

No. 730,554.

PATENTED JUNE 9, 1903.

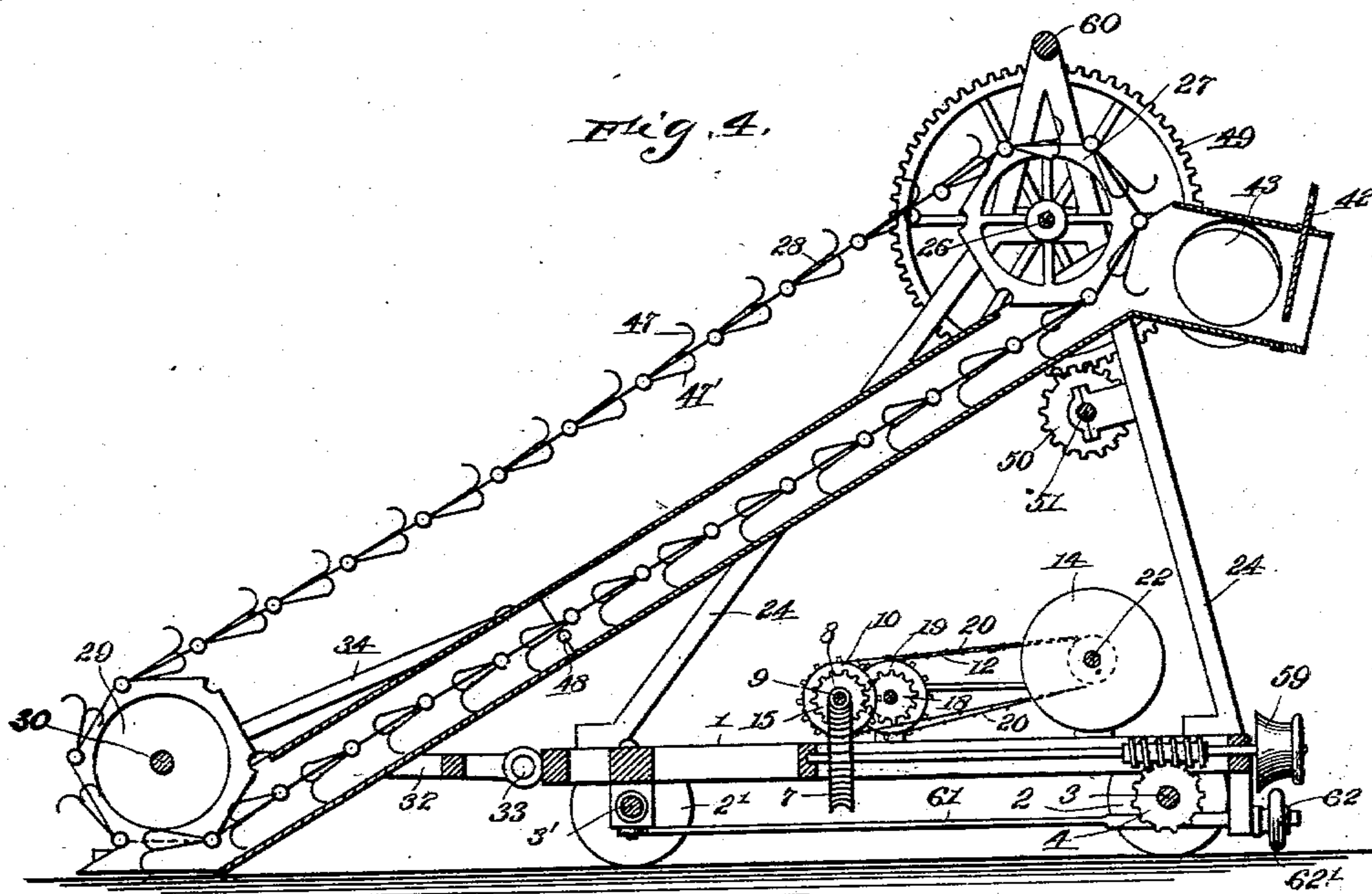
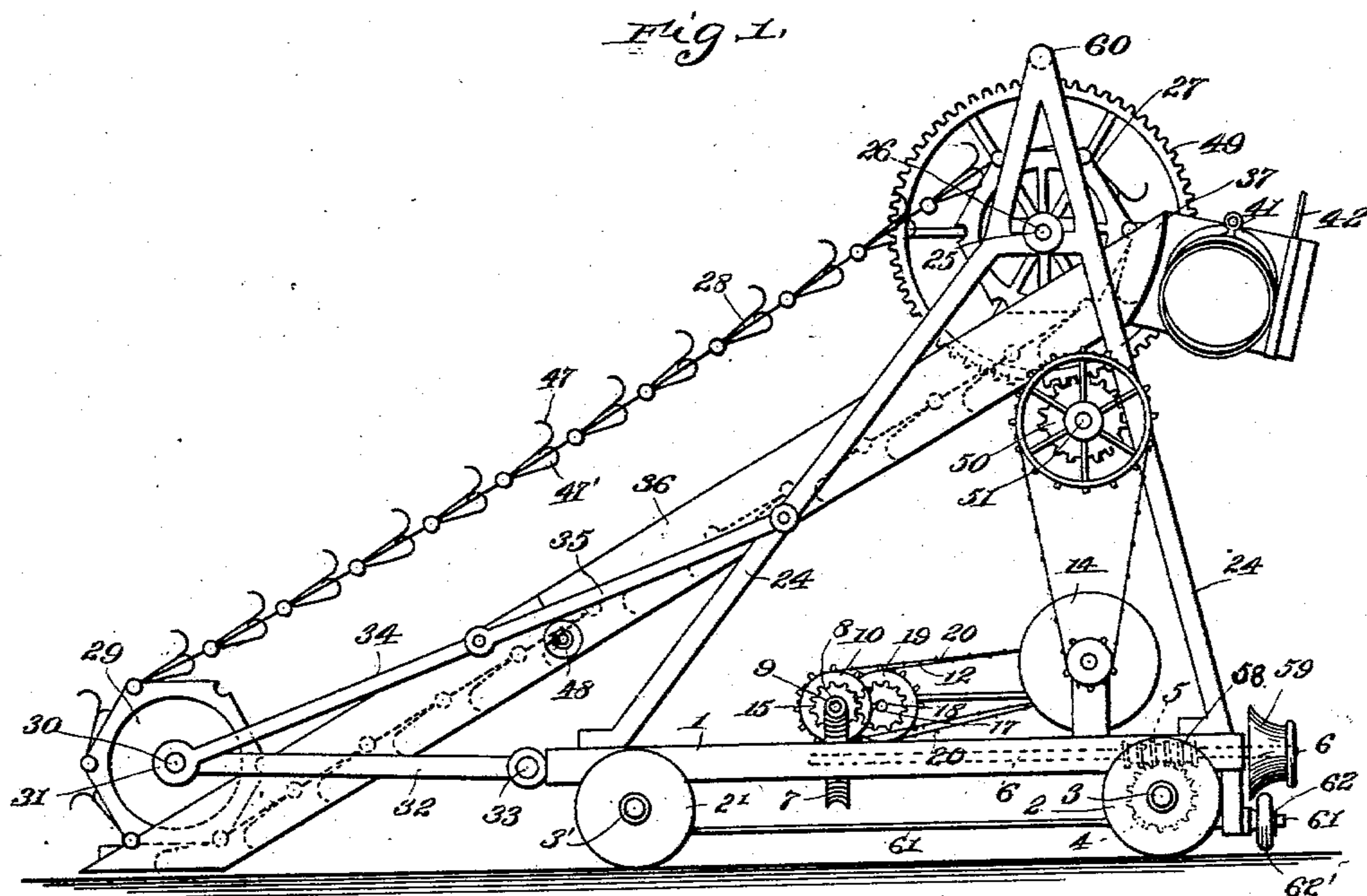
J. McBRIDE, Sr.

