J. W. FORD, JR.

SIEVE.

APPLICATION FILED NOV. 20, 1912.

1,069,244.

Patented Aug. 5, 1913.

2 SHEETS—SHEET 1.

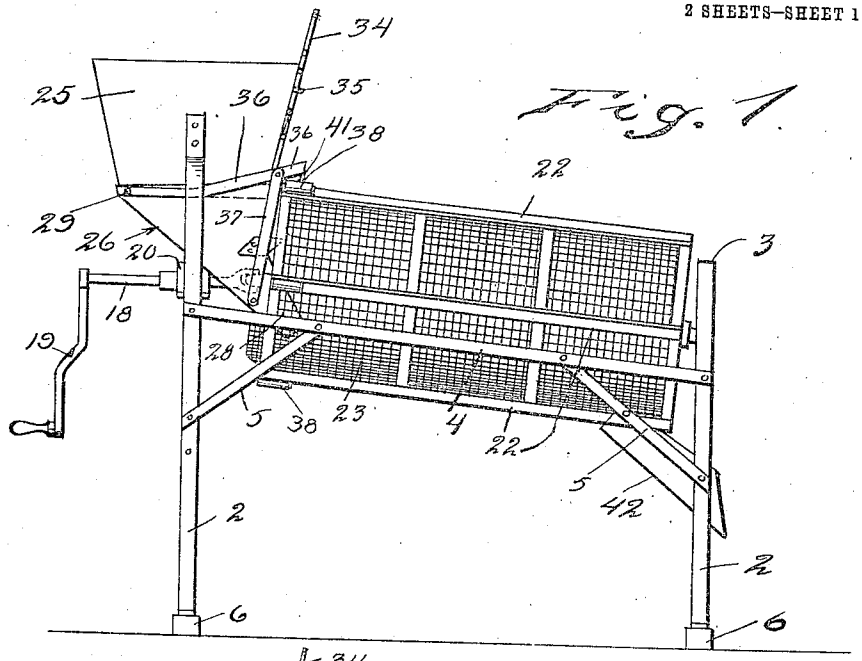

Fig. 1.

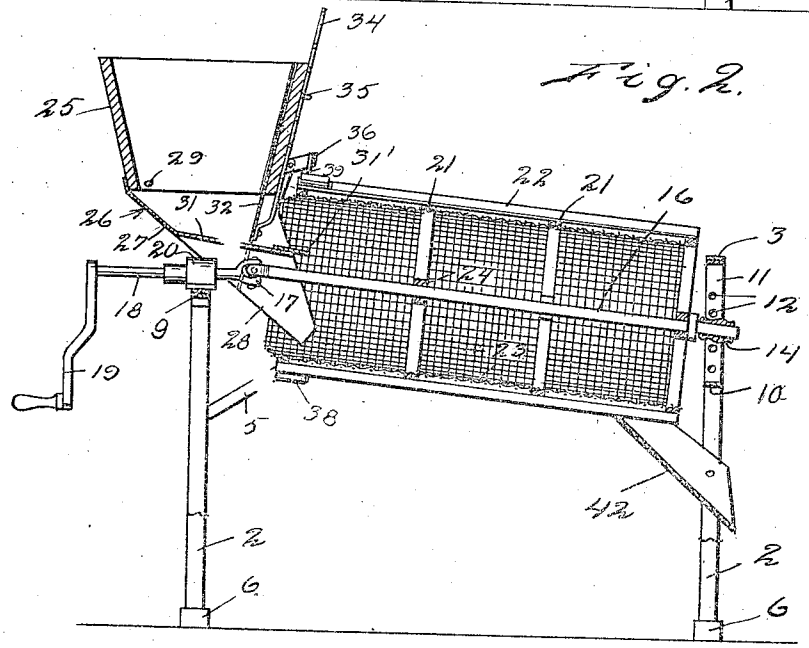

Fig. 2.

Witnesses

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2 SHEETS—SHEET 2.

