(No Model.)

W. W. LOCKWOOD.

ROTARY PUMP.

No. 391,852. Patented Oct. 30, 1888.

Fig. 1.

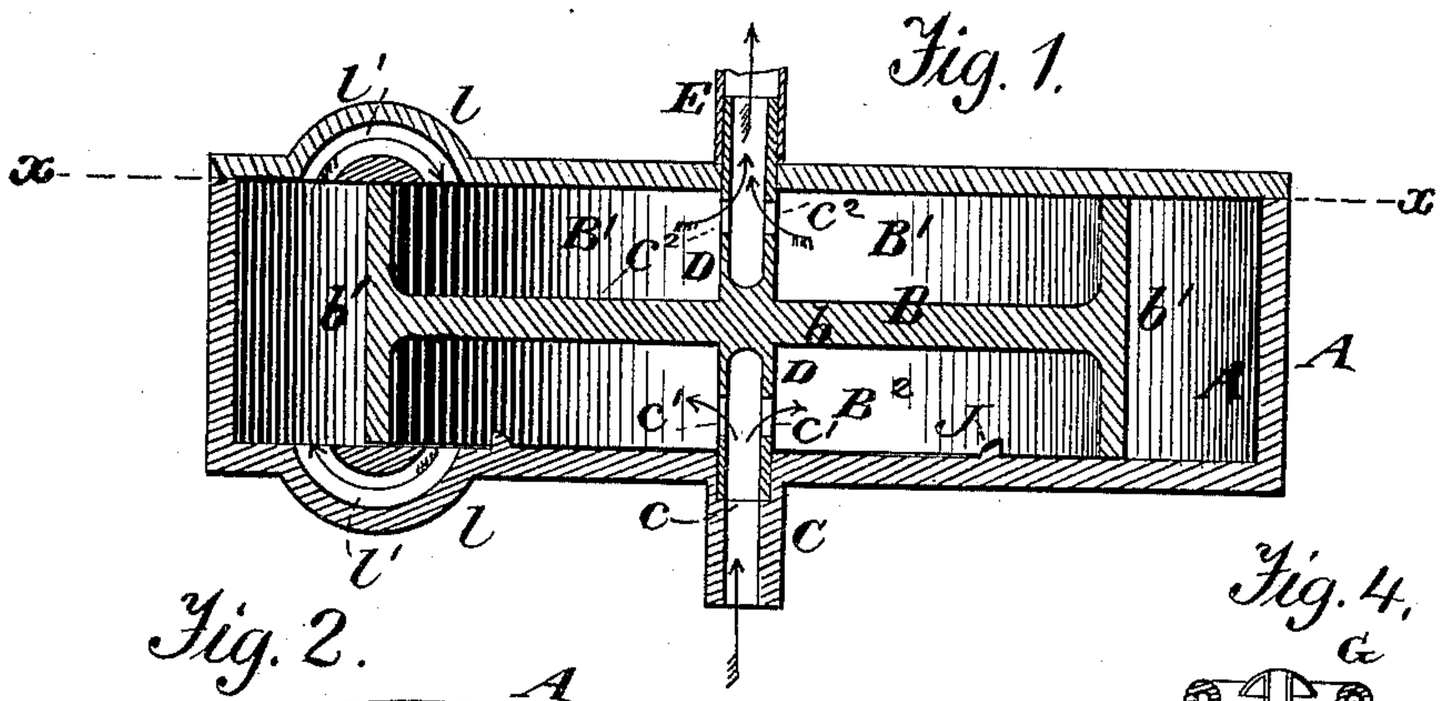


Fig. 2.