MACHINE FOR CONVEYING, TRIMMING, AND TRANSFERRING COAL, &c.

APPLICATION FILED DEC. 6, 1901.

3 SHEETS—SHEET 1.

NO MODEL.



Witnesses:

John M. Todd
Edmond J. Vaughan.

Inventor:

John McBride, Sr.
by Lloyd McCauley
att'y

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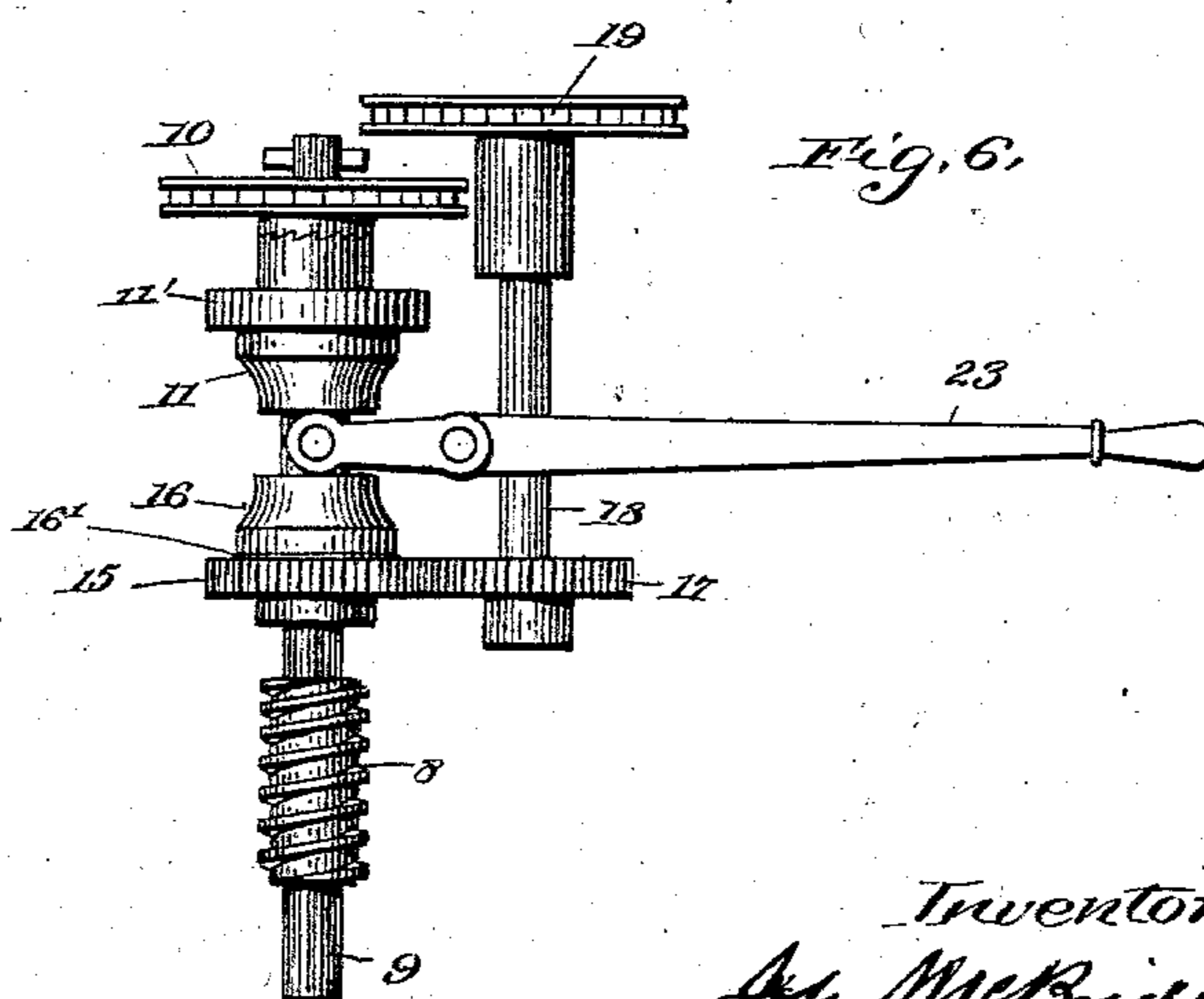
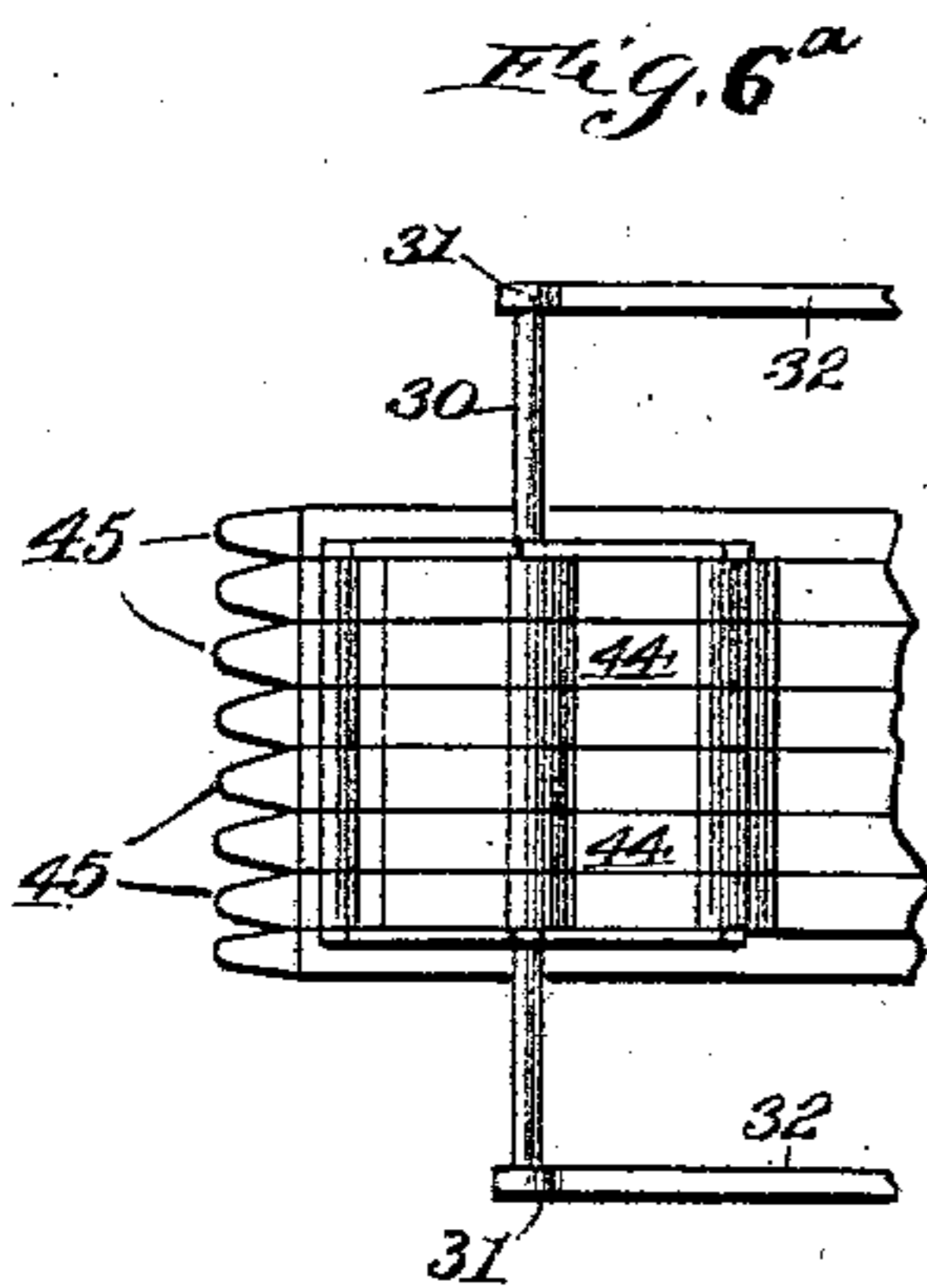
