred pattern is located. A steam-boiler
55 furnace 12 is located upon the other end of the platform 2, and the steam-supply pipe 13 from the boiler of said furnace is connected, through suitable packing, with the engine 11
60 at a point in line with the axis of rotation of the turn-table and the engine mounted thereon. The turn-table 10 is provided with an outward projection 14, to which an arm 15 is pivotally connected by means of a horizontal
65 pivot-pin 16. The guide or frame 17 of a drill 18 is adjustably secured to the free end of the arm 15 by means of a coupling device 19. The drill-body 18 is mounted to move longitudinally on the guide frame or shell
70 and is fed by means of a suitable device 20. In order to permit the operator to readily reach the feed device for manipulating it, a step 21 is provided and secured to the arm 15 in proximity to the connection of the latter
75 with the drill.

Adjacent to the journal-bearing of the engine crank-shaft 21^a the engine-casing is provided with a clutch-case 22, into which the crank-shaft projects. A gear-casing 23 is
80 revolvably connected with the clutch-case, and in this gear-casing a pinion 24 is mounted. The hub 24^a of the pinion 24 is made elongated and has a bearing in the gear-casing. Said hub is threaded internally for the recep-
85 tion of a sleeve 24^b, the latter having an elongated bearing in the gear-casing. The sleeve 24^b is made with an angular bore for the passage of a rigid driving-rod 26, having a cross-section corresponding with that of the bore
90 of said sleeve. The pinion 24 receives motion from a bevel-gear 27, located in the gear-casing and mounted on the engine-shaft. The gear 27, which is mounted loosely on the shaft, is held in place by a disk 28, secured to the
95 latter. The gear 27 is secured to the shaft or

released therefrom by means of a friction-clutch 29, operated by a clutch-lever 30, pivoted to the clutch-case. The rigid angular driving-rod 26 passes through a pinion mounted in a gear-case 31, revolubly connected with the drill-body 18, and said pinion is connected, through suitable gearing, with the drill-rod 32 for reciprocating it.

When the drill shall have been adjusted for the particular work required, the wagon will be locked or chucked by means of the brakes, as before explained, the turn-table will be locked by means of a bolt or other suitable device, and rigidity of the drill will be further insured by means of an adjustable brace 33, clamped at one end to the arm 15 and at the other end to the engine.

The drill can be readily adjusted to the position shown in Fig. 1 for drilling a vertical wall, or it can be disposed in the position shown in Fig. 2 for sinking purposes, in which latter case the rear end of the brace-rod will preferably be secured to the lower portion of the wagon structure.

In Figs. 2 and 3 I have shown an oil or gasoline engine as the motive power and provided with a cooling-tank 34 therefor on the wagon; but the construction and arrangement of the drill, driving, and adjusting devices are the same as above described.

By means of my improvements the apparatus, including the drill, driving-engine, and generator of motive power therefor, can be readily conveyed to the quarry or other place, and a number of holes can be bored by adjusting the drill to different positions without moving the wagon. When the drill is disposed, as shown in Fig. 2, for sinking, a series of holes marking nearly a circle can be bored without moving the wagon or even without stopping the engine, because by means of the clutch the operation of the drill can be stopped and the engine permitted to run. The engine can also be employed for propelling the wagon. For this purpose a worm-wheel 35 is connected with the rear wheels of the wagon and the driving-rod removed from the drill and connected with a worm 36, meshing with said worm-wheel, or other form of gearing might be employed, the driving-rod being in any case employed for propelling said gearing. When the wagon is thus driven from place to place, it is simply necessary for an attendant to properly guide the direction of travel of the same.

Various slight changes might be made in the details of construction of my invention without departing from the spirit thereof or limiting its scope, and hence I do not wish to limit myself to the precise details herein set forth.

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

1. The combination with a wagon, a drill

and an arm pivotally connected to the wagon and to the drill, of an engine adjustably mounted on said wagon and adjustable means for transmitting motion from the engine to said drill.

2. The combination with a wagon and a drill, of an arm pivotally connected at its respective ends to the wagon and drill, an engine mounted on a revoluble support on the wagon, a driving-rod adjustably connected at one end with the engine and at the other end adjustably connected with the drill-operating mechanism.

3. The combination with a turn-table, a wagon on which said turn-table is mounted and an engine mounted on the turn-table, of an arm pivoted to said turn-table, a drill pivotally attached to said arm and adjustable driving means between the engine and drill.

4. The combination with a wagon, of a turn-table thereon, an engine mounted on said turn-table, an arm pivoted to the turn-table, a drill adjustably secured to the arm and a rigid driving-rod connecting the engine with the drill and means for permitting the automatic adjustment of said rod relatively to the engine and to the drill.

5. The combination with a turn-table, of an engine mounted on the turn-table, an arm pivoted to the turn-table, a drill pivoted to said arm, adjustable driving means connecting the engine and drill and an adjustable brace for the pivoted arm.

6. The combination with a wagon, and a turn-table thereon, of an engine mounted on the turn-table, an arm pivoted to the turn-table, a drill pivotally attached to said arm, automatically-adjustable driving means between the engine and drill and adjustable bracing means between the drill and wagon.

7. The combination with a turn-table and an engine mounted thereon, of an arm pivoted to the turn-table, a drill pivotally connected with said arm, driving-gearing for the drill, gearing connected with the engine-shaft and a rigid driving-rod connecting said gearings and automatically adjustable relatively to the engine and drill.

8. The combination with a wagon, a turn-table thereon and an engine on the turn-table, of an arm pivotally connected with the turn-table, a drill pivotally attached to said arm, automatically-adjustable driving means between the engine and drill, means for feeding the drill and a step on said arm to permit the operator to reach said feeding means.

9. The combination with a platform and an engine adjustably mounted thereon, an arm pivotally connected with the engine, and a drill pivotally connected with said arm, of automatically-adjustable driving means between the engine and drill, and a clutch for connecting said driving means to and disconnecting it from the engine-shaft.

10. A portable drilling apparatus comprising

ing a wagon, an engine mounted thereon and
a drill adjustably connected therewith, of a
rigid driving-shaft connecting the engine and
operating mechanism of the drill, gearing
5 connected with wheels of the wagon and
means for connecting said driving-rod with
said gearing for the purpose of propelling
the wagon.

In testimony whereof I have signed this
specification in the presence of two subscrib- 10
ing witnesses.

THOMAS EDGAR ADAMS.

Witnesses:

H. S. JENKINS,
JOHN R. ORPUTT.