March 4, 1924. 1,485,946

J. N. BATTENFELD

SIFTING MACHINE

Filed Nov. 18, 1921 2 Sheets-Sheet 1

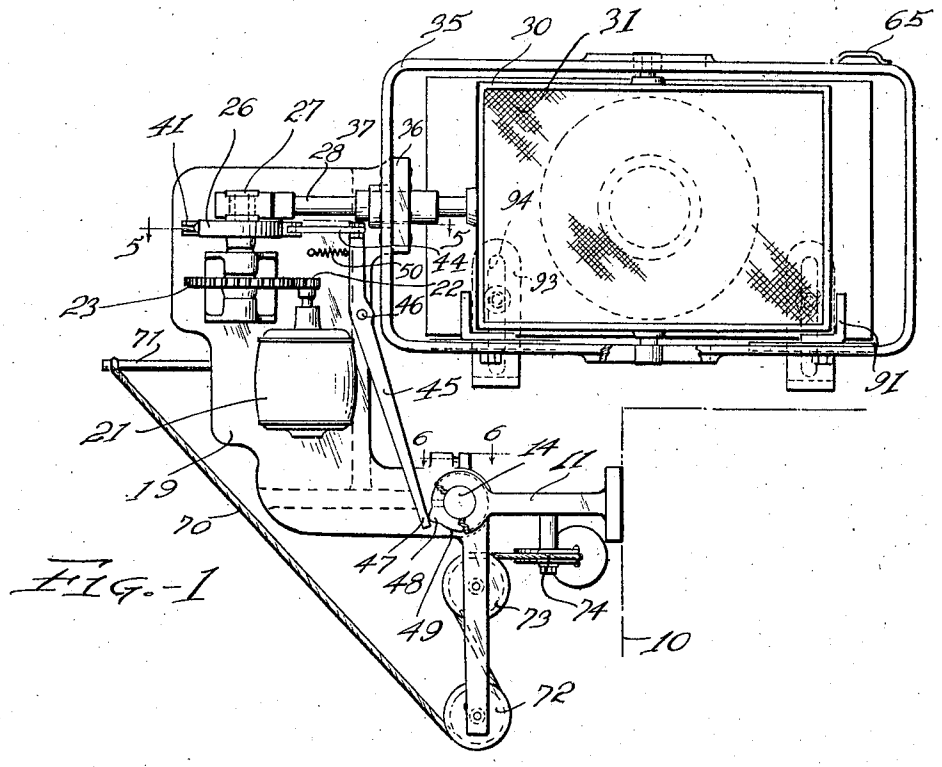


FIG.-1

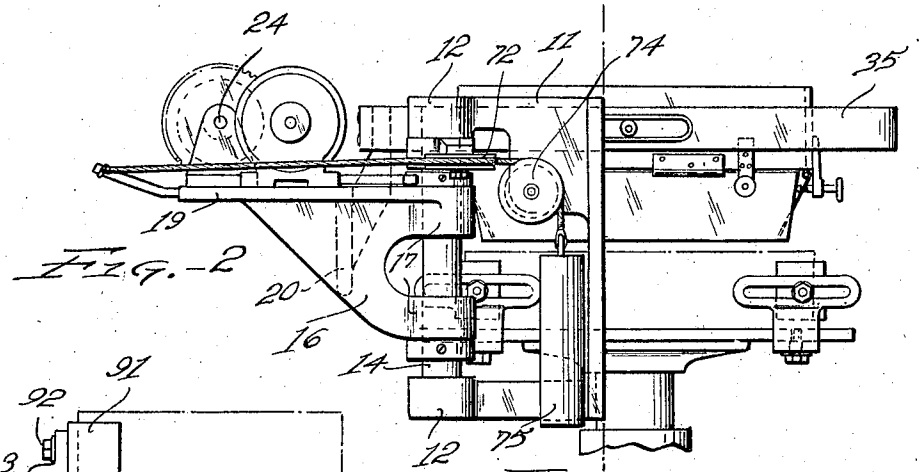


FIG.-2

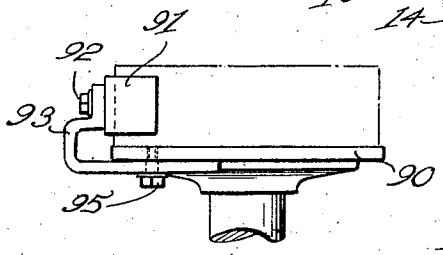


FIG.-3

INVENTOR

John N. Battenfeld,

By Baker & Maeklin,

ATTORNEYS

March 4, 1924. 1,485,946

J. N. BATTENFELD

SIFTING MACHINE

Filed Nov. 18, 1921 2 Sheets-Sheet 2

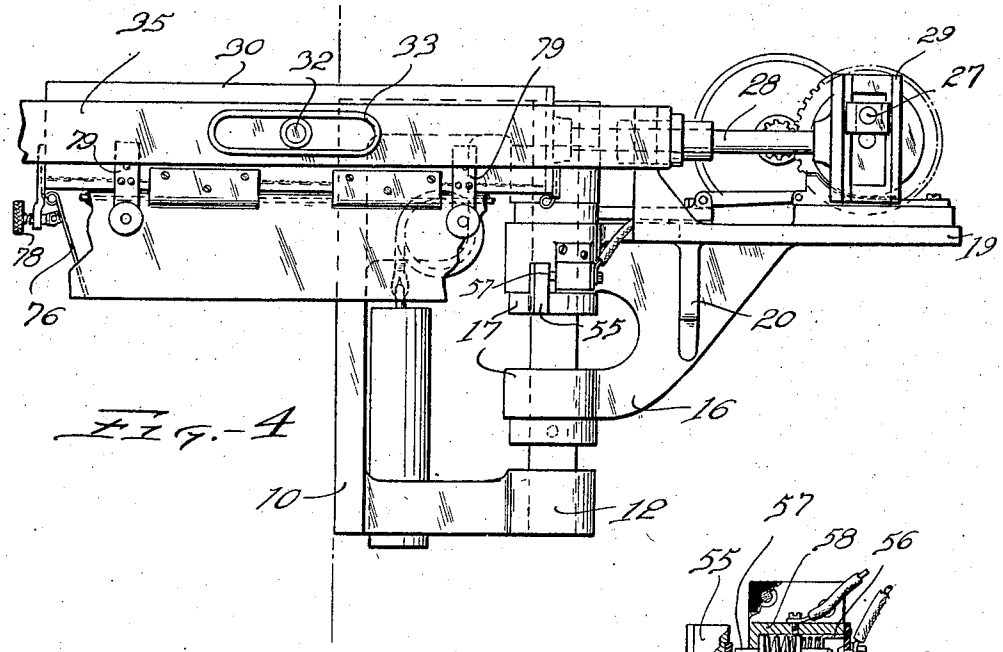


Fig.-4

Fig.-6

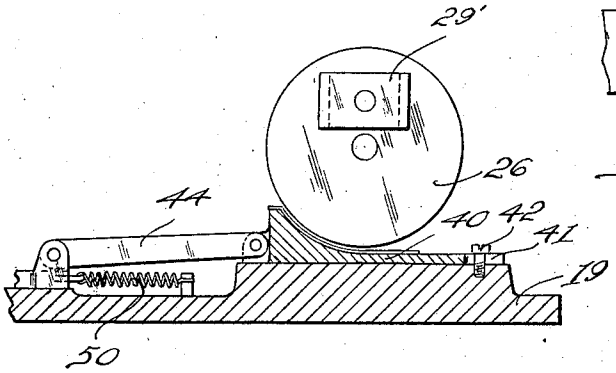


Fig.-5

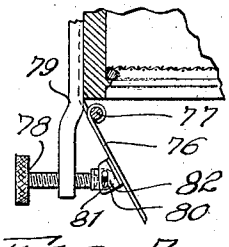


Fig.-7

INVENTOR

John N. Battenfeld,

BY Bakewell & Macklin,

ATTORNEYS

Patented Mar. 4, 1924. 1,485,946

UNITED STATES PATENT OFFICE.

JOHN N. BATTENFELD, OF CLEVELAND, OHIO, ASSIGNOR TO JESSE R. BATTENFELD, OF KANSAS CITY, MISSOURI.

SIFTING MACHINE.

Application filed November 18, 1921. Serial No. 516,090.

To all whom it may concern:

Be it known that I, JOHN N. BATTENFELD, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in a Sifting Machine, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

This invention relates to sand sifting machines and has particular reference to such machines which are intended for use in connection with molding machines and like structures.