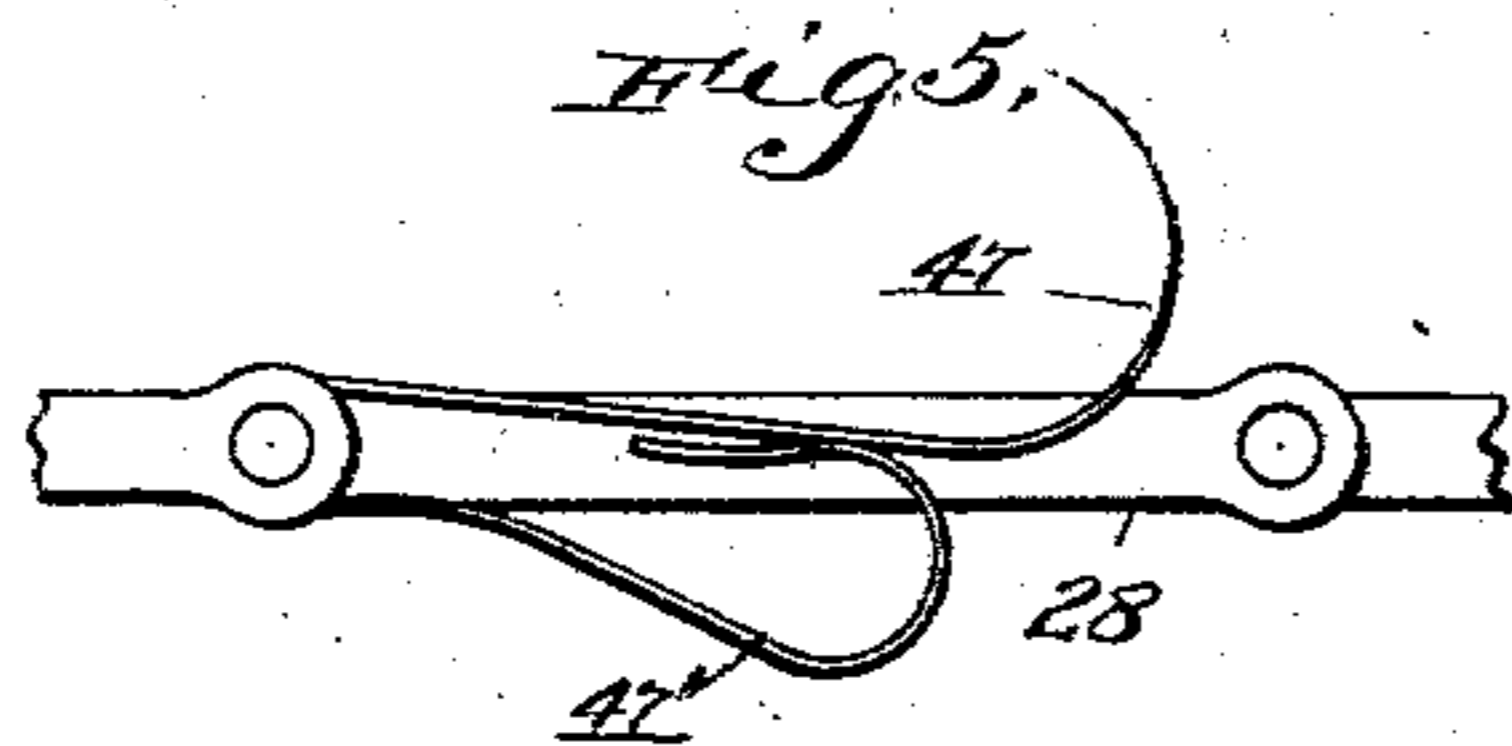
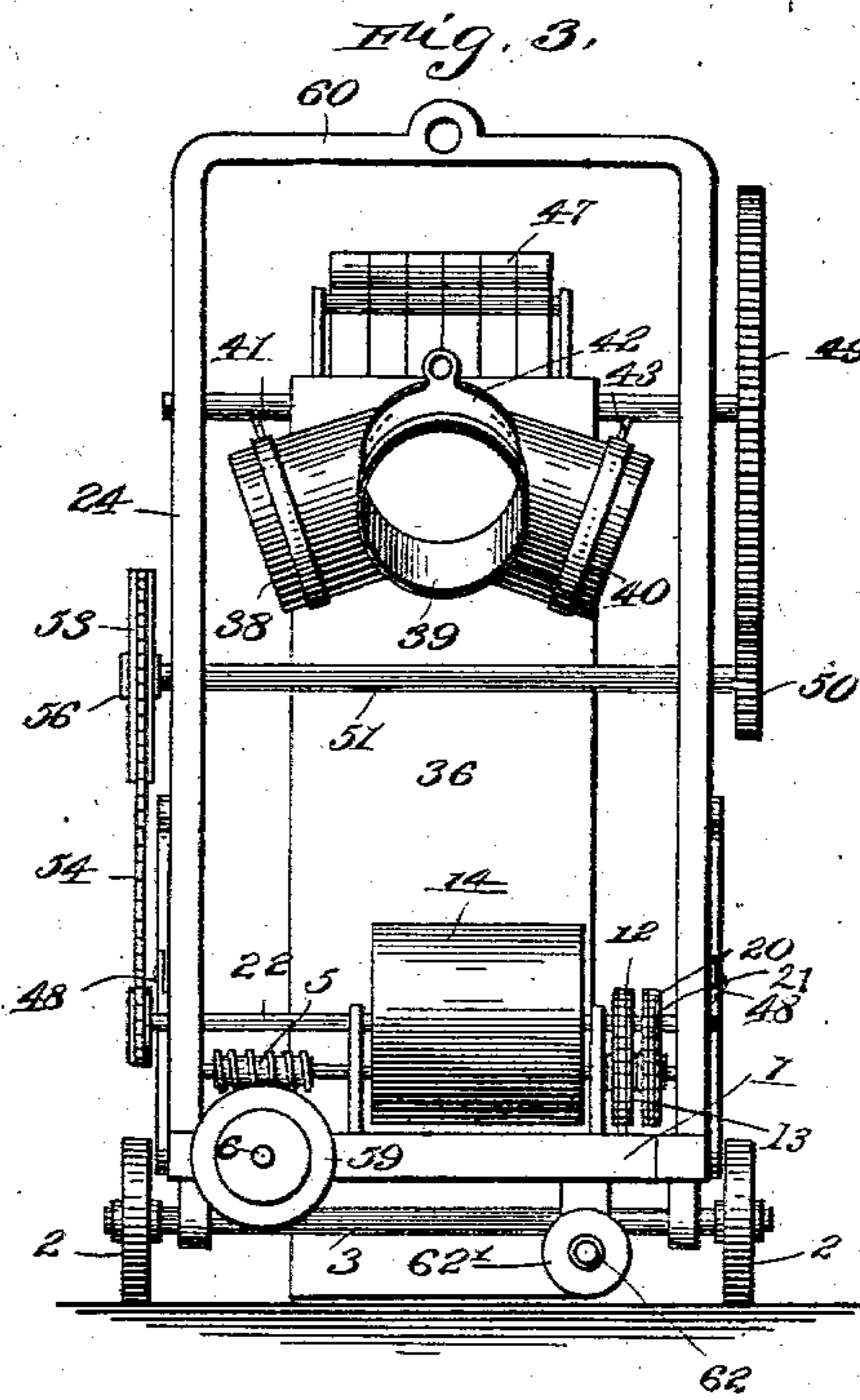
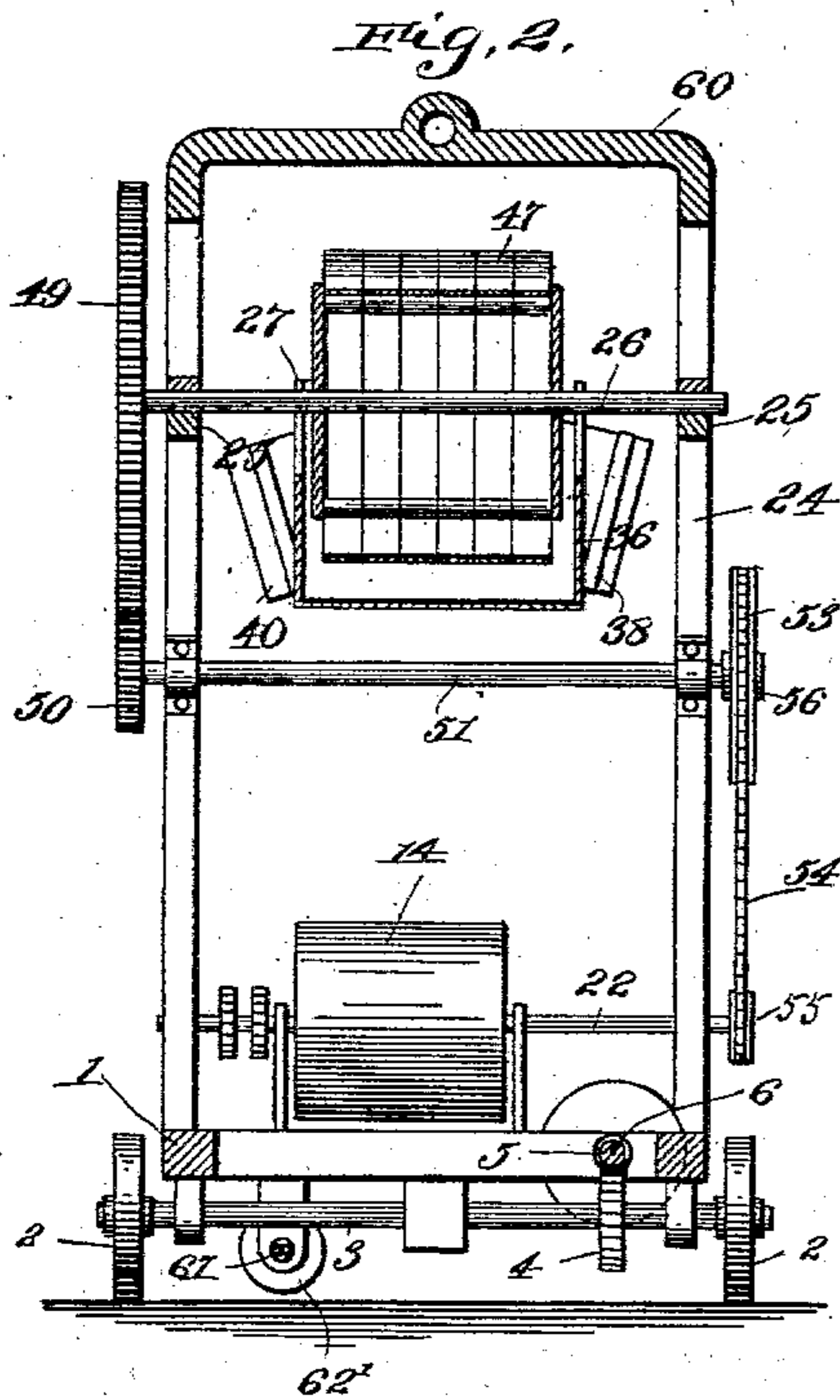
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NO MODEL.

