

No. 626,019.

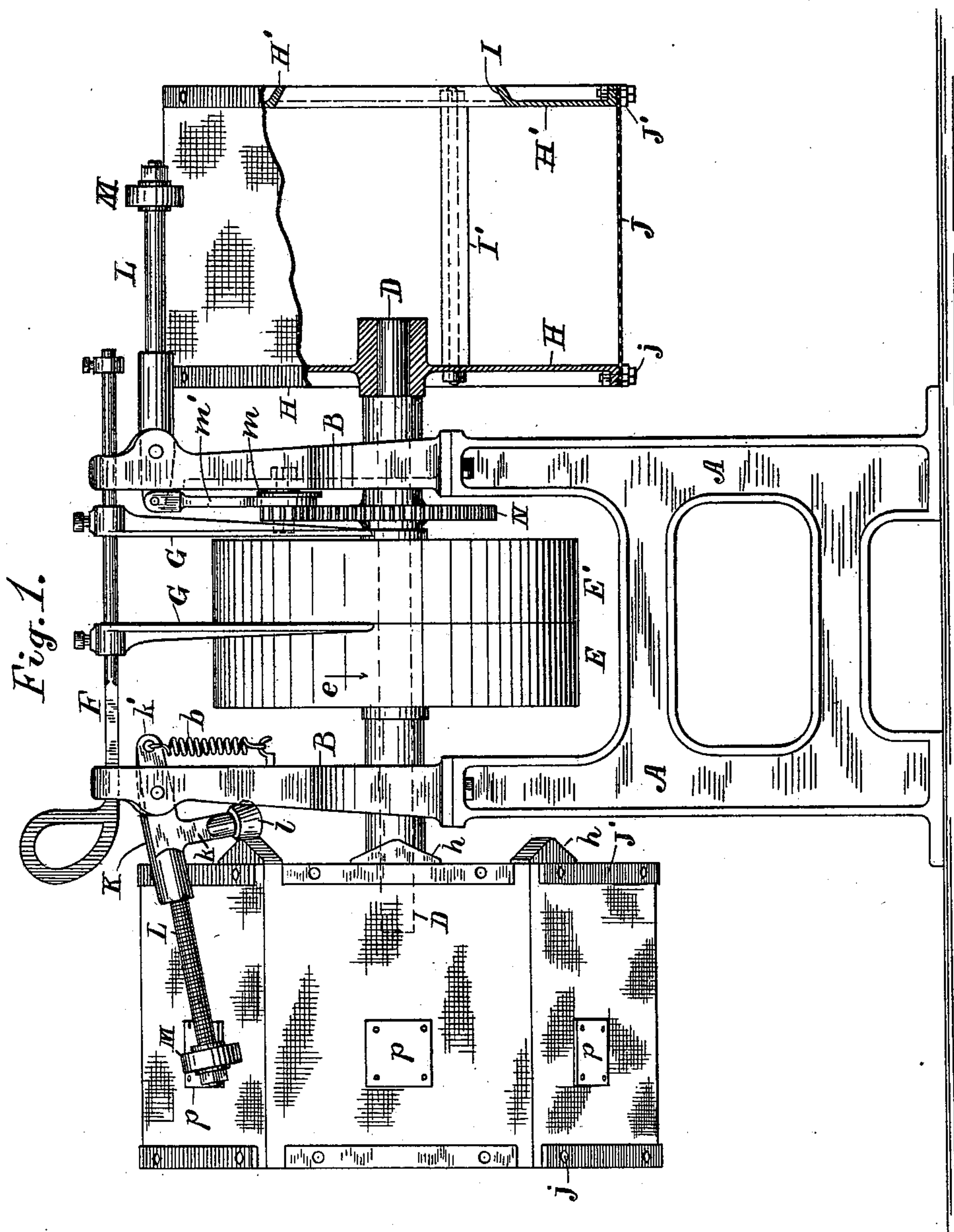
Patented May 30, 1899.