One of the objects of the invention is to provide a power operated sand sifting device, or riddle, so constructed and arranged that it may be readily moved to position above a molding flask.

A further object of the invention is to provide a power operated riddle so constructed that movement of the riddle to the operative position, acts to start the shaking of the riddle, while the act of releasing the riddle will automatically shut off the power and move the riddle to inoperative position.

A specific object of the invention is to provide a power riddle with means which will automatically shut off the power and apply a brake and cause the riddle's motion to cease when the operator releases his hold upon the riddle.

A further object of the invention is to provide an adjustable outlet for a power riddle or similar device whereby the area upon which the sand is deposited may be proportioned to suit the size of the container into which the sand is flowing, without reducing the capacity of the riddle.

An additional object of the invention is to provide a centering device for the table of a molding machine so arranged that a sand flask placed on the table may be centered over a riddle.

Further objects will become apparent from the following description taken in connection with the accompanying drawings wherein Fig. 1 is a top plan view of the machine embodying my invention; Fig. 2 is a side elevation of the machine; Fig. 3 is an elevation of the table for supporting the flask; Fig. 4 is a side elevation of the machine, the view being taken from an opposite direction from that of Fig. 2; Fig. 5 is a section on line 5—5 Fig. 1; Fig. 6 is a section on line 6—6 Fig. 1; and Fig. 7 is a sectional detail, partly in elevation showing means for adjusting the area of the discharge outlet of the machine.

Referring to the drawings by reference characters, I have shown at 10, a suitable support to which my improved riddle may be secured. A bracket 11 shown as secured to the support is indicated as provided with spaced bearings 12—12 which support a pivot pin 14.

Supported on this pivot pin, I show a second bracket member 16 having bifurcated ends 17 embracing the pivot pin to have free swinging movement relative to the support 10. It will be noted that the bracket 16 is provided at its upper end with a bed or table 19 which may be reenforced by a suitable web 20.

Secured upon the upper surface of the table 19, I show a suitable electric motor 21 connected with a suitable source of current. The armature shaft of the motor is indicated as provided with a gear 22 shown as meshing with a similar gear 23 mounted on a shaft 24. This shaft 24 carries thereon a brake drum 26 and a crank pin 27. A connecting rod 28 is shown as connected with the crank pin 27 at one end and at the other end to a substantially rectangular frame 30.

The frame 30, it will be noted, is mounted on suitable anti-friction rollers 32, one located at each side and fitted in a slot 33, in the side rails of the frame 35. This frame 35 is shown as secured to a lug 36 on the table 19. The connecting rod 28, it will be noted is mounted to move through a suitable aperture 37 in the frame 35.

The connecting rod 28 is provided with a cross head 29 and a block 29′ mounted on the cross pin 27 reciprocates in a slot in the cross head. The distance between the ends of the block 29 is less than the width of the slot in the cross head in which it moves. When the motor is operating, the riddle 30 will be given a reciprocating motion and on account of the loose connection described at each limit of movement of the riddle, it will be given a sudden shock, thus causing the sand to be more effectually sifted.

A suitable brake member 40 which may be curved to fit the periphery of the brake drum 26 is shown as slidably supported on the top of the table 19. The forward end of this brake 40 is shown as slotted at 41; the

slotted portion being fitted about a suitable stop member shown as a screw 42. The other end of the brake member 40 is connected by means of a link 44 with the brake lever 45. The brake lever (see Fig. 1) is shown as pivoted at 46 to the top part of the table, while the end 47 is adapted in one position of the riddle, to coact with a cam 48, carried on the bracket, to release the brake. In the other position of the riddle, that is, when it is removed from the operative position, the end 47 coacts with the curved surface 49 of the bracket thus causing the brake to be moved against the drum through the action of a spring 50.

In order that the motor may receive current, only, when the riddle is over the molding flask, I have provided a circuit closer, shown in detail in Fig. 6, as comprising a lead member 55 which is stationarily supported on the bracket 11 and a circuit closing member 56 supported on the swinging table 19. The circuit closing member 56 comprises a spring-pressed pin 57 enclosed in a suitable case 58 and adapted to complete the circuit through the points 59 to the motor.

It will be apparent from the description preceding, that when the operator grasps the riddle by the handle 65 and moves it to position over the flask, that this act will cause the brake to be removed by the action of the cam 48 on the end of the lever 47 and at the same time current will be supplied to the motor through the circuit closer 56. This will cause the motor to operate, and through the gearing 22 and 23 the riddle 30 will reciprocate over the flask and thus cause the sand to be deposited.