3 SHEETS—SHEET 2.



Witnesses:

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Inventor:

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PATENTED JUNE 9, 1903.

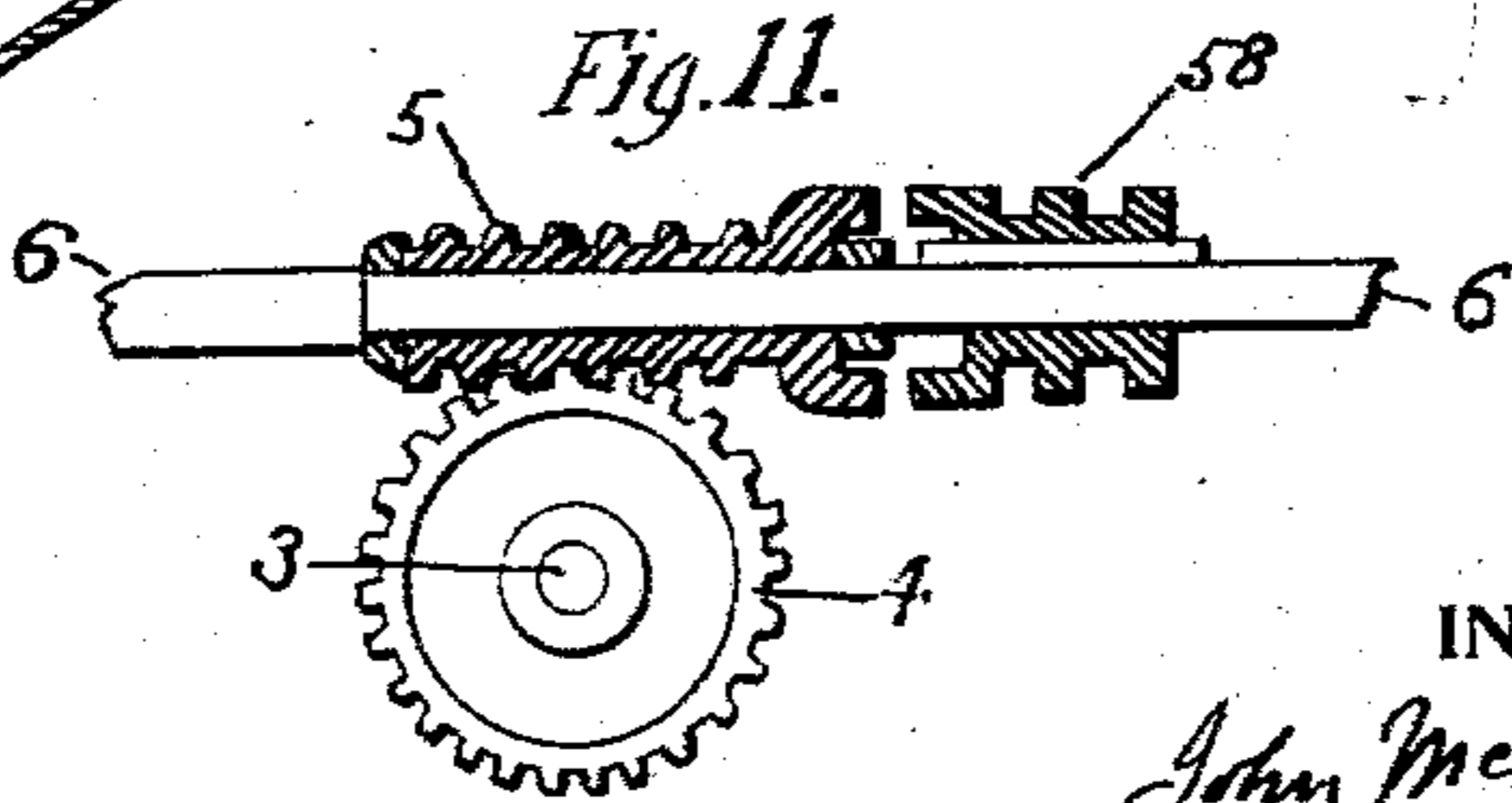
