April 8, 1952 E. FAULKNER 2,591,688

SAND RIDDLING DEVICE

Filed May 4, 1946 2 SHEETS—SHEET 1

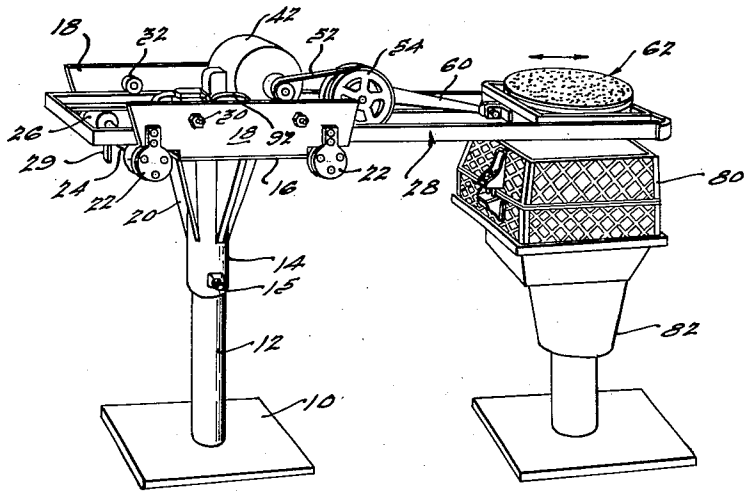


Fig. 1.

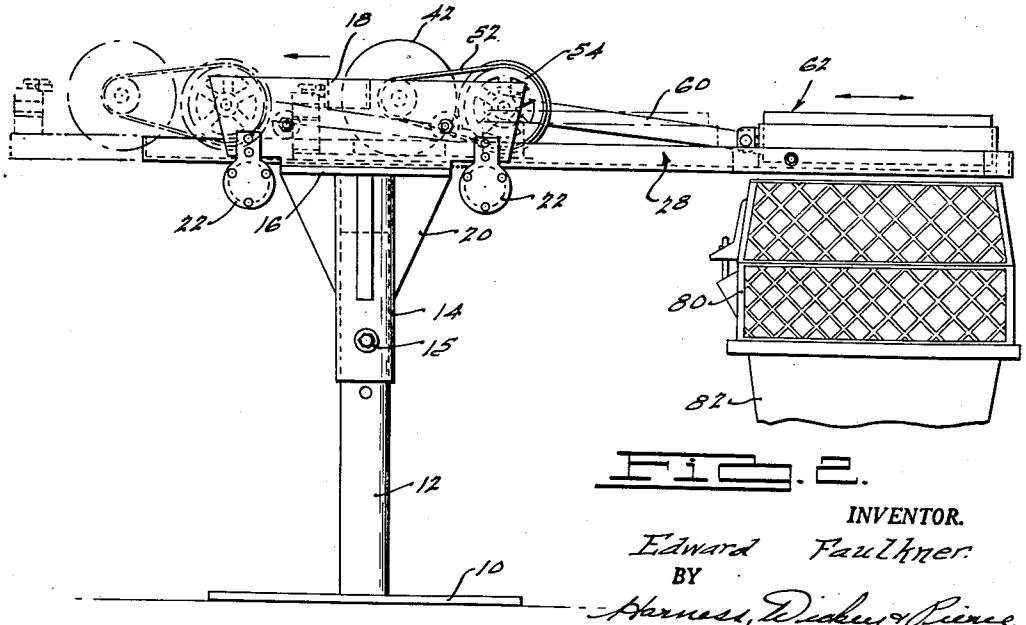


Fig. 2.

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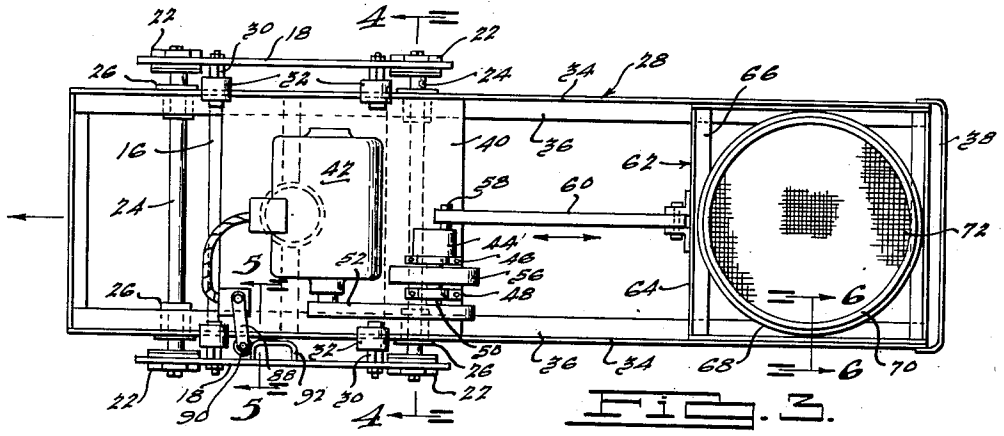


Fig. 3.