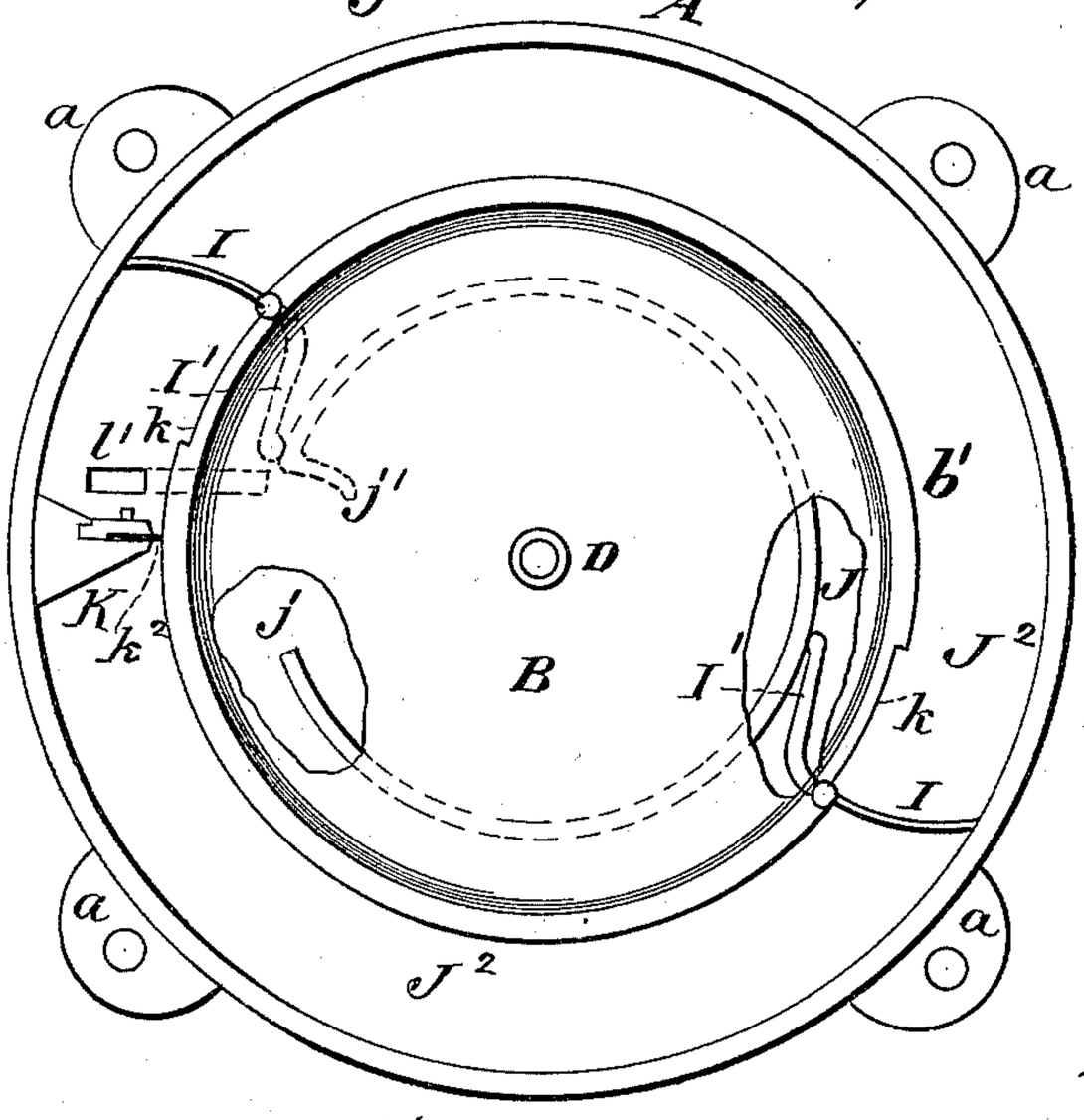


Fig. 3.