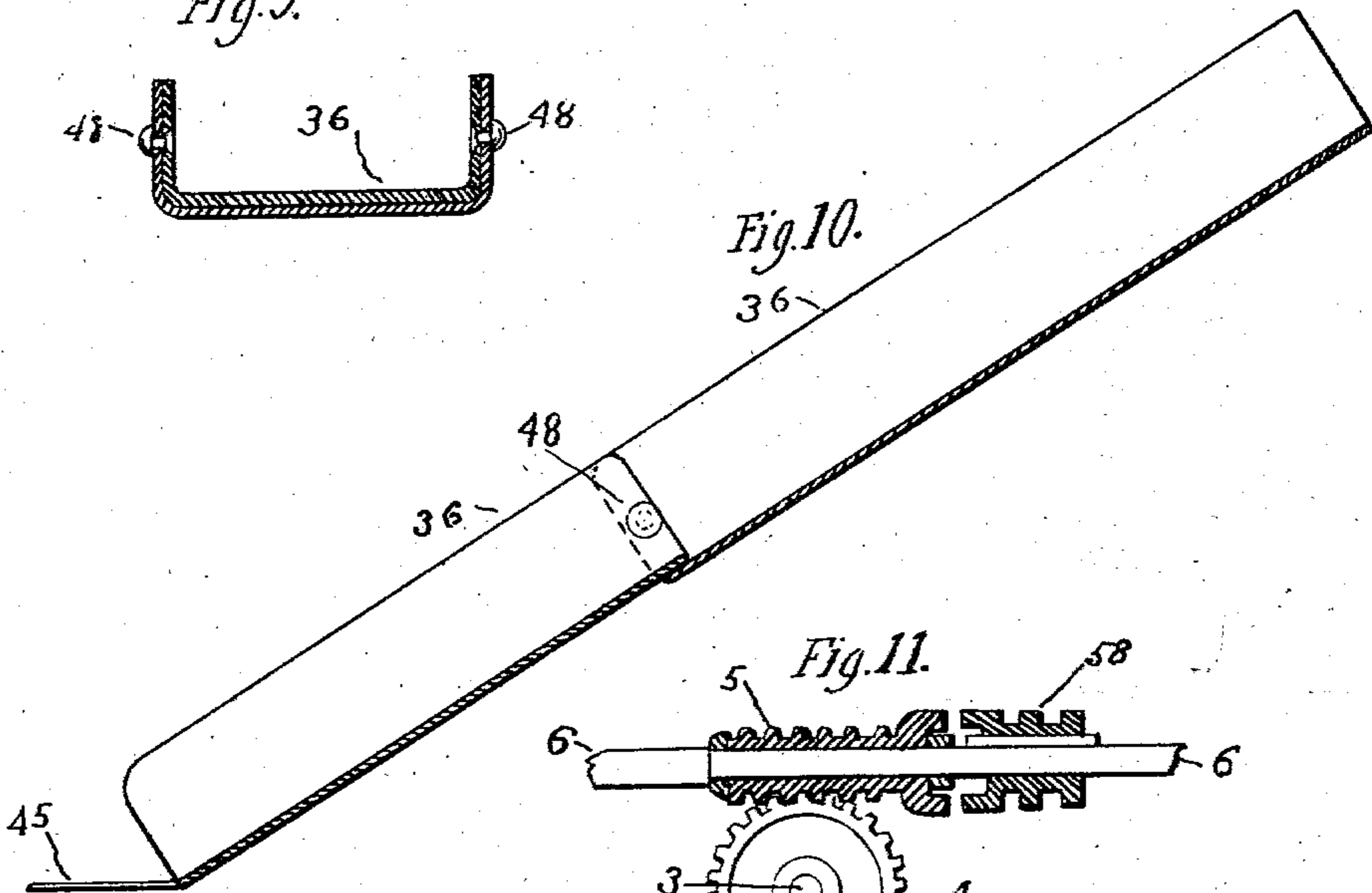
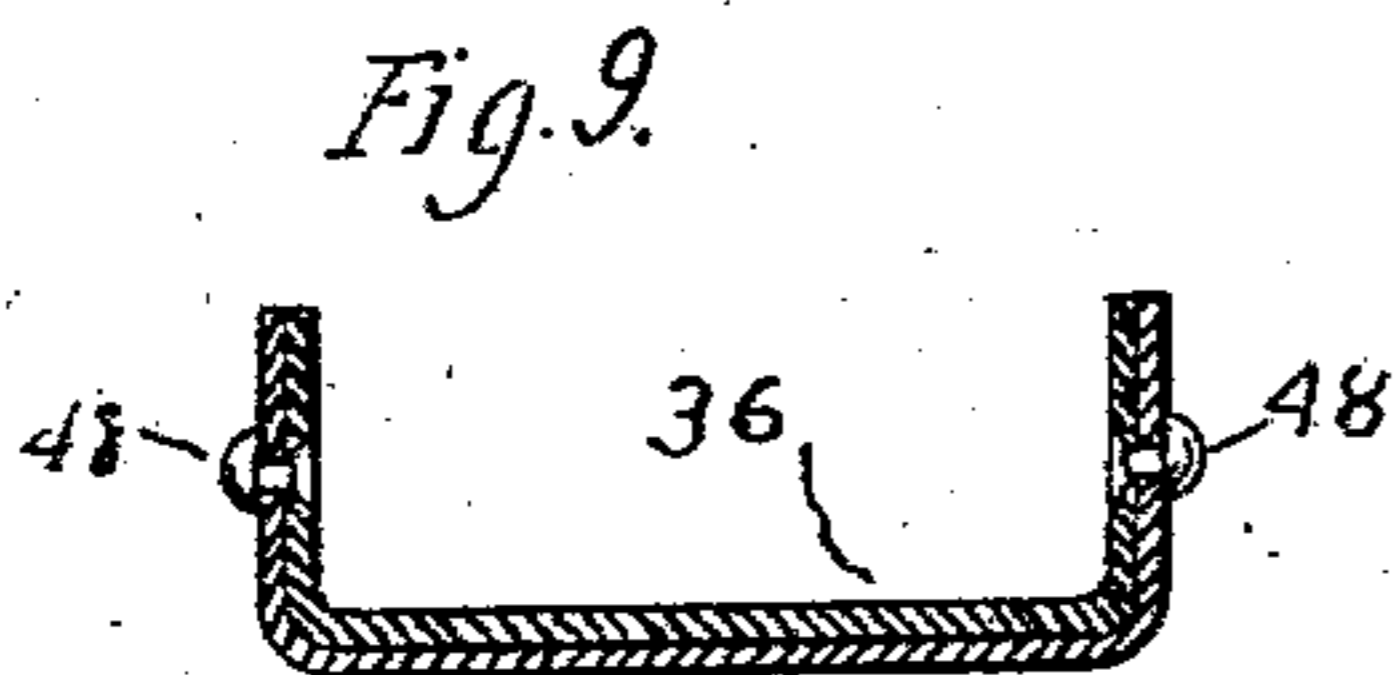
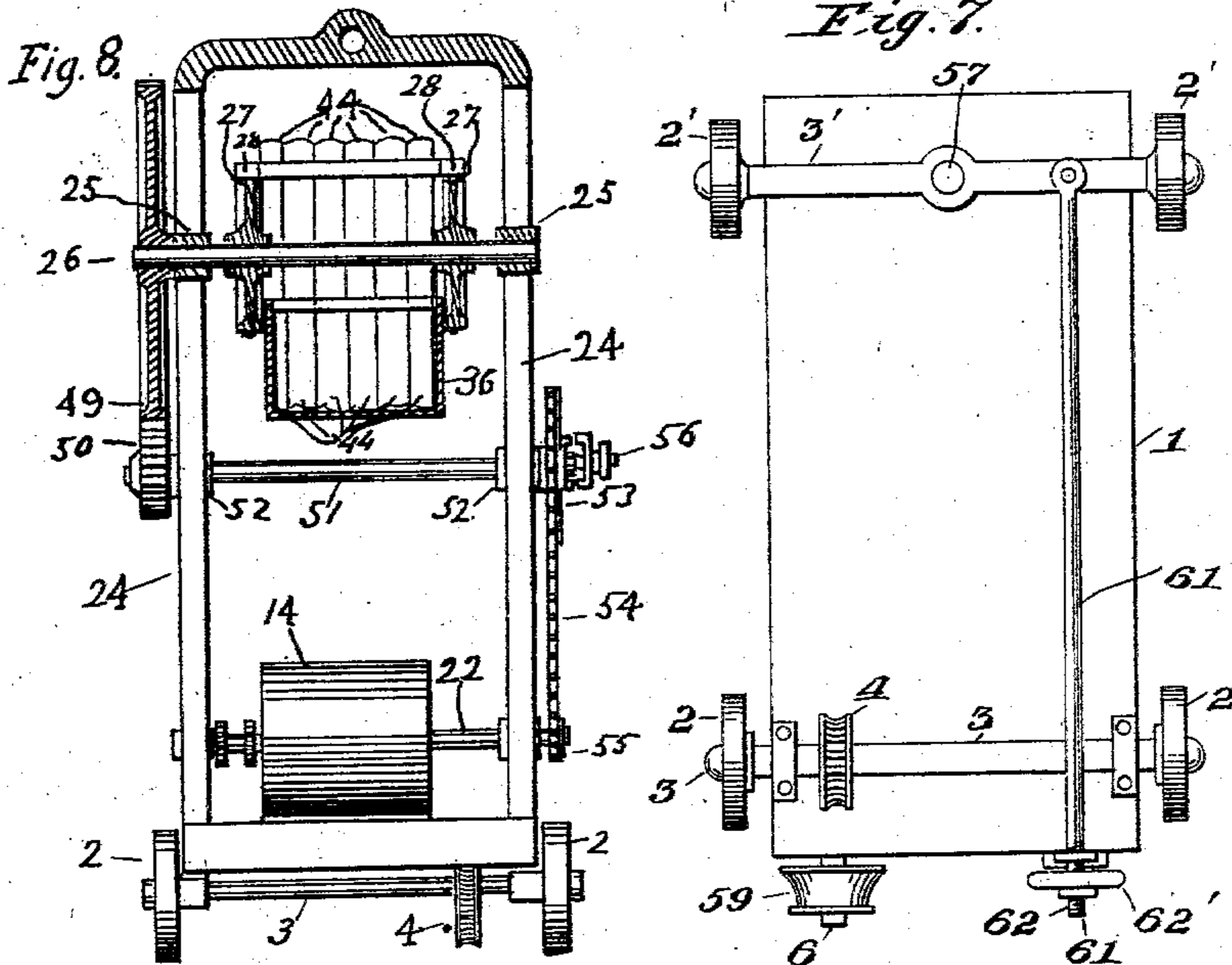
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APPLICATION FILED DEC. 6, 1901.

