(No Model.) 2 Sheets—Sheet 1.

J. E. McCRACKEN.

SCREENING MACHINE.

No. 520,119. Patented May 22, 1894.

Fig. 1.

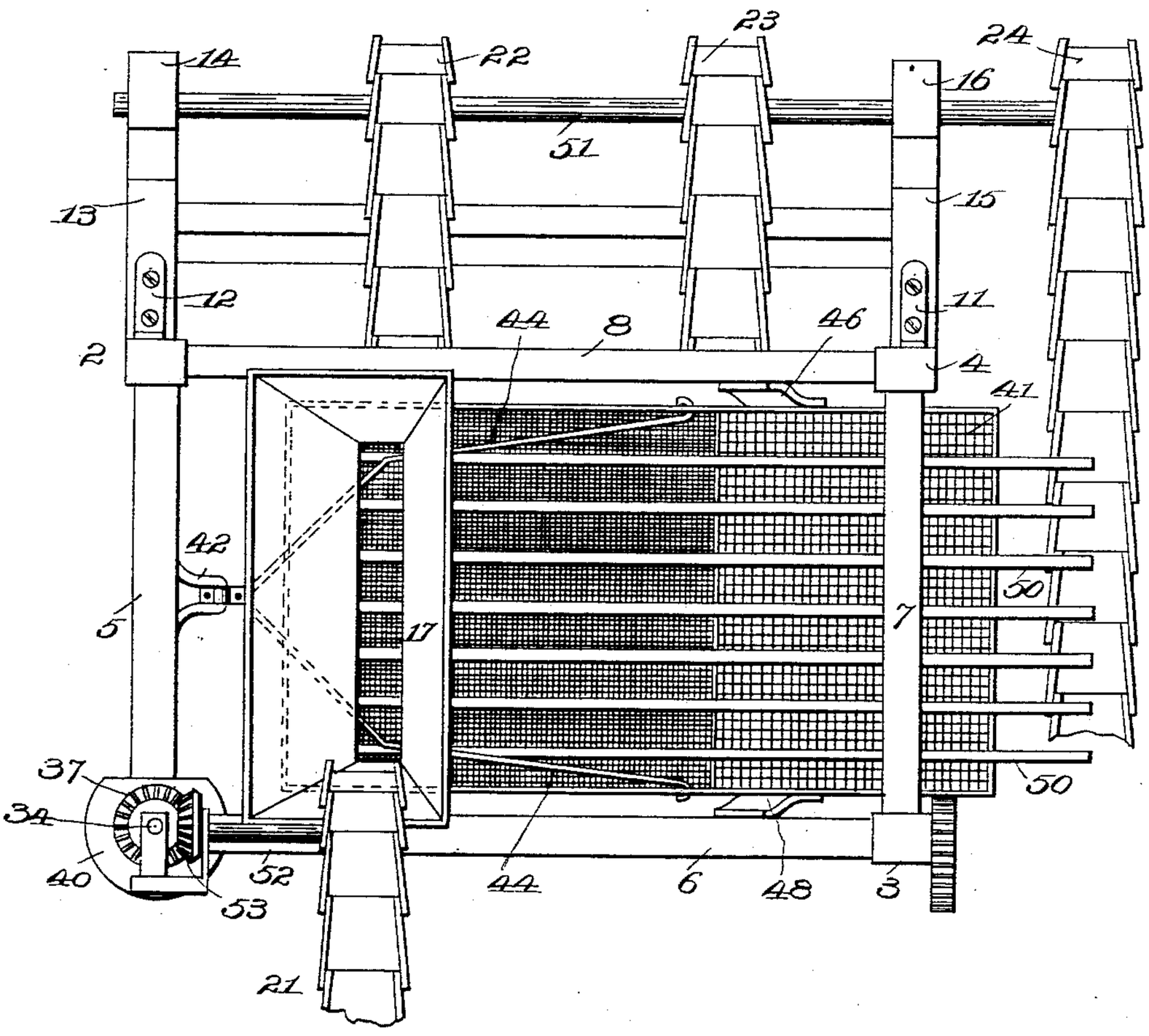
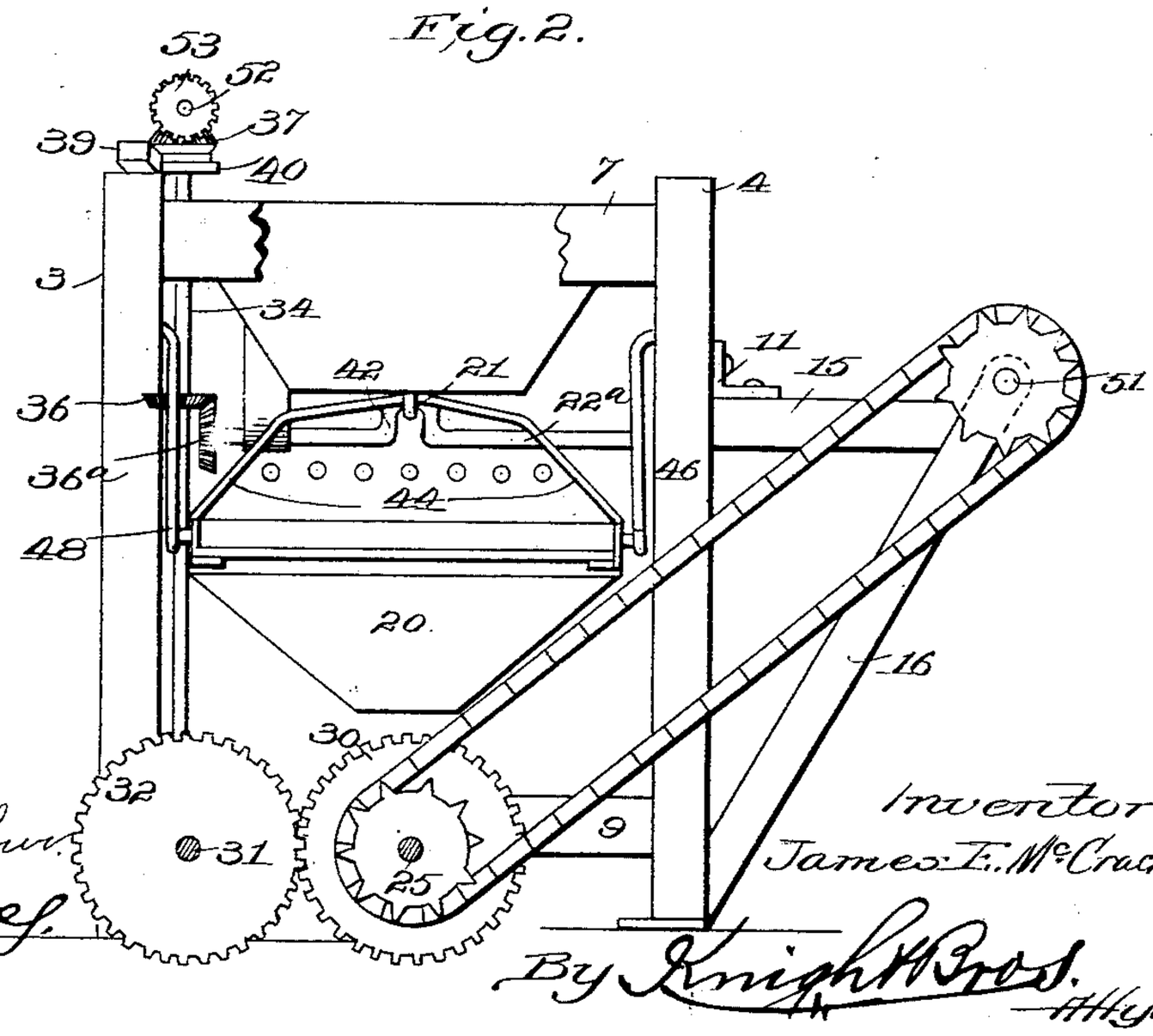


