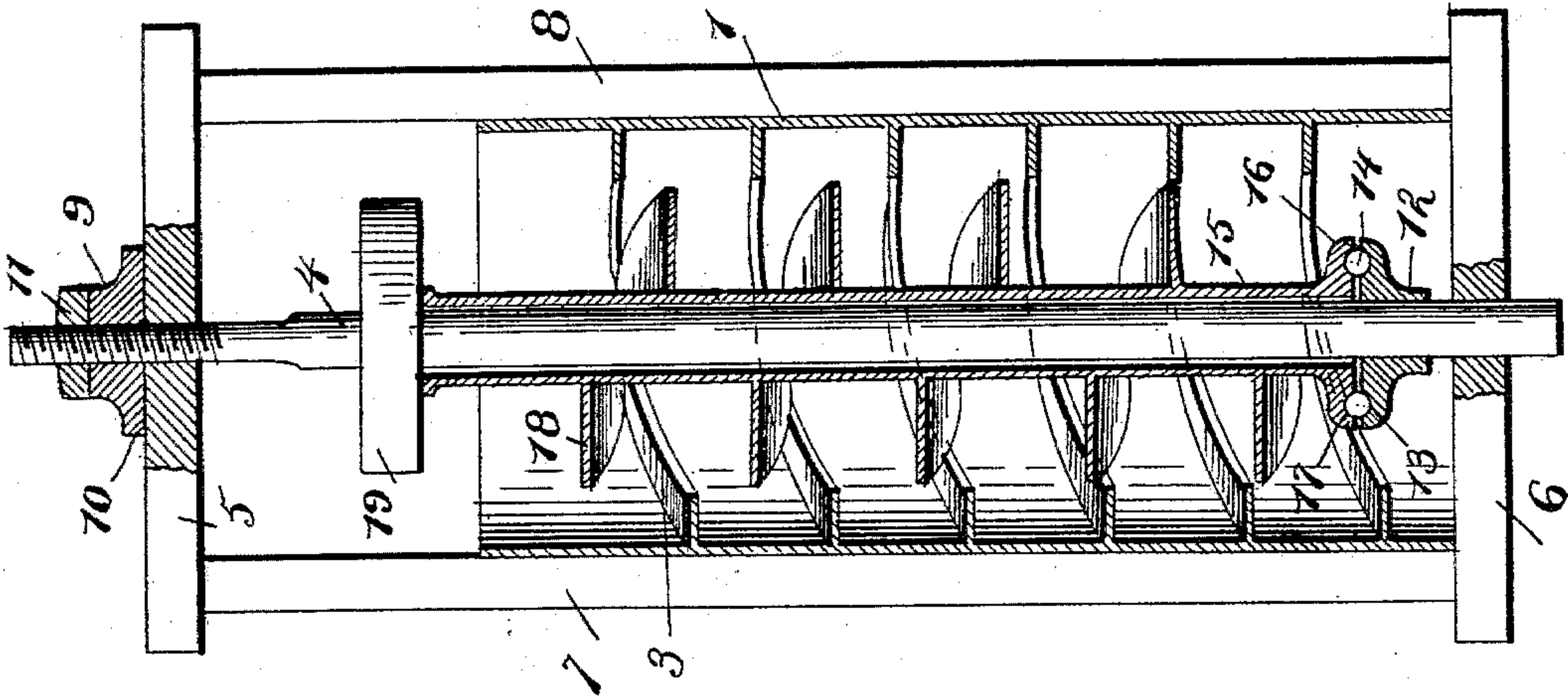


(No Model.)

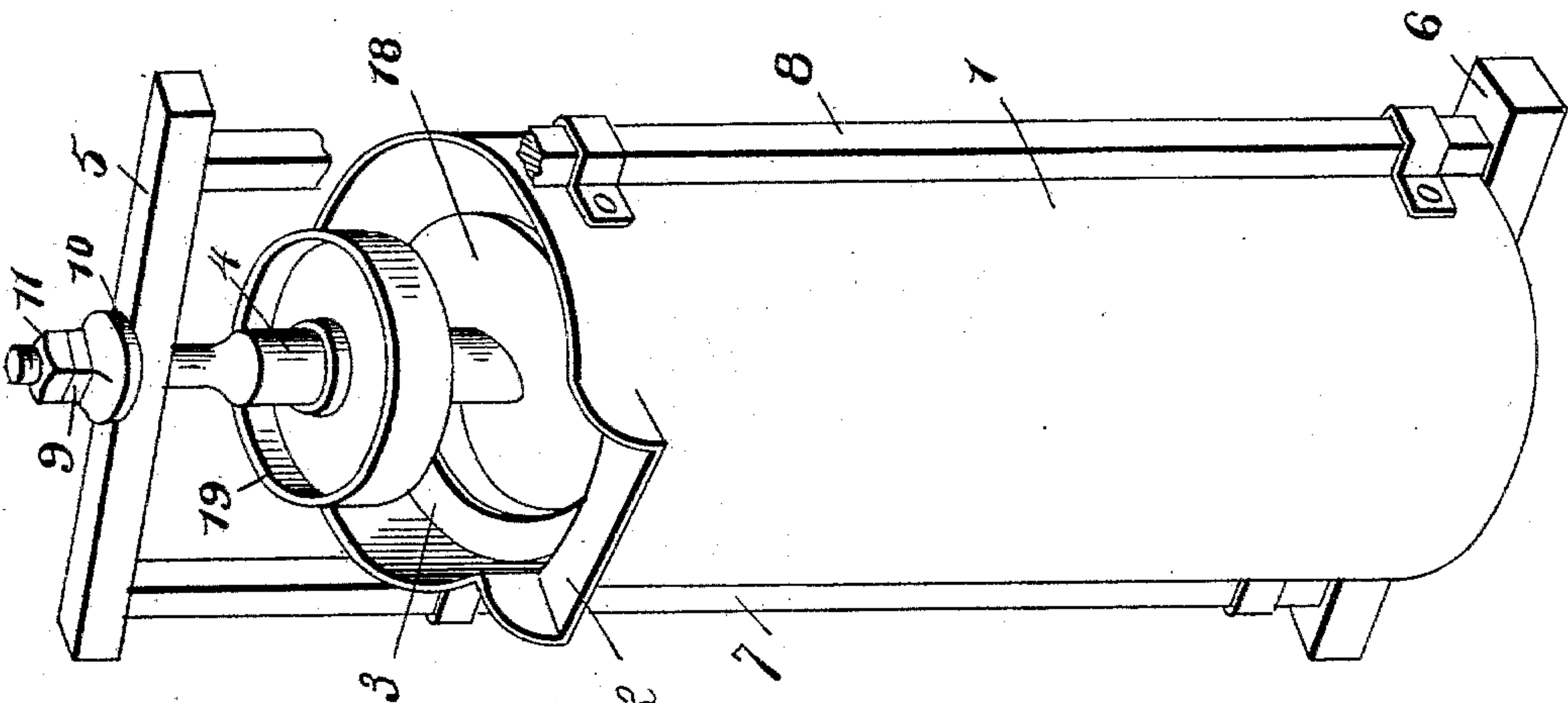
A. B. McCOSKEY.  
LIFTING OR IRRIGATING PUMP.

