

No. 741,821.

PATENTED OCT. 20, 1903.

G. W. OSBURN.
SCREENING MACHINE.
APPLICATION FILED FEB. 5, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.

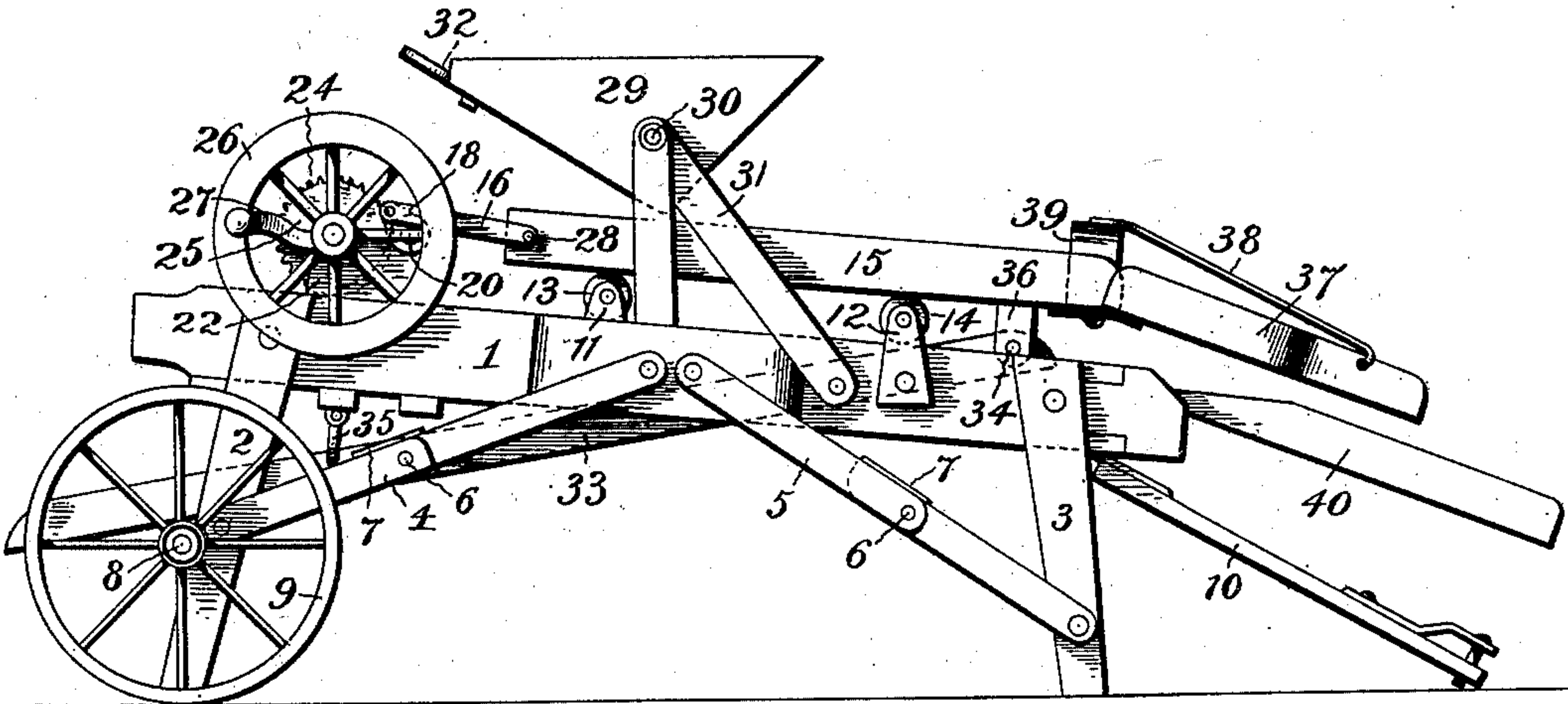
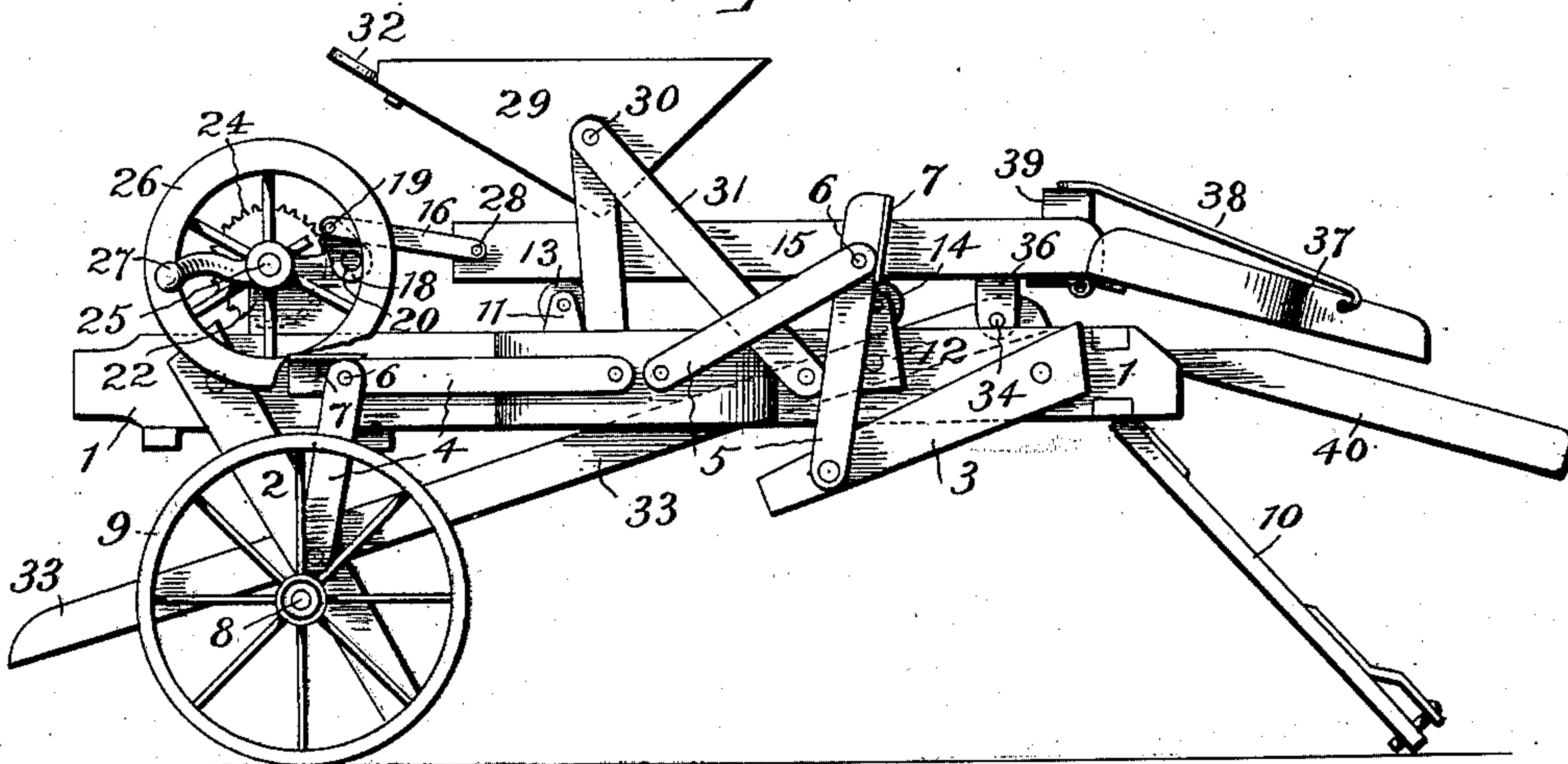