Fig. 2.



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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

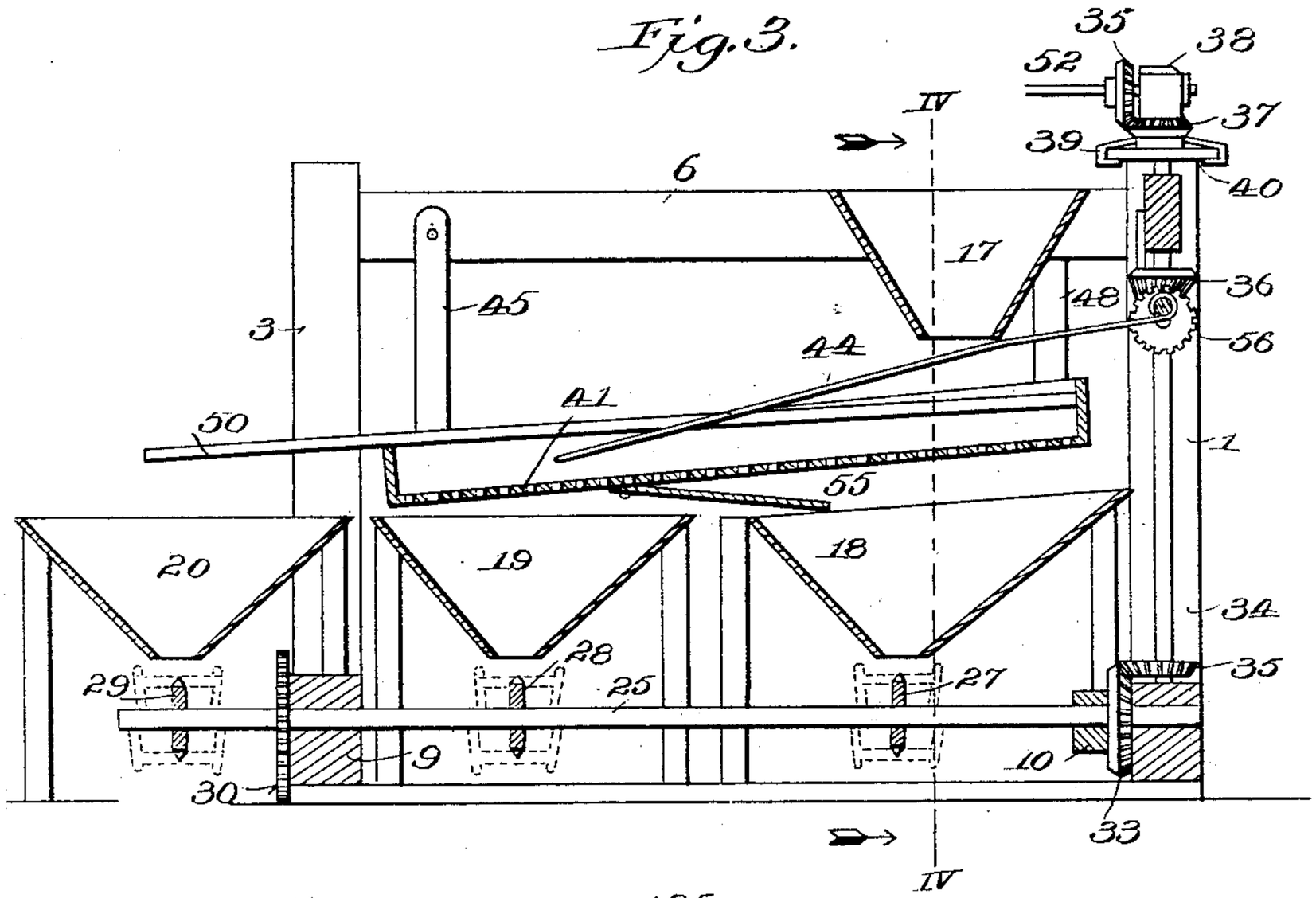


Fig. 5.

