

No. 748,530.

PATENTED DEC. 29, 1903.

R. ROBINSON & J. H. BALL.
COAL MINING MACHINE.

APPLICATION FILED NOV. 21, 1902.

NO MODEL.

2 SHEETS—SHEET 1.

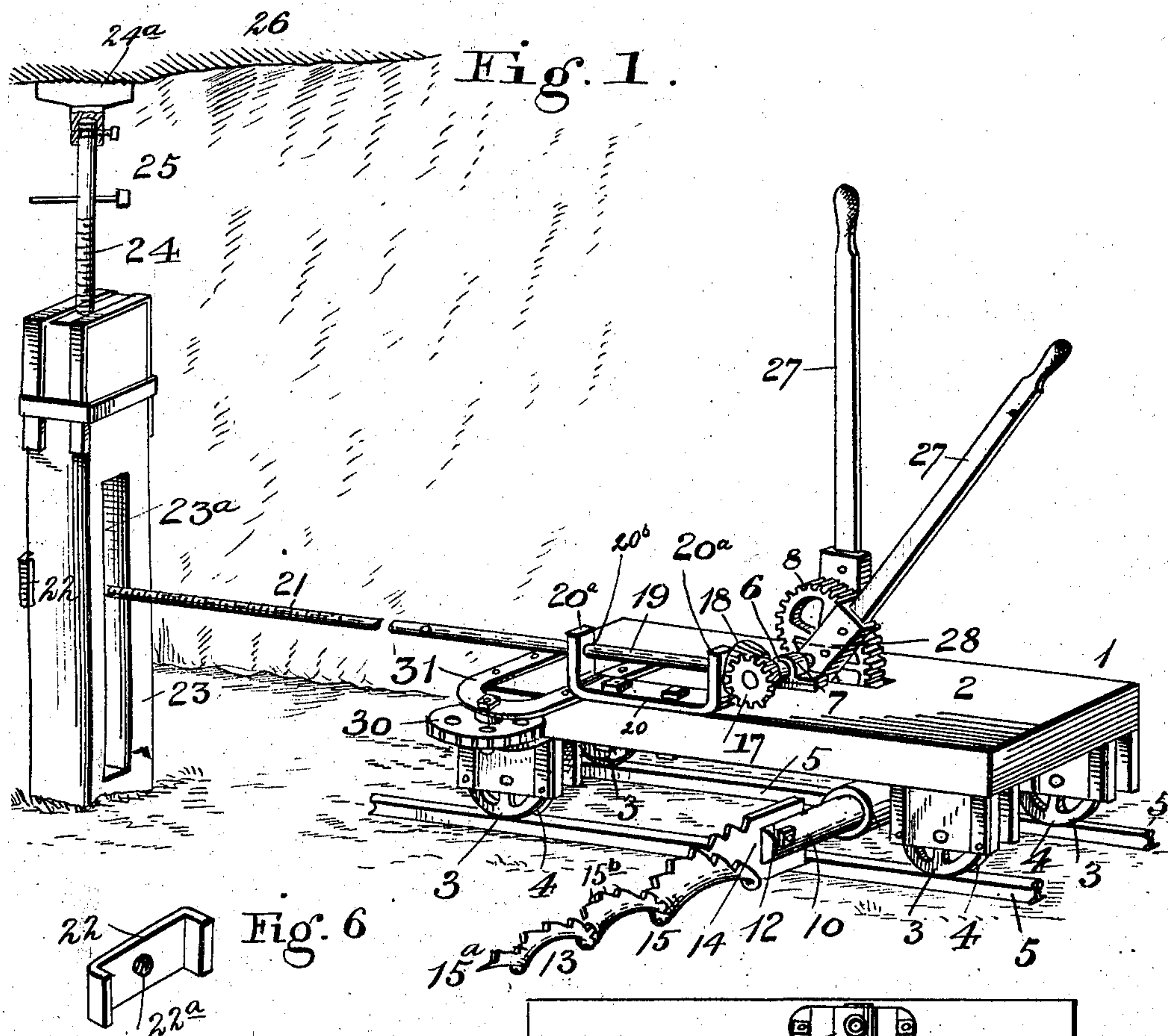
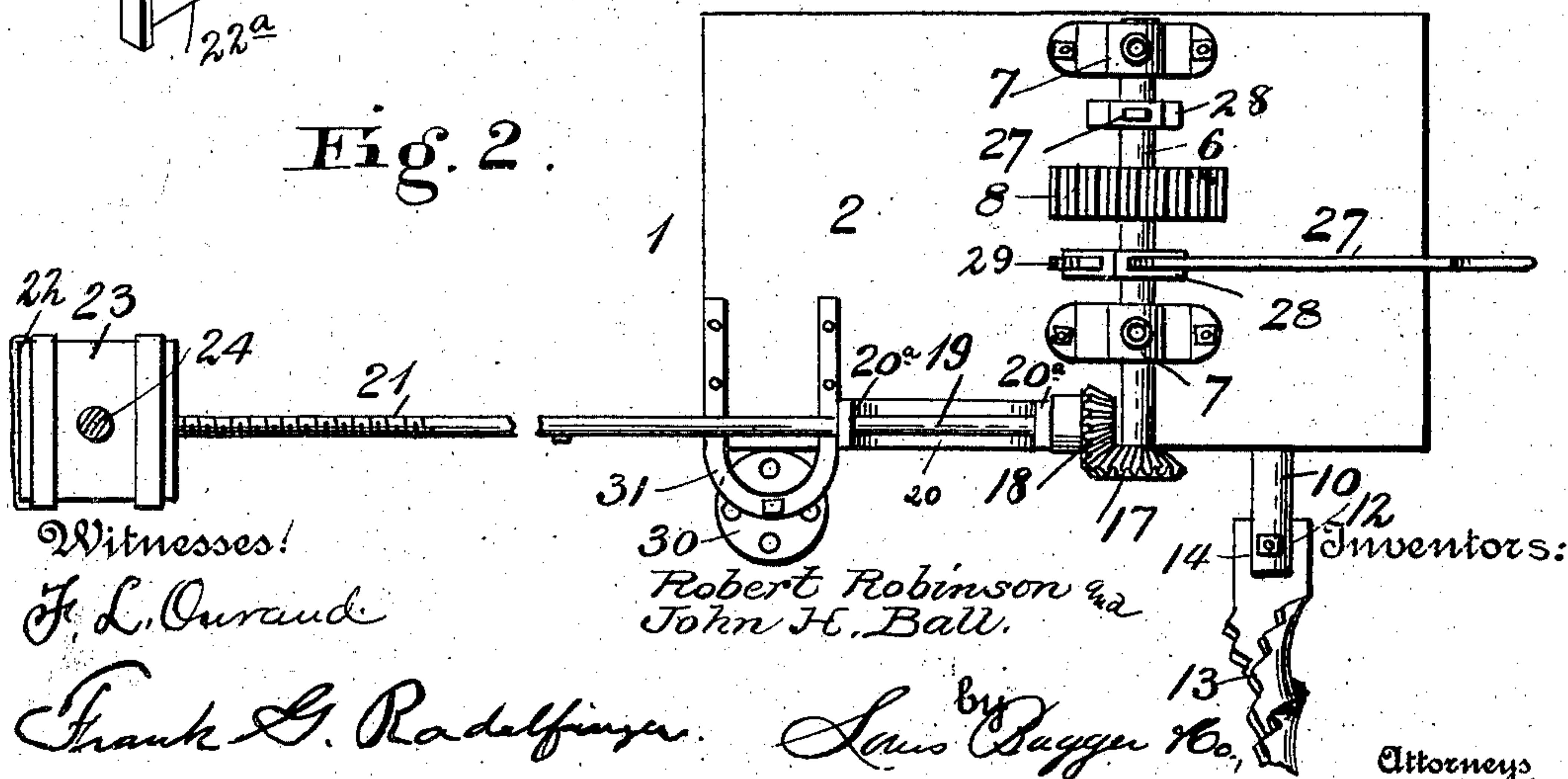


