No. 793,523. PATENTED JUNE 27, 1905.

A. F. HELSEL.

PUMP.

APPLICATION FILED SEPT. 27, 1904.

2 SHEETS—SHEET 1.

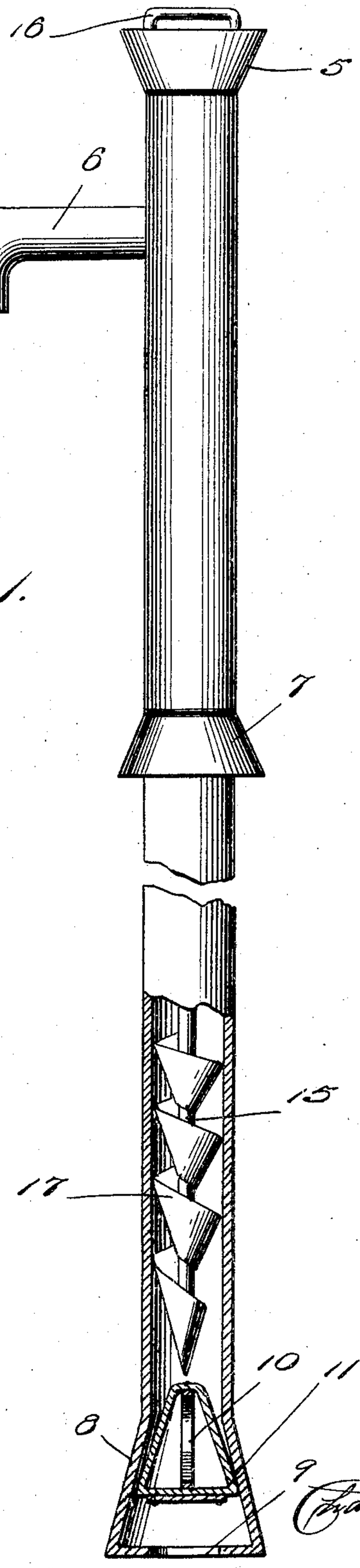

Fig. 1.

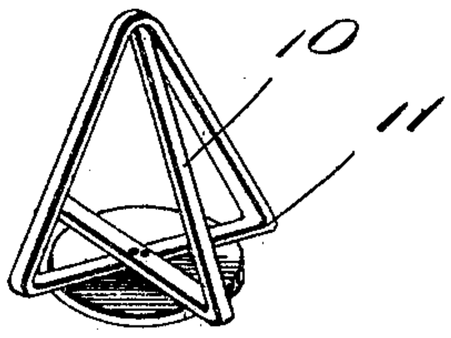

Fig. 3.

Witnesses
Chas. Thompson.
H. M. Baldwin.

Inventor
A. F. Helsel
By
Chandlee & Chandlee
Attorneys

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2 SHEETS—SHEET 2.

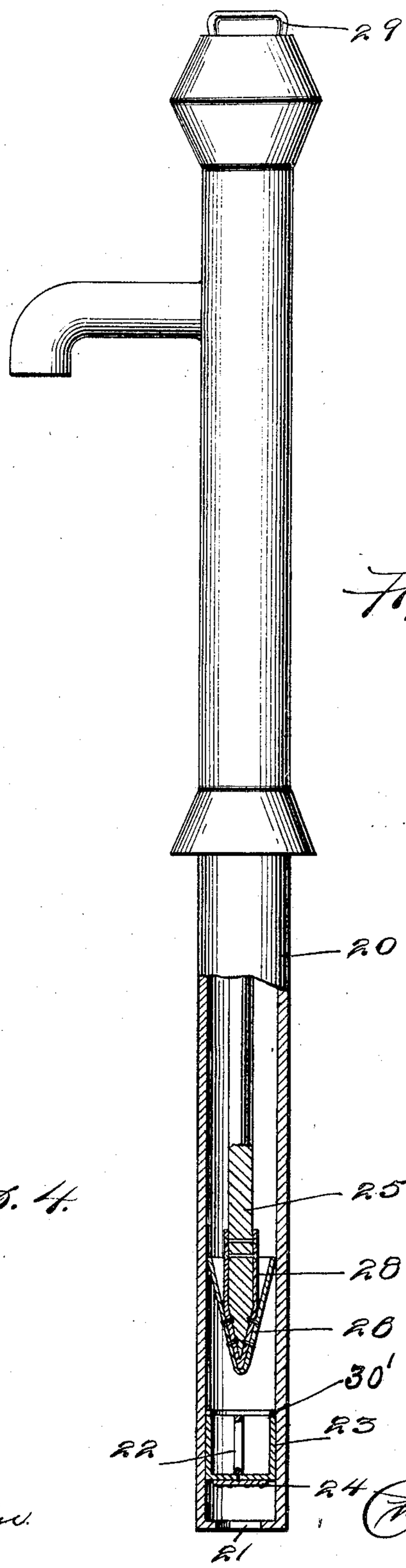

Fig. 2.

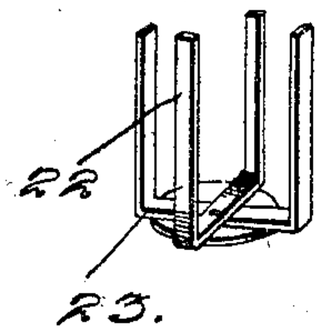

Fig. 4.

Witnesses
Arthur Simpson
H. M. Baldwin.

Inventor
A. F. Helsel
By Munn & Co
Attorneys.

No. 793,523. Patented June 27, 1905.

UNITED STATES PATENT OFFICE.

