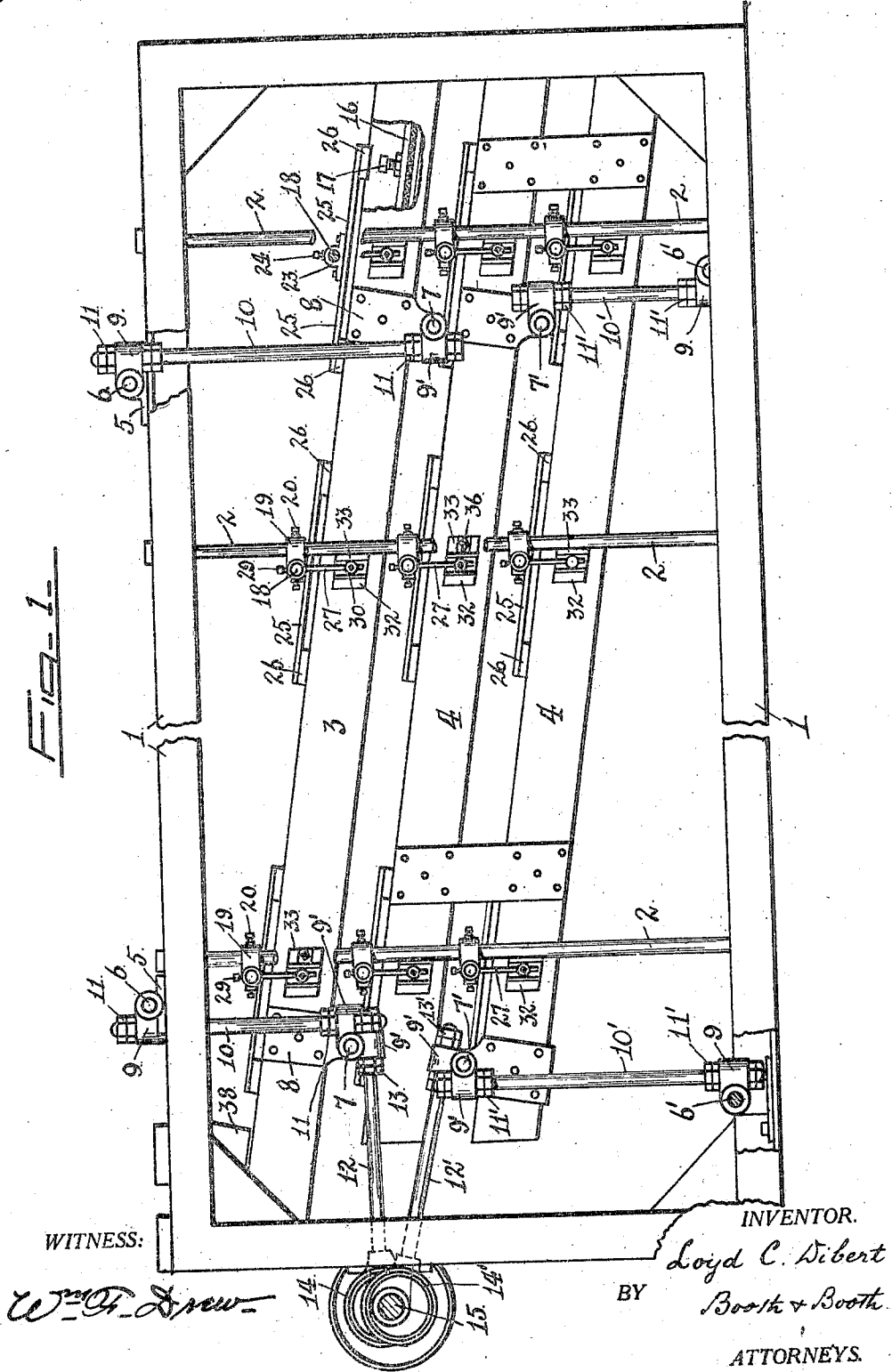


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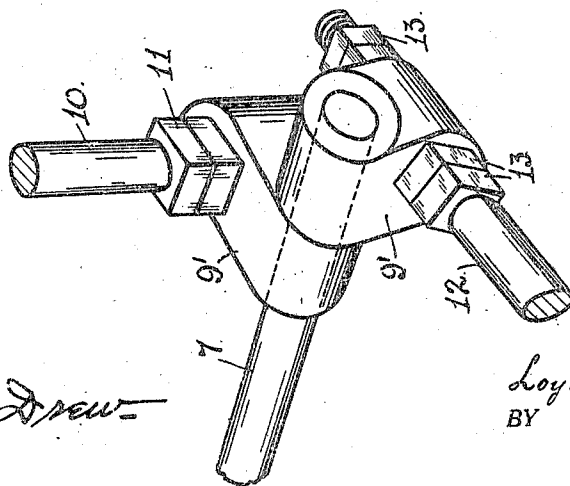
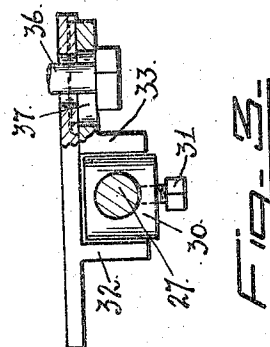
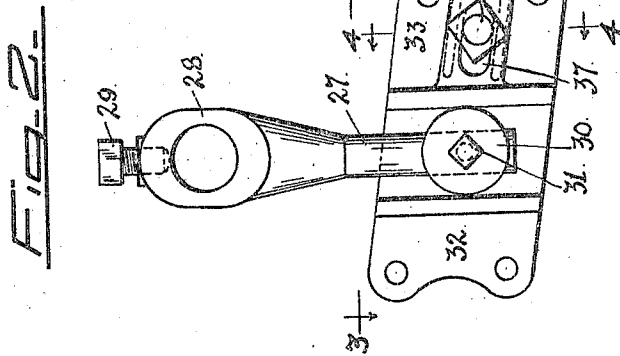
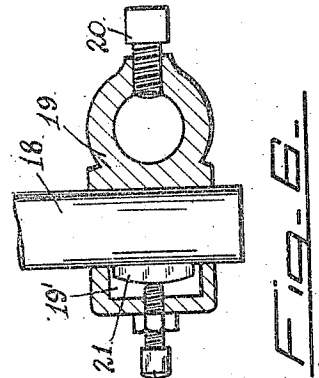
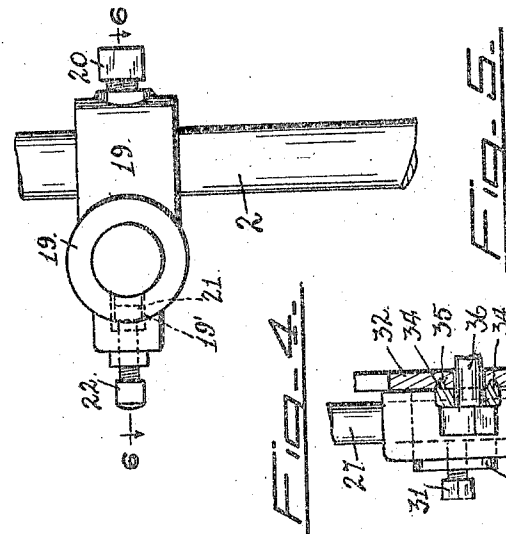
FIG. 1—



L. C. DIBERT.
VIBRATING SHAKER SCREEN.
APPLICATION FILED MAR. 6, 1917.

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2 SHEETS—SHEET 2.

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WITNESS:

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UNITED STATES PATENT OFFICE.

LOYD C. DIBERT, OF SAN FRANCISCO, CALIFORNIA.

VIBRATING SHAKER-SCREEN.

1,234,299.

Specification of Letters Patent.

Patented July 24, 1917.