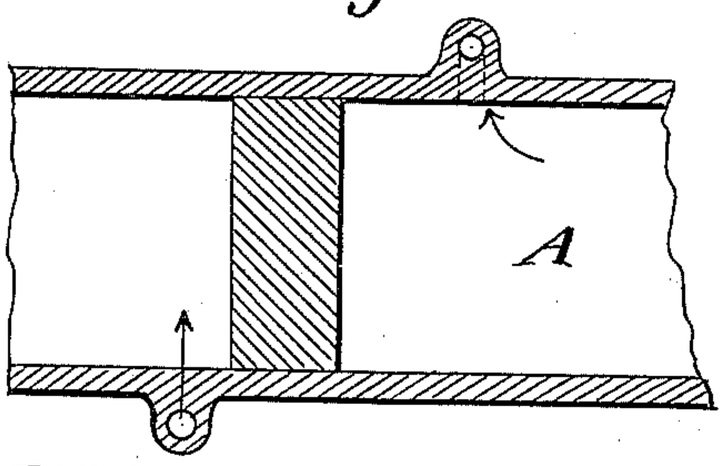
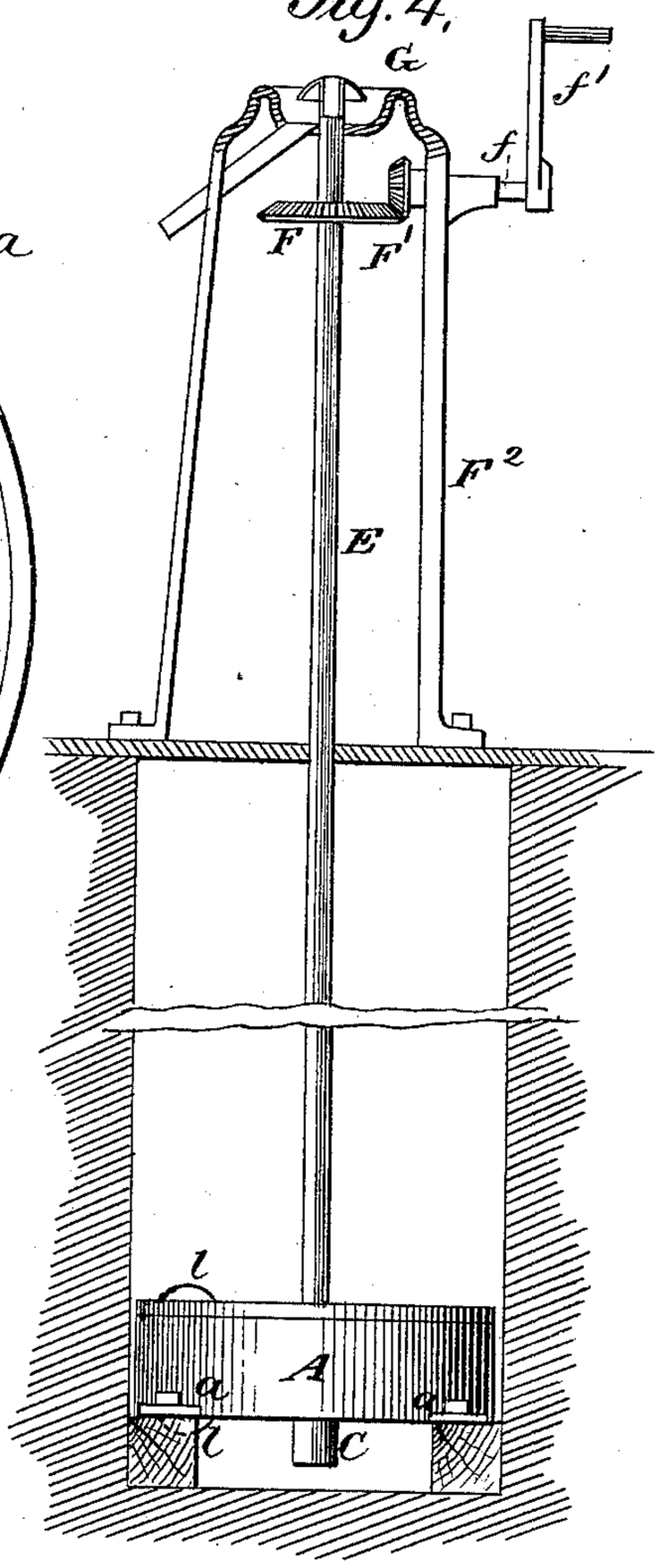


Fig. 4.



Witnesses.
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UNITED STATES PATENT OFFICE.

WILLIAM W. LOCKWOOD, OF FREEPORT, KANSAS.

ROTARY PUMP.

SPECIFICATION forming part of Letters Patent No. 391,852, dated October 30, 1888.

Application filed June 16, 1888. Serial No. 277,301. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM W. LOCKWOOD, a citizen of the United States, residing at Freeport, in the county of Harper and State of Kansas, have invented certain new and useful Improvements in Rotary Pumps; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to certain new and useful improvements in rotary pumps; and it has for its object to provide a pump of this class that shall be simple and cheap in construction, and at the same time efficient and durable in operation.

To these ends and to such others as the invention may pertain the same consists in the peculiar combinations and in the construction, arrangement, and adaptation of parts, all as more fully hereinafter described, shown in the drawings, and then particularly defined in the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters marked thereon, form a part of this specification, and in which—

Figure 1 is a central vertical section illustrating my improvement. Fig. 2 is a top plan of the parts below the line *x x* of Fig. 1. Fig. 3 is a detail in vertical cross-section; and Fig. 4 is a sectional detail, more particularly hereinafter referred to.

Reference now being had to the details of the drawings by letter, A designates the main or outer drum or cylinder, which may be made of any suitable material and of any size. This drum is placed in the bottom of the well, and is secured therein in any suitable manner to prevent its turning, and it is preferably formed with lugs *a* for this purpose.

