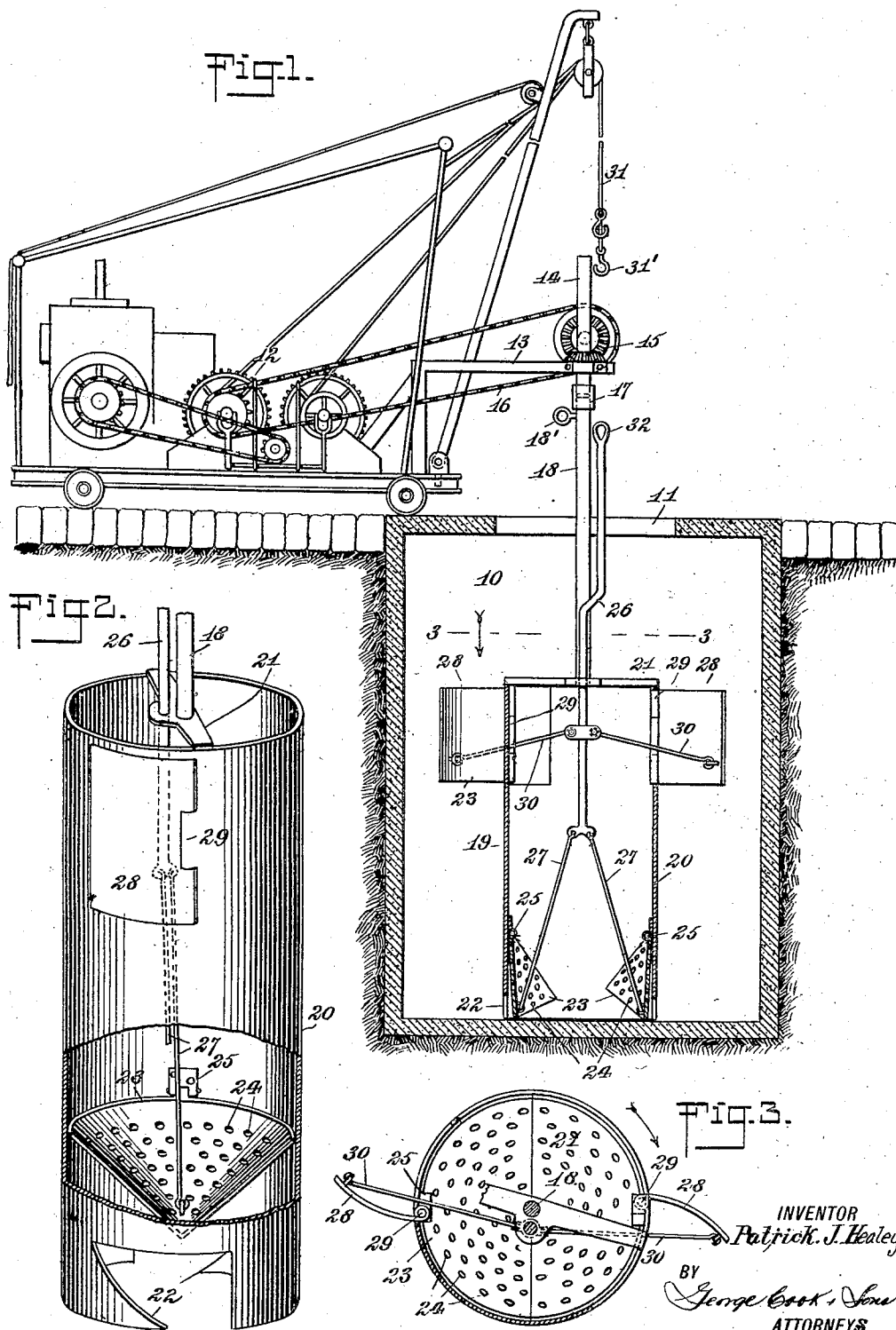


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 CLEANING APPARATUS FOR CATCH BASINS.
 APPLICATION FILED SEPT, 6, 1919.

1,325,638.

Patented Dec. 23, 1919.



UNITED STATES PATENT OFFICE.

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1,325,638.

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Application filed September 6, 1919. Serial No. 322,036.

To all whom it may concern:

Be it known that I, PATRICK J. HEALEY, a citizen of the United States, and a resident of Jersey City, in the county of Hudson and State of New Jersey, have made and invented certain new and useful Improvements in Cleaning Apparatus for Catch-Basins, of which the following is a specification.

My invention relates to a cleaning apparatus and particularly to one which is adapted to clean catch basins, the apparatus being operated in conjunction with my sewer cleaning apparatus, as described in Patent No. 1,313,378, granted to me on the 19th day of August, 1919.

