

(No Model.)

2 Sheets—Sheet 1.

G. H. EVANS.

BASE CHAMBER OR SEAT FOR HYDRAULIC ELEVATORS.

No. 564,062.

Patented July 14, 1896.

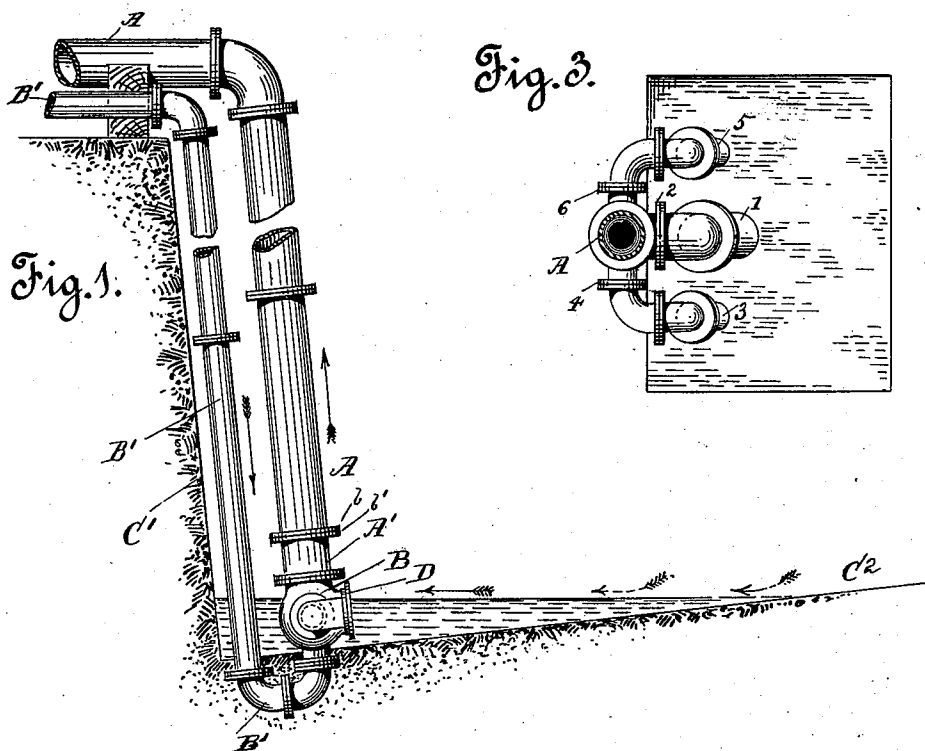
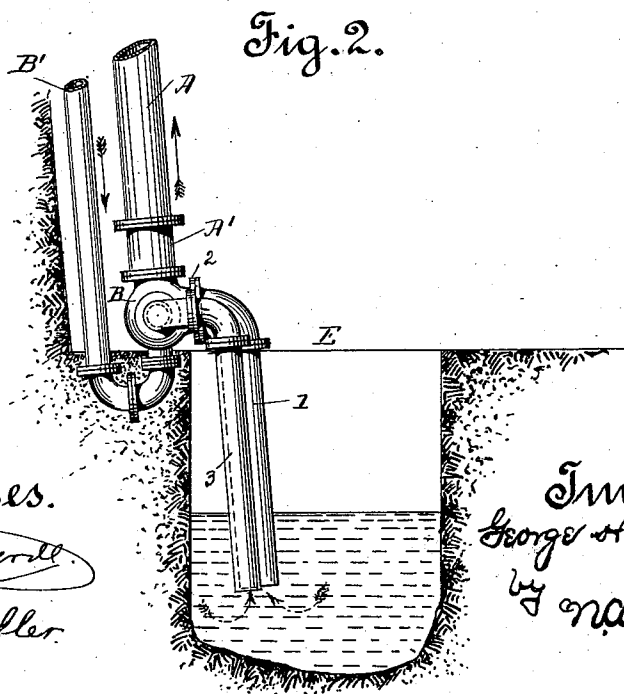
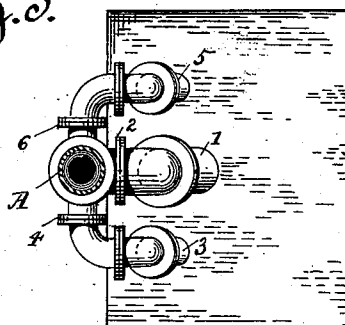


Fig. 3.



Witnesses.

H. J. Monteverde
M. G. Loefer.

Inventor.
George H. Evans
by *W. A. Adams*
att.

(No Model.)