Fig. 3

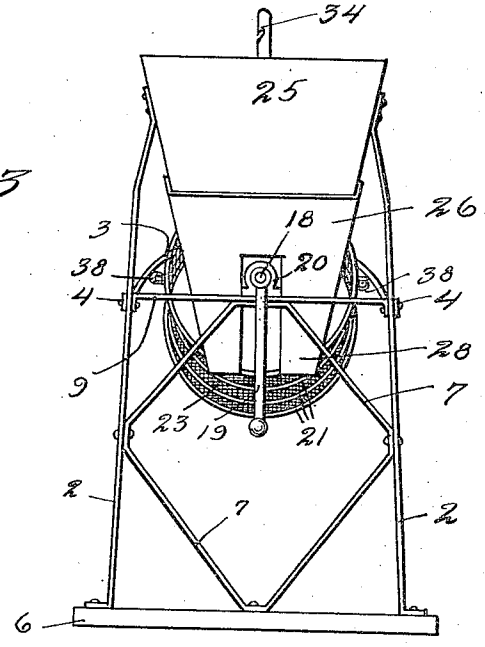
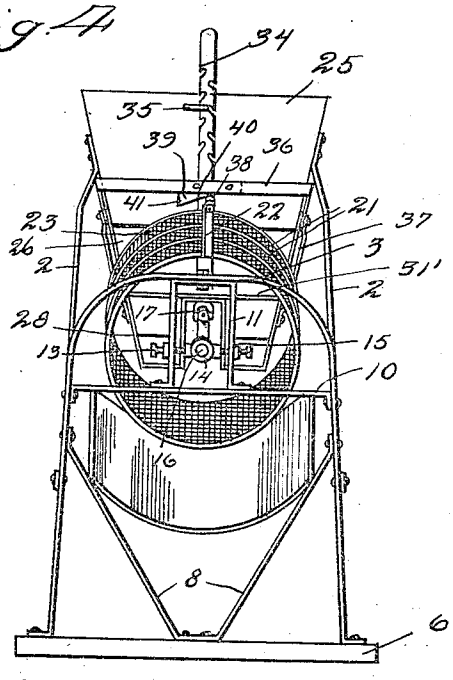


Fig. 4



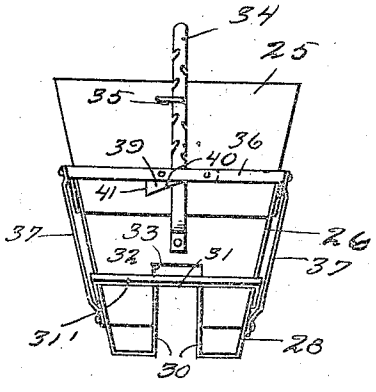


Fig. 5.

Witnesses

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UNITED STATES PATENT OFFICE.

JOHN W. FORD, JR., OF MARION, KANSAS.

SIEVE.

1,069,244. Specification of Letters Patent. Patented Aug. 5, 1913.

Application filed November 20, 1912. Serial No. 732,585.

To all whom it may concern:

Be it known that I, JOHN W. FORD, Jr., a citizen of the United States, residing at Marion, in the county of Marion and State of Kansas, have invented certain new and useful Improvements in Sieves, of which the following is a specification.

This invention comprehends certain new and useful improvements in sieves and relates more particularly to inclined rotary sieves.

The primary object of the invention is to provide a sieve of this type which shall be of extremely simple construction, relatively cheap to manufacture, strong, durable, and particularly adapted for screening sand.

Another object of the invention resides in the provision of a sieve into which material is fed by means of a hopper and a pivoted chute, said chute being agitated by a revolving screen.

Another and more specific object of the invention is to provide a rotary screen having rollers adapted to raise the pivoted chute by contacting with a lift bar carried by the chute.

With these and other objects in view as will become more apparent as the description proceeds, the invention consists in certain features of combination, construction, and arrangement of parts, as will be hereinafter fully described and claimed.

For a complete understanding of the invention, reference is to be had to the following description, and accompanying drawings, in which,

Figure 1 is a side elevation of my improved sieve, Fig. 2 is a longitudinal sectional view through the same. Figs. 3 and 4 are front and rear elevations, respectively, and, Fig. 5 is a detail end elevation of the hopper and pivoted chute.

In the following description and accompanying drawings, similar parts will be referred to and designated by like reference characters.

Referring to the drawings by numerals, 1 designates, generally, a frame having front uprights 2, a rear arched bar 3, side bars 4, and inclined braces 5 connected to the side bars and end bars. Transverse base bars 6 connect the lower ends of the front uprights and rear arched bar. The frame is further strengthened by the inclined braces 7 and 8, and horizontal transverse bars 9 and 10.

A yoke 11 is secured at its ends to the brace bar 10 and intermediate its body portion to the center of the arched frame bar 3. The vertical sides of the yoke are formed with a plurality of alined openings 12, which are adapted to receive the threaded supporting bolts 13. These bolts thread transversely into a bearing 14 and pivotally support the same. It will be noted that this construction permits of the vertical adjustment of the bearing and also allows the same to swing about the bolts 13 as pivots. Nuts 15 are employed to lock the bolts 13. The main shaft 16 has its rear end extended through the bearing 14 and is connected at its forward end by means of a universal joint 17, to a stub shaft 18 upon the free end of which a crank 19 is mounted. The stub shaft 18 is supported in the bearing 20, positioned upon the transverse brace bar 9. The main shaft 16 supports a cylindrical sieve consisting of the hoops 21, longitudinal angle iron ribs 22 bolted to the spaced hoops, and a wire mesh body 23 connected to the inner surfaces of the hoops 21. The wire mesh body 23 is open at its front and rear ends and has its forward end of a somewhat contracted diameter and extended beyond the forwardmost hoop 21. Flat metal braces 24 are bolted at their outer ends to the hoops and ribs of the sieve and at their inner ends to the shaft 16, whereby the screen is rigidly supported thereon.

