

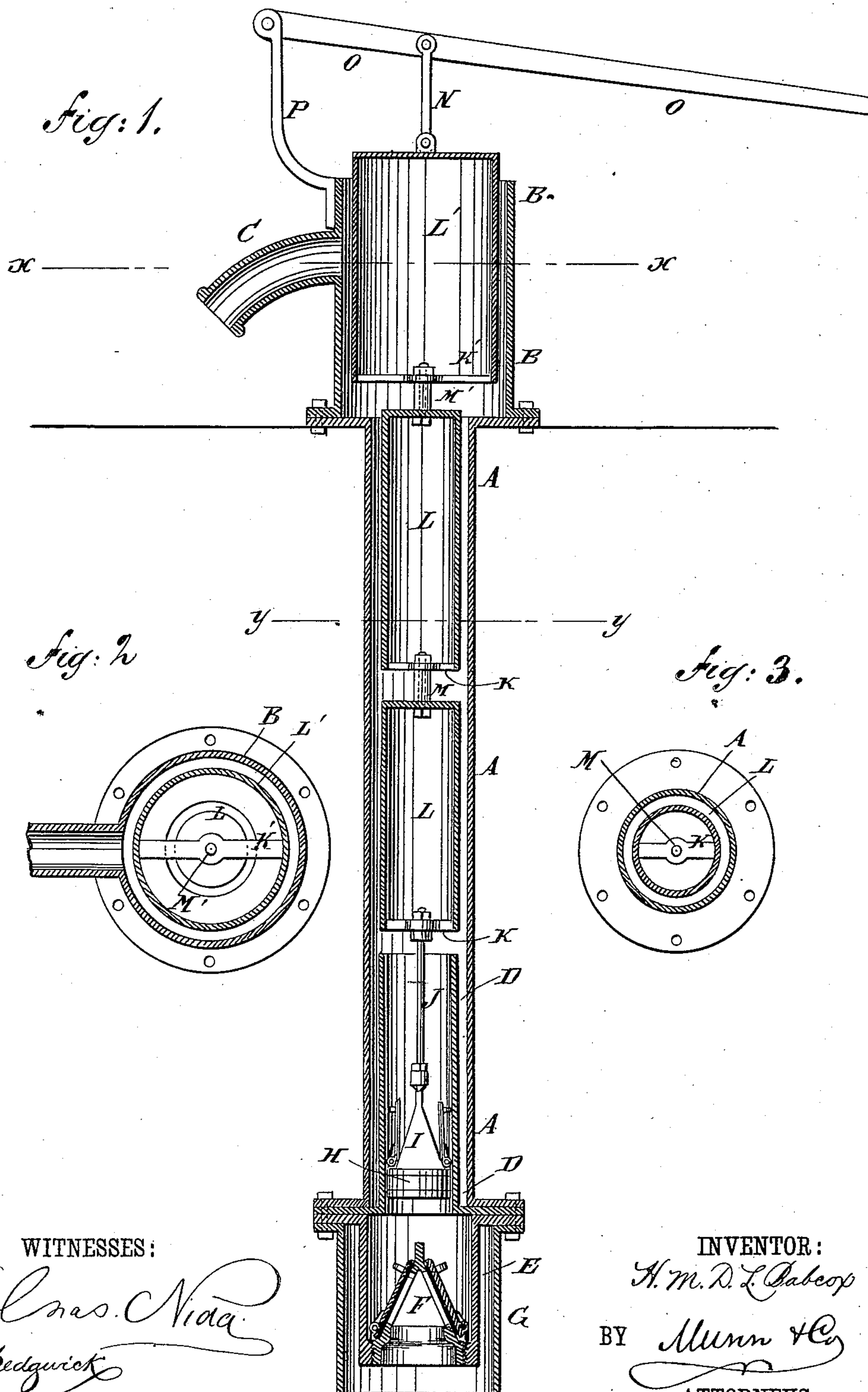
(No Model.)

H. M. D. L. BABCOX.

PUMP.

No. 334,211.

Patented Jan. 12, 1886.



WITNESSES:

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HIRAM M. D. L. BABCOX, OF SAN FRANCISCO, CALIFORNIA.

PUMP.

SPECIFICATION forming part of Letters Patent No. 334,211, dated January 12, 1886.

