983,205.

R. M. CLARK.

TRAVELING CONVEYER.

APPLICATION FILED JULY 23, 1910.

Patented Jan. 31, 1911.

3 SHEETS—SHEET 1.

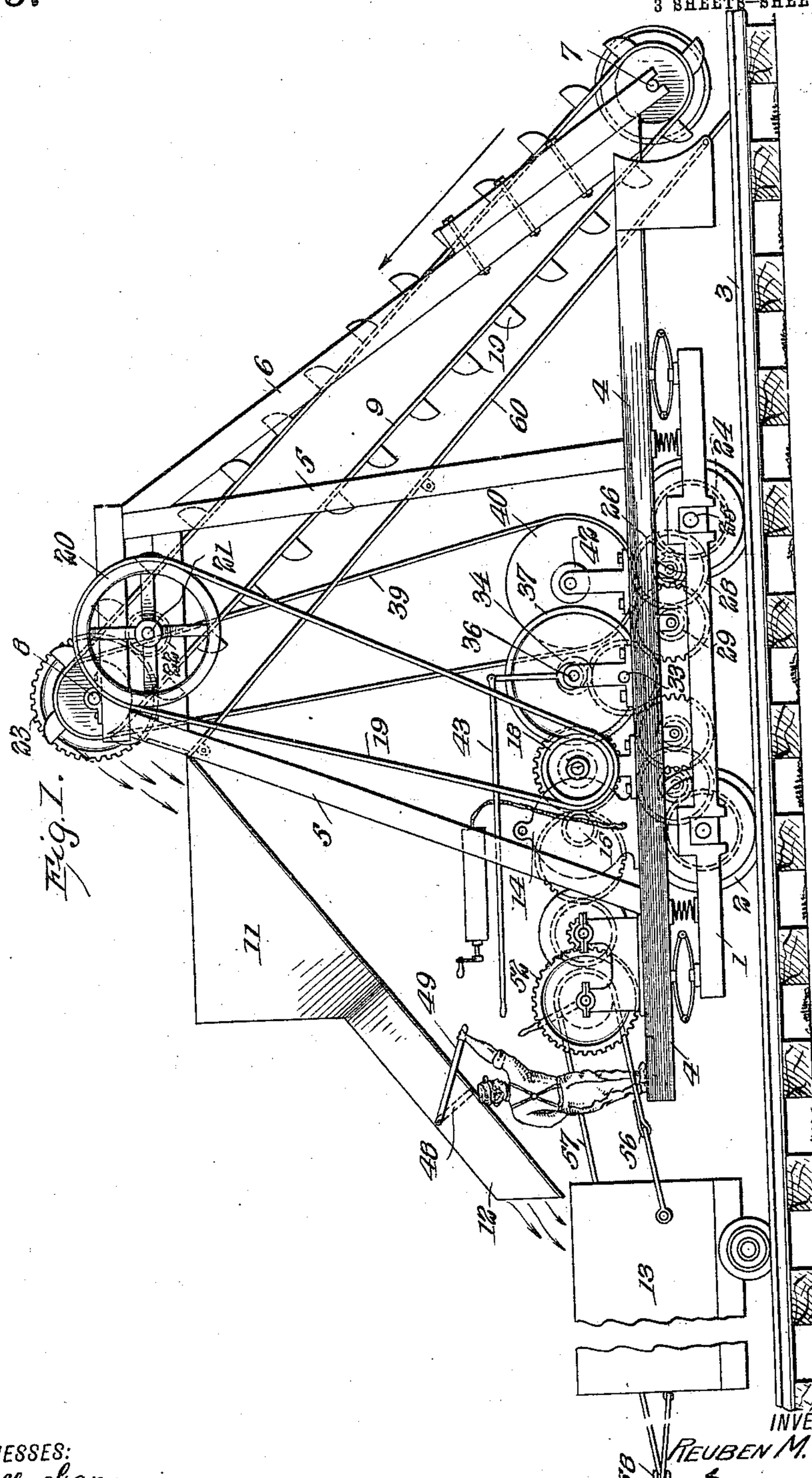

Fig. 1.

WITNESSES:

E. M. Callaghan

Arwood Hart

INVENTOR

REUBEN M. CLARK

BY Munn & Co.