No. 589,532.

Patented Sept. 7, 1897.



*Fig. 2.*



*Fig. 1.*

Witnesses

*Geo. C. French.*  
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# UNITED STATES PATENT OFFICE.

ALLEN B. MCCOSKEY, OF GERING, NEBRASKA.

## LIFTING OR IRRIGATING PUMP.

SPECIFICATION forming part of Letters Patent No. 589,532, dated September 7, 1897.

Application filed July 14, 1896. Renewed July 22, 1897. Serial No. 645,622. (No model.)

*To all whom it may concern:*

Be it known that I, ALLEN B. MCCOSKEY, a citizen of the United States, residing at Gering, in the county of Scotts Bluff and State of Nebraska, have invented certain new and useful Improvements in Lifting or Irrigating 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.

My invention has relation to irrigating-pumps, and the object is to produce a simple valveless pump of this kind that will be simple and cheap in construction and reliable and durable in operation; and to these ends the novelty consists in the construction, combination, and arrangement of the same, as will be hereinafter more fully described, and particularly pointed out in the claims.

In the accompanying drawings the same figures of reference indicate the same parts of the invention.

Figure 1 is a perspective view of my improved pump as it appears in operation, and Fig. 2 is a vertical section of the same.

1 represents the cylindrical casing of the pump open at the bottom and provided with a discharge-spout 2 at its open top.

3 is a continuous spiral flange secured to the inside of the cylinder 1 and extends from the top to the bottom thereof, forming a female stationary Archimedean screw.

4 is a central stationary shaft mounted in the cross-braces 5 6 of the uprights 7 8, which form the vertical frame of the machine. This shaft 4 is adjustable in said frame by means of the nut 9, the flange 10 of which rests upon the cross-brace 5 and supports the weight of the shaft, the lower end of which passes vertically through a guide-orifice in the lower cross-brace 6, and a lock-nut 11 serves to lock the nut 9 in place on the shaft 4 when adjusted.

Near the lower end of the shaft 4 is secured a collar 12, the flange of which is formed with an annular semicircular groove 13, in which rests a series of antifriction-balls 14.

15 is a pipe or sleeve rotating freely on the shaft 4, its lower end terminating in a flange 16, formed with an annular semicircular groove 17, which rests upon the upper side of the balls 14, and which supports the weight of the sleeve. This sleeve is provided with a spiral flange 18 after the manner of an Archimedean screw, the thread of which runs in a reverse

direction to the similar spiral flange 3 of the stationary cylinder 1, and the upper end of the sleeve is provided with a pulley 19, by means of which the pump is operated.

To operate the pump the cylinder is placed in a lake or pond with the level of the water a foot or so above the bottom of the thread on the revolving sleeve, which is then rotated in the direction of the rise or pitch of its thread of screw, or in the opposite direction to the rise or pitch of the screw on the stationary cylinder. The volume of water overflows at the spout, when it may be conducted by any suitable means to the irrigating ditches or trenches. Should the line of the water be lowered, the shaft 4 may be lowered until the thread on the sleeve projects below the surface and the pump again put into operation without interfering with the cylinder or the supporting-frame.

From the construction and the description of the same it will be seen that water containing foreign matter, such as sand and gravel, can be raised with equal facility and with little or no wear on the pump.

Having thus fully described my invention, what I claim as new and useful, and desire to secure by Letters Patent of the United States, is—

1. A pump comprising a stationary cylinder provided with a female Archimedean screw-thread, in combination with a central vertically-adjustable shaft provided with a bearing-collar upon which revolves a sleeve provided with a male Archimedean screw and means for rotating the same, substantially as and for the purpose set forth.

2. A pump comprising the frame, the stationary cylinder 1 provided with the spiral flange 3, in combination with the central stationary shaft 4, provided with the adjustable nut 9 and the stationary collar 12, the sleeve 15 journaled on said shaft 4 and formed with a bearing-flange 16, a driving-pulley 19, and a spiral flange 18, the pitch of which rises in the opposite direction to the rise or pitch of the spiral flange on the stationary cylinder, substantially as and for the purpose set forth.

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

ALLEN B. MCCOSKEY.

Witnesses:

CLARK B. WHIPPLE,  
J. A. LOWRY.