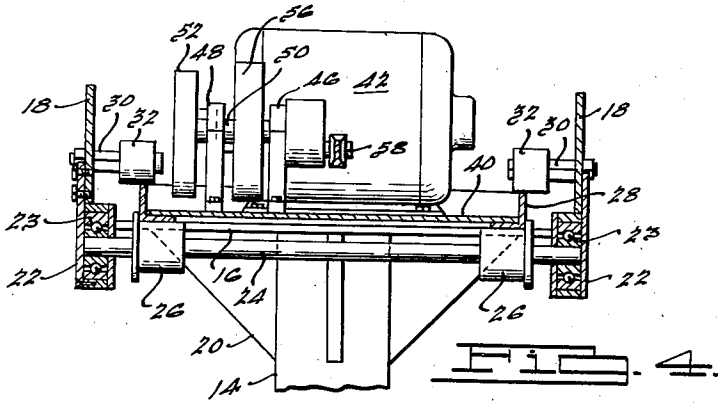


Fig. 4.

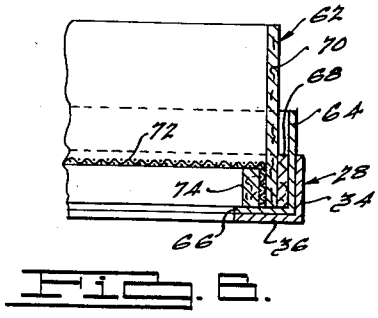


Fig. 6.

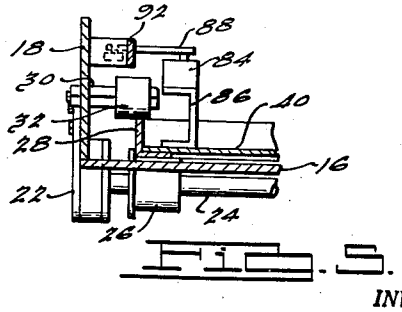


Fig. 5.

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UNITED STATES PATENT OFFICE

2,591,688

SAND RIDDLING DEVICE

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Application May 4, 1946, Serial No. 667,310

3 Claims. (Cl. 209—342)

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This invention relates to riddling devices and more particularly to a motor driven sand riddling device.

It is an object of the present invention to provide an improved riddling device having a power driven reciprocating riddle or sieve.

It is a further object of the present invention to provide an improved sand riddling device having switch means which is responsive to movement of the frame to and from an operative position.

Another object of this invention is to provide an improved sand riddling device of simple construction which is economical of manufacture and assembly, and which is reliable and efficient in operation.

Other and more detailed objects will be apparent from a consideration of the following description, the accompanying drawings, and the appended claims.

For a better understanding of the invention, reference may be had to the drawings in which like reference characters designate like parts throughout and wherein:

Figure 1 is a perspective view of a riddling device constructed to my invention;

Figure 2 is an enlarged elevational view of the structure of Figure 1;

Figure 3 is an enlarged plan view of the structure of Figure 1;

Figure 4 is an enlarged sectional view of the structure of Figure 3 taken substantially along the line 4—4 thereof;

Figure 5 is an enlarged fragmentary, sectional view of the structure of Figure 3 taken substantially along the line 5—5 thereof; and

Figure 6 is an enlarged fragmentary view of the structure of Figure 3 taken substantially along the line 6—6 thereof.

Referring to Figs. 1 and 2 of the drawings, the riddling device comprises a base including a supporting plate 10 provided with a vertically upstanding column 12 fixed thereto and a tubular supporting element 14 supported on and adjustable along such column 12 by means of a bolt 15 extending through said tubular element and said column. Fixed to the upper end of the tubular element 14, is a bed comprising a horizontally disposed plate 16 and opposed and parallel vertically disposed side plates 18. For additionally supporting the plate 16 a plurality of reinforcing webs 20 are provided having one side integrally connected to the tubular element 14 and another side integrally connected to the plate 16.

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As shown by Figs. 3 and 4, the side plates 18 are provided at either end thereof with depending bearing housings 22 which carry ball bearings 23 adapted to rotatably support shafts 24 disposed transversely of the plates. The shafts 24 are provided with spaced flange rollers 26 fixed thereto for supporting a rectangularly shaped frame 28 and such rollers 26 permit movement of the frame 28 longitudinally of the side plates 18, but movement laterally or transversely of said side plates is prevented by the flanges formed on the rollers. Each of the side plates 18 is provided with a pair of roller supporting bolt elements 30 carrying rollers 32 positioned to engage the upper edge of the frame 28 to prevent movement of the frame vertically.

The frame 28 is formed of angle irons disposed to have one leg 34 (Fig. 3) extending vertically upward, and the other leg 36 extending horizontally inwardly of the frame from the lower edge of the vertical leg. At one end thereof the frame 28 is provided with a handle 38 by means of which the frame 28 may be moved relative to the base on the rollers 26. As may be seen in Fig. 1, a depending stop or bracket 29 is secured to the frame 28 in position to engage a roller 26 and prevent inadvertent withdrawal of the frame 28 from the base when moving it to the operating position.