ATTORNEYS

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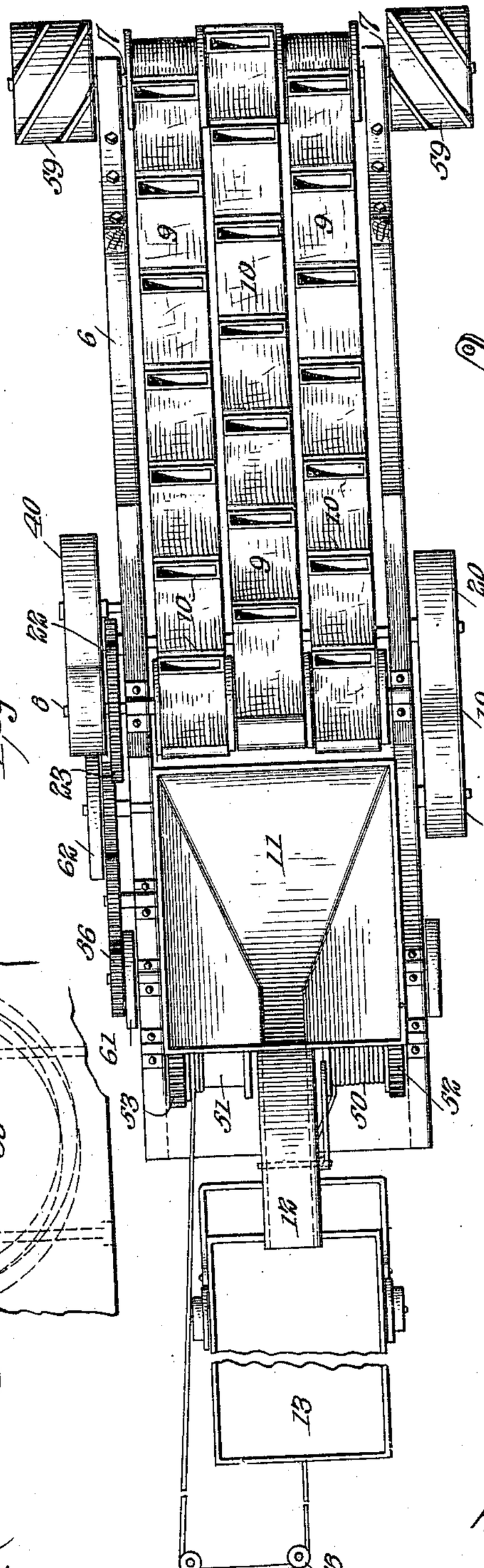

Fig. 2.

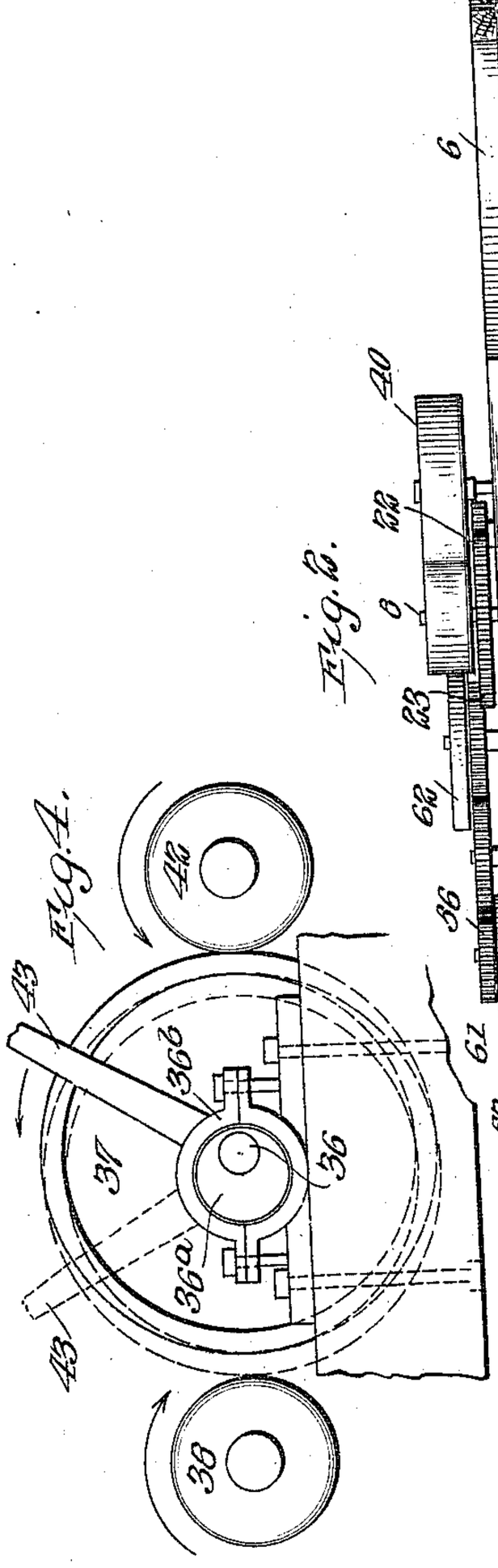

Fig. 4.