A hopper 25 having downwardly and inwardly inclined walls, is rigidly supported between the upper ends of the forward uprights 2 and supports a sheet-metal chute 26. The chute is formed with a downwardly and inwardly inclined bottom wall 27 and tapering vertical side walls 28, and is pivotally connected to the bottom of the hopper adjacent its forward wall, by means of a pivot-rod 29, which extends through the hopper walls and the side walls of the chute. In order to permit the shafts 16 and 18 to pass through the chute 26, I form the bottom of the same with a vertical offset portion having the side walls 30 and the top 31. It will be noted that the offset portion is arranged centrally of the chute bottom 27 adjacent its inner end and forms a sort of housing through which the shafts 18 and 16 may extend. A flat metal brace bar 31′ extends across the chute 26 above the offset portion and is connected at its ends to the exterior of the side walls 28.

A feed regulating gate 32 is slidably mount-

ed upon the inner surface of the rear hopper wall and is adapted to project downwardly across the chute 26 any desired distance. The bottom edge of the gate is formed with an end opening slot 33, the walls of which engage the offset portion of the chute 26. To brace the gate 32 and permit the same to be locked in any desired position, I provide a notched locking bar 34, which is secured at its lower end to said gate and which extends upwardly along the outer face of the rear hopper wall. A U-shaped fastening 35 encircles the locking bar 34 and may be engaged by any one of the notches formed therein.

To provide for a proper movement of the chute 26 in order that a steady feed of material may be insured, I provide the lift yoke 36 which is pivotally connected at its ends to the pivot rod 29, and which extends rearwardly and upwardly and across the rear hopper wall. Links 37 are pivotally connected to the inner ends of the yoke arms and to the chute 26. Rollers 38 are mounted upon the angle iron ribs 22 of the sieve and as the sieve revolves, strike against the inclined wall of the spur 39, carried upon the yoke 36. The spur 39 has an inclined wall 40 which is engaged by the rollers 38 and terminates abruptly with a vertical end wall 41, and thus the yoke 36 is gradually lifted and allowed to drop with a jarring action. The movement of the yoke is transmitted to the pivoted chute 26 through the medium of the links 37 and a steady flow of material is insured. The jar sustained by the sieve as the rollers 38 strike the spur 39, tends to dislodge all material from the meshes of the screen 23.

In the operation of my improved sieve, material to be screened is placed in the hopper 25 and flows down over the inclined chute 26, into the forward end of the rearwardly inclined sieve. By turning the crank 19, the shafts 18 and 16 are revolved and carry with them the rotary sieve. The finer particles of the material drop through the wire mesh 23, while the coarser particles are expelled through the rear of the sieve onto the trough 42. Each time one of the angle iron ribs 22 passes under the spur 39, the roller carried upon said rib, raises the yoke 36, causing the chute 26 to move upwardly. When the roller moves beyond the spur the chute drops quickly because of the weight of the material carried thereon. The flow of the material through the chute 26 may be regulated, as heretofore described, by adjusting the gate 32.

While I have shown and described the preferred embodiment of my invention, it is to be understood that I do not wish to be limited to this exact construction and arrangement of parts, but may make such changes as will fall within the scope and spirit of the invention.

Having thus described my invention, what I claim is:—

1. A machine of the character described, including a supporting frame, a sieve rotatably supported thereby, a hopper, a chute pivotally secured under said hopper and emptying into the sieve, a lift yoke pivoted at its ends and extending over the sieve, links connecting the yoke to the chute, and means carried upon the sieve adjacent one end thereof for engagement with the yoke, whereby the chute is agitated and the sieve vibrated to cause the contents of the sieve to be precipitated through the meshes thereof.

2. A machine of the character described, including a supporting frame, a sieve rotatably supported thereby, a hopper, a chute pivoted to said hopper and discharging into the sieve, a yoke pivoted to said hopper and projecting above the sieve, links connecting said yoke to the chute, the yoke being formed with a tapered projection, and means carried by the sieve adjacent one end thereof for engagement with said projection, whereby the chute is agitated and the sieve vibrated to cause the contents of the sieve to be precipitated through the meshes thereof.

3. A machine of the character described, including a supporting frame, a sieve rotatably supported thereby, a hopper, a chute pivoted to said hopper and discharging into the sieve, a yoke pivoted to said hopper and projecting above the sieve, links connecting said yoke to the chute, the yoke being formed with a tapered projection, and rollers carried upon the periphery of said sieve for engagement with the tapered projection, whereby the yoke is lifted to agitate the chute and the sieve vibrated to cause the contents of the sieve to be precipitated through the meshes thereof.

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

JOHN W. FORD, JR.

Witnesses:
CARLOS A. STEBBINS, JR.,
H. M. THORP.