

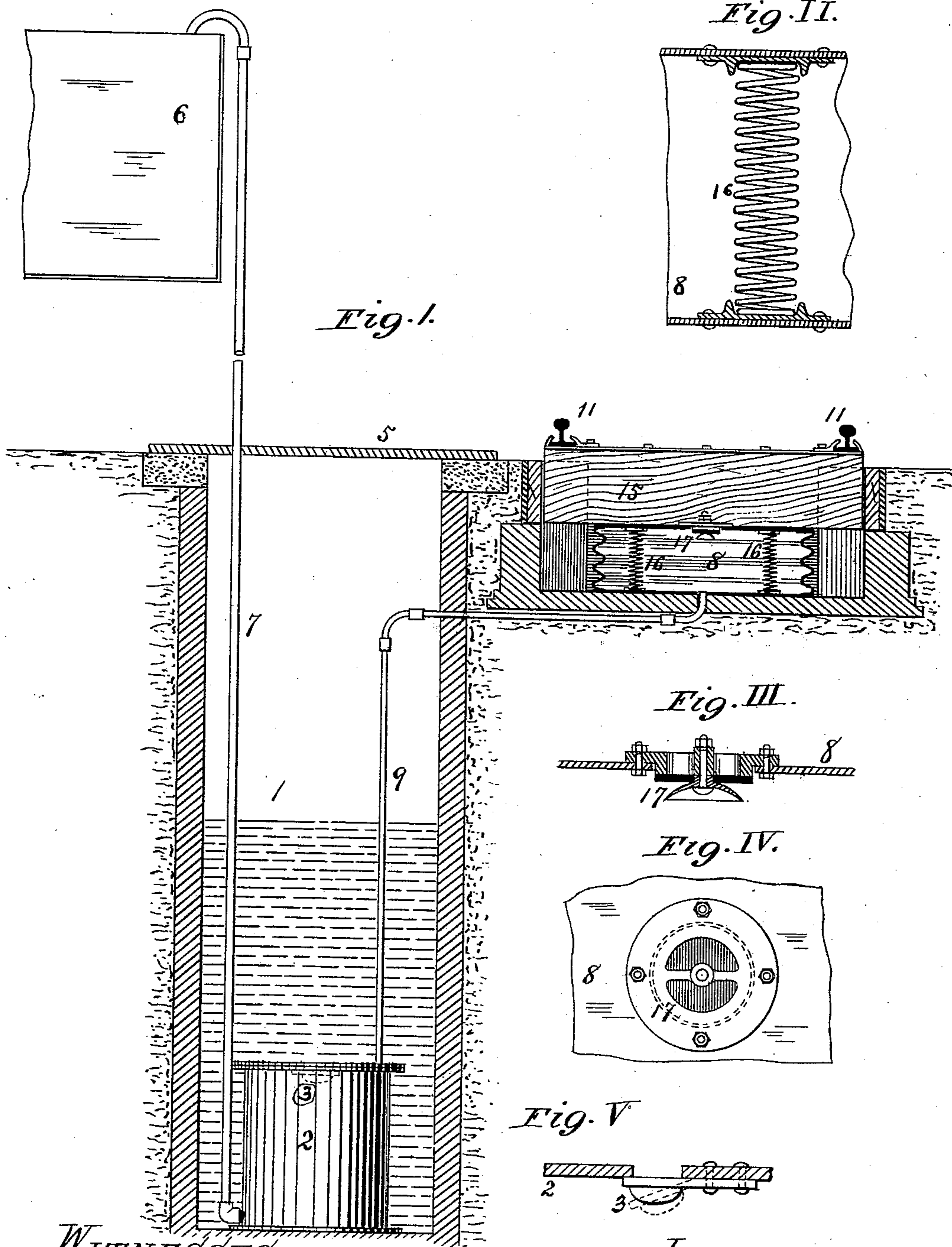
(No Model.)

2 Sheets—Sheet 1.

H. R. ESTES.  
AUTOMATIC WATER ELEVATOR.

No. 450,062.

Patented Apr. 7, 1891.



WITNESSES  
Emma Arthur  
E. L. Knight

INVENTOR  
Hubert R. Estes  
By Thright Bros Attys

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