These basins, which are located at street corners, rapidly become filled with mud and refuse, requiring their almost constant cleaning. Heretofore, this cleaning has been carried out by a man entering the catch basin, but the presence of poisonous gases and the general condition under which the work is performed render this practice particularly hazardous and objectionable.

It is accordingly an object of my invention to provide an apparatus for cleaning catch basins, which will render unnecessary the entering of a workman into the basin and which apparatus will quickly and efficiently clean the catch basin of all refuse, even though the latter be solidly packed therein.

A further object is to provide an apparatus which will accomplish the aforementioned ends and is simple in construction and composed of few parts, allowing it to be economically manufactured; and which apparatus is at the same time rugged in character so as to stand up under the rough service to which it will be necessarily exposed.

With the foregoing and other objects in view, my invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, and illustrated in the accompanying drawings, wherein the preferred embodiment of my invention is shown.

Figure 1 is a view in section of a catch basin with my improved cleaning apparatus therein.

Fig. 2 is a view in perspective and partially in section, of the cleaning bucket.

Fig. 3 is a view taken on the line 3, 3 of Fig. 1.

Referring particularly to the several views, the catch basin 10 is rendered acces-

sible through the manhole 11, and alongside of which latter is provided the double drum hoisting engine and derrick 12. Projecting above the manhole opening is the overhanging arm 13, which carries a rotating spindle 14, the latter being connected to and driven by the engine through the beveled gears 15, and the chain 16. Mounted upon the lower extremity of this spindle is a coupling 17, the same detachably engaging the shaft 18, which is fixed to and adapted to rotate the bucket cleaner 19. The cleaner bucket is formed with the open-ended cylinder or drum 20, across the open upper extremity of which extends the bracket 21, and to which the shaft 18 is rigidly fixed. The lower extremity of the drum is cut away so as to form the plows or cutters 22, and positioned slightly thereabove are the doors 23, the said doors being hinged to the drum as at 25, and provided with perforations 24. A lifting rod 26 extends through a suitable opening in the bracket 21 and has its lower extremity connected to the doors 23 by the links 27, whereby the raising or lowering of the lifting rod will cause a corresponding closing or opening of the doors.

Arranged adjacent the upper extremity of the drum are provided the agitator blades 28, these blades being formed of sections cut from the side wall of the drum and hinged thereto along one edge, as at 29. The agitator blades are adapted to extend outwardly from the drum as shown in Fig. 3, or to be retracted and form a continuation of the side walls thereof, as shown in Fig. 2, the blades being moved and held in these positions by links 30 which are connected to the said blades and to the lifting rod 26.

In using my apparatus, a cable 31 is connected to an eye 32 which is provided at the upper extremity of the lifting rod and by means of this cable the bucket cleaner is lowered within the catch basin, the weight of the bucket and associated parts holding the agitator blades retracted and the doors closed. The cleaner bucket is lowered into the catch basin until the lower extremity contacts with the refuse which covers the bottom of the basin. The cable 31 is then detached from the lifting rod and the agitator blades and doors will then open, due to the weight of the lifting rod and the doors. This opening of the doors and blades may be assisted by pushing downwardly on the lifting rod. The shaft 18 is then attached

to the coupling 17, the latter having been moved into position above the manhole, and the power supplied by the engine 12 will cause the cleaner bucket to rotate, the plows 5 or cutters 22 to loosen such material as may be solidly packed within the catch basin, and the agitator blades will loosen such solid material which may adhere to the side walls of the basin. The mud and other refuse will accordingly be deposited within the cleaner bucket, either through the open doors or through the openings left by the extended position of the agitator blades.

In order that the cleaner bucket may be continually rotated as it digs its way into the refuse, which is in the catch basin, I have provided the shaft 14 with a sliding joint or mounting with the arm 13 and with the bevel gear 15. This sliding and non-rotating connection between the gear and shaft may be effected by any of the usual means, such as a key way and spline or by providing the shaft with a square portion and the bevel gear with a square opening. This construction being of the ordinary type is not shown in detail. The slidably mounting of the shaft 14 allows the entire weight of the cleaner bucket to be utilized in forcing the same into the refuse and provides for the quick and efficient action of the apparatus.