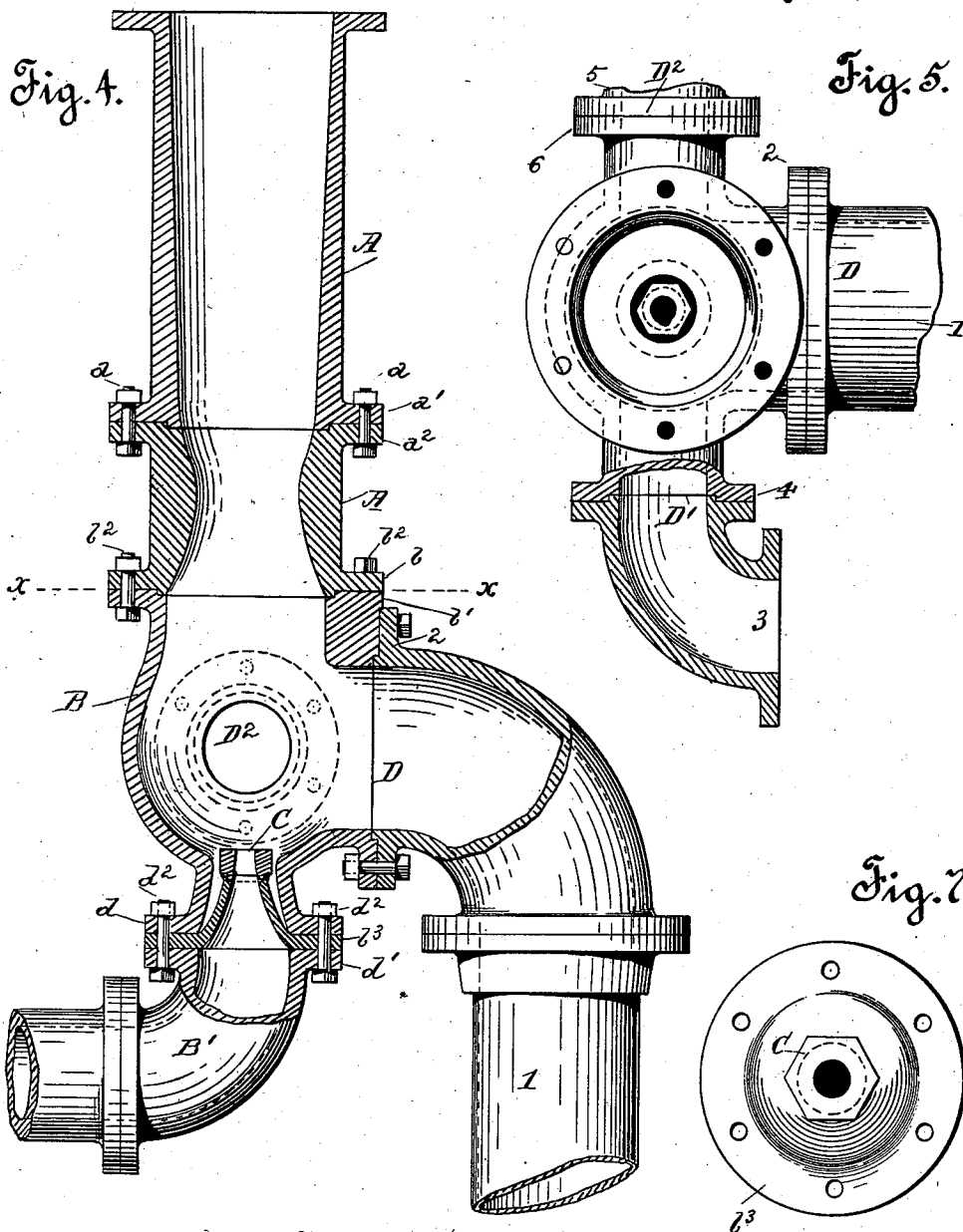
2 Sheets—Sheet 2.

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Witnesses.

Stellfontwerde.
M. L. Loefler

Fig. 6.

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UNITED STATES PATENT OFFICE.

GEORGE H. EVANS, OF OROVILLE, CALIFORNIA, ASSIGNOR OF ONE-HALF
TO FRANK McLAUGHLIN, OF SAME PLACE.

BASE CHAMBER OR SEAT FOR HYDRAULIC ELEVATORS.

SPECIFICATION forming part of Letters Patent No. 564,062, dated July 14, 1896.

Application filed September 30, 1895. Serial No. 564,059. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. EVANS, a subject of the Queen of Great Britain, residing at Oroville, in the county of Butte and State of California, have invented certain new and useful Improvements in Base Chambers or Seats for Hydraulic Elevators; and I do hereby declare that the following is a full, clear, and exact description thereof.

This invention relates to a certain new and useful base chamber or seat for hydraulic elevators, which consists in the arrangement of parts and details of construction, as will be hereinafter fully set forth in the drawings and described and pointed out in the specification.