AL F. HELSEL, OF ST. MARYS, OHIO.

PUMP.

SPECIFICATION forming part of Letters Patent No. 793,523, dated June 27, 1905.

Application filed September 27, 1904. Serial No. 226,202.

To all whom it may concern:

Be it known that I, AL F. HELSEL, a citizen of the United States, residing at St. Marys, in the county of Auglaize, State of Ohio, have invented certain new and useful Improvements in Pumps; and I do hereby 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.

This invention relates to pumps, and more particularly to that class employed for raising water from cisterns and from other places where an extended lift is not required, the object of the invention being to provide a structure which will be cheap and simple and which will be durable and efficient in its operation.

In the drawings forming a portion of this specification, and in which like numerals of reference indicate similar parts in the several views, Figure 1 is a view showing the upper portion of a pump-barrel in elevation and the lower portion in section with the contained parts in elevation. Fig. 2 is a view similar to Fig. 1, showing a second form of the invention. Fig. 3 is a detail perspective view of a valve at the bottom of the barrel shown in Fig. 1. Fig. 4 is a detail view of the valve at the base of the pump-barrel in Fig. 2.

Referring now to the drawings, and more particularly to Figs. 1 and 3 thereof, there is shown a pump including a barrel, the upper portion of which is flared, as shown at 5, and below which flared portion there is a spout 6. A flange 7 is provided upon the barrel beneath the spout and serves to support the pump, the lower portion of the barrel of which is passed through an opening in the curb of a cistern. The lower end of the pump-barrel is likewise flared, as shown at 8, and in the bottom of this flared portion is a central opening 9, through which water enters the pump-barrel. In the flared bottom portion 8 of the pump-barrel is an inlet-valve comprising two triangular frames 10 and 11, one of which is disposed with its base upon that of the other and its apex within the inclosure of the sides of the other. These triangular frames are connected at their bases and also at their tops, and against the lower face of the base of the outer frame is secured a leather or other disk 12, which serves to close the opening 9 when the valve is in lowered position. When the valve rises, the upper ends of the triangular frames pass into the cylindrical portion of the barrel and water is permitted to flow between the sides of the frames, as will be understood.

Within the barrel is disposed a pump-rod 15, the upper end of which is provided with a handle 16 for reciprocation. To the lower end of the pump-rod 15 is attached one end of a leather strip 17, which is wound in spiral form upon the rod and is connected at its opposite end to the rod at a point below at the upper end of the leather, one longitudinal edge of this leather strip being secured in continuous contact with the rod, while the other edge, which may be termed the "outer" edge, is in spaced relation thereto and is adapted to lie in close contact with the inner surface of the pump-barrel.

When the pump-rod is reciprocated, downward movement of the pump-rod carries the sucker formed by the leather strip 17 downwardly into the body of water that is above the lower valve, the water passing upwardly between the upper or outer edge of the strip and the wall of the pump-barrel. When the rod is drawn upwardly, the weight of water above the sucker causes the leather strip to lie closely against the wall of the pump-barrel, and the water above the sucker is carried upwardly with it, excepting such small quantity as may run down through the helical passage between the upper edge of the strip and the pump-rod. In the use of this pump the leather strip 17 is entirely below the water-level when in lowered position. It will of course be understood that if the sucker is drawn up slowly that the water will run past it; but in using a pump of this style the sucker is drawn upwardly with a quick stroke, and it is found in practice that the sucker described serves to raise the water in the pump-barrel. This is of course not a suction-pump.

In Figs. 2 and 4 of the drawings there is shown a second form of the invention wherein the bottom portion of the pump-barrel 20 is

cylindrical and has a contracted opening 21 in its lower end for inlet of water. Above this opening 21 is disposed a valve consisting of the two U-shaped members 22 and 23, the bight portions of which are crossed and secured together, said bight portions being disposed downwardly and carrying a disk 24 to cover the opening 21. Above the valve is an inwardly-directed flange 30′, that limits the upward movement of the valve after it has uncovered the opening 21. In the pump-barrel 20 is a pump-rod 25, at the lower end of which is a sucker 26. The sucker consists of a leather inverted cone within which is secured the bight portion of a U-shaped attaching-iron 28, the sides of which embrace and are secured to the lower end of the pump-rod. During upward movement of the sucker in the pump-barrel its upper edge is in close contact with the pump-barrel to raise the body of water thereabove, and when the sucker moves downwardly the water passes between it and the pump-valve. The upper end of the pump-rod is provided with a handle 29 above the upper end of the barrel, and in both constructions illustrated there is provided a discharge-spout.

It will be understood that in practice other modifications may be made and any suitable materials and proportions may be used for the various parts without departing from the spirit of the invention.

What is claimed is—

1. A pump comprising a barrel having an inlet-opening in its lower end and an outlet-opening in its upper portion, a sucker in the barrel and a valve in the lower portion of the barrel, said valve comprising a disk adapted to cover the opening and a frame comprising cross-bars secured at their point of crossing upon the disk, the end portions of the bars being bent upwardly, and means in the path of upward movement of the frame to limit such movement.

2. A pump comprising a barrel having a frusto-conical lower end portion provided with an inlet-opening in its bottom, a sucker in the barrel, the barrel having an outlet-opening, a disk within the frusto-conical portion and adapted to cover the opening and a frame comprising cross-bars secured at their point of crossing upon the disk, the end portions of the bars being bent upwardly and toward each other and arranged to contact with the wall of the frusto-conical portion and limit the upward movement of the disk.

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

AL F. HELSEL.

Witnesses:
F. F. ASCHBACHER,
J. F. STOUT,
CHARLES F. LIMBACHER.