

G. S. GREEN.
Pumps.

No. 155,721.

Patented Oct. 6, 1874.

Fig. 1.

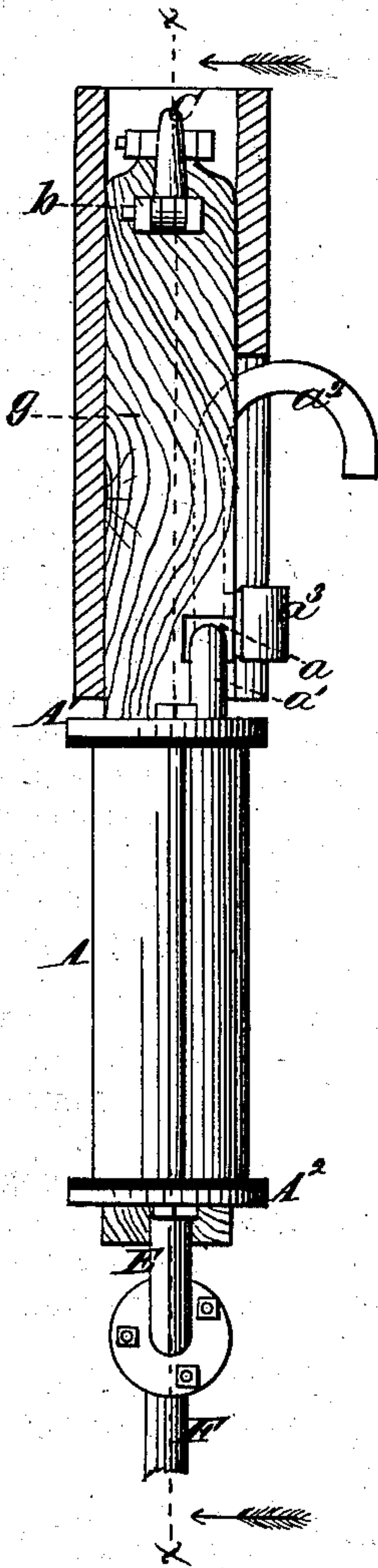
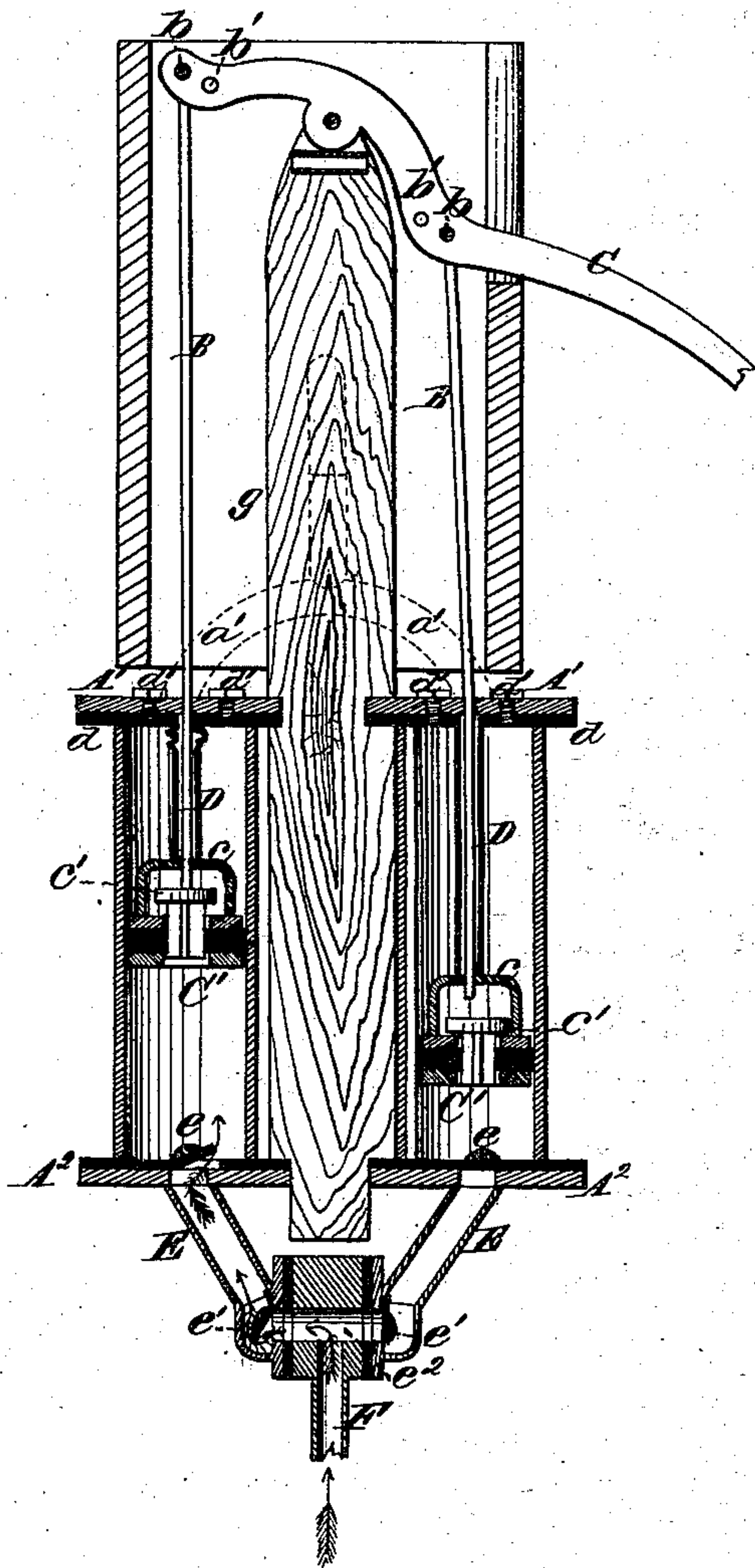