The rotation of the cleaner bucket not only loosens the material which is located in the catch basin but causes the same to be deposited within the cleaner bucket. As soon as the bucket has become filled, the coupling 17 is disconnected and the overhanging arm 13 and associated parts moved to one side. The two cables 31 and 31' are connected to the lifting rod 26 and to an eye 18', which latter is connected to the upper extremity of the shaft 18. The hoisting engine is then operated, so that the cleaner bucket is moved upwardly by a direct pull upon the lifting rod 26, the initial upward pressure upon the rod causing the agitator blades to retract so that the cleaner bucket may pass through the manhole opening and also closing the doors 23. During the raising of the cleaner bucket the water will drain through the perforations in the bucket doors. The derrick or hoisting engine which operates the cables 31 and 31' is then moved so as to swing the cleaner bucket above a cart. The hoisting engine is then operated so that the cable 31 is drawn upwardly and the weight of the cleaner bucket supported by the cable 31' and the shaft 18. The weight of the cleaner bucket being thus relieved from the lifting rod 26, the latter will move downwardly, due to the weight of the material within the cleaner bucket, and the doors 23 will swing open, allowing the contents of the bucket to be dumped into the cart.

While I have particularly described my apparatus as being used for cleaning catch basins, it will be readily appreciated that it may be used for other and allied purposes without departing from the spirit of my invention.

Having thus explained my invention, I claim and desire to secure by Letters Patent:

1. A cleaner bucket comprising a body portion, doors carried at the lower extremity thereof, agitator blades carried by and projecting from the said body portion, and means for closing said doors and retracting said agitator blades.

2. A cleaner bucket comprising an open-ended drum, cutters carried at the lower end thereof, perforated doors hinged to said drum adjacent the lower end thereof, agitator blades retractably secured to the drum adjacent the upper extremity thereof, and a lifting rod connected to said blades and doors, adapted to control the positions thereof.

3. An apparatus of the class described comprising a cleaner bucket having a vertical shaft carried thereby, doors hinged to the lower open end of said bucket, a lifting rod connected to said doors and adapted to close the same during the lifting of said bucket by said lifting rod, means for detachably engaging and rotating said shaft, and means for engaging said lifting rod for the raising and lowering of said cleaner bucket and the closing of said bucket doors.

4. A cleaner bucket comprising a drum, doors carried at the lower end thereof, a shaft carried by said drum and projecting thereabove, a lifting rod connected to said doors and adapted to close the same during the supporting of said cleaner bucket by said lifting rod, and means associated with said shaft whereby the weight of said cleaner bucket may be supported by said shaft.

5. An apparatus of the class described comprising a cleaner bucket, doors for the same adjacent the lower end thereof, a vertical shaft carried by said cleaner bucket, and means for rotating said shaft for the rotation of said bucket.

6. The combination of a hoisting machine, means associated therewith for transmitting rotary motion to a vertical spindle, and a cleaning bucket having a shaft fixed thereto detachably engaging said spindle, and means for raising and lowering said cleaning bucket.

7. An apparatus of the class described comprising a cleaner bucket including a drum with hinged doors at the lower extremity thereof, retractable agitator blades carried by said drum, a lifting rod connected to said agitator blades and said doors and adapted to move the same in a closed position when the weight of said cleaner bucket

is supported by said lifting rod, a shaft carried by said cleaner bucket and extending axially thereabove, means whereby said shaft may support the weight of said cleaner bucket, relieving the lifting rod and allowing the doors and agitator blades to swing open for the dumping of the contents of the cleaner bucket.

8. An apparatus of the class described comprising a cleaner bucket including a drum with hinged doors at the lower extremity thereof, retractable agitator blades carried by said drum, a lifting rod connected to said agitator blades and said doors and adapted to move the same in a closed position when the weight of said cleaner bucket is supported by said lifting rod, a shaft carried by said cleaner bucket and extending axially thereabove, means whereby said shaft may support the weight of said cleaner bucket, relieving the lifting rod and allowing the doors and agitator blades to swing open for the dumping of the contents of the cleaner bucket, and a hoisting engine adapted to engage the said lifting rod and the said shaft for the raising and lowering of said cleaner bucket, and

power-transmitting means for engaging the said shaft with the cleaner bucket for the rotation of the latter.

9. The combination of a cleaner bucket including retractable agitator blades and swinging doors, a lifting rod connected to said agitator blades and doors and adapted to hold the same in closed position, a shaft carried by said cleaner bucket extending axially thereabove and provided with cable engaging means whereby the weight of said cleaner bucket may be supported by said shaft to thereby relieve the lifting rod, allowing the doors of the cleaner bucket to swing open, and a power transmitting apparatus including a longitudinally slidable shaft with a coupling at the end thereof adapted to engage the shaft of said cleaner bucket and forcibly rotate the latter.

Signed at New York, borough of Manhattan, in the county of New York and State of New York, this 5th day of Sept. A. D. 1919.

PATRICK J. HEALEY.

Witnesses:

AGNES T. GRAY,
ANNE V. WALSH.