Fig. 2.



Witnesses!

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2 SHEETS—SHEET 2.

Fig. 3

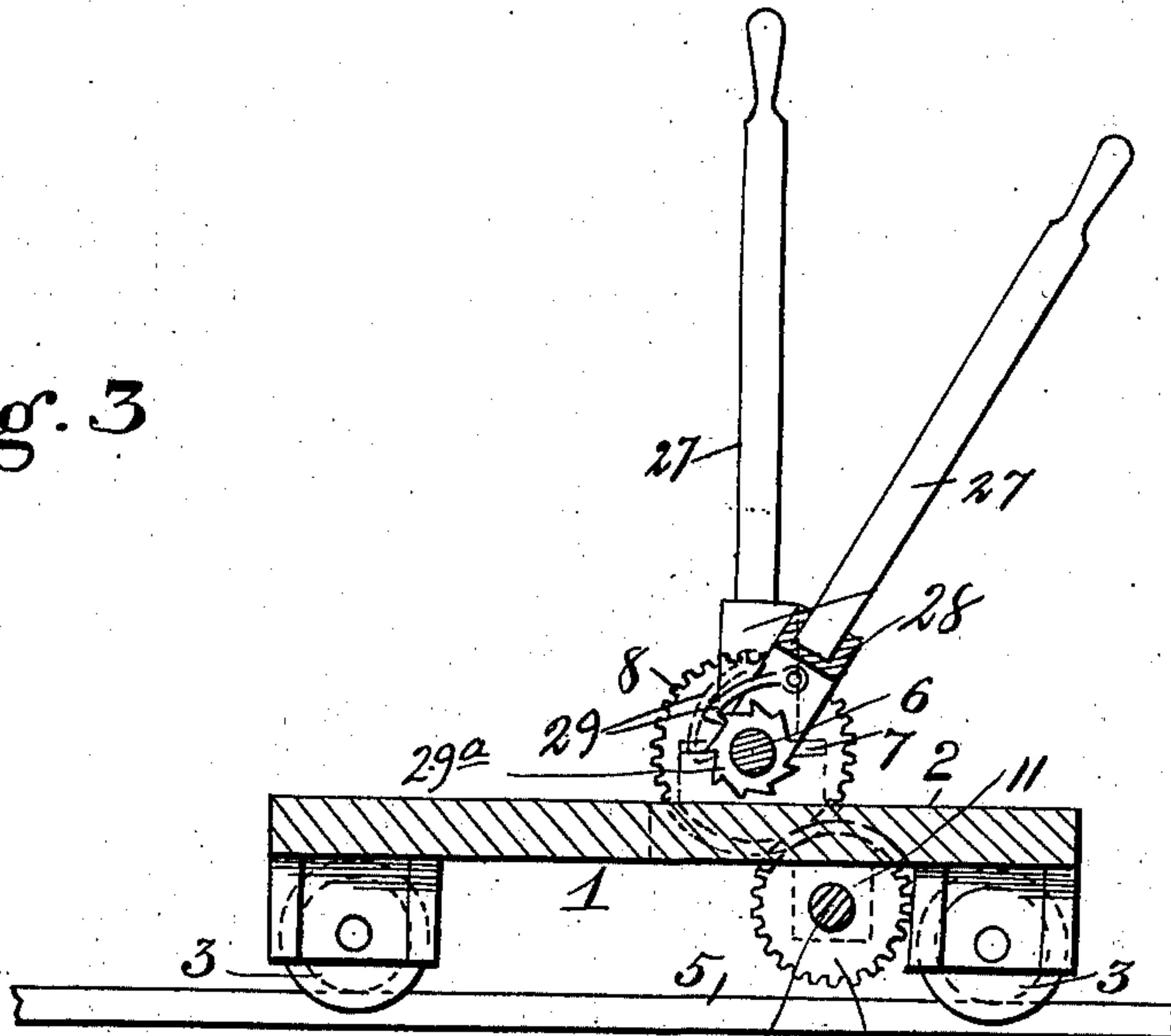


Fig. 4.