Fig. 2.



WITNESSES-

Jas. Hutchingson.
 J. Wm. Foster.

INVENTOR-

George S. Green
 Edison Bros.
 Attorneys.

UNITED STATES PATENT OFFICE.

GEORGE S. GREEN, OF LEAVENWORTH, KANSAS.

IMPROVEMENT IN PUMPS.

Specification forming part of Letters Patent No. **155,721**, dated October 6, 1874; application filed August 31, 1874.

To all whom it may concern:

Be it known that I, G. S. GREEN, of Leavenworth, in the county of Leavenworth and State of Kansas, have invented a certain new and useful Improvement in Pumps, of which the following is a full, clear, and exact description, reference being had to the annexed drawing, in which—

Figure 1 is a side view, and Fig. 2 a vertical longitudinal section, of my improved pump.

Corresponding parts in the two figures are designated by like letters.

This invention relates to improvements in pumps; and it consists of the employment, in the pump-cylinders, of elastic tubing or packing, inclosing or surrounding the piston-rods, and attached at their lower ends to the pistons, and at their upper ends to the upper cylinder-heads; secondly, of a V-shaped arrangement of pipes or tubes attached to the lower cylinder-heads, and supplied each with a valve at their lower extremities, and having their upper extremities opened and closed by valves, substantially as hereinafter more fully set forth.

To enable others skilled in the art to make and use my invention, I will proceed to describe it.

In the annexed drawing, A A refer to the pump-cylinders, of the ordinary construction, and united to, and communicating with, a centrally-disposed chamber, *a*, by means of short curved or arched tubes or pipes *a*¹ *a*¹, by which the ascending water will be facilitated in its passage to said chamber *a*, from which it is taken and discharged through a curved tube or spout, *a*², extending upwardly from the said chamber. *a*³ is the air-chamber. B B are the piston-rods, united by pins *b* *b* passing through their upper ends and any two of a series of openings, *b*¹ *b*¹, in the handle C, to the latter, by which the working capacity of the pump may be varied by adjusting the piston-rods to any of the said openings, or detaching one of the said rods from the handle, enabling the pump to be worked with half of its capacity, &c. The lower ends of the piston-rods B B are secured in the cages *c* *c* of the pistons C' C', which are provided with valves *c'* *c'*, properly seated and confined thereby by the said cages *c* *c*. D D are elastic tubes or packing surrounding or inclosing the pis-

ton-rods B B, and attached, at their lower ends, to the cages *c* *c* of the pistons C' C', and, at their upper ends, to the upper cylinder-heads A¹ A¹, the object of which being to afford or furnish an air-tight packing around the openings in the cylinder-heads, through which the piston-rods enter the cylinders to prevent the escape or forcing of the water out of the cylinders at these points while the pump is at work. These elastic tubes or packing may be provided with flanges or margins *d* *d*, which receive screws *d'* *d'* inserted through the upper cylinder-heads A¹ A¹ for their attachment to the said heads. They expand as the piston-rods descend and collapse as the latter ascend, thus crowding up around the rods air-tight. E E is a V-shaped arrangement of pipes or tubes, attached at their divergent ends to the lower cylinder-heads A² A², which are opened and closed by the valves *e* *e*, disposed and fastened to the inner sides of the said heads over openings in a line with the said tubes or pipes. In the lower or convergent ends of the pipes E E are disposed valves *e*¹ *e*¹, which open and close a transverse passage, *e*², in the upper end of the well-pipe F. By this arrangement and construction of pipes and valves a constant supply or flow of water is kept up during the working of the pump. A post, *g*, interposed between the cylinders A A, where it is secured, as indicated in Fig. 2, or otherwise, forms a support or fulcrum for the pump-handle C above alluded to.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The elastic tubing or packing D D, combined with the cylinders A A, pistons and piston-rods C' C' B B, substantially as and for the purpose set forth.

2. The V-shaped arrangement of pipes E E, having the valves *e*¹ *e*¹, in combination with the cylinders A A, having the valves *e* *e*, substantially as and for the purpose specified.

In testimony whereof I have hereunto signed my name in presence of two subscribing witnesses.

GEORGE SLOAN GREEN.

Witnesses:

GEORGE W. GODDARD,
WM. VOSS.