NO MODEL..

3 SHEETS—SHEET 3.



WITNESSES:

M. Wiegand
John M. Flood

INVENTOR

John Mc Bride Sr.
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UNITED STATES PATENT OFFICE.

JOHN McBRIDE, SR., OF PHILADELPHIA, PENNSYLVANIA.

MACHINE FOR CONVEYING, TRIMMING, AND TRANSFERRING COAL, &c.

SPECIFICATION forming part of Letters Patent No. 730,554, dated June 9, 1903.

Application filed December 6, 1901. Serial No. 84,976. (No model.)

To all whom it may concern:

Be it known that I, JOHN McBRIDE, Sr., a citizen of the United States, residing at Philadelphia, Pennsylvania, have invented a new and useful Machine for Conveying, Trimming, and Transferring Coal and Like Commodities Handled in Bulk, of which the following is a specification.

The object of my invention is to provide a means of moving coal, ores, and all other commodities shipped in bulk with the least amount of manual labor; and my invention is specially applicable to the moving of cargoes of such commodities in the holds of vessels and in coal-yards and other storages.

To this end my invention consists of a framework upon wheels and means of moving and steering the same in combination with an ascending-chute and scrapers and endless chain or chains and sprocket-wheels and a motor to operate said chains; also, a construction and arrangement for folding the chute and framework and controlling and guiding the endless chains, so as to enable it to be lowered into the hold of a vessel and moved about therein to bring the cargo within convenient reach of the hoisting apparatus through the hatchway, and an arrangement of discharging spouts and gates for directing and controlling the course of the material in different directions from the top of the ascending chute through chutes to various points as desired.

The construction and operation of my invention are hereinafter particularly described, and shown in the accompanying drawings, in which—

Figure 1 shows a side elevation thereof. Fig. 2 is a vertical sectional view of the device in line with the lifting-eye. Fig. 3 is a rear view of the device; Fig. 4, a sectional lengthwise elevation thereof; Fig. 5, an enlarged view of one of the scrapers and springs; Fig. 6, the clutching device for controlling the motion of the truck-hoisting device. Fig. 6^a is a plan view of the scraper-strips and adjacent parts. Fig. 7 shows an inverted plan view of the truck and mechanism for steering the same. Fig. 8 shows in vertical section

in the plane indicated by the dotted line *yy* on Fig. 2. Figs. 9 and 10 respectively show transverse and lengthwise sectional views of the chute, and Fig. 11 shows an enlarged sectional view of the clutch for engaging and disengaging the propelling-wheels of the truck from the motive power.

