No. 644,475. Patented Feb. 27, 1900.

# W. S. SHARPNECK.

## CENTRIFUGAL PUMP.

(Application filed June 12, 1899.)

(No Model.)

Fig. 1.

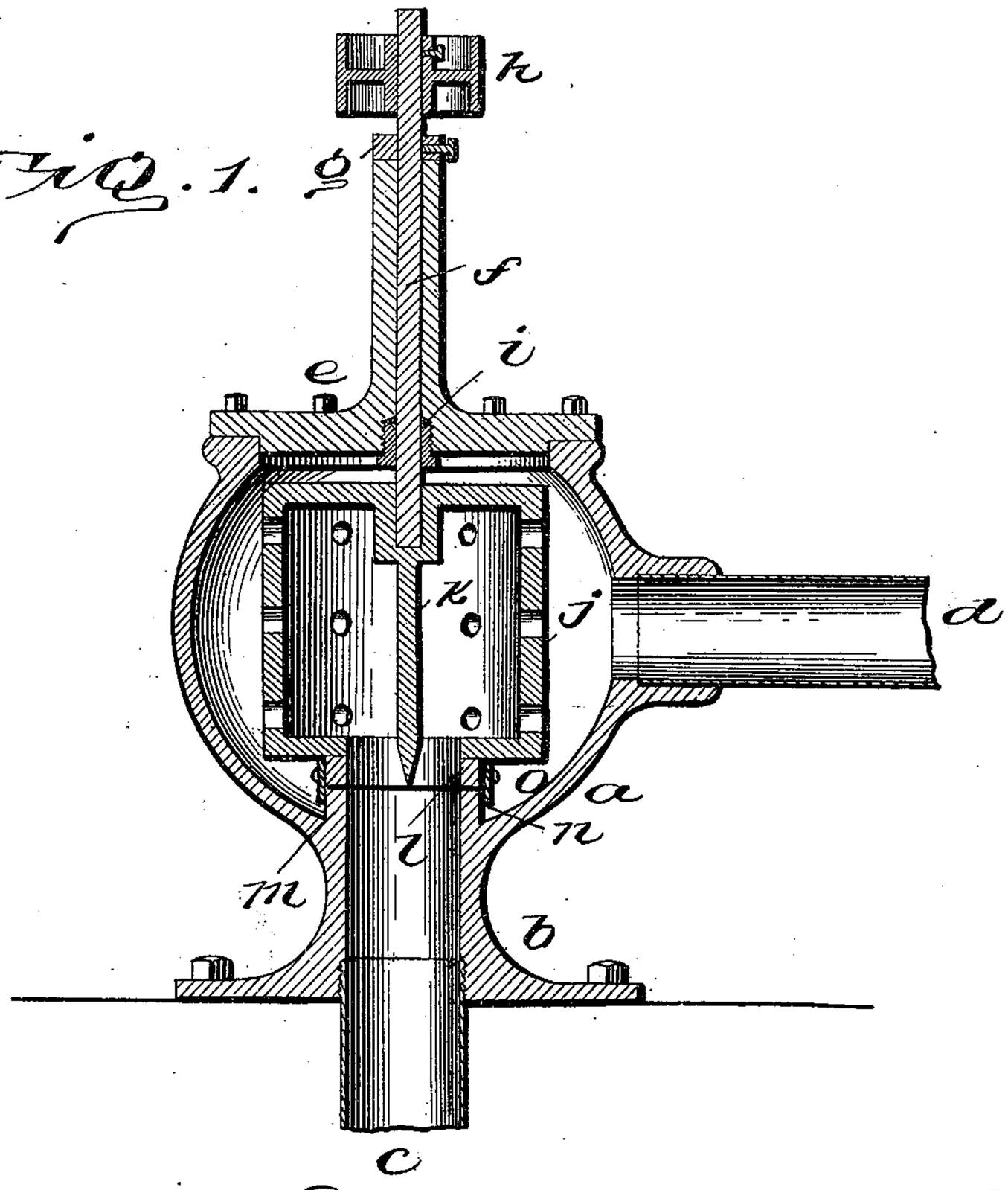



Fig. 2.

