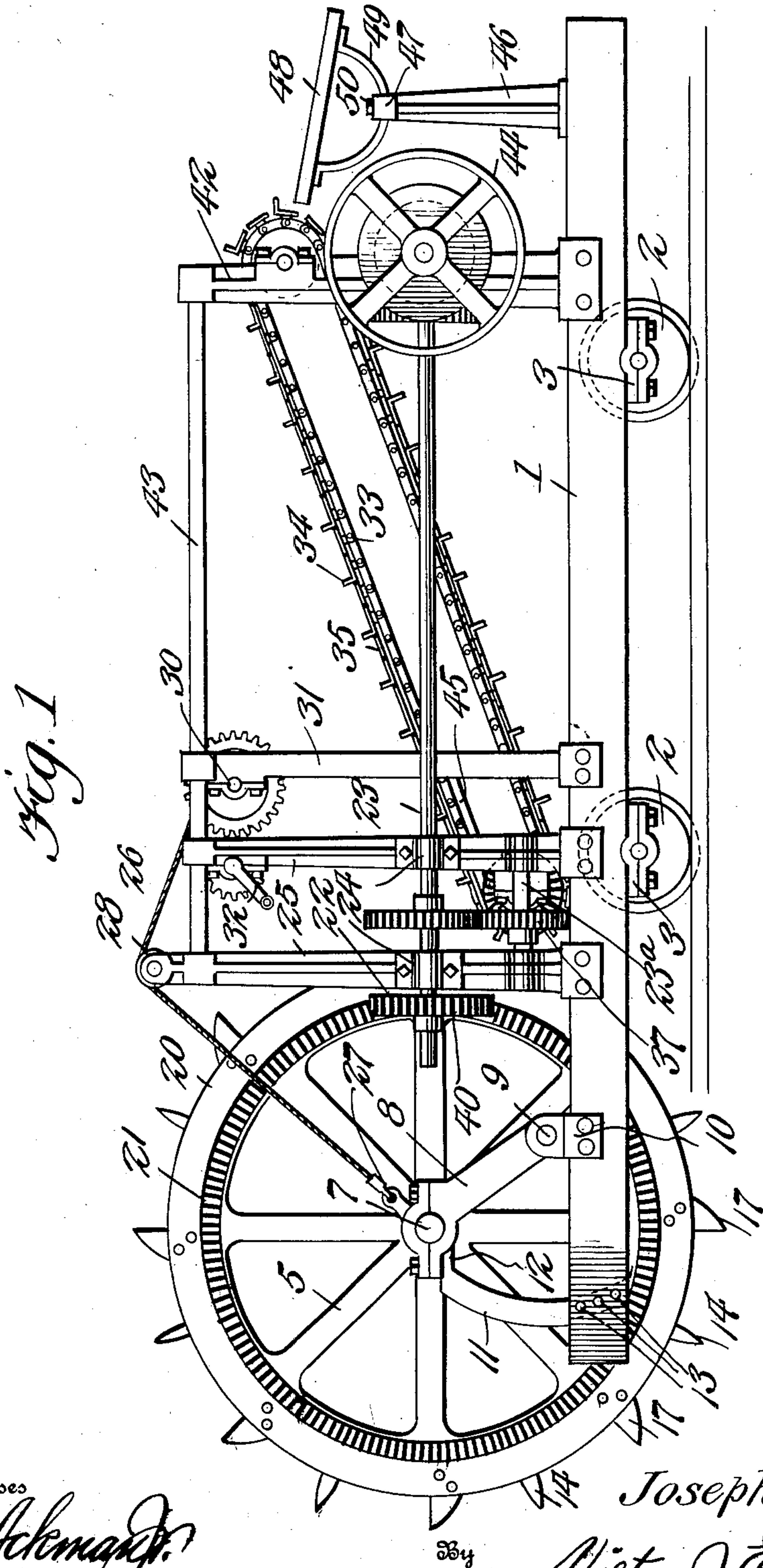


EXCAVATING MACHINE.

Patented Dec. 29, 1908.

3 SHEETS—SHEET 1.

908,317.



