

March 2, 1926.

1,575,601

C. G. KNOBLAUCH

SCREENING DEVICE

Original Filed Nov. 26, 1923

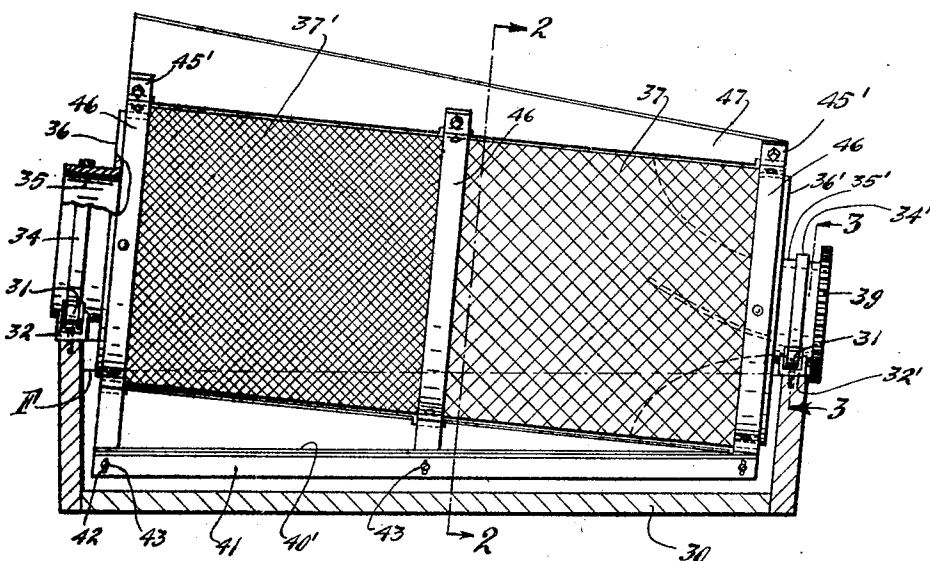


Fig. 1

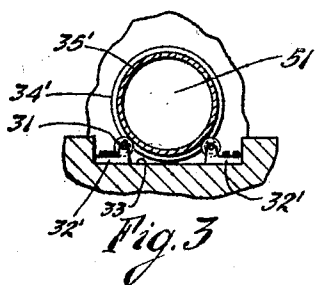
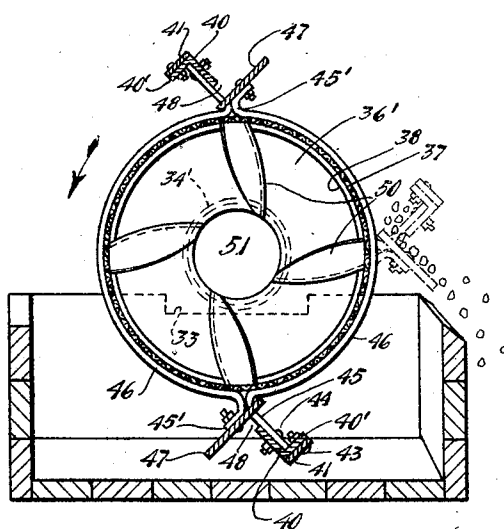


Fig. 2



Witnesses:

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UNITED STATES PATENT OFFICE.

CURT G. KNOBLAUCH, OF CHICAGO, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO
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SCREENING DEVICE.

Original application filed November 26, 1923, Serial No. 677,132. Divided and this application filed
February 16, 1925. Serial No. 9,377.

To all whom it may concern:

Be it known that I, CURT G. KNOBLAUCH, a citizen of the United States, and a resident of the city of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Screening Devices, of which the following is a specification.

My invention relates to new and useful improvements in screening devices, and more particularly to rotary screens, such as are used for screening and washing particles of material, such as sand and the like.

An object is to provide such a device with means for screening the material while said material is submerged in the cleaning liquid, for thoroughly cleansing the material.

Another object is to provide such a device with means on the screening mechanism and movable therewith for elevating, deflecting and discharging the screened material.

A further object is to provide screening mechanism with means for elevating the screened material and means to adjust the capacity of said elevating means.

And another object is to provide such a device having a rotary screen mounted to operate in a liquid container, for simultaneously screening and washing the material in said liquid, and having means on its periphery for elevating and deflecting the screened and washed material out of the container.

Other objects will appear hereinafter.

This is a division of applicant's prior application for screening devices, Serial No. 677,132, filed November 26, 1923.

The invention consists in the combinations and arrangements of parts hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawings forming a part of this specification, and in which,

Fig. 1 shows my invention partly in side elevation and partly in section; and

Figs. 2 and 3 are substantially vertical cross sections taken respectively on lines 2—2 and 3—3 of Fig. 1.