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

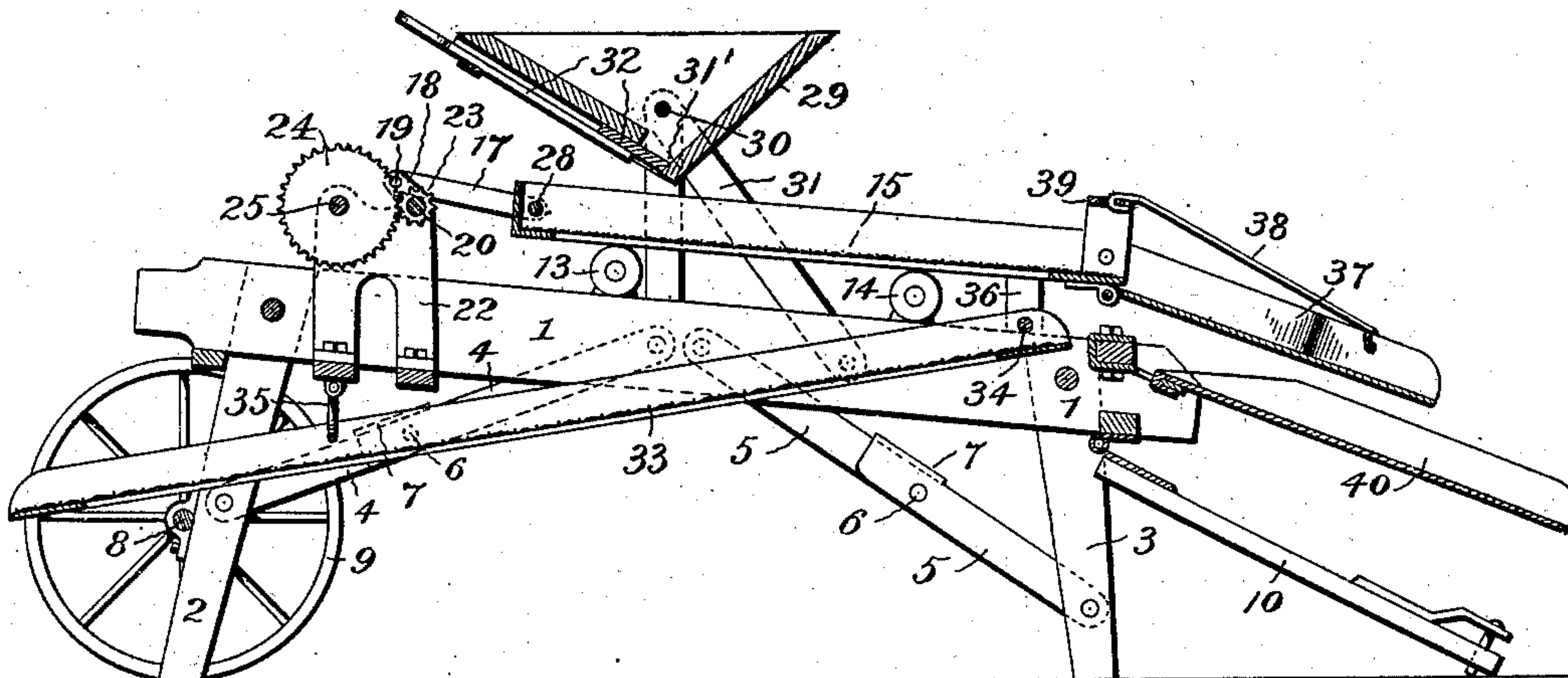


Fig. 4.

