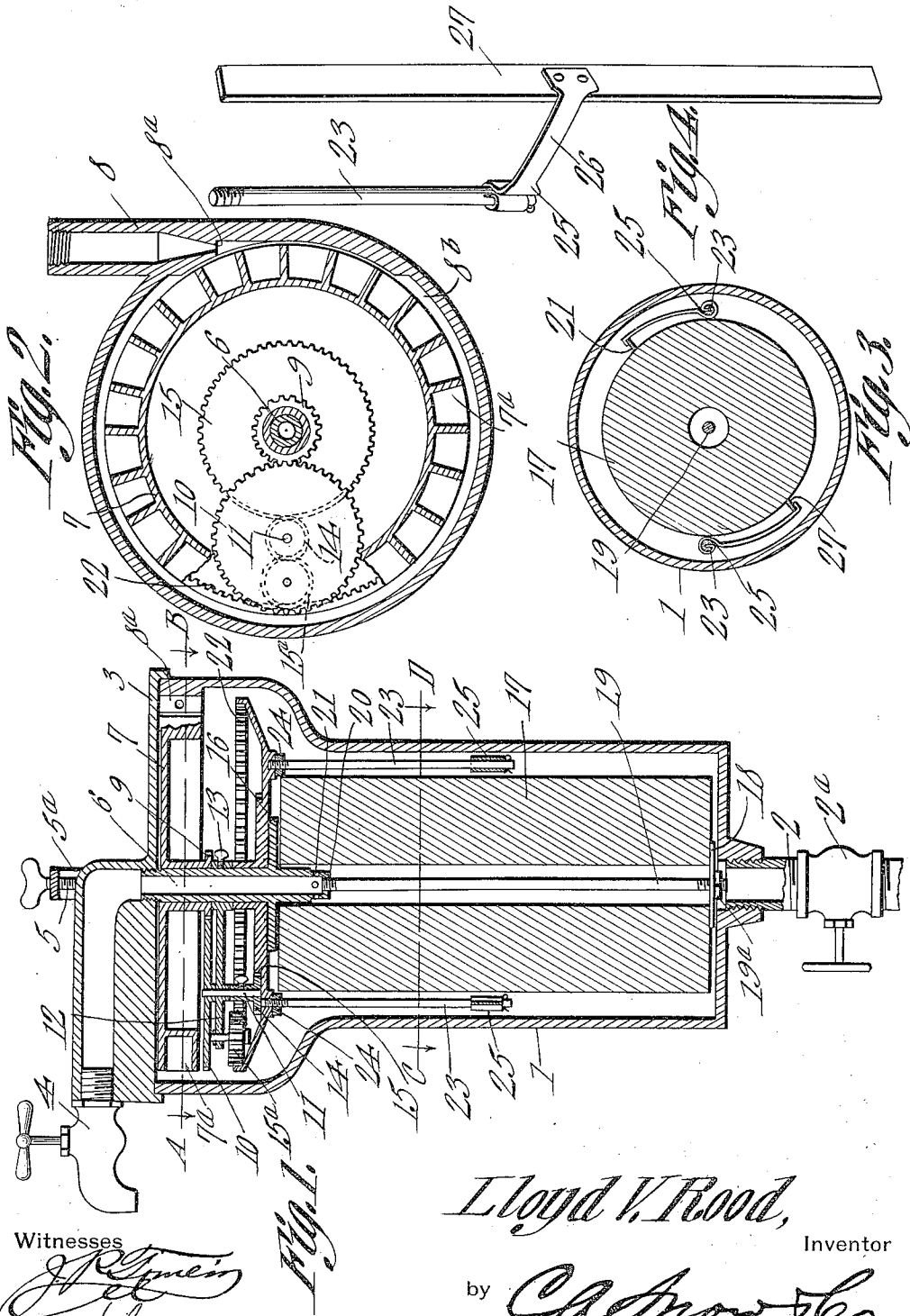


L. V. ROOD.
FILTER.

APPLICATION FILED SEPT. 25, 1912.

1,069,476.

Patented Aug. 5, 1913.



Witnesses

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UNITED STATES PATENT OFFICE.

LLOYD VINCENT ROOD, OF MARIETTA, OHIO.

FILTER.

1,069,476.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, LLOYD V. ROOD, a citizen of the United States, residing at Marietta, in the county of Washington and State of Ohio, have invented a new and useful Filter, of which the following is a specification.

This invention relates to filters and has for its object the provision of a filter adapted to operate efficiently with a slow moving body of water.

A further object of the invention is to provide means for adjusting the cleaning members of the filter so that the pressure of said members may be made suitable to the work to be done by them at all times.

Another object is to provide improved mechanism whereby the filter can be adjusted to the water pressure so as to produce the speed desired.