B is a smaller or inner drum or cylinder arranged within the drum A. This drum B is formed with a central partition, *b*, and a peripheral flange, *b'*, providing two chambers, one, B', above said partition, and the other, B^2, beneath the same, as best shown in Fig. 3.

C is an inlet-pipe to the drum A, and at its upper end it is formed with a socket, *c*, in which is seated the lower end of the pipe, D, formed with or secured to the drum B and provided beneath the partition *b* with openings *c'*, communicating with the space between the two drums, as shown in Fig. 3. The pipe D above the partition *b* is provided with openings c^2, communicating with the upper chamber, B^2. The pipe D is secured to the pipe E, the upper end of which carries a bevel-pinion, F, with which meshes the bevel-pinion F', carried by the shaft *f*, suitably journaled in the support F^2, secured to the platform or other stationary part. The shaft *f* is provided with a suitable crank-handle, *f'*, by which it is turned.

Secured to the upper end of the pipe E is a saucer-shaped cup, G, convex side upward, as shown in Fig. 1, so that water can flow upon all sides and be caught by a spout which is designed to be placed underneath.

By turning the handle *f'* the drum B is rotated through the medium of the devices above described.

Pivotally secured to the drum B are the valves I, two or more, as occasion may require, and each of these valves is provided with an arm or lever, I', extending into the chamber B^2, and has its inner end in contact with a flange or rim, J, secured to the inner face of the bottom head of the drum A. This flange or rim is interrupted, as shown, at *j*, Fig. 2, for a purpose hereinafter described, the said rim or flange on one side of the break or opening therein being provided with an inwardly-extended curved portion, *j'*, for a purpose hereinafter explained.

The valves I are of such shape and dimension as to fit the space J^2 between the inner and outer cylinders. This space J^2 is continuous, except for a partition, K, opposite the cut-away portion of the rim J, as shown in Fig. 2. The periphery of the drum B is formed at proper intervals with recesses *k* to receive the valves when closed against said drum.

Upon opposite sides of the partition K the outer drum is provided with an enlargement, *l*, through which are formed the passages *l'*, affording communication between the chambers B' B^2 and the space J^2.

The partition K may be provided with a valve or packing, k^2, if preferred, as shown in Fig. 2; but this is not necessary. The upper head of the outer drum should be made removable in any suitable way, to provide for examination or repair of the inclosed parts when necessary.

The operation is as follows: Motion being given to the pipe E by means of the crank and pinions above described, the inner drum is turned, and with it the valves I, with their arms or levers I′ riding on the flange J. Water enters the inlet-pipe C and takes the course shown by arrows in Fig. 3. To allow the valves I to pass the partition K, the cut-away portion in the flange J is provided, as seen in Fig. 2. It will be seen on reference to said figure that when the arms of the valves reach this cut-away portion they are no longer supported by the flange, and consequently the valves fall against the periphery of the drum B. After passing the cut-away portion the valves are again thrown out by their arms or levers striking against the inwardly-extended curved portion j' of the flange J.

A pump constructed as above described can be produced at small expense, will be very durable and efficient in operation, and is not liable to get out of order.

Having thus described my invention and set forth its merits, what I claim to be new, and desire to secure by Letters Patent, is—

1. In a submerged pump, the combination, with the outer fixed drum, of the rotary inner drum formed with central horizontal partition, b, and peripheral flange b', and the pipe D, extended upon both sides of said central partition and provided with openings communicating with the spaces between the two drums upon each side of said partition, and a passage, l', affording a communication between the two chambers and the space between the two drums, substantially as shown and described.

2. In a submerged pump, the combination, with the outer fixed drum provided with enlargements l, of the inner rotary drum formed with central horizontal partition, b, forming two chambers, and with peripheral flange b', leaving a space, J^2, between the two drums, the valve I, and the pipe D, extended upon both sides of said partition and provided with openings communicating with the spaces between the two drums upon each side of said partition, and a passage, l', in said enlargements affording communication between the two chambers and the space J^2, substantially as shown and described.

3. The combination, with the inner and outer drums, of the flange J, secured to the inner face of the bottom of the outer drum and interrupted at j, and formed with inwardly-curved portion j', the partition K, arranged in the space J^2 between the two drums opposite the interrupted portion of the flange, and the valves pivoted to the inner drum and provided with arms I′, traveling in contact with the said flange, the said outer drum being provided upon opposite sides of said partition with enlargements l, having passage-ways l', affording communication between the space between the two drums and the chambers of the inner drum, substantially as shown and described, and for the purpose specified.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM W. LOCKWOOD.

Witnesses:

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