Application filed March 6, 1917. Serial No. 152,503.

To all whom it may concern:

Be it known that I, LOYD C. DIBERT, a citizen of the United States, residing at the city and county of San Francisco and State of California, have invented certain new and useful Improvements in Vibrating Shaker-Screens, of which the following is a specification.

My invention relates to that type or class of screening devices for granular or floured substances in which the screen shoe or shoes are mounted for vibratory movement and are additionally subjected to a surface jarring or shaking action by means of automatically operated oscillating rapidly striking tappets.

A machine of this type is disclosed in my Patent No. 941,862 granted Nov. 30, 1909, and my present invention consists in novel improvements in that machine.

These improvements consist particularly in the tappet operating means, by which a nicer and more accurate adjustment of the degree or force of the blow may be had and all wear of parts compensated for; and in the means for carrying the screen shoes and nicely and accurately regulating their vibratory movement, all of which I shall hereinafter fully describe by reference to the accompanying drawings in which—

Figure 1 is a side elevation, broken, of my machine.

Fig. 2 is a side elevation, enlarged of the tappet-operating arm and its adjustable bearings.

Fig. 3 is a section, partly broken, on the line 3—3 of Fig. 2.

Fig. 4 is a section on the line 4—4 of Fig. 2.

Fig. 5 is an elevation of the tappet-rock-shaft two-way-casting.

Fig. 6 is a section on the line 6—6 of Fig. 5.

Fig. 7 is a perspective view of the pair of two-way castings for the eccentric connections at the head of the machine.

1 is the frame of the machine including the side-standards 2.

For the sake of illustration I show two screen shoes inclining downwardly from head to foot, the upper one 3 being single and the lower one 4 being double. It will be understood however, that this arrangement may be varied at will, and any number of shoes either single or double or an aggregation of both may be employed.

The upper screen shoe is hung as follows: Fixed in bearings 5 across the top of the frame near its head and foot ends are the cross shafts 6.

Under the screen shoe near its head and foot are the cross shafts 7 which are fixed to the shoe by brackets 8 bolted to the shoe sides.

Journalled to rock on each end of the cross shafts 6 are the two-way castings 9 the shafts passing through the horizontal way of the castings.

Journalled to rock upon the ends of the cross shaft 7, at the head end of the shoe, are two right-angle two-way castings 9' similar to the castings 9. This pair of castings 9' has its members placed end to end, the shaft 7 passing through their alined ways. The inner member of the pair is arranged with its other way substantially vertical, while the outer member is placed with its other way substantially horizontal.

The castings 9' for the foot-shaft 7 of the shoe are single two-way castings. Hanger rods 10 for the head of the shoe are fitted at their upper ends in the vertical ways of the castings 9, and at their lower ends in the vertical ways of the inner members of the pairs of castings 9'; and nuts 11 on these rods above and below serve to adjust them to level the screen shoe and regulate its inclination. Similar adjustable hanger rods 10 are fitted to the castings 9 and 9' at the foot end of the machine.

In the lower ways of the outer members of the casting-pairs 9', at the head of the shoe, is fitted one end of the connecting rod 12 with adjusting nuts 13, the other end of the rod being fitted to eccentric 14 on the drive shaft 15 across the head of the frame 1.

The lower shoe 4 is similarly supported except from the reverse direction, that is to say, in the base of the frame 1 are cross-shafts 6' and secured to the shoe are cross shafts 7'. Upon the former are the rocking two-way castings 9 and on the latter are the rocking two-way castings 9'. Between these extend the rods 10' with adjusting nuts 11', and from the head end castings 9 extends the connecting rod 12' with adjusting nuts 13', to the eccentric 14' on the drive shaft.

It will now be seen that through these several connections the shoes have imparted to them a vibratory movement in the direction of their length and that this movement

may be regulated and the shoe properly leveled laterally, and its inclination varied and determined by adjusting the connections.

- 5 To the screen surfaces of each shoe are fitted the longitudinally directed jarring strips 16, which carry at intervals the anvils 17.