In spaced relation to the other end thereof the frame 28 is provided with a plate 40 extending transversely thereof and supported on the inwardly extending legs 36 of the frame and secured thereto. The plate 40 supports an electrical motor 42 and eccentric means 44 driven thereby. The eccentric means 44 comprises a pair of spaced bearings 46 and 48 mounted on the plate 40 and rotatably supporting a shaft 50 which extends outwardly of said bearings, and is disposed transversely of the frame 28. The shaft 50 is driven from the motor 42 by a V-belt 52 engaging a wheel 54 mounted on the shaft adjacent its outer end. Intermediate the bearings 46 and 48 the shaft 50 carries a flywheel 56 secured thereto, and at its other or inner end the shaft 50 carries an eccentric or crank pin 58. Crank pin 58 has a pivotal connection to one end of a link 60 which has a pinned connection at its other end to a sieve 62, which is slidably supported on the frame 28 adjacent one end thereof.

The sieve 62 comprises a square frame or riddle supporting means 64 which extends transversely of the frame 28 and is supported on the inwardly extending legs 36 thereof. As shown by Fig. 6,

the frame 64 is formed of angle iron having inwardly turned legs 66 similar to the legs 36 on the frame 28. A ring 68 is received within the frame 64 and supported on the leg 66 and receives and positions a removable sieve element comprising a cylindrical outer member 70 having a screen 72 mounted adjacent its lower end and extending transversely thereof. Screen 72 is securely held in position by a ring 74 pressed into the lower end of the cylindrical member 70 and wedging a marginal portion of the screen 72 between ring 74 and the cylindrical element 70. The sand or other material to be sifted or riddled is placed in the upper portion of the cylindrical member 70 and supported on the screen 72 and when the sieve 62 is reciprocated by the motor 42 acting through the eccentric means 44, the sand is sifted through the screen 72 in the conventional manner and dropped through the frame 28. A mold 80 may be supported on a stand 82 and disposed below the frame 28 and under the sieve 62 to receive the sand as it is sifted through the screen 72.

A switch box 84 is secured to a channel 86 mounted on the plate 40, and carries a switch arm 88 pivotally mounted on the upper side thereof. The arm 88 extends laterally outwardly and has a roller 90 mounted on its outer end. Resilient means (not shown) are provided for urging the arm in a counterclockwise direction as shown in Figure 2, to an off position. A bracket or cam 92 is mounted on one of the side plates 18 and disposed to engage the roller 90 on the outer end of the switch arm 88 and pivot the switch arm in a clockwise direction to an on position, as the frame 28 is moved into the operating position illustrated in full lines in Figure 2. Upon completion of the desired sifting, the frame 28 is grasped by the handle 38 and moved toward the rest position illustrated in broken lines in Figure 2. As the frame is moved from the operating position the switch arm 88 is moved clear of the bracket 92 and the resilient means above mentioned causes the switch arm to move to the off position.

While only one specific embodiment of the invention has been illustrated and described in detail, it will be apparent to those skilled in the art that various modifications and changes may be made without departing from the spirit of the invention and the scope of the appended claims.

What is claimed is:

1. A sand riddling device comprising a base, an elongated frame, means mounting said frame on said base for reciprocation along the longitudinal axis of said frame, riddle supporting means mounted on said frame for reciprocation relative thereto, a motor mounted on said frame, means operatively connecting said motor to said riddle supporting means and operable by said motor to reciprocate said riddle supporting means, said first named means comprising a plurality of flanged rollers mounted on said base and adapted to engage said frame to prevent vertical movement thereof in one direction, the flanges of said rollers engaging opposite sides of said

frame to prevent movement thereof transversely of said axis, and additional roller means carried by said base adapted to engage said frame to prevent vertical movement thereof in the opposite direction.

2. A sand riddling device comprising a base member, an elongated horizontally disposed frame member, means mounting said frame member on said base member for movement horizontally along the longitudinal axis of said frame member to and from a desired operating position in which said frame member overhangs said base member, a riddle supported on said frame member for reciprocation relative thereto, a motor mounted on the frame member, means operatively connecting said motor to said riddle and operable by said motor to reciprocate said riddle relative to said frame member, said first named means including co-operating means on said base member and said frame member including roller means mounted on one of said members and engaging the other of said members at points spaced longitudinally thereof to prevent vertical movement of said frame member in either direction relative to said base member and provide a force couple supporting said frame member in said operating position.

3. A sand riddling device comprising a base, an elongated frame disposed with its longitudinal axis extending horizontally, means including anti-friction rolling elements mounting said frame on said base for free movement horizontally along said longitudinal axis, riddle supporting means mounted on said frame for reciprocation relative thereto along said axis, a motor mounted on said frame, means operatively connecting said motor to said riddle supporting means and effective upon operation of said motor to effect reciprocation of said riddle supporting means along said axis, said first named means being effective during operation of said motor to permit a reciprocation of said frame relative to said base along said axis induced by said reciprocation of said riddle supporting means.

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