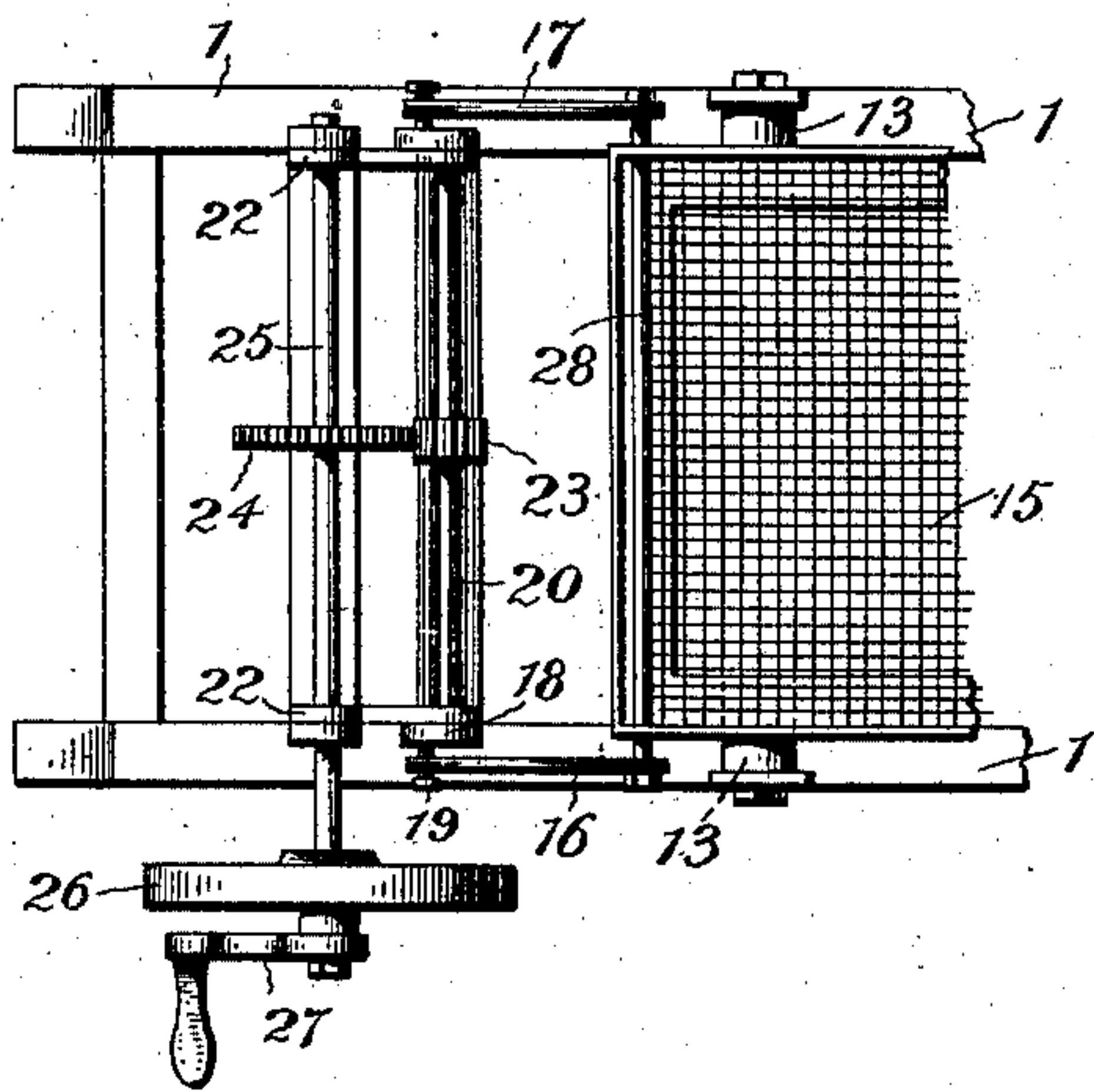
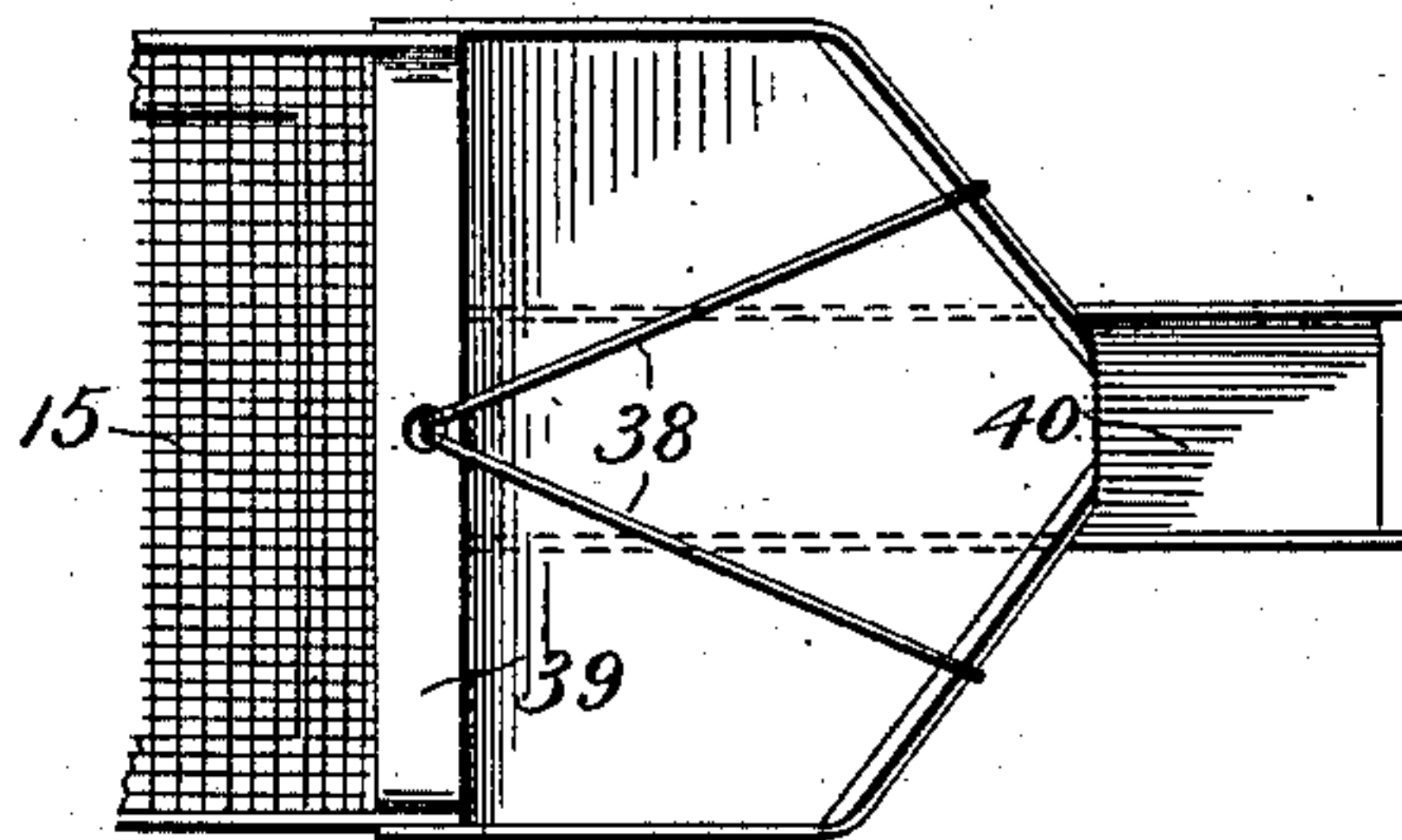