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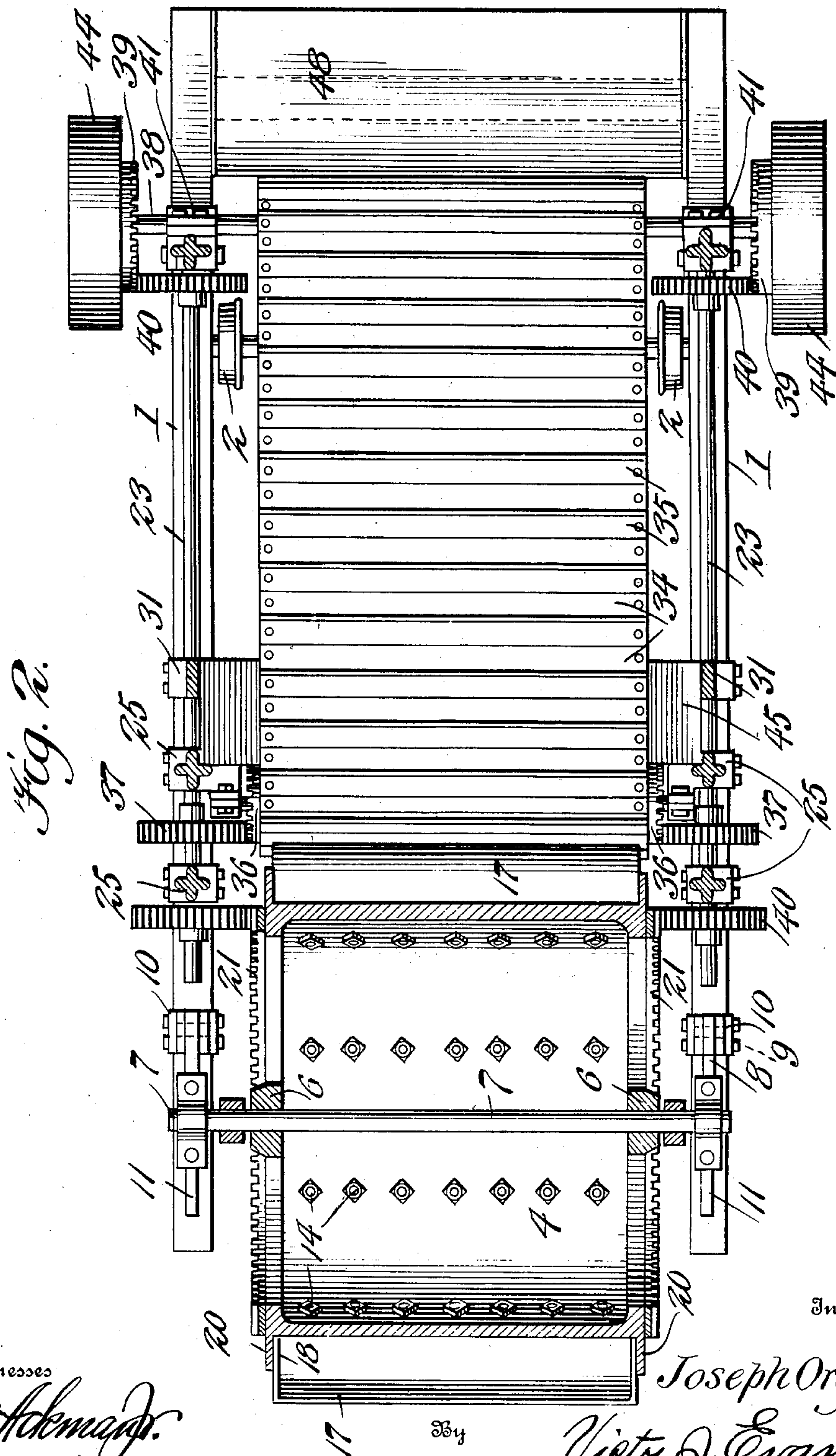
Witnesses

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3 SHEETS—SHEET 2.



