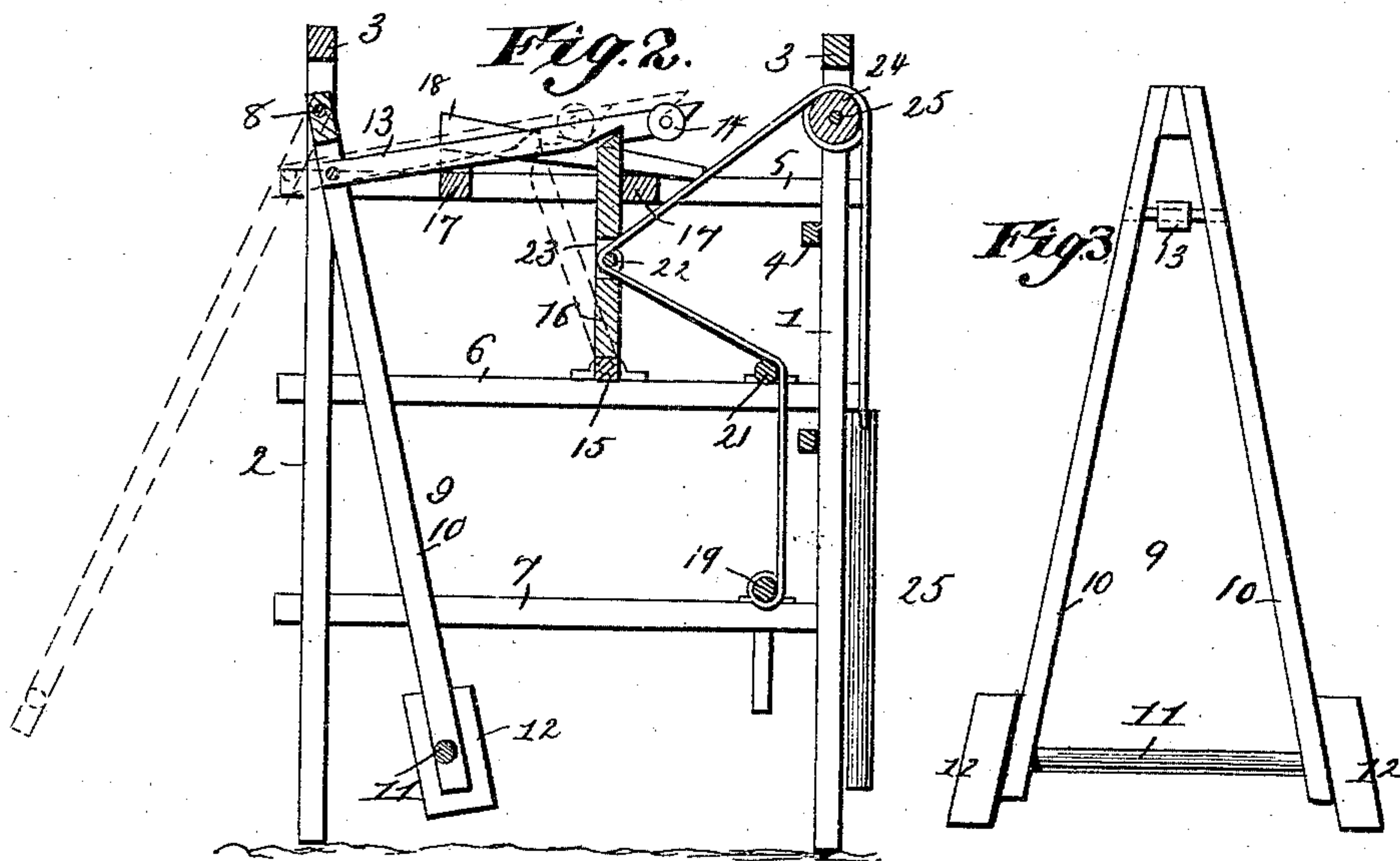
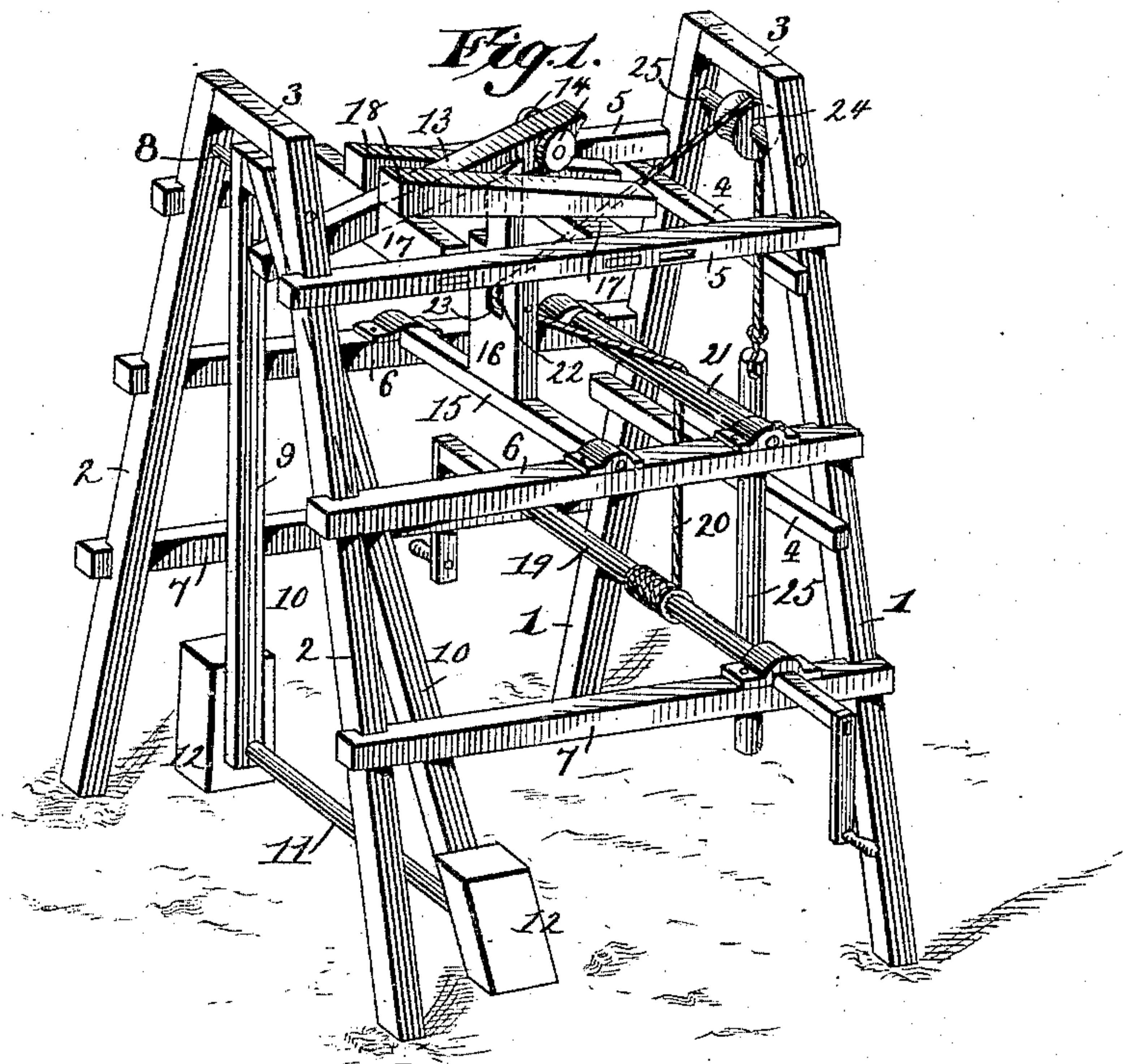