U. EBERHARDT.
POWER RIDDLE FOR FOUNDRIES.

(Application filed Mar. 30, 1898.)

(No Model.)

2 Sheets—Sheet 1.



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Inventor.
Ulrich Eberhardt, per
Thomas S. Crane, atty

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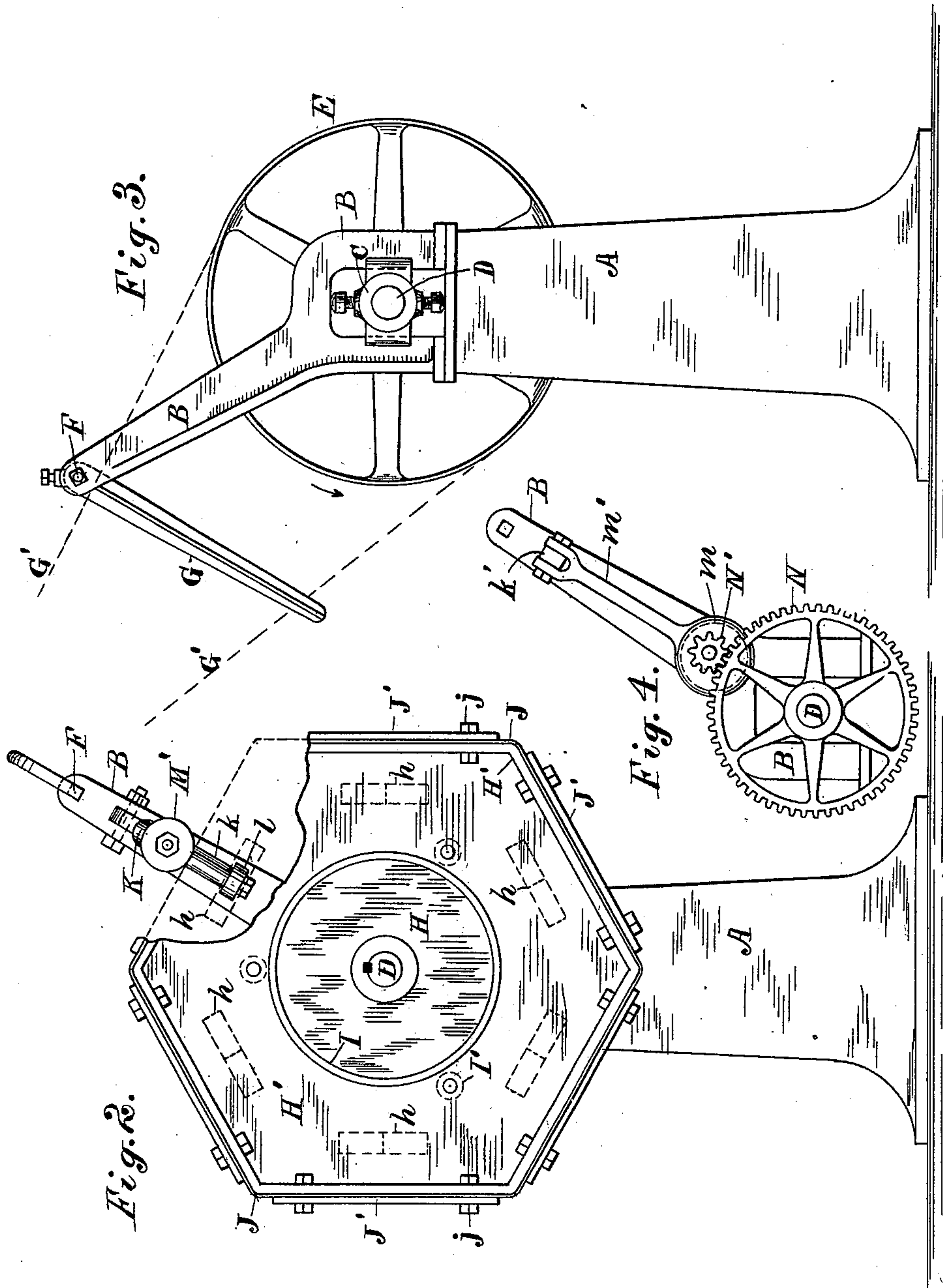
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UNITED STATES PATENT OFFICE.