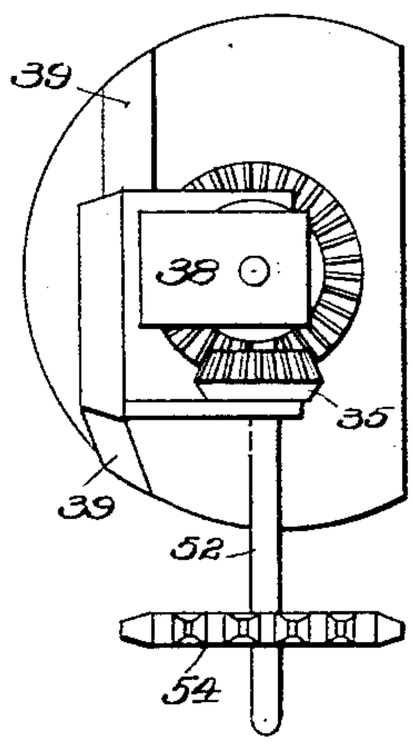
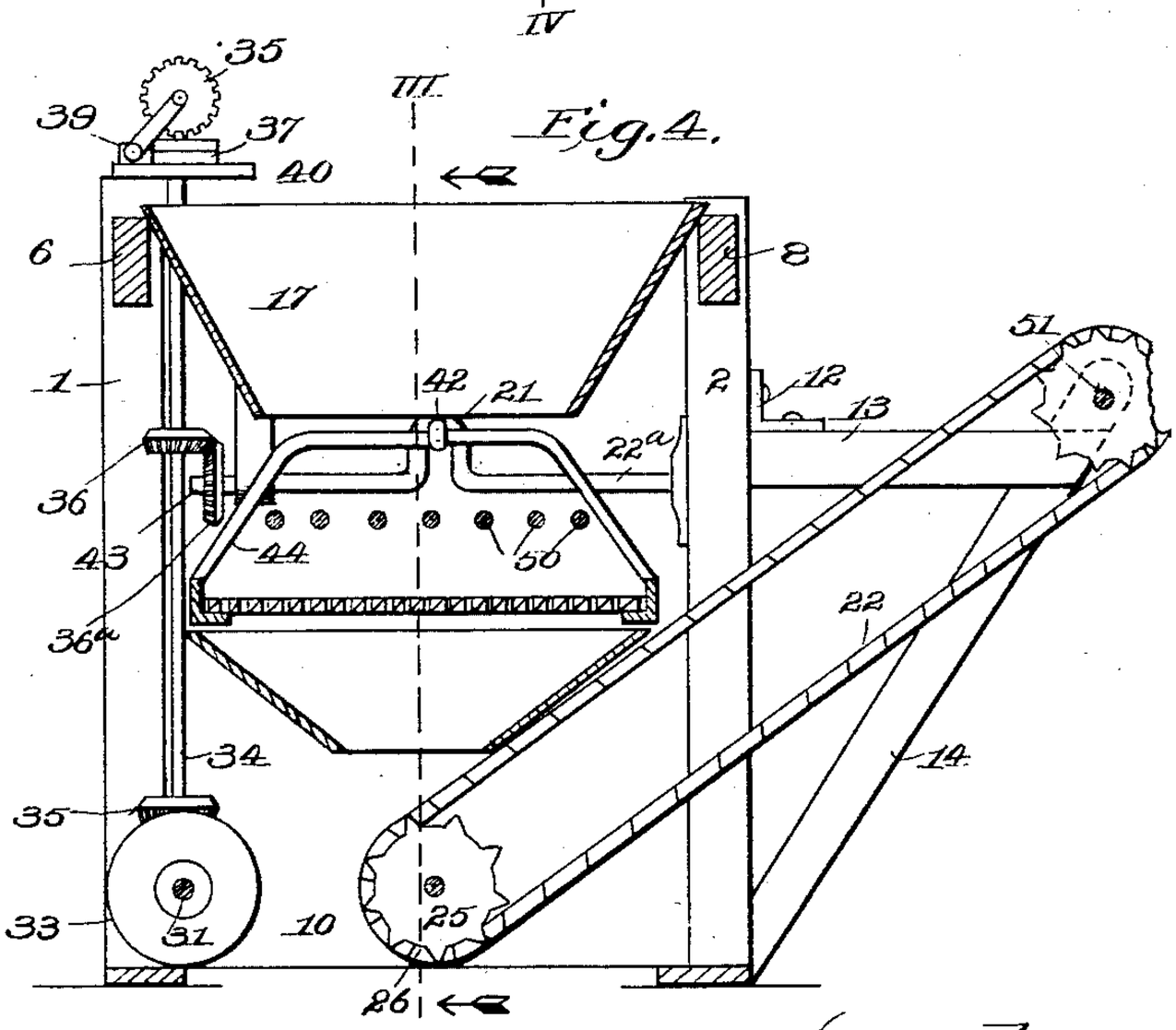


Fig. 4.



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UNITED STATES PATENT OFFICE.

JAMES E. McCRACKEN, OF NEAR BELLEFONTAINE, OHIO.

SCREENING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 520,119, dated May 22, 1894.

Application filed January 23, 1892. Serial No. 419,090. (No model.)

To all whom it may concern:

Be it known that I, JAMES E. McCRACKEN, a citizen of the United States, and a resident of near Bellefontaine, in the county of Logan and State of Ohio, have invented a new and useful Improvement in Screening-Machines, of which the following is a specification.

My invention relates to certain improvements in machines for elevating and screening sand, coal and other materials whereby the finer particles are separated from the coarser and the different grades of material conveyed away to suitable receptacles; and my invention consists of certain novel features that will be fully described with reference to the accompanying drawings which form a part of this specification and specifically pointed out in the claim.