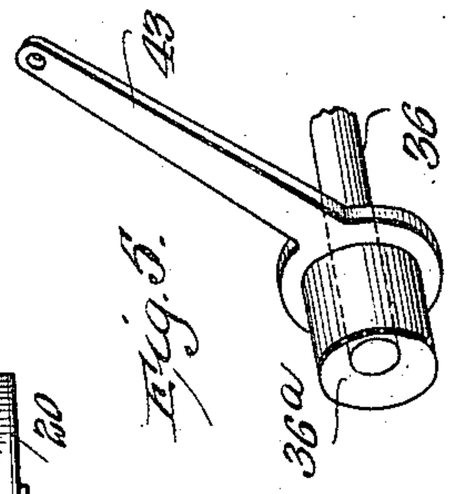

Fig. 5.

WITNESSES:

E. M. Callaghan

Arno W. Hurt

INVENTOR

REUBEN M. CLARK

BY Munn & Co.

ATTORNEYS

R. M. CLARK.

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3 SHEETS—SHEET 3.

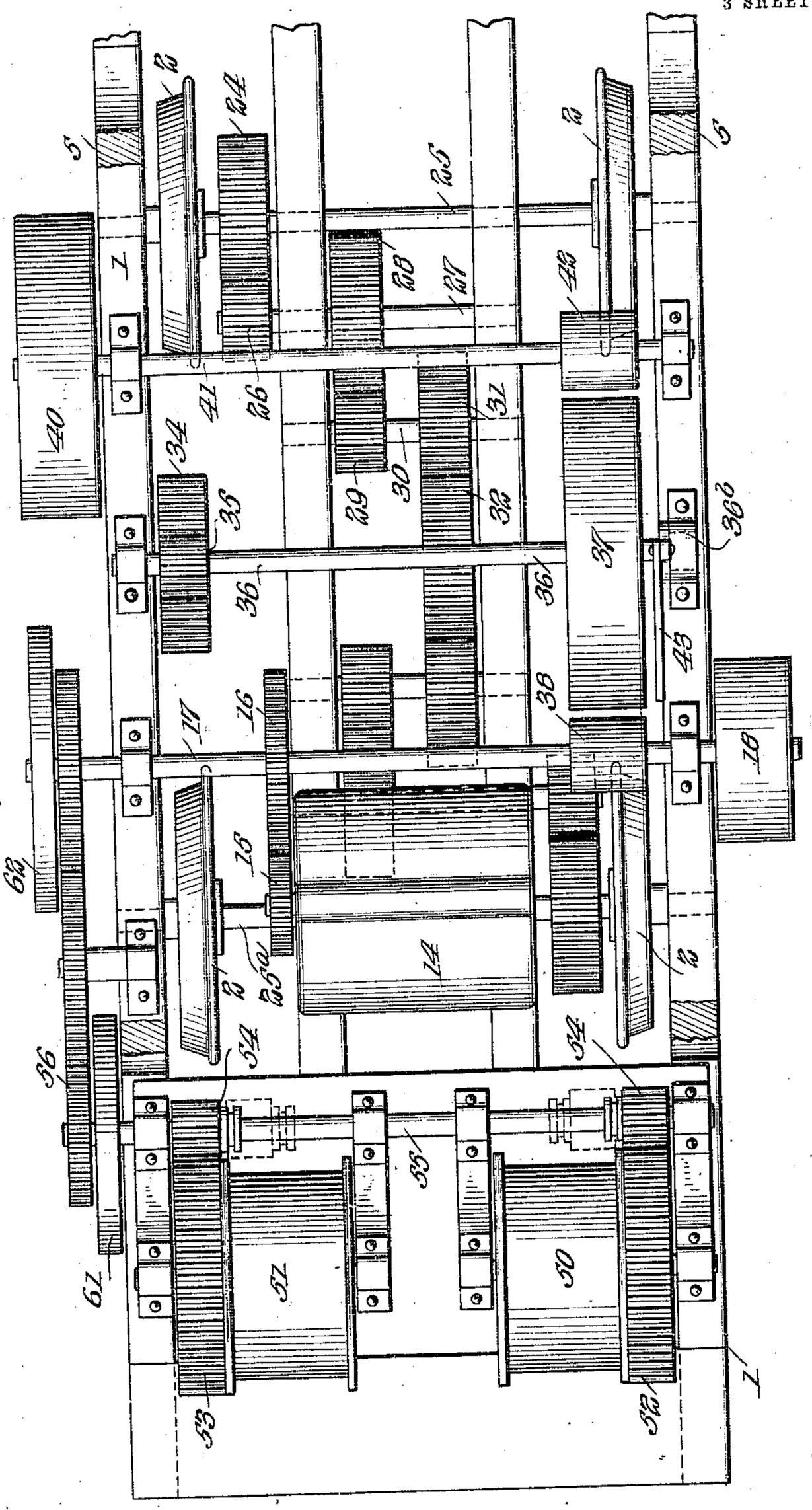

Fig. 3.

WITNESSES:

E. M. Callaghan

Amos W. Hart

INVENTOR

REUBEN M. CLARK

BY Munn & Co.

ATTORNEYS

UNITED STATES PATENT OFFICE.

REUBEN M. CLARK, OF WEBB CITY, MISSOURI.

TRAVELING CONVEYER.

983,205. Specification of Letters Patent. **Patented Jan. 31, 1911.**

Application filed July 23, 1910. Serial No. 573,448.

To all whom it may concern:

Be it known that I, REUBEN M. CLARK, a citizen of the United States, and a resident of Webb City, in the county of Jasper and State of Missouri, have invented an Improved Traveling Conveyer, of which the following is a specification.

My invention is a machine adapted for removing tailings when piled upon the ground, or sand, and various other loose materials, the same being taken up by a conveyer proper formed of belts with buckets attached, and by which the material is delivered into a chute and thus discharged into a car. The operative parts, save the car, are mounted upon a wheel-truck adapted, like the car, to run on rails. The truck wheels are geared with the same motor that drives the conveyer proper, the gearing for the wheels being reversible, so that the machine may be driven in either direction, that is to say, forward or back. The car may be run up to, or moved away, from the conveyer proper, as conditions require.

The details of construction, arrangement, and operation of parts are as hereinafter described, and illustrated in the accompanying drawing, in which—

Figure 1 is a side elevation of the machine. Fig. 2 is a plan view of the same. Fig. 3 is a plan view of the major part of the gearing, that is to say, the gearing which is mounted directly upon the truck and operatively connected with the wheels of the latter. Fig. 4 is a side elevation of the mechanism for reversing the direction of movement of the machine as a whole. Fig. 5 is a perspective view of the eccentric and lever forming part of the reversing mechanism.