Transversely above each screen surface 10 are the rock-shafts 18. These are journaled at their ends in two-way castings 19 adjustably fixed on the frame standards 2 by set screws 26.

The standards 2 pass through the vertical 15 ways of these journal castings, while the rock-shafts are journaled in their horizontal ways. Thus the position of the rock-shafts may be nicely adjusted initially. Within the horizontal way of each journal casting 20 19 as shown in Figs. 5 and 6, is a recess 19' in which is seated a gib 21, adapted by means of a set-screw 22 to take up the wear due to the oscillation of the rock-shaft.

The rock-shafts 18 have secured to them 25 by means of the brackets 23 with set screws 24, the tappet arms 25, each end of said arms carrying a tappet shoe 26 in position to strike a blow upon an underlying anvil 17 and thereby shake or jar the screen.

30 The shafts 18 are rocked or oscillated by means of the crank arms 27, the heads 28 of which fit on the shafts and are fixed by set screws 29. Upon the lower end of each crank arm is fitted a roll-stud 30. This stud 35 is vertically adjustable on the crank arm and is fixed in position when adjusted, by a set screw 31 in its end. See Figs. 2 and 3.

Bolted to the side of each shoe is a bearing comprising a fixed flanged member 32 40 and an adjustable flanged member 33. The latter is slidably fitted on the former by means of elongated guides 34 in the one fitting in elongated grooves 35 in the other, as seen in Fig. 4, and said adjustable member 45 is fixed in its adjusted position by a bolt 36 passing through a slot 37. The adjustment of the bearing member 33 toward the roll-stud 30 compensates for wear; the adjustment of the cross-shaft 18 by means of its 50 journal castings initially defines the position of its tappets; and the adjustment of the roll-stud on the crank arm regulates the force and character of the tappet-blow, the motion being transmitted from the longitudinally vibrating shoe.

55 It will thus be seen that all adjustments are provided for and all wear compensated by simple and convenient means. These are results especially to be desired in a machine

in which the movements are rapid and continuous. 60

38 in Fig. 1 is a feed hopper at the head of the machine.

I claim:—

1. In a machine of the described type, the 65 combination of a screen-shoe; means for supporting and vibrating said shoe; oscillating tappets for jarring the screen surface of the shoe; and means for oscillating said tappets comprising rock-shafts on which the 70 tappets are carried, two-way castings in which the rock-shafts are journaled, crank arms carried by said shafts, each of said arms having a roll-stud, and a two-part bearing for the roll-stud, secured to the vi- 75 brating shoe, one of the parts of said bearing being adjustable on the other to take up wear between the roll-stud and bearing.

2. In a machine of the described type, the 80 combination of a screen-shoe; means for supporting and vibrating said shoe; oscillating tappets for jarring the screen surface of the shoe; and means for oscillating said tappets comprising rock-shafts on which the 85 tappets are carried; vertically adjustable two-way castings in which the rock-shafts are journaled, crank arms carried by said shafts, vertically adjustable roll studs carried by each of said crank arms, and a two- 90 part bearing for the roll-stud, secured to the vibrating shoe, one of the parts of said bearing being adjustable on the other to take up the wear between the roll-stud and bearing.

3. In a machine of the described type, the 95 combination of a screen shoe; means for supporting and vibrating said shoe; oscillating tappets for jarring the screen surface of the shoe; and means for oscillating said tappets comprising rock-shafts on which the tappets 100 are carried; vertically adjustable two-way castings in which the rock-shafts are journaled, an adjustable gib seated in each of said castings to take up the journal wear, crank arms carried by said shafts, vertically 105 adjustable roll studs carried by each of said crank arms, and a two-part bearing for the roll-stud, secured to the vibrating shoe, one of the parts of said bearing being adjustable on the other to take up the wear between the 110 roll-stud and bearing.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

LOYD C. DIBERT.

Witnesses:

WM. F. BOOTH,
D. B. RICHARDS.