In the said drawings: Figure 1 is a plan view of my improved machine. Fig. 2 is an end view thereof. Fig. 3 is a longitudinal section, taken on the line III—III Fig. 4, looking in the direction of the arrow. Fig. 4 is a transverse section taken on the line IV—IV Fig. 3 looking in the direction of the arrow, and Fig. 5 is a detail top view of the mechanism for driving the sand elevating device.

In the said drawings: 1, 2, 3, 4 represent standards or uprights of the frame carrying my improved device, and 5, 6, 7, 8, 9, 10 cross-pieces connecting together said standards.

11 and 12 represent angle irons which connect to the main frame a supplemental frame, composed of the outwardly extending pieces 13, 15 and downwardly extending inclined supports 14, 16.

17 represents a hopper mounted in the main frame and adapted to receive the material to be screened, which is raised from the pit by the conveyer 21.

18, 19 and 20 represent hoppers which are placed under the screen 41 to receive the different grades of the screened material.

41 represents the sifting screen which is loosely mounted in the main frame by means of the supports 45, 46 and 48, which supports are pivoted at one end to the frame and at the other to the screen. The screen is adapted to be reciprocated by means of the yoke 44, the ends of which are secured to the screen and the neck connected by means of a loop 21 to the crank 42 of the shaft 22^a, which is journaled in the frame. Motion is given to this shaft by the mechanism hereinafter described. The meshes of the upper half of this screen are small to allow the fine material to pass through, while the meshes of the lower half are larger to allow the coarser material to pass and thus separate the different grades of material. Secured to the bottom of the screen is a chute board 55 which guides the fine material to its receiving hopper.

50 represents a set of parallel bars mounted on the screen for tailing over said screen into the hopper 20, the stones which drop from the hopper 17. Situated beneath the hoppers 18, 19, 20 is a series of conveyers 22, 23, and 24 for conveying away the different grades of sifted material. These conveyers pass over sprocket-wheels, one set of which is mounted on the main shaft 25 which is journaled in the main frame, and the other set on the shaft 51 which is journaled in the supplemental frame.

I will now describe the means for imparting motion to the device. Mounted on the shaft 25 is a spur wheel 30 which meshes with a spur wheel 32 mounted on a shaft 31 which has its journals in the main frame. The shaft 31 also carries a bevel wheel 33 meshing with a second bevel wheel on the shaft 34 which also has its journals in the main frame. Midway of the shaft 34 is mounted a bevel wheel 36 engaging with a bevel wheel 36^a on the shaft 22^a carrying the crank 42. By this mechanism a reciprocating motion is imparted to the screen. Secured to the top of the standard 1 is a semicircular plate 40 provided with a central opening through which the shaft 34 passes, and mounted on the shaft 34 at that point is a bevel wheel 37. This wheel meshes with a similar wheel 35 mounted on a short shaft 52 which has its journal in a yoke 38 secured on the plate 40 by means of a clamp 39. 54 is a sprocket-wheel journaled on the shaft 52 and over which the conveyer 21 passes which conveys the material to be sifted to the hopper 17. When the machine is not in use the sprocket-wheel 54 together with the conveyer 21 may be swung out of the

way, by turning the clamp 39 around the plate 40.

The operation of my device is as follows:—Power is applied to the shaft 25 which sets in motion the several conveyers and the screen. The conveyer 21 shovels the material into the hopper 17 which feeds it to the screen. The parallel bars 50 tail the stones into the hopper 20, the finer material dropping onto the screen. The finer particles drop through the fine mesh of the upper half of the screen, the reciprocating motion throwing the coarser particles to the lower half of the screen where they drop through into the hopper 19. The conveyers 22, 23 and 24 passing under the hoppers convey the material away to any suitable place.

Having thus described my invention, what I claim as new therein, and desire to secure by Letters Patent, is—

In a sand-screening machine, the combination of the frame, the sifting frame loosely suspended therein, a yoke secured to said frame, suitable means for imparting a reciprocating motion thereto consisting of a crank-shaft journaled in the frame and connected with the yoke, and suitablo mechanism for rotating said crank-shaft, a suitable hopper mounted over said screen, and a conveyer emptying into said hopper, a series of hoppers placed beneath said screen and conveyers passing beneath said hoppers for conveying away the sifted material, a series of rods on and extending the whole length of the screen for tailing over the stones dropping on said rods, and a deflector board secured to the bottom of said hopper for leading the sifted material to its hopper, substantially as and for the purpose set forth.

JAMES E. McCRACKEN.

Witnesses:
SAMUEL H. WEST,
THOMAS L. MOORE.