July 12, 1932. H. V. HARDING 1,866,531

RIDDLE APPARATUS

Filed Jan. 9, 1930

Fig. 1.

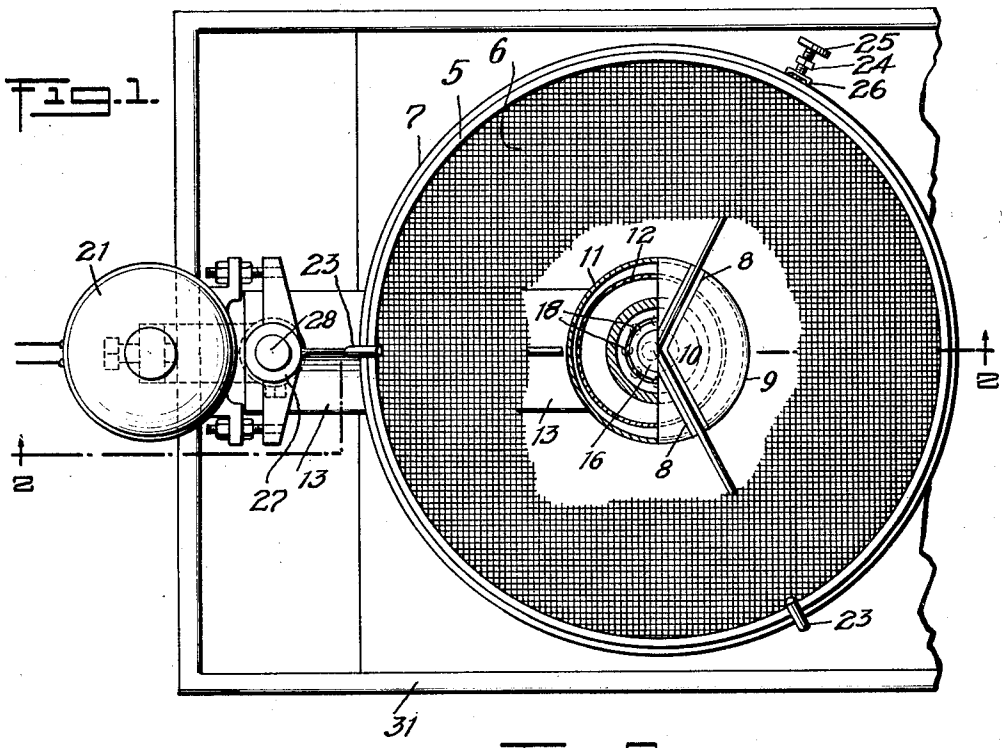


Fig. 2.

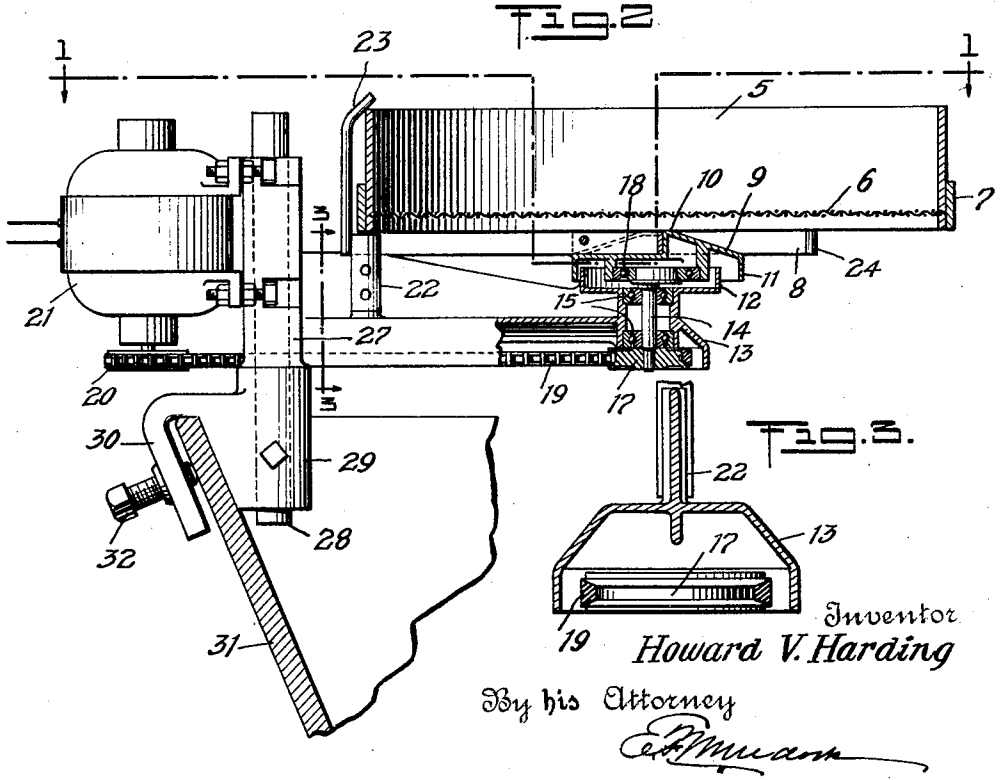


Fig. 3.