(No Model.)

J. PATTERSON.
MECHANICAL MOVEMENT.

No. 442,998.

Patented Dec. 16, 1890.



Witnesses
H. G. Dieterich.

Inventor
James Patterson.

Wm. Bagger.

By *his* Attorneys,

Chas. Snow & Co.

UNITED STATES PATENT OFFICE.

JAMES PATTERSON, OF SANS BOIS, INDIAN TERRITORY.

MECHANICAL MOVEMENT.

SPECIFICATION forming part of Letters Patent No. 442,998, dated December 16, 1890.

Application filed August 7, 1890. Serial No. 361,279. (No model.)

To all whom it may concern:

Be it known that I, JAMES PATTERSON, a citizen of the United States, residing at Sans Bois, in Choctaw Nation, and of Indian Territory, have invented a new and useful Mechanical Movement, of which the following is a specification.

This invention relates to mechanical movements for operating well-drilling machines and other like machines; and it has for its object to provide a device of this class which shall be simple in construction and inexpensive, and which may be conveniently operated by hand-power.

The invention consists in the improved construction, arrangement, and combination of parts, which will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings hereto annexed, Figure 1 is a perspective view of a well-drilling machine to which my invention has been applied. Fig. 2 is a longitudinal vertical sectional view of the same, shown in dotted lines, the swinging operating-frame drawn back to elevate the drill. Fig. 3 is a detail view of the swinging frame or pendulum.

Like numerals of reference indicate like parts in all the figures of the drawings.

The frame of the machine is composed of the front and rear uprights, (designated, respectively, by 1 1 and 2 2.) The said uprights are tilted or inclined toward each other, and are connected at their upper ends by the cap-pieces 3 3. The front uprights are connected by additional transverse bars 4, and longitudinal braces (designated, respectively, by 5, 6, and 7) connect the front and rear uprights, as will be seen in the drawings.

Upon a shaft 8, which connects the rear uprights 2 near their upper ends, is mounted a swinging frame or pendulum 9, which is composed of side pieces 10 10, connected near their lower ends by means of a cross-piece or handle 11. The lower end of the said swinging-frame is preferably provided with weights 12 for the purpose of giving the necessary impetus to the operation of the machine.