Application filed February 16, 1885. Serial No. 156,088. (No model.)

To all whom it may concern:

Be it known that I, HIRAM M. D. L. BABCOX, of San Francisco, San Francisco county, California, have invented a new and useful
5 Improvement in Pumps, of which the following is a full, clear, and exact description.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate
10 corresponding parts in all the figures.

Figure 1 is a sectional side elevation of one of my improved pumps. Fig. 2 is a sectional plan view of the same, taken through the line *x x*, Fig. 1. Fig. 3 is a sectional plan view of
15 the same, taken through the line *y y*, Fig. 1.

The object of my invention is to improve the construction of the pumps for which Letters Patent No. 284,708 were issued to me September 11, 1883, in such a manner as to make
20 them more effective in operation and more easily operative.

The invention consists of the air-chamber with a lower open end combined with the plunger, the upper enlarged end of the pump-case, and the enlarged upper air-chamber with
25 a lower open end, and of the combination with the foregoing parts of the working-barrel with a surrounding water space or chamber, substantially as hereinafter more fully set forth
30 and claimed.

A is the pump-case, the upper part, B, of which is enlarged, and is provided with a discharge-spout, C. The adjacent ends of the sections A B are flanged to receive the bolts
35 that fasten them together.

Within the lower part of the case A is placed the working-barrel D, which is made smaller than the interior diameter of the said case A, so as to leave an annular space between the
40 said barrel and case, as shown in Fig. 1.

Below the case A is placed the cylinder E, that carries an ordinary check-valve, F, and which is made of the same size as the pump-case A. The valve-cylinder E is surrounded
45 and protected by the case G, which is made larger than the pump-case A and valve-cylinder E, so as to leave an annular space between it and the said valve-cylinder, as shown in Fig. 1.

The lower ends of the pump-case A and barrel D and the upper ends of the valve-cylinder E and valve-cylinder case G are flanged

to receive the bolts that fasten the said four parts together.

Within the working-barrel D is placed the
55 plunger H, which is provided with an ordinary valve, I. The upper end of the plunger-stem J is attached to the cross-bar K, secured to the open lower end of the air-chamber L. The air-chamber L can be a single chamber,
60 or it can be made in two or more sections. In the latter case the closed upper end of each lower section is connected to a cross-bar, K, secured in the open lower end of the next upper section by a short rod, M, as illustrated
65 in Fig. 1.

The closed upper end of the upper section of the air-chamber L is connected by a short rod, M', with a cross-bar, K', secured to the open lower end of the enlarged air-chamber L',
70 placed in the enlarged upper part, B, of the pump-case.

To the closed upper end of the enlarged air-chamber L' is pivoted the lower end of a short pump-rod, N, the upper end of which is piv-
75 oted to the pump-lever O. The pump-lever O is pivoted at its forward end to a bracket, P, attached to the upper part of the enlarged upper section, B, of the pump-case.

With this construction, as the free end of
80 the lever O is forced downward the air-chambers are forced downward through the water in the pump-case, compressing the air in the said air-chambers, and the plunger is forced downward through the water in the working-
85 barrel, the check-valve preventing the said water from passing downward and the pressure of the water opening the plunger-valve, so that the plunger will readily move down-
90 ward through the said water. As the downward pressure upon the free end of the pump-lever ceases the compressed air in the air-chambers expands, and part of the power thus developed raises the air-chambers, the plun-
95 ger, and the water in the working-barrel above said plunger, and raises the lever for another stroke.

The balance of the power developed by the expansion of the compressed air forces the water out of the pump-case through the spout C. 100

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

1. In a pump, the combination, with the pump-case having an enlarged upper end, of

the lower air-chamber connected to the plunger, and the enlarged air-chamber arranged in the enlarged upper end of the pump-case and having a lower open end, said air-chambers
5 being connected together, substantially as and for the purpose set forth.

2. In a pump, the pump-case having in its lower end the working-barrel, surrounding which barrel is a water space or chamber, said
10 pump-case having at its upper end an enlargement, in combination with the plunger,

the lower air-chamber connected to the plunger, and the enlarged air-chamber arranged in the enlargement at the upper end of the pump-case, and having a lower open end, said air- 15 chambers being connected together, substantially as and for the purpose set forth.

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Witnesses:

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