The form of invention illustrated in this application comprises a liquid container 30 for receiving water or any suitable cleaning fluid, and rollers 31 are mounted in bearings 32 on one end of the container

and in similar bearings 32' fastened in a notch 33 at the other end of said container. The rollers are preferably flanged to engage bearing bands 34 and 34' on the necks or trunnions 35 and 35' fastened on the end members 36 and 36' which are suitably fastened on the cylindrical screen 37, as with flanges 38, the device thus rotating on such rollers at the desired slant or inclination. A sprocket gear 39 or similar means is mounted on the outer end of trunnion 35' for application of the driving power.

Several screens of various mesh may also be used, said screens being axially alined and the screen 37' of the finest mesh being placed in the receiving end. The elevating members or bars 40 have plates 41 adjustably and replaceably mounted with suitable slots 42 and bolts 43 on their outer flanges 40', said bars being removably fastened, as with bolts 44, to the outwardly-turned ends of the re-enforcing bands 46, and deflecting members 47 are fastened with suitable bolts on the outwardly-turned ends 45' of said bands 46, said member 40 being spaced from member 47 to provide a discharge opening 48.

Curved plates 50 are mounted in the discharge end of the screen for moving the oversized and unscreened material out through the central discharge opening formed in trunnion 35', and in gear 39.

The bearings are arranged on the liquid container 30 to mount the cylindrical screen at a suitable angle or inclination, and water or the desired cleaning fluid is placed in the container to substantially the line F indicated in the drawings. The material to be screened and washed, such as sand or the like, is then entered through the open upper end or through the receiving trunnion and the cylindrical screen is rotated, with the lower part thereof operating in the fluid, and the contained sand or material being also mainly submerged under the level of said fluid and being thus simultaneously screened and cleaned. The elevating members thereupon carry the screened and cleaned sand or material upwardly and finally drop it through the provided discharge slot or space on to the deflecting members which deflect such material and discharge it beyond the container 30, as clearly indicated in Fig. 2. And where

5 screens of various mesh or gauge are used, the material is graded according to fineness, simultaneously and automatically discharged and deposited outside of the container in the respective positions opposite the screens of the various mesh, while the oversized and unscreened material is discharged and deposited beyond the discharge end of the screen.

10 While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of variation and modification without departing from the spirit of the invention. I, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

20 Having described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A screening device comprising in combination a liquid container, a rotary screen operating in the liquid in said container and having a trunnion at each end, means extending laterally outward from said screen for elevating and deflecting material from said container, and members adjustably mounted on said elevating means for adjusting said elevating means for capacity.

2. A screening device comprising in combination a liquid container, a rotary screen operating in the liquid in said container and having a trunnion at each end, means extending laterally outward from said screen for elevating and deflecting material radially from said container, means adjustably mounted on said elevating means for adjusting the same for capacity, and curved members in the end of said screen for discharging unscreened material axially through the adjacent trunnion.

3. A screening device comprising in combination, a liquid container, a rotary screen operating in the liquid in said container and being supported at each end on said container, means extending laterally from the periphery of said screen for elevating material from said container, and including means at the outer end of said elevating means adjustable to vary the capacity thereof, and deflecting means mounted rearward of said elevating means to discharge the elevated material beyond said container.

4. A screening device comprising in combination a liquid container, a rotary screen operating in the liquid in said container and

having a support at each end, reenforcing members on the periphery of said screen, an elevating member mounted on one outwardly turned end of said reenforcing members, and a deflecting member mounted on the other end of said reenforcing members.

5. A screening device comprising a cylindrical screen, reenforcing bands mounted circumferentially of said screen, an elevating bar mounted on one end of said bands, means adjustably mounted on the outer part of said bar to vary the carrying capacity thereof, and a deflecting member mounted on the other end of said bands.

6. A screening device comprising in combination a liquid container, a rotary screen operating in the liquid in said container and being supported at each end on said container, reenforcing means on said screen, elevating bars mounted on said reenforcing means and carrying adjustable means to adjust said bars for capacity, deflecting means mounted on said reenforcing means rearward of said elevating means, for deflecting material outward of said container, and means in the end of said screen for discharging unscreened material outward of said container.

7. A screening device comprising in combination, a liquid container, a rotary screen operating in said container and having a trunnion with a bearing band at each end, roller means on said container engaging said bands for rotatably supporting said device, spaced longitudinal bars mounted on the periphery of said screen for elevating and deflecting material beyond said container, and a driving gear fastened on the discharge trunnion for operating the device.

8. A screening device comprising in combination, a liquid container, a rotary screen operating in said container and having a trunnion with a bearing band at each end, roller means on said container engaging said bands for rotatably supporting said device, spaced longitudinal bars mounted on the periphery of said screen for elevating and deflecting material beyond said container, a driving gear fastened on the discharge trunnion, and spiral blades in the discharge end of said screen for discharging the unscreened and oversized material through said discharge trunnion and driving gear.

In testimony whereof I have signed my name to this specification.

CURT G. KNOBLAUCH.