The invention is designed for use in connection with that class of hydraulic elevators used for mining purposes or for raising or conveying spoil, debris, and gravel to an elevation; and the object of the invention is so to construct the base chamber or seat that the stream of water discharged therein from the ejector-pipe will thoroughly break up or disintegrate the mass of spoil or material as sucked or drawn therein, in order that the spoil or material may be forced upward through the elevator-pipe in a comminuted condition and not forced therethrough in a solid mass. By thus disintegrating the mass of spoil or material less power will be required to raise or force the comminuted mass of material through the elevator-pipe than if the material be forced upward in a solid body. This disintegration of the spoil or material I accomplish by so constructing the base chamber or seat as to permit of the spoil or material being sucked or drawn therein through two or more suction-openings, thus causing the spoil to enter in a divided condition, which as received into the seat or chamber is acted upon by the water discharged therein from the ejector-pipe.

In order fully to understand my invention, reference must be had to the accompanying sheets of drawings, forming a part of this application, wherein—

Figure 1 is a side view in elevation of a hydraulic elevator with my base chamber or seat connected thereto, the device being shown when used for ground-suction. Fig. 2 is a

similar view showing the device when utilized for well-sinking or for raising material from a "sump." Fig. 3 is a top plan view of the mechanism illustrated by Fig. 2, the ejector-pipe being removed. Fig. 4 is an enlarged detail view, in side elevation, with the ejector-pipe, the elevator-pipe, and the main suction-pipe partly broken away. Fig. 5 is a top plan view, partly broken away, taken on line *x x*, Fig. 4. Fig. 6 is an enlarged detail sectional view of the ejector-nozzle, and Fig. 7 is a top plan view of the ejector-nozzle.

In the drawings the letter A is used to indicate the elevator-pipe, and A' the throat thereof, which is united thereto by the bolts *a*, extending through the flanges *a'* *a*² of the elevator and throat. The lower flange *b* of the throat is united to the top flange *b'* of the base chamber or seat B by bolts *b*². To the lower flange *d* of the base-chamber B is fastened, by bolts *d*², the flange *d'* of the ejector-pipe B'. Within the lower end or contracted mouth portion B² of the base chamber or seat B is located the ejector-nozzle C, the flange *b*³ thereof fitting between the flanges *d* *d'*, and being held therebetween by the bolts *d*².

The ejector-pipe leads from any suitable source of water supply located above the embankment or wall C', and the elevator-pipe A is run above said embankment or wall, so as to discharge the spoil conveyed there-through a distance above the low land C², at which point the base chamber or seat B is located.

The present base chamber or seat B is provided with the main suction-opening D and the auxiliary side suction-openings D' D², each arranged to discharge the material or spoil within the interior of the base chamber or seat. From below, or from the bottom of the said base chamber or seat, is introduced the ejector-nozzle C, the stream of water from which commingles with the inflowing streams of spoil or material and thoroughly disintegrates the same and forces the comminuted material through the throat A' and into the elevator-pipe A in a semiliquid condition. Inasmuch as the material or spoil which enters the base chamber or seat B is divided and converted into a semiliquid condition before entering into the elevator-pipe, it is ob-

vious that less water-power is required to raise or elevate the spoil within the pipe A than where the material is forced upward in a solid body and that I am enabled to perform the work of raising the material, while in a semiliquid condition, with the elevator-pipe standing at a less angle than where the material is forced upward in a solid body, consequently requiring less cutting away of the embankment against which the elevator-pipe stands. By providing a base chamber or seat wherein the spoil is divided and disintegrated before entering the elevator-pipe I am enabled to elevate or raise the material to a greater height, with a given pressure of water, than where the material enters the elevator-pipe in a solid mass, and, by being enabled to run the elevator-pipe at nearly a perpendicular, considerable pipe may be dispensed with.

In order to raise material or spoil from a sump or well, it is necessary only that a section of pipe sufficiently long to reach from the level E to the material in the sump be connected to each suction-opening of the base chamber or seat, the main suction-pipe 1 being bolted to the flange 2, surrounding the central or main suction-opening D, the flange of pipe 3 being bolted to flange 4, surrounding the side or auxiliary suction-opening D', and the flange of pipe 5 being bolted to flange 6,

surrounding the side or auxiliary suction-opening D', Figs. 2 and 3.

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

In a hydraulic elevator, the combination with the elevator-pipe, of the throat connected to the lower end thereof, the base chamber or seat secured to the throat, the main suction-opening cut therein, the side or auxiliary suction-opening formed in the base chamber or seat (through which suction-openings the spoil enters the base chamber or seat in a divided condition), the ejector-nozzle located within the contracted mouth of the base chamber or seat, and the ejector-pipe connected to the end of the contracted mouth, the water from which is forced through the nozzle into the interior of the base chamber or seat and commingles with and disintegrates the spoil delivered into the said chamber through the suction-openings before forcing the spoil into the elevator-pipe.

In testimony whereof I affix my signature, in presence of two witnesses, this 14th day of August, 1895.

GEORGE H. EVANS.

Witnesses:

N. A. ACKER,
A. F. JONES.