

J. LARGE.

Check-Valves and Strainers.

No. 134,077.

Patented Dec. 17, 1872.

Fig. 1.

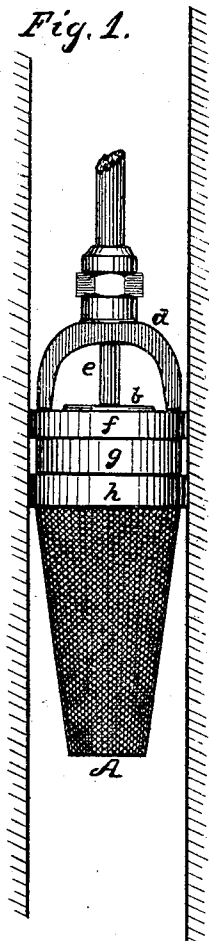
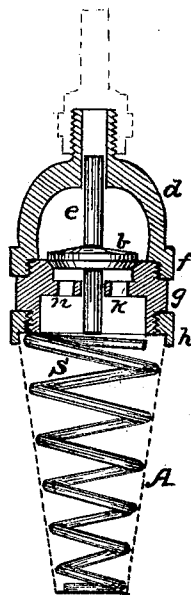


Fig. 2.



Witnesses

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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN CHECK-VALVES AND STRAINERS.

Specification forming part of Letters Patent No. 134,077, dated December 17, 1872.

To all whom it may concern:

Be it known that I, JAMES LARGE, of Jefferson township, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Check-Valves and Sand-Screens for Deep-Well Pumps.

My invention will be readily understood by the following description, taken in connection with the accompanying drawing, wherein—

Figure 1 represents a perspective view of my improved check-valve and strainer or sand-screen, and Fig. 2 a transverse vertical section of the same.

The general form of the frame for supporting the valve is similar to those already in use for such purposes, and is intended to be fitted and packed in the barrel of the pump in any of the well-known ways. But in order to accomplish the object of my invention, in addition to the ring *f* with its bail *d* and circular valve-seat *g*, I have furnished the disk-like valve *b* with a stem top and bottom, the upper stem *e* extending vertically into the arch of the bail *d*, while the lower stem *k* is guided by a perforated bridge *n*, and in which bearings the valve is free to play up or down. This construction, combination, and arrangement of parts is such as to prevent all lateral vibration of the valve, thereby causing it to drop and set more evenly on its seat than when guided by a single stem. To the lower edge of the valve-supporting arrangement *g* is screwed a ring, *h*, to which is soldered or otherwise secured a wire-gauze netting, constituting a strainer or screen, *A*, which, in this case, extends some distance below its supporting-ring, and, being smallest in diameter at its lowest end, resembles in shape a lady's thim-

ble, but may be made cylindrical or other shapes without departing from the spirit of my invention. This screen *A* is applied for the purpose of preventing the upward passage of *detritus*, usually sand or other extraneous matter, that otherwise, and but for the interposition of the screen, would be drawn in by the flow of water, and seriously interfere with the proper working of the valve, so much so as to destroy the action of the pump.

As this screen is necessarily constructed of light wire-gauze or netting, any accumulation of foreign matter on its outside incapable of passing through its meshes, when acted on by the strong suctional force of the pump, is liable to produce a collapse of such screen. To prevent any such contingency I have placed within the netting or screen a strong spiral wire or guard, *s*, so arranged with respect to its interior sides as to rest against them in such a manner that thereby any undue drawing in or collapse of the screen is prevented.

The attachment of the screen directly to the valve-sustaining parts, instead of to the pump-barrel, as in ordinary cases, admits of such parts being readily drawn out for repairs or otherwise without interfering with the tubing.

I claim—

The conical screen *A*, fitted with an internal coiled-wire support, *s*, in combination with the circular valve *b* provided with a lower stem, *k*, an upper stem, *e*, and bail *d*, secured together by the rings *f g h*, in the manner shown and described.

JAMES LARGE.

Witnesses:

JOSIAH W. ELLS,
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