ULRICH EBERHARDT, OF NEWARK, NEW JERSEY.

POWER-RIDDLE FOR FOUNDRIES.

SPECIFICATION forming part of Letters Patent No. 626,019, dated May 30, 1899.

Application filed March 30, 1898. Serial No. 675,660. (No model.)

To all whom it may concern:

Be it known that I, ULRICH EBERHARDT, a citizen of the United States, residing at Newark, county of Essex, State of New Jersey, have invented certain new and useful Improvements in Power-Riddles for Foundries, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

10 The present invention relates to improvements in the riddles or sifters which are used for sifting sand for various purposes, and especially for sifting the sand or loam used in making molds for castings. Such loam is somewhat sticky and tends to clog the meshes of the screen; and the invention consists in the particular combination and arrangement hereinafter pointed out for providing the screen with a knocker to dislodge the dirt therefrom.

The nature of the improvements will be understood by reference to the annexed drawings, in which—

Figure 1 is a side elevation of a riddle having two rotary screens covered with wire-cloth of different grades of fineness, the right-hand screen having the wire-cloth broken away and the heads shown in section at the center line where hatched, the knockers for the two screens being shown actuated by different mechanism; and Fig. 2 is an elevation upon the left side of Fig. 1, showing cams to actuate the knocker, a part of the screen being broken away and indicated by dotted lines. 30 The apparatus may be made with a single screen only. Fig. 3 represents an elevation of the apparatus at the right-hand side of such a machine, having the screen at the left-hand end. Fig. 4 is an inner view of the stanchion at the right-hand side of Fig. 1, showing the eccentric and cog wheels which are provided to vibrate the knocker upon the right-hand screen.

A designates a stand upon which two stanchions are mounted and provided with bearings C for the screen-shaft D. The shaft is provided with fast and loose pulleys E E', which are rotated in the direction indicated by the arrow e in Figs. 1 and 3, and the tops of the stanchions are provided with a shifting-bar F, having belt-guides G to push the belt across

the pulleys, as is common. A belt G' is indicated by dotted lines in Fig. 3.

Each screen is formed with head H, secured to the outer end of the shaft D, and with the head H', having a central opening I to throw in the sand or loam. The heads are connected by ties I' and are shown of hexagonal form, with the wire-cloth J secured upon the six flat sides by the gibs J' and bolts j. The meshes of the cloth in the screen at the right-hand side of Fig. 1 are shown much coarser than the screen at the left side.

The preferred construction (that which is specifically claimed herein) for the knocker and its actuating mechanism is shown at the left side of Fig. 1, the knocker being pivoted upon the stanchions nearly in line with the periphery of the screen and projected outwardly over its perforated surface. The knocker is formed with a shank K, which is jointed upon a pivot in the stanchion and is provided with a projecting closely-coiled spring L, which carries upon its outer end the knocker-head M, which is formed, as is usual, of an india-rubber disk. The spring L forms an elastic arm to carry the knocker flexibly. The shank K is formed with a downwardly-projecting arm k, which extends between the stanchion and the inner head H of the screen, which head is lettered only in Fig. 2. This arrangement of the arm k adapts it to coöperate with a series of cam projections h upon the head H, the roll l being pressed toward such cam projections by a spring b, which operates upon the knocker through an arm k', projected inside the stanchion from the shank K. The projections h operate as the screen rotates to move the knocker positively toward the periphery of the screen, but are not intended to strike the head M positively against the same, as the flexibility of the arm L permits the head when the positive movement ceases to jerk elastically toward the screen and produces an elastic blow thereon, which I have found to be the most effective in dislodging the sand. The spring b operates to retract the knocker after each projection has passed the roll l. Each time that the knocker is moved by the cam projection the elasticity of the arm L thus permits the momentum of the head M to carry

it independently toward the screen and to strike thereon a blow which is more effective than one produced by the direct agency of the cam.