The truck upon which the conveyer proper is mounted is formed of side bars 1 and flanged wheels 2 that are adapted to run upon rails 3. The base frame 4 of the conveyer proper is supported by a spring on the truck frame 1, and a vertical frame 5 is supported on the horizontal or base frame 4. From this vertical frame 5, beams 6 extend forward and downward to the front of the conveyer, and in the lower end of the same the driving shaft 7 is suitably mounted. The upper and driving conveyer-shaft 8 is supported in boxing on the top of the vertical frame 5, and is constantly driven in the direction indicated by the arrow.

The conveyer proper is formed of a series of endless belts 9, carrying buckets 10, and arranged to run upon flanged pulleys suitably keyed on the respective shafts 7 and 8 and arranged side by side, as shown in Fig. 2. The buckets of the conveyer discharge into a hopper 11 having a chute or spout 12 which delivers into the car 13 adapted to run on the track behind the conveyer, and operatively connected therewith, so as to be run up to or away from the conveyer, as will be presently described.

As indicated in Figs. 1 and 3, an electric motor 14 is arranged on the main frame 4 and provided at one end with a spur gear 15 which meshes with a larger gear 16 keyed on a countershaft 17. On one end of this countershaft 17 is mounted a pulley 18 from which a belt 19 runs to a larger pulley 20 mounted on a shaft 21 arranged in the upper portion of the vertical frame 5. On the other end of shaft 21 is keyed a spur pinion 22 that meshes with the large gear 23 keyed on the driving shaft 8 of the conveyer. It is to be supposed that the motor is constantly driven and the countershaft 17 also, so that, through the gear 18, belt 19, and gearing 20, 21, 22, and 23, the conveyer proper is also constantly driven. The machine as a whole, however, must be driven forward as the material is taken up, and also driven backward at times, and for this purpose it is requisite that the motor shall be connected reversibly with the axles of the truck running-wheels 2.