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Patented July 12, 1932 1,866,531

UNITED STATES PATENT OFFICE

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RIDDLE APPARATUS

Application filed January 9, 1930. Serial No. 419,527.

This invention relates to riddle apparatus and more particularly to apparatus for sifting sand in foundries.

Among the principal objects of the invention are: To provide a power-driven apparatus for riddling or sifting sand; to provide means whereby the apparatus may be removably attached to a stationary object; to provide means for rocking the riddle laterally and lengthwise; to secure simplicity of construction, and to obtain other advantages and results as may be brought out in the following description.

In the drawing:

Figure 1 is a top plan of a riddle apparatus, and partly in section as indicated by line 1—1 of Figure 2,

Figure 2 is a front view, and partly in section as indicated by line 2—2 of Figure 1, and

Figure 3 is a detail sectional view of the driving apparatus within a housing, and taken on line 3—3 of Figure 2.

Description:

In the specific embodiment of the invention illustrated in said drawing, I have shown a sieve or riddle 5, said sieve or riddle having a standard wire mesh 6 for sifting sand or other granular materials, and through which the fine contents pass, the lumps or larger pieces of material remaining in the sieve or riddle.

In order that the sieve or riddle 5 may be held securely in place, I have provided a ring or frame 7 the sides thereof extending slightly upward around the lower portion of the riddle to give ample support thereto when in motion. The said ring or frame 7 is open at its bottom and held in place by a plurality of radial spider arms 8. The said arms emanate substantially at the middle of the ring or frame at the bottom thereof from a casting 9. Said casting has a conical top 10 and a downwardly projecting peripheral flange 11. Beneath this conical top 10 and within said flange 11 is a cup-like upper end 12 of a fixed casting 13 housing the operating mechanism.

Within the fixed housing 13 is positioned an upright shaft 14 mounted in suitable bearings 15, 15 and carrying a horizontally positioned eccentric 16 at its upper end and a pulley or other actuating means 17 at its lower end. The eccentric 16 is peripherally confined by a ball bearing 18, one race of which is carried by the conical cap 10. The pulley 17 may be conveniently driven by a belt 19 extending beyond the side of the sieve or riddle 5 through the fixed housing 13 to a driving pulley 20 on a motor 21, or other source of power. For purposes of vibrating or oscillating the riddle 5 by the eccentric, means are provided for restraining the riddle and its holding frame 6 at one point distant from the eccentric. As a convenient means for thus restraining the riddle 5, I have shown a bifurcated post 22 upstanding from the lateral portion of the fixed housing 13 at a point substantially at the periphery of the frame and riddle. The location and dimensions of this post is such that one of the spider arms 8 may rest between the bifurcations. Sufficient freedom of movement of parts is provided to permit reciprocation of said arm in the post and also permit oscillation of the arm with the post as a fulcrum. As the eccentric rotates, a vibration or oscillation of the sieve or riddle 5 will be maintained.

If desired, the sieve or riddle 5 may be clamped in place by any suitable means. As one exemplification of this feature, two of the spider arms have upstanding brackets 23 with upturned upper ends which overlie the riddle edge when the riddle is slid into place on those two arms. The third arm also has an upstanding bracket 24 but without an inturned end. Instead, this bracket 24 has an appropriate releasable clamp such as a hand screw 25 threaded through the bracket in a direction radially of the riddle. The inner end of the screw is shown carrying a cleat 26 which will bear against the edge of the riddle 5 and thus clamp the same in place.

In order that the apparatus may be used on various moulds, barrels, vats and so forth, the transverse fixed housing 13 is shown having a hinge pin bearing 27 upstanding therefrom beyond the edge of the riddle frame. This hinge pin bearing 27 also extends laterally to provide an appropriate mounting for the motor 21. A pin 28 depends from this

hinge pin bearing 27 to a supporting member 29 providing a vertical socket for reception thereof. This supporting member 29 is also shown provided with a cleat 30 spaced from the body portion of the said member sufficient to take over the edge of a mould or other upright device 31, and a lateral set screw 32 in this cleat will serve to secure the same in place where mounted.

I claim:—

In an apparatus as characterized, a supporting frame adapted to receive and hold a screen, said frame having spider-like supports extended radially, a rigid support for said frame embodying a bracket arm, a vertical bifurcated member thereon adapted to receive one arm of said spider, said bracket arm extending to and beneath the normal center of said frame, a vibrator for said frame embodying a vertical rotary shaft having an eccentric member at the upper end thereof and a housing for said member forming a hood over said member, and a pocket recess for one of the arms of said spider, a prime mover operatively connected with said vibrator and the shaft thereof, and a friction reducing bearing interposed between said hood and said eccentric member whereby said eccentric member revolves within said hood to eccentrically vibrate the same.

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