Between the side pieces 10 of the frame 9, near the upper end of the latter, is pivoted a dog or pawl 13, to the sides of which rollers 14 are journaled.

15 designates a rock-shaft, which is mounted in suitable bearings upon the longitudinal braces 6 of the frame. Said rock-shaft is provided with an upright 16, the upper end of which is normally engaged by the pawl 13. Upon cross-pieces 17, connecting the upper longitudinal braces 5 of the frame, are mounted a pair of inclined tracks 18, between which the pawl 13 extends, and upon which the rollers 14 of said pawl will ride. Said tracks, as will be noticed, are inclined in an upward and rearward direction, and their function will be presently described.

19 designates a drum or shaft, which is journaled in suitable bearings upon the longitudinal braces 7 of the frame. Upon this shaft is wound the drill-rope 20, which passes over a guide-roller 21, which is journaled in bearings upon the braces 6 near the front end of the frame. From thence the drill-rope passes over a guide-sheave 22, which is journaled in a slot 23 in the upright 16, attached to the rock-shaft 15. From said sheave the drill-rope passes over a pulley 24, journaled upon a shaft 25 at the upper end of the front uprights 1 of the frame, and is connected with the drilling-tool 25, which is of ordinary construction.

The operation of my invention is as follows: Normally the pawl 13 is in engagement with the upper end of the upright 16, which is drawn in a forward direction by the weight of the drilling-tool. The lower end of the swinging frame or pendulum 9 is thus likewise drawn in a forward direction. The operator, by manipulating the said swinging frame, will draw the pawl 13 in a rearward direction, carrying with it the upright 16, attached to the rock-shaft 15, and thus raising or elevating the drilling-tool. This movement continues while the rollers 14 travel in an upward direction upon the inclined tracks 18, thus eventually tripping or disengaging the pawl 13 from the upright 16. The drill is thus permitted to drop, and the upright 16 is restored to its normal position. When the frame 9 swings forwardly, the pawl will engage the upper end of the upright 16, and the machine is then in position for a repetition of the operation. Suitable well-known means may be employed for paying out the drill-rope from the shaft 19, and the ends of the

latter are squared for the reception of cranks, by means of which the rope may be rewound and the drill hoisted out of the well.

My improved mechanical movement may, 5 by making slight changes in the general structure and in the means for transmitting motion from the swinging frame 9, be used for the purpose of operating other machinery than well-drills, and I reserve the right to 10 any such changes in the general structure as may be resorted to without departing from the spirit of my invention.

Having thus described my invention, what I claim is—

15 1. The combination of the supporting-frame, the swinging frame 9, mounted therein, the dog or pawl 13, having one end pivotally attached to said swinging frame, a rock-shaft 15, journaled in the supporting- 20 frame and having an upright 16 arranged to engage the free end of said pawl, and means for tripping the latter, substantially as set forth.

2. The combination of the supporting- 25 frame, the swinging frame mounted therein, the dog or pawl mounted pivotally in said swinging frame, the rock-shaft having an upright engaging said dog or pawl, the rollers journaled to the sides of the latter, and the 30 inclined tracks, substantially as set forth.

3. The combination of the supporting-frame, the swinging frame mounted therein, the pawl mounted pivotally in said swinging frame, the rock-shaft having an upright en- 35 gaging said pawl, a guide-sheave journaled in a slot in said upright, the rollers journaled to the sides of the pawl, the inclined tracks for the said roller, a winding-drum journaled in the supporting-frame, and the drill-rope 40 wound upon said drum and passing over

suitable guide rollers or sheaves and over the sheave journaled in the upright rising from the rock-shaft, substantially as and for the purpose set forth.

4. The combination of the supporting- 45 frame, the swinging frame or pendulum mounted therein and having weights at its lower end, the pawl having one end pivotally attached to the said swinging frame, a rock-shaft journaled in the supporting-frame and 50 having an upright arranged to engage the free end of said pawl, the drill-rope guided over a sheave journaled in said upright, and suitable trip mechanism, substantially as set forth. 55

5. The supporting-frame comprising the in- 55 clined uprights, the cap-pieces connecting the latter and the longitudinal braces, the swinging frame mounted upon a shaft connecting the upper end of the rear uprights, the wind- 60 ing-drum, the guide-roller, and the rock-shaft journaled upon the longitudinal braces of the frame, a guide-pulley journaled upon a shaft at the upper ends of the front uprights, an upright rising from the rock-shaft and en- 65 gaging a pawl pivoted in the swinging frame, the guide-sheave journaled in a slot in said upright, rollers journaled to the sides of the pawl, inclined tracks mounted upon cross- 70 pieces connecting the upper longitudinal braces of the frame, and the drill-rope, all constructed and combined substantially as and for the purpose herein set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature 75 in presence of two witnesses.

JAMES PATTERSON.

Witnesses:

WALTON PATTERSON,
S. W. HAMPTON.