Fig. 5.



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UNITED STATES PATENT OFFICE.

GEORGE W. OSBURN, OF ENID, OKLAHOMA TERRITORY.

SCREENING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 741,821, dated October 20, 1903.

Application filed February 5, 1903. Serial No. 141,991. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. OSBURN, a citizen of the United States, residing at Enid, in the county of Garfield and Territory of Oklahoma, have invented a new and useful Screening-Machine; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention relates to a screening-machine, and has for its object to improve the construction of screening-machines and to provide a simple and comparatively inexpensive one designed particularly for sifting sand and coal and adapted to be readily arranged for either operation.

A further object of the invention is to provide a machine of this character capable of rapidly sifting a material such as sand or coal and adapted to save time and labor in such operation and to be actuated by hand or other power.

A further object of the invention is to provide a sifting-machine capable of being readily set up for use and adapted to be conveniently folded for transportation.

The invention also has for its object to provide a screening-machine which when folded may be conveniently moved from place to place.

The invention consists in the construction and novel arrangement of parts hereinafter described and shown, and particularly pointed out in the claim hereto appended.

In the drawings forming part of this specification, and in which like numerals of reference designate corresponding parts, Figure 1 is a side elevation of a screening-machine constructed in accordance with this invention and set up for operation. Fig. 2 is a side elevation of the same, the machine being folded for transportation. Fig. 3 is a longitudinal sectional view. Fig. 4 is a plan view of a portion of the machine, illustrating the arrangement of the gearing for reciprocating the screens. Fig. 5 is a plan view of the rear end of the machine, illustrating the construction of the discharge spouts or chutes.

Referring to the drawings, 1 designates an oblong frame which when the machine is operated by power other than hand is designed

to be firmly secured to a suitable support and which when the machine, as illustrated in the accompanying drawings, is constructed for manual operation is supported by legs 2 and 3, pivoted at their upper ends to the frame and supported in a slightly-inclined position by foldable braces 4 and 5. The foldable braces are composed of two sections pivoted at their outer ends to the frame and to the legs and pivotally held together at their adjacent ends, one of the sections or members of each brace being extended beyond the intermediate pivot 6 and provided with a lip or flange 7 for engaging the other section or member to retain the section in alignment when the legs are arranged as shown in Fig. 1.

The legs 2 are provided between their ends with suitable bearings for the reception of an axle 8, having carrying-wheels 9 at its ends for supporting one end of the machine when the legs are folded, as illustrated in Fig. 2 of the drawings. The frame is provided at the other end of the machine with a suitable tongue 10, adapted to be arranged to brace the machine when the latter is set up for use and capable also of being hitched to a vehicle or drawn by hand when it is desired to move the machine from one place to another. The front of the frame is supported by the tongue when the latter is hitched to a vehicle or drawn by hand.