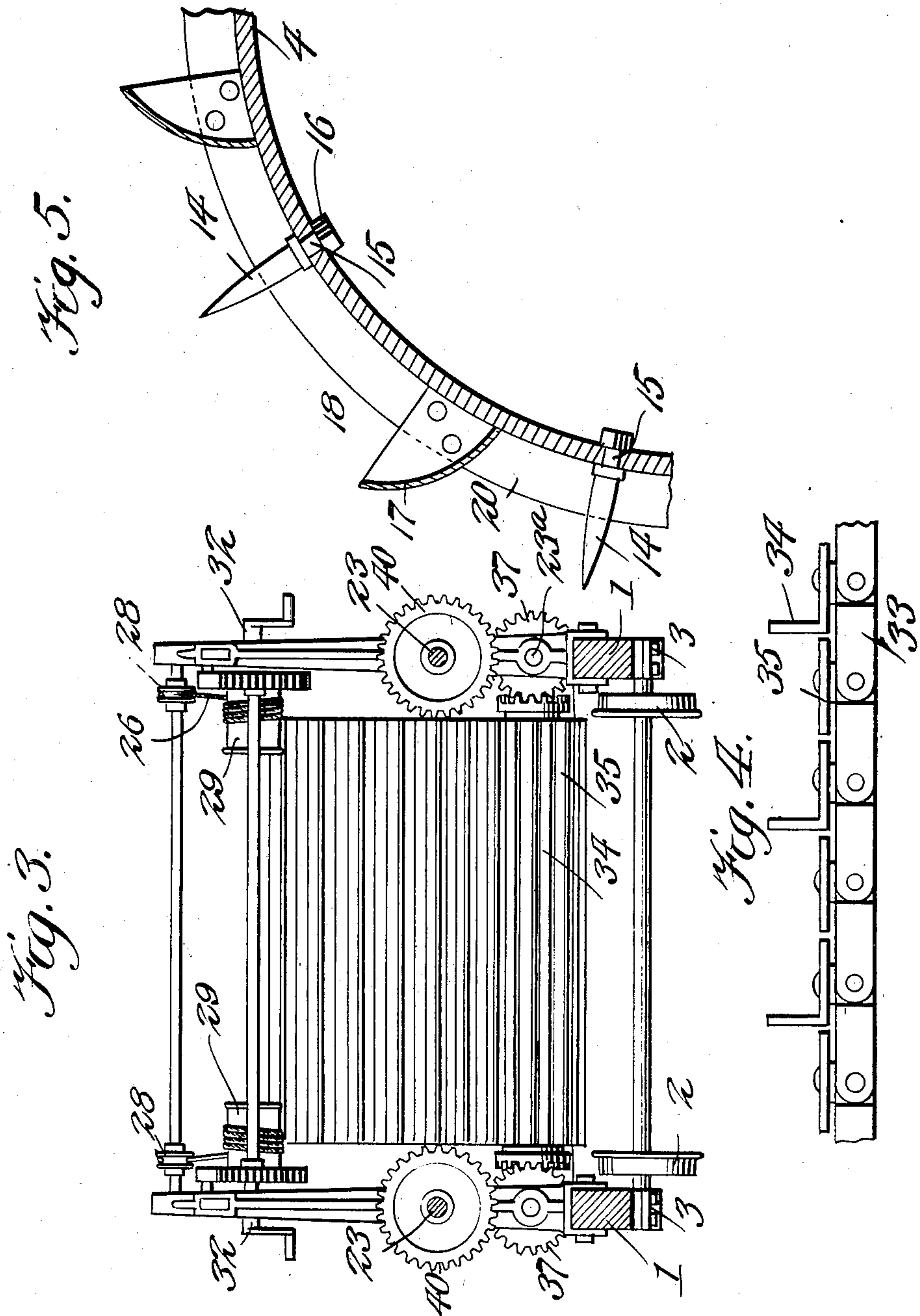
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UNITED STATES PATENT OFFICE.

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EXCAVATING-MACHINE.

No. 908,317.

Specification of Letters Patent.

Patented Dec. 29, 1908.

Application filed February 25, 1908. Serial No. 417,663.

To all whom it may concern:

Be it known that I, JOSEPH ORGAN, a citizen of the United States of America, residing at Metcalf, in the county of Graham and Territory of Arizona, have invented new and useful Improvements in Excavating-Machines, of which the following is a specification.

This invention relates to excavating machines, and one of the principal objects of the same is to provide means for thoroughly loosening the soil and for carrying it up by means of a series of cups to an endless apron upon which the material is discharged and by means of which the material is carried backward and deposited upon an adjustable platform which may be inclined backwardly or laterally to deposit the material at the back or side of the machine.

Another object of the invention is to provide a steel drum armed with alternately arranged steel drag teeth for loosening the earth and cups or buckets for scooping up the earth and carrying it back to an endless apron for discharge to the rear of the machine.

Still another object of the invention is to provide means for raising and lowering the steel drum.

These and other objects may be attained by means of the construction illustrated in the accompanying drawings, in which,—

Figure 1 is a side elevation of an excavating machine made in accordance with my invention. Fig. 2 is a plan view and partial section of the same. Fig. 3 is a transverse vertical section of the same. Fig. 4 is a detail view of the endless carrier. Fig. 5 is an enlarged detail section of a portion of the steel drum.