With the above and other objects in view, which will hereinafter appear, the invention consists in the combination of parts hereinafter shown and described, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention;

In the drawings: Figure 1 is a vertical section through the filter embodying the present invention; Fig. 2 is a horizontal section on the line A—B of Fig. 1; Fig. 3 is a horizontal section on the line C—D of Fig. 1; Fig. 4 is a perspective view showing the preferred construction of one of the cleaning members.

In the drawings, 1 designates the outer jar of the filter, which is composed of any suitable material and 2 designates an outlet pipe secured in the bottom of the jar and provided with a valve 2^a. On the top of the filter jar 1 is secured a cover 3, of suitable construction, which is provided with a tap 4 for the escape of filtered water. The top is held in position by means of a screw 5 which works through a suitable bail 5^a.

In the bottom of the top I preferably secure a downwardly extending tube 6 and on the upper portion of said tube I provide a wheel 7, preferably of the construction shown. The wheel 7 is provided at its outer extremity with a plurality of pockets 7^a which are arranged radially, as shown. These pockets are presented to the inflow of water through the pipe 8 which is provided

on the periphery of the casing of the filter. The member 7 is mounted to rotate about the member 6, which is threaded into the lower surface of the top 3 of the filter. At the lower margin of the hub portion of the member 7 I preferably provide a small gear 9 which meshes with a larger gear 10 which turns on a shaft 11 which is revolubly mounted in a bracket 12 secured on the outside of the member 6 by means of a set screw 13. At the lower end of the member 11, I preferably mount an invertible gear 14, which is tightly secured to the member 11 as will be seen. In the position shown the gear 14 meshes with a larger gear 15 which is mounted to turn about the member 6 and is secured to or formed with a large annular gear 22; but, by inverting gear 14 it can be brought in engagement with a small gear 15^a which is supported from the free end of the bracket 12, and constantly meshes with the annular gear 22, as will be seen. Below the member 15 a flange 16 is provided on the tubular member 6, which serves to hold the several gears in proper relation and also affords a suitable surface for the contact of the filtering block 17, which is fitted beneath the member 16. The block 17 is secured in position by means of a small member 18 which engages the lower end of the block 17 and is held by means of a central shaft 19, the lower end of which is engaged by a suitable nut 19^a and the upper end of which is threaded into the downward extension 20 of the member 6. The member 20 is provided with openings 21 which permit the water to escape from the interior of the block 17 and pass to the spigot 4.

In order to keep the filter member 17 clean, I preferably provide downwardly extending rods 23 on the under side of the larger gear 22, these being locked in position by means of nuts 24 which prevent the rods 23 from rotating. At the lower end each of the rods is provided with a spring 25, the free portion of which is reduced in width as shown at 26. One end of the spring is attached to a vertically disposed cleaning member or scraper 27. The angular adjustment of the cleaning members 27 and their degree of engagement with the revolving member 17 is controlled by means of the threaded connection of the rods 23 with the bottom of the gear 22 and by the lock nuts 24.

From the foregoing description, it will be

noted that as liquid is allowed to enter the filter through the entrance tube and engage with the extensions on the wheel 7, rotation of the wheel will naturally result and a slow rotation will be imparted to each of the gears 10 and 15 with a consequent movement of the member 17. It will thus be seen that it will seldom be necessary to open the valve 2^a in the pipe 2 to permit rapid flow of water through the filter and consequent rapid turning of the member 17. The water which enters through the tube 18 will pass through the filter stone 17 and up through the interior space to the tap 4 from which it can be allowed to escape as required for use.

By providing the reversible or invertible gear 14, it will be seen that the power transmitted from the wheel 7 to the cleaning members 27 can be regulated according to the available water pressure.

It will be noted that a shoulder 8^a is formed at the discharge end of the nozzle so as to constitute an abutment for the water and produce the best results. Furthermore, it will be seen that a clearance is provided, as at 8^b, between the wheel 7 and the outer jar or casing 1 so as to permit water to pass freely from the wheel and downwardly within the jar.

Having thus described the invention, what I desire to claim is:

1. In an apparatus of the class described,

the combination with a water wheel, and means for directing a stream of water against it, of a fixed cylindrical filtering member, a scraper arranged to turn about the filtering member, concentric gears revoluble with the scraper, and a gear actuated by the water wheel and shiftable into mesh with either of the concentric gears, said shiftable gear constituting speed changing means.

2. In an apparatus of the class described, the combination with a water wheel and means for directing a stream of water against it, of a fixed cylindrical filtering member, a movable scraper fixed to turn about the filtering member, and means for transmitting motion from the wheel to the scraper during the movement of water through the filter, said motion transmitting means including opposed gears movable together, an idler gear meshing with one of said gears, and an invertible gear meshing with the other one of said gears and adapted to be adjusted to mesh with the idler gear to vary the speed of movement of the scraping member.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

LLOYD VINCENT ROOD.

Witnesses:

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