5 In Fig. 2 the knocker-head M is shown in contact with the dotted line which represents the periphery of the screen.

I have found that the coiled spring L is of especial utility in carrying the knocker M and applying it to the periphery of the screen. 10 The cams are so disposed upon the screen-head H that they operate successively to jerk the head M into contact with each of the flat sides of the screen, while the spring b operates through the arm k and shank K to raise 15 the knocker-head, so as to clear the corners of the hexagonal screen-frame.

The vibrating movement is shown imparted to the knocker for the right-hand screen by 20 means of an eccentric m, rotated by gears N N', which are connected by a link m' with the arm k' of the knocker, as shown in Figs. 1 and 4; but such construction is not specifically claimed herein, as I find in practice that 25 the cams operating upon the roll-arm k is a much cheaper construction.

A projecting plate p may be riveted upon the perforated metal or wire cloth where the knocker strikes the same, as shown upon the 30 screen at the left side of Fig. 1, and such plate preserves the screen, while it permits the blow to produce the greatest effect in dislodging the obstructions from the meshes. By mounting the screens of different grades 35 upon opposite ends of the shaft D, as shown in Fig. 1, a very great economy of construction is secured, as the same pulleys operate to rotate both screens and only one shifter is required to actuate the belt, while no addi- 40 tional supports are required for the additional knocker and the mechanism to operate the same, as the stanchions and stand which are required for one screen and its attachments serve equally well to support the additional 45 screen and its attachments. I have therefore claimed a single stand, arranged to support upon its opposite sides the two screens and the attachments for vibrating the knockers upon the same.

50 Having thus set forth the nature of the invention, what is claimed herein is—

1. In a power-riddle, the combination, with the stand A, of stanchions B projected upwardly from the same and provided with bear-

ings C, the shaft D extended through the 55 bearings and provided with pulleys E, E', the screen overhung upon the end of the shaft adjacent to one of said stanchions, and provided at its outer end with the hole I to insert the sand, and the knocker having shank 60 pivoted upon the stanchion, and the arm formed of spiral spring L with knocker-head M upon its outer end, and means for vibrating the shank toward the periphery of the screen without striking the same positively, 65 whereby the flexibility of the arm produces an elastic blow of the head upon the screen, substantially as herein set forth.

2. The power-riddle comprising the stand A having the stanchions B projected upwardly 70 from the same and provided with bearings C as set forth, the shaft D extended through the bearings and provided with pulleys E, E', the head H attached to the shaft and forming the polygonal screen with the head H' in its 75 outer end having central hole I to introduce the sand, the cams h projected from the head H toward the stanchion, the shank K pivoted to the stanchion and provided with the spiral spring L and knocker-head M projected over 80 the periphery of the screen, the arm k' projected inside the stanchion and provided with spring b to retract the knocker, and the arm k projected from the shank between the stanchion and the head H and provided with 85 the roll l to bear upon the cams, the whole arranged and operated as herein set forth.

3. The power-riddle comprising the stand A having the stanchions B projected upwardly 90 from the same, and provided with bearings C as set forth, the shaft D extended through the bearings and projected at both ends, and provided with pulleys E, E', the two screens having each the inner head H attached to the shaft D, and the outer head provided with 95 hole I, a knocker pivoted upon the adjacent stanchion for each of the screens, and means for vibrating the knockers to strike the peripheries of the screens, the whole arranged and operated substantially as herein set forth. 100

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

ULRICH EBERHARDT.

Witnesses:

ULRICH EBERHARDT, Jr.,
THOMAS S. CRANE.