The frame is provided at opposite sides with front and rear bracket-arms 11 and 12, located at the front and rear portions of the frame and provided at their inner faces with inwardly-projecting rollers 13 and 14, which support a reciprocating or vibrating screen 15. The screen 15 is provided at its side and front end with upwardly-extending walls or flanges and is connected by pitmen 16 and 17 with cranks 18, having wrist-pins 19. The cranks 18 are located at the end of the transverse shaft 20, as clearly shown in Fig. 4. The transverse shaft is journaled in suitable bearings of brackets 22 and carries a pinion 23, which meshes with a cog-wheel 24 of the transverse shaft 25. The drive-shaft 25, which is journaled in suitable bearings at opposite sides of the frame, is provided at one end with a balance or fly wheel 26, having a crank-handle 27; but any other suitable means,

such as a crank, may be employed for operating the drive-shaft, and a pulley or the like may be employed for transmitting motion to the drive-shaft from a suitable motive power. When the drive-shaft is rotated, motion will be communicated through the gearing to the transverse crank-shaft 20, which will reciprocate the screen 15; but any other form of crank element may be provided for actuating the pitmen.

The screen 15 is detachably connected with the pitmen by means of a transverse rod 28 to enable the screens of different mesh to be employed to adapt the machine for operating on different materials.

The screen 15 is arranged at an inclination, and the material is fed to the screen from a superimposed hopper 29 of approximately-triangular form pivotally mounted by a rod 30 between opposite supports 31, consisting of oppositely-inclined bars extending upward from the sides of the frame and connected at their upper ends by the rod 30, which is removable to permit the hopper to be detached and to allow the bars or support 29 to be folded. The hopper is provided at its bottom with an opening 31, which is controlled by a slide or cut-off 32, adapted to vary the size of the opening to control the feed and slidably mounted on the hopper. The cut-off is provided with a suitable handle, which extends above the hopper, as shown. The hopper is adapted to be oscillated by hand to agitate its contents for causing a positive feed of the material.

The screen 15 when arranged for sifting sand only has a fine mesh; but when the machine is arranged for sifting coal or obtaining gravel a lower screen 33 is employed. The lower screen 33, which is inclined downward toward the front of the machine in the opposite direction from the upper machine, is detachably connected with the same by means of a rod 34 and is supported between its ends by suitable hangers 35. The rod 34 passes through perforations of side walls of the lower screen and through depending arms 36 of the upper screen and is detachable to permit it to be arranged on the rollers. The lower screen is of finer mesh than the upper screen, and in sifting coal the latter will pass out from the upper screen. The fine coal will pass out of the machine from the lower end of the lower screen and the dust and trash will fall through the latter. By providing a pair of screens of this character the machine is adapted without change for sifting coal and for obtaining sand and gravel, and the lower

or finer screen may be interchanged with the upper screen to arrange the machine for sifting sand.

The upper screen is connected at its lower end with an upper discharge chute or spout 37, detachably secured to the screen 15 and supported by rods 38, diverging outwardly and extending from an arched bar 39, which is mounted upon the upper screen. The outer portion of the upper chute or spout is tapering and is arranged over a narrow lower spout 40, detachably secured at its upper end to the frame and extending downward at an inclination, as clearly shown in Fig. 3. In sifting sand the fine sand will pass through the screen, which is mounted upon the rollers, and will fall to the bottom of the machine, and the gravel will pass out of the machine at the lower end of the screen.

What I claim is—

A screening-machine comprising a portable frame provided with front and rear pivoted legs, the rear legs being provided with wheels adapted to rest upon the ground when the rear legs are swung inward, a tongue connected with the front of the frame and adapted to swing downward to form a brace, a chute connected with the frame and located above the tongue, brackets extending upward from the frame and provided with wheels, an upper screen slidable on the wheels and arranged at an inclination, an oppositely-inclined lower screen interchangeable with the upper screen and suspended at its upper end from the same and having its lower portion arranged above the axle of the wheels of the rear legs and suspended from the frame, a spout carried by the front end of the upper screen and located above and adapted to empty into the chute, parallel shafts disposed transversely of the gearing connecting the shafts, cranks carried by one of the shafts and connected with the upper screen, operating mechanism connected with the other shaft, supports extending upward from the frame and projecting above the upper screen at a point between the ends thereof, and an approximately triangular hopper pivotally mounted between the supports and discharging into the upper screen, substantially as described.

In testimony whereof I have hereto affixed my signature in the presence of two witnesses.

GEORGE W. OSBURN.

Witnesses:

JAMES G. OSBURN,
NILE HOUSTON.