As shown in Fig. 3, a large spur gear 24 is keyed on the front axle 25 and meshes with a pinion 26 keyed on a short countershaft 27, which carries a large gear 28 that in turn meshes with a pinion 29 on a short countershaft 30. This last-named shaft carries a large gear 31 that meshes with a gear 32 keyed on a shaft 33—see Fig. 1. The rear axle 25ª is similarly connected with the shaft 36 through gearing which is practically a duplicate of that already described.

On the farther end of shaft 33—see Fig. 3—there is keyed a spur gear 34 which meshes with a pinion 35 on shaft 36 arranged directly over said shaft 33 and having near its other end a large friction wheel or drum 37 keyed thereon. The shaft 36 is adapted to be shifted right or left, to bring the large drum 37 into contact with either of the small paper drums 38 or 42. An eccen-

tric 36ª is mounted loose on the shaft 36 and arranged in boxing 36ᵇ that permits its rotation by a hand lever 43. By adjusting said lever, the eccentric is rotated a part of a revolution, and that end of shaft 36 is thereby shifted right or left so as to bring the large friction wheel 37 into contact with paper drums 38 or 42, with the result that the machine is driven forward or backward, as may be desired. It is obvious the farther end of shaft 36 must be fitted loose in its bearings to allow the near end, bearing the wheel 37, to be shifted as stated. The drums 38 and 42 are constantly driven, and the shaft 36 is driven only when the large drum is in contact with one or the other of the smaller drums.

An electrical controller is arranged contiguous to and suitably connected with the motor 14, and since it involves no novelty, further or detailed description is unnecessary.

The chute or spout 12 is shown provided with a valve 48 which may be operated by a handle 49 for opening or closing as may be desired. This handle is in such position that it may be easily reached by the operator standing on the platform on base frame 4.

On the rear end of the frame 4 are arranged two drums 50 and 51, each mounted upon a short axle and having an adjacent gear 52 and 53. These gears mesh with pinions 54 that are mounted on a shaft 55 which is operatively connected by gearing 56 with the driven shaft 17 before described. Each of the pinions 54 is provided with a clutch by which it may be shifted on a feather and thus brought into or out of mesh with the gear on the adjacent drum. In brief, by operating these clutches, reversely, one drum may be turned in one direction and the other left free, and vice versa.

A belt or rope 56—see Fig. 1—connects the front end of the car with one of the drums, say 50, and another belt 57 is similarly connected with the other drum, 51, and passes around a fixed pulley 58. It will now be apparent that, by operating the drums 50, 51, that is to say, by alternately clutching or releasing them, the car may be hauled up to the conveyer proper or hauled away therefrom. When hauled up to the conveyer, the chute discharges into it and when filled, the operator may move the car away to the place where its contents are to be dumped. Thus, the car forms a necessary part of the conveyer and is operatively connected with the same motor that drives the conveyer and also shifts it backward and forward on the track.

In Fig. 1, spirally flanged drums 59 are shown mounted on the extended ends of the lower conveyer shaft 7, so that they are rotated therewith. The spiral flanges attached to the periphery of the drums are so arranged as to force or push the loose material which they encounter toward and in front of the conveyer proper. In other words, these spirally flanged drums constitute lateral feeders, tending to crowd or push the loose material into position to be readily taken up by the buckets of the conveyer.

Under the conveyer proper is arranged an inclined chute-board 60 by which material falling or scattering from the buckets is reconveyed to the point of take-up.

In Fig. 3, two balance wheels 61 and 62 are shown, the same being applied respectively, to the shafts 55 and 17.

What I claim is:—

1. The machine for the purpose specified, comprising a wheeled truck having front and rear axles, a motor which is operatively connected with both axles by interposed gearing, a shaft 17 carrying a friction wheel 38 and geared with one side of the motor, a countershaft 41 carrying a friction wheel 42 and geared with the other side of the motor, and an interposed shaft operatively connected with the two sets of gearing which are connected with the respective axles and carrying a large friction wheel which is interposed between the aforesaid friction wheels 38 and 42, and adapted to be shifted into contact with either, for driving the truck in one direction or the other, substantially as described.

2. The combination with a wheeled truck having front and rear axles, of two sets of gearing connected with the respective axles and interposed gearing including parallel shafts 17 and 41 and friction drums 38 and 42 carried thereby, the shaft 33 and shaft 36 arranged thereover and adapted to be shifted laterally at one end, a large friction drum keyed on said shaft and adapted for contact with either of the smaller friction drums, an eccentric mounted loose on such shaft 36, and boxing in which the eccentric is rotatable, as shown and described.

REUBEN M. CLARK.

Witnesses:
AMOS. D. HATTEN,
F. W. KELLER.