Referring to the drawings, 1 represents a truck supported upon wheels 2 and 2' and axles 3 and 3'. On the rear axle 3 is fitted a worm-wheel 4, which engages an endless screw 5 on an arbor 6. On the arbor 6 is a worm-wheel 7, which is turned by an endless screw 8 on the arbor 9. The arbor 9 is fitted with a sprocket-wheel 10, turning with a hollow shaft 9' a connected cup-shaped member 11' of a friction-clutch 11, said hollow shaft 9' fitting upon and turning freely on the arbor 9 and engaged and disengaged as to rotative motion with the arbor 9 by a clutch 11. The sprocket-wheel 10 is turned by an endless chain 12, driven by a sprocket-wheel 13 on the arbor 22 of a motor 14, suitably supported on the truck 1. On the arbor 9 is fitted a spur-wheel 15, attached to and turning with the cup-shaped member 16' of the friction-clutch 16, connected as to rotative motion with the arbor 9 by a clutch 16. The spur-wheel 15 meshes with a spur-wheel 17 on a counter-shaft or arbor 18, provided with and turned by a sprocket-wheel 19, propelled by an endless chain 20, driven by a sprocket-wheel 21 on the arbor 22 of the motor 14.

The clutches 11 and 16 may be of any known form, but are preferably frictional, and are controlled by a connected lever 23, so that the arbor or shaft 9 is rotatable in either direction, with a resulting progress of the wheels 4 and truck 1 in either direction, or by placing the lever 23 in intermediate position the rear wheels 4 are held against rotation.

The front axle 3' is connected pivotally with the truck 1 by a king-bolt 57, so that the direction of motion of the truck 1 can be changed or steered by means of a screw 61, connected with the axle 3', and worked by a nut 62, connected with the truck 1 and turned by a hand-wheel 62'.

Upon the truck 1 are secured frames 24,

having bearings 25, supporting an arbor 26, carrying sprocket-wheels 27, which carry endless chains 28, that pass obliquely downward around sprocket-wheels 29 on an arbor 30, fitted to turn in bearings 31 in a frame 32, consisting of parallel links or bars attached by pivots 33 to the end of the truck 1. The frame 32 is held in extended position by links 34 and 35, pivotally connected together and to the frames 24 and 32, so that when straightened out the frame 32 is held in horizontal position, and when bent upward the frame 32 is raised in a vertical position, slacking the chains 28 and bringing the arbor 30 and sprocket-wheels 29 within the vertical plane of the end of the truck 1 and permitting the machine to be hoisted and lowered through hatchways otherwise too small to allow it to pass in extended position.

Below the under side of the endless chain 28 is placed a trough or chute 36, upwardly inclined from the plane upon which the wheels 2 and 2' rest, terminating in a hopper 37, having downwardly-inclined nozzles or spouts 38, 39, and 40, provided with gates 41, 42, and 43, through which material deposited in the hopper 37 can be discharged in either lateral direction or a forward direction through chutes which are preferably made telescopic.

Upon the chain 28 are attached hooked scrapers 47, pressed downwardly by springs 47', which scrapers propel the coal or other like commodity upward in the chute 36 and deliver it in the hopper 37. The scrapers 47 are preferably made of elastic material and are divided into strips 44, forming grapple-hooks, so as to present narrow points to engage in the interstices between the lumps to be raised without being held out of engagement by any lump lying under the point of one scraper.

The lower end of the chute 36 is slit in strips 45, having pointed ends, so as to readily pass under the coal, the points being elastic, so as to apply closely to the floor or deck. The chute 36 is hinged at a point 48, so that it can be raised into vertical position within the vertical plane of the end of the truck 1 to permit the apparatus to be raised and lowered through the hatchways.

The arbor 26 is propelled by a gear-wheel 49, connected therewith and driven by a pinion 50 on an arbor 51, turning in bearings 52 in the frame 24 and receiving motion from a sprocket-wheel 53, connected by an endless chain 54 with a sprocket-wheel 55 on the arbor 22 of the motor 14. The sprocket-wheel 53 is connected as to rotative motion with the arbor 51 by a clutch 56, by means of which the motion of the elevating portion of the apparatus can be started or suspended.

The endless screw 5 is connected as to rotative motion with the arbor 6 by a clutch 58, so that the shaft or arbor 6 may rotate with- out rotating the screw 5, and upon the end of

the arbor 6 is a winding-drum or winch 59, which may be used with a rope-tackle to hoist the apparatus by suspending it by the eye 60, formed in the top of the frame 24.

Having described my invention, what I claim is—

1. In a machine for conveying and moving commodities in bulk, a truck provided with means of propulsion in either direction, in combination with a framing and an inclined chute and bearing supported on said frame, and an arbor bearingsprocket-wheels and inclined endless chains provided with slit elastic hooked scrapers arranged to raise commodities in said chute as and for the purpose set forth.

2. In a machine for conveying and moving commodities in bulk, a truck and means for propelling said truck, in combination with an inclined chute jointed so as to fold above said truck, a frame jointed to fold above said truck and endless chains provided with scrapers and means of propulsion of said endless chains and scrapers upwardly against said chute when in extended position, and to hang in slackened position when said frame and chute are folded up, as and for the purpose set forth.

3. In a machine of the character described a jointed chute having slitted points at the lower end and a hopper at the upper end and with inclined spouts and gates in combination with scrapers and means of propelling said scrapers upwardly in said chute, as and for the purpose set forth.

4. In a machine of the character described, a truck containing an inclined elevating apparatus in combination with a motor and endless screws and worm-wheels and clutches 11 and 16 for propelling said truck in either direction, and a clutch 58 for engaging and disengaging the rear axle from propulsion in combination with a winding-drum arranged for hoisting by a rope-tackle applied to said drum as and for the purpose set forth.

5. In a machine of the character described, an endless chain or chains having elastic hooked scrapers attached thereto, and springs supported in said scrapers, in combination with an inclined chute extending beyond the path of said scraper and adapted to be forced under the commodity to be raised as and for the purpose set forth.

6. In a machine of the character described a truck supported on rear axle and wheels and means of propelling said wheels in either direction, a forward axle and wheels pivotally attached to said truck and means of steering said forward axle in combination with a clutch, arranged to engage and disengage the propelling apparatus from rear wheels and a winding-drum 59 arranged to be propelled in either direction by the same means as the propelling-wheels are reversibly operated, as and for the purpose set forth.

7. In a mechanism of the character described, an inclined chute, an endless chain or chains and means of propelling said chains, in substantially parallel position with said chute, in combination with elastic scrapers divided lengthwise and attached to said chains, and springs superposed on said scrapers to press the ends of said slit portion of said scrapers, independently of each other, into contact with said chute as and for the purpose set forth.

JOHN McBRIDE, SR.

Witnesses:

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C. R. JONES.