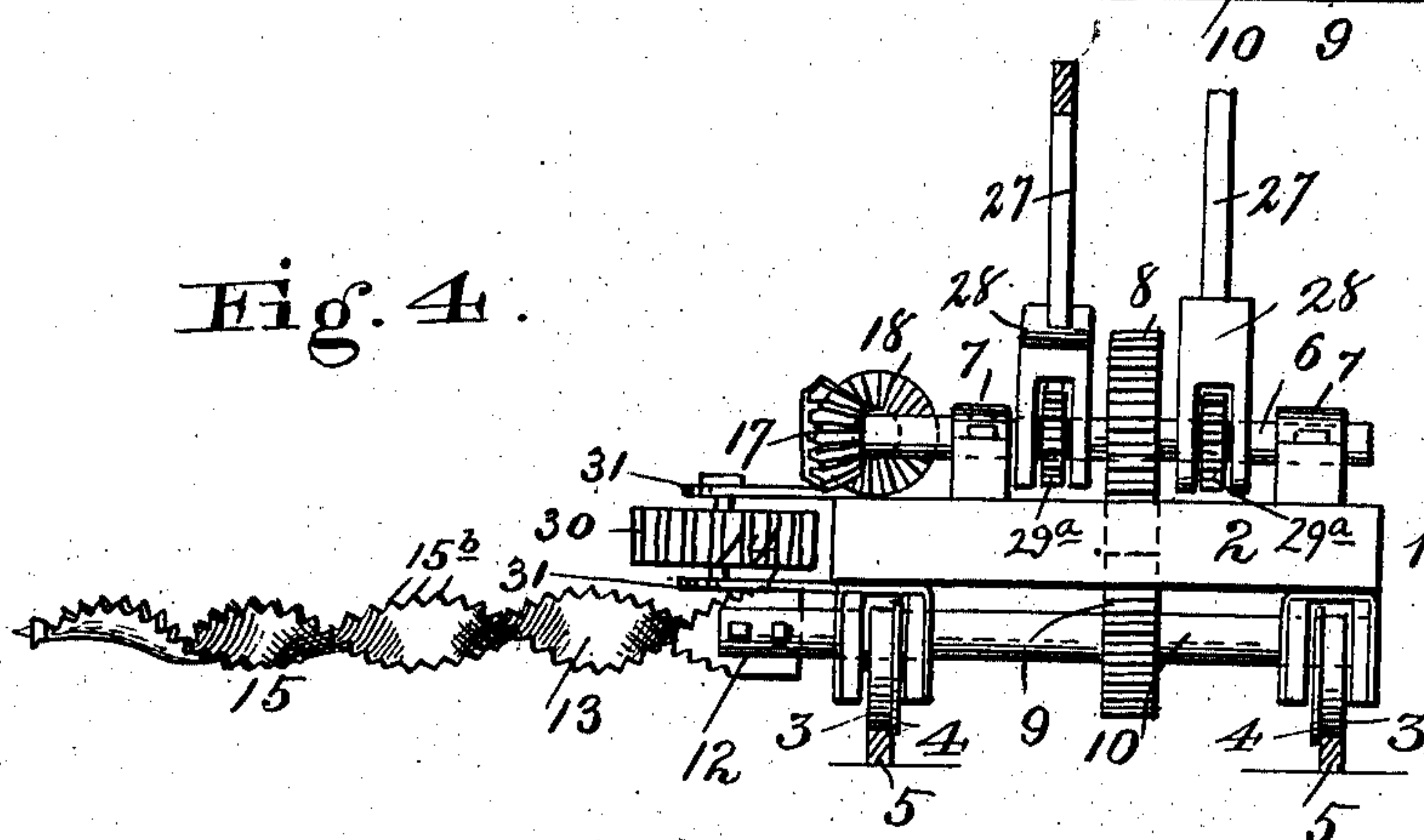
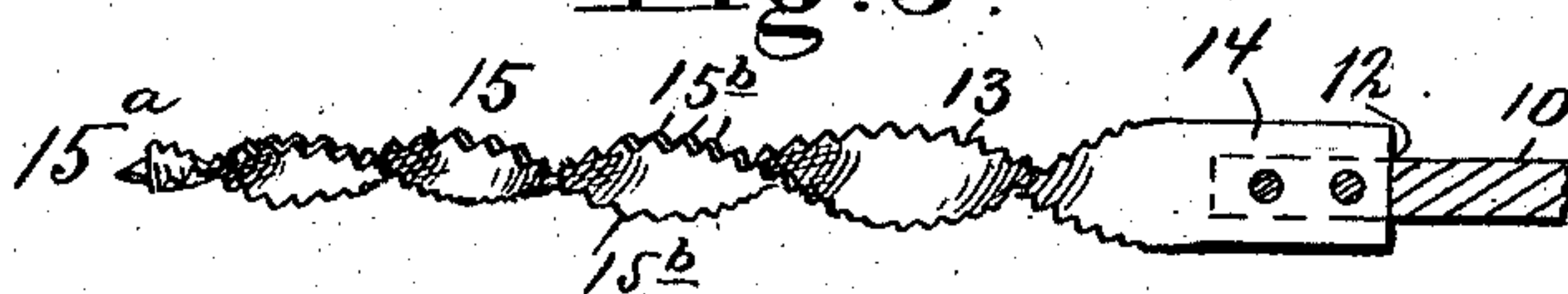


Fig. 5.



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UNITED STATES PATENT OFFICE.

ROBERT ROBINSON AND JOHN H. BALL, OF MYSTIC, IOWA.

COAL-MINING MACHINE.