When sufficient sand has been removed, the riddle is moved from the position shown in Fig. 1, by swinging it about its pivot 14 and it will be apparent that this act will cause the end 47 of the lever 45 to move down to the curved portion 49 of the bracket; thus causing the spring 50 to move the brake to braking position. The same movement causes the circuit to be broken and the motor to cease operating.

In order that the riddle may be removed from operative position automatically when the operator releases his hold upon it, I may provide a suitable means shown as a cable 70 suitably secured at 71 to the table whence it passes over the pulleys 72, 73, and 74 to a counter-weight 75 where it is secured. This counter-weight 75 is sufficient to move the riddle away from position as soon as the operator releases his hold upon it.

In order that the same riddle may be adapted to deposit sand upon flasks of different size without waste, I have provided a novel form of outlet so constructed that the discharge area of the riddle may be varied at will. The means shown for accomplishing this purpose comprises a plurality of spout forming aprons 76 hinged as at 77 to the riddle frame. Suitable adjusting screws 78 are shown as threaded through supporting bars 79 secured on the riddle frame. These adjusting screws 78 may be provided with a pin 80 shown as adapted to move in the slot 81 in a lug 82 secured to an apron 76. From the description, it will be apparent that when a change in the area of the riddle is desired, the operation of the adjusting screws 78 will cause the aprons to move inwardly and thus define a pouring spout of the desired size.

It is quite necessary that the flask be properly centered with respect to the riddle and for this purpose, I provide upon the flask table 90 a pair of L-shaped members 91 which are slidably secured as by means of a bolt 92 to a U-shaped bracket 93. This U-shaped bracket 93 is slotted as at 94 and through the slot a bolt 95 extends. It will thus be apparent that the L-shaped members 91 may be moved transversely of the frame by loosening the bolt 95 and may be moved longitudinally by loosening the bolt 92 so that any proper adjustment may be made and thereby cause the flask to center properly.

From the foregoing description, it will be apparent that I have invented an improved sand riddle which is highly efficient and which is positive in its operation and can be economically made.

Having thus described my invention, I claim:—

1. In a power riddle, a frame to support the riddle, means to move the riddle to operative position, power means mounted on the frame for operating the riddle, and means whereby the operation of moving the riddle to position automatically causes the power means to operate.

2. In a power riddle, a pivotal support for the riddle allowing it to swing horizontally to operative position, power means for operating the riddle, means whereby the act of moving the riddle to operative position causes the power means to operate, and yielding means to automatically return the riddle to inactive position.

3. In a power riddle, means to support the riddle, means to move the riddle to operative position, a motor for operating the riddle, means whereby the operation of moving the riddle to position supplies current to the motor and means to automatically return the riddle to inactive position.

4. In a power riddle, means to support the riddle, means to move the riddle to operative position, power means for operating the riddle, means whereby the operation of moving the riddle to operative position causes the power means to operate, said last means also acting automatically to cause the

power means to cease functioning when the riddle is moved from operative position.

5. In a power riddle, means to support the riddle, means to move the riddle to operative position, power means for operating the riddle, means whereby the act of moving the riddle to operative position removes a brake and causes the riddle to begin operating, said last means serving when the riddle is moved from the operative position to cause the operating means to cease functioning and to apply the brake.

6. In a power riddle, a supporting member, a table pivoted thereto, a motor carried by said table, a frame carried by said table, a riddle slidably mounted in said frame, and connections between said motor and said riddle whereby the latter may be reciprocated, and means for moving the riddle away from its operative position when not in use.

7. In a device of the character described, the combination of a riddle, a spout device below the same comprising four aprons pivotally supported at their upper ends and bounding the four sides of a rectangular space, and means independent of gravity for adjusting the position of said aprons to change the form or direction of the outlet area.

8. In a power riddle, a supporting member, a table pivoted thereto, a motor carried by said table, a drive shaft driven by said motor, a brake drum on said shaft, a crank pin on said drum, a frame carried by said table, a riddle slidably mounted in said frame, and connections between said crank pin and said riddle whereby the latter may be reciprocated.

In testimony whereof, I hereunto affix my signature.

JOHN N. BATTENFELD.