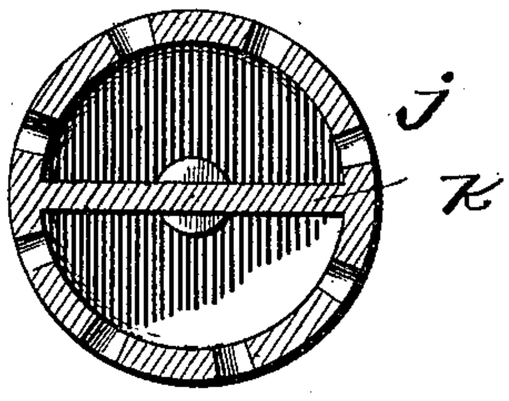
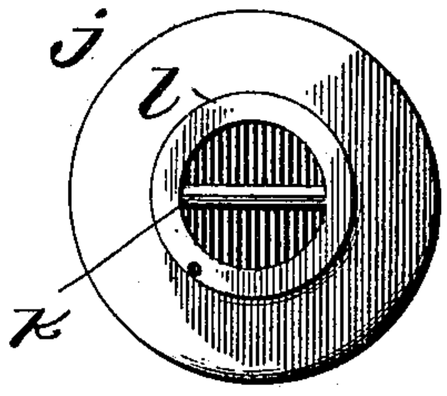



Fig. 3.

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# UNITED STATES PATENT OFFICE.

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## CENTRIFUGAL PUMP.

SPECIFICATION forming part of Letters Patent No. 644,475, dated February 27, 1900.

Application filed June 12, 1899. Serial No. 720,289. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM S. SHARPNECK, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Centrifugal Pumps, of which the following is a specification, reference being had to the accompanying drawings.

This improvement relates to that class of centrifugal pumps which have a vertical shaft; and its object is to provide a pump of this class that will be cheaply made, rapid in work, easy to operate, and not likely to get out of order.

To these ends the invention consists in the peculiar construction hereinafter more particularly described and then difinitely claimed at the end hereof.

In the accompanying drawings, Figure 1 is a vertical central section of a pump constructed according to my improvement. Fig. 2 is a horizontal section through the center of the revolving cylinder. Fig. 3 is a reversed plan of the same.

Referring now to the details of the drawings by letters, *a* is the casing, provided with a base *b*, in which is secured the vertical suction-pipe *c*, and a horizontal discharge-pipe *d* projects from one side of the casing. At the top of the casing is a cap *e*, securely bolted thereto, in which runs the shaft *f*, having a collar *g* secured on it by a set-screw. Above this collar is set a band-pulley *h* for giving motion to the shaft *f*. The lower part of the shaft runs through a stuffing-box *i*, so as to be water-tight, and on the bottom of such shaft is hung the revolving cylinder *j*, which is perforated for the passage of the water and is provided with a partition *k*, whose bottom is preferably brought down to a knife-edge, as shown in Figs. 1 and 3.

The bottom of the revolving chamber terminates in a neck *l*, which is in line with a corresponding neck *m*, rising in the interior of the casing. These two necks should be nicely fitted together, so as to run with but little, if any, friction, which can be arranged by properly adjusting the collar *g*. In some cases I may secure to the neck *l* a packing-ring *n* by a band *o*, which ring will drop around the neck *n*, and the pressure of the water around it will keep the joint perfectly tight; but this packing is not essential in all cases.

The object of the partition is to prevent the cylinder from running around over the water, and thus wasting power, for the partition drives the water outward and the centrifugal force forces it through the holes in the periphery of the cylinder into the casing and then through the discharge.

The outside of the cylinder is intended to be turned smooth, so as to run with but little friction in the water in the casing.

What I claim as new is—

1. The combination of the vertical casing *a*, provided with an outlet *d*, base *b* having a central opening, and a neck *m*, with a revolving perforated cylinder *j* having a neck *l* and a partition *k* extending into the neck, substantially as described.

2. The combination of the vertical casing *a* having a base *b*, neck *m*, and a cap *e* provided with a stuffing-box on its under side and a bearing formed in an extension of said cap *e* with a revolving perforated cylinder having a neck *l* and a packing-ring *n* attached to one of said necks and embracing the other, substantially as described.

3. The combination in a centrifugal pump, of the vertical casing *a* having a suction-pipe *c*, discharge-pipe *d*, cap *e* and neck *m*, with the vertical shaft *f* running in said cap, the adjustable collar *g* mounted on said shaft, the perforated revolving vertical cylinder carried thereby having a partition *k*, a neck *l* surrounding the inlet into the cylinder and a band *n* fast on said neck *l* and loosely inclosing the neck *m*, all substantially as described and shown.

In testimony whereof I affix my signature, in the presence of two witnesses, this 9th day of June, 1899.

WILLIAM S. SHARPNECK.

Witnesses:
HIRAM MCCULLOUGH,
MATTHEW P. MCCULLOUGH.