Referring to the drawings for a more specific description of my invention, the numeral 1 designates a frame to which the traction wheels 2 are journaled by means of the boxes 3. The steel drum 4 is hollow and is provided at its ends with spokes 5 and central hubs 6. Extending through the hubs 6 is a shaft 7, the ends of said shaft being journaled at opposite sides of the drum upon levers 8 which are pivoted at 9 to brackets 10 secured to the side bars of the frame. To support the wheel in its lowermost position a bracket 11, one at each end of the drum, is provided with an enlarged upper end 12 which assists in supporting the drum in its lowermost position, said bracket being se-

cured by bolts 13 to the frame of the machine. Secured to the periphery of the drum 4 are the drag teeth 14 provided with squared shanks 15 which extend through apertures in the drum and are screw-threaded and fitted with nuts 16 for holding them firmly in place. Arranged alternately with the drag teeth are cups or buckets 17, said buckets extending entirely across the drum and at the ends being provided with flanges 18 which are secured by rivets to the end flanges 20 of the drum.

On the ends of the drum are formed gear teeth 21 which are engaged by gear wheels 22 mounted upon shafts 23 journaled in boxes 24 secured to standards 25 rising from the frame of the machine. A spring cable 26 connected to a bracket 27, one upon each end of the drum 4, passes up over a pulley 28 and is wound upon a drum 29 journaled in boxes 30 secured to uprights 31 rising from the frame of the machine. Hand cranks 32 are provided for rotating the drums 29 to raise the drum 4 to regulate the depth of cut and to hold the drum elevated when the machine is moved from place to place.

An endless carrier made up of pivoted links 33 carrying angle iron flights or risers 34 and intermediate plates 35 is mounted on rollers, the lower roller being provided upon opposite ends with crown gears 36 which mesh with gear wheels 37 on the stub shafts 23 journaled in the standards 25. The endless carrier is inclined upwardly, and at its upper end the roller is provided with a shaft 38 which extends outwardly from the roller and is provided with crown gears 39 which mesh with gear wheels 40 on the shaft 23. The shaft 38 is journaled in boxes 41 secured to standards 42 rising from the frame. The standards 25, 31 and 42 are connected by longitudinal bars or braces 43. On the ends of the shaft 38 belt pulleys 44 are secured, and one of these belt pulleys is used to transmit motion to the parts of the excavator, while the other may be used as a fly wheel.

In order that the weight of the materials carried by the drum and dumped upon the carrier may not depress said carrier and render it inoperative, a platform 45 is placed underneath the carrier at the point where the materials are discharged thereon, as shown more particularly in Fig. 1. At the rear end of the machine and supported upon standards 46 and a cross bar 47 is a discharge

platform 48 provided with curved brackets 49 which permit the platform to be adjusted at various inclinations by means of a binding screw 50.

5 The operation of my invention may be briefly described as follows: The machine is mounted upon tracks, and the drum is designed to excavate to a depth equal to the sleepers for the tracks, and when the drum is
10 raised and the tracks are laid the machine may be moved from place to place or advanced as the work advances. The drag teeth loosen up the earth, and the buckets scoop it up and carry it back to the endless
15 carrier upon which it is deposited and discharged upon the platform 48 from which it is slid off at the back or at the side of the machine, depending upon the adjustment of said platform.

20 From the foregoing it will be obvious that an excavator made in accordance with my invention is of comparatively simple construction, and will cut its own way through a pile of earth or other materials and will de-
25 posit the materials either at the side or back upon wagons or upon the banks at the sides of the excavation.

Having thus described the invention, what is claimed as new, is:—

30 1. An excavating machine comprising a hollow steel drum, a series of steel drag teeth secured to the periphery of said drum, a series of buckets secured to said drum, said drag teeth and buckets being arranged alter-
35 nately, means for raising and lowering said

drum, an endless carrier, and a tilting platform for discharging the material.

2. In an excavating machine, a hollow steel drum, steel drag teeth provided with squared shanks and secured in openings in said drum, said drag teeth being secured at equal distances apart across said drum, and a series of buckets secured to said drum, said drag teeth and buckets being alternately arranged, said drum having end flanges to
45 which the buckets are secured.

3. In an excavating machine, the combination of a steel drum armed with drag teeth and buckets alternately arranged on the periphery thereof, means for rotating
50 said drum, means for raising and lowering said drum, an endless carrier, and an adjustable platform.

4. In an excavating machine, a hollow steel drum armed with drag teeth and buck-
55 ets, gear teeth on the ends of said drum, shafts mounted in the frame, gear wheels mounted on the shaft for engaging the teeth on the drum for rotating the same, an endless carrier made up of angle iron flights and piv-
60 oted links, means for rotating said carrier, and an adjustable platform for discharging the material.

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

JOSEPH ORGAN.

Witnesses:

L. R. ADAMS,
J. JAMES.