SPECIFICATION forming part of Letters Patent No. 748,530, dated December 29, 1903.

Application filed November 21, 1902. Serial No. 132,317. (No model.)

To all whom it may concern:

Be it known that we, ROBERT ROBINSON and JOHN H. BALL, citizens of the United States, residing at Mystic, in the county of Appanoose and State of Iowa, have invented new and useful Improvements in Coal-Mining Machines, of which the following is a specification.

Our invention relates to a coal-mining machine, and has for its object the construction of a self-propelling machine for removing the clay or gouge underlying a vein of coal, so that the coal may be broken down.

The simple and novel construction employed by us in carrying out our invention is fully described and claimed in this specification, and illustrated in the accompanying drawings, forming a part thereof, in which—

Figure 1 is a perspective view of our machine. Fig. 2 is a plan view of the same. Fig. 3 is a longitudinal section of the same. Fig. 4 is an end view of the same. Fig. 5 is a detail of the auger. Fig. 6 is a detail of the stop-plate.

Like numerals of reference designate like parts in the different views of the drawings.

The numeral 1 designates a carriage comprising a bed 2, mounted on wheels 3. The wheels 3 have flanges 4 thereon to adapt them to engage a track formed of parallel rails 5. The bed 2 is constructed of iron and supports the working parts of our device. A shaft 6 extends transversely the bed 2 and is supported by boxes 7 bolted thereon. A large gear 8 is mounted on the shaft 6 and meshes with a smaller gear 9, keyed on a shaft 10, journaled in boxes 11 and slotted at 12 to accommodate an auger 13. The auger has a broad flat shank 14, which fits the slot 12, and a long screw 15, which tapers uniformly from the junction with the shank 14 to a point 15^a. The spiral edges of the auger bear V-shaped teeth arranged alternately, which serve to cut the clay.

To propel the machine, a bevel-gear 17 is keyed on the shaft 6 and meshes with a bevel-gear 18, keyed on a shaft 19. The shaft 19 is journaled in bearings 20^b, formed in the upwardly-extending arms 20^a of a yoke 20, rigidly bolted on the bed 2, and is threaded at 21 throughout the greater portion of its length to adapt it to engage a threaded aperture 22^a,

formed in a stop 22, adjustably mounted in a longitudinal slot 23^a, formed in a post 23. The post 23 is provided with an adjustable head 24^a, carried by a screw 24, operated by a lever 25. The head 24^a engages the roof 26 of a stope or drift.

To drive the shaft 6 to propel the machine and to operate the auger 13, two levers 27 are provided and have forked heads 28, which straddle the shaft 6 and carry hooked pawls 29, which engage ratchets 29^a, keyed on the shaft 6. A wheel 30, carried by an arm 31, secured to the carriage, serves as a buffer to keep the carriage from catching the wall.

In using our machine the post 23 is first set up and the head 24^a raised to engage the roof 26. The track is then laid and the shaft 19 placed in position. The auger 13 is then forced into the gouge, and the levers 27 are operated to drive the shaft 6 to drive the shaft 19 to pull the machine ahead and to actuate the auger to cut away the gouge and undermine the coal-vein.

We do not wish to be limited as to details of construction, as these may be modified in many particulars without departing from the spirit of our invention.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a mining-machine, the combination of a carriage constructed to run on a track, a shaft mounted transversely said carriage and bearing a bevel-gear and two ratchets, a yoke mounted on said carriage and having upwardly-extending apertured arms, a post having an apertured threaded stop mounted thereon, a screw journaled in the said apertured arms and engaging said threaded aperture in said stop and bearing a bevel-gear meshing with said bevel-gear on said first-mentioned shaft, and two hand-levers bearing hooked pawls engaging said ratchets to operate them to drive said screw, substantially as described.

2. In a mining-machine, the combination of a carriage, a track for said carriage, a shaft mounted transversely said carriage and bearing a bevel-gear and two ratchets, a yoke mounted on said carriage and having upwardly-extending apertured arms, a screw-

threaded shaft journaled in said apertured arms and bearing a bevel-gear meshing with said bevel-gear, a slotted post, an apertured stop adjustably mounted in said slot and engaged by said screw-threaded shaft, and two levers carrying hooked pawls engaging said ratchets.

In testimony whereof we have hereunto set

our hands in presence of two subscribing witnesses.

ROBERT ROBINSON.
JOHN H. BALL.

Witnesses:

D. B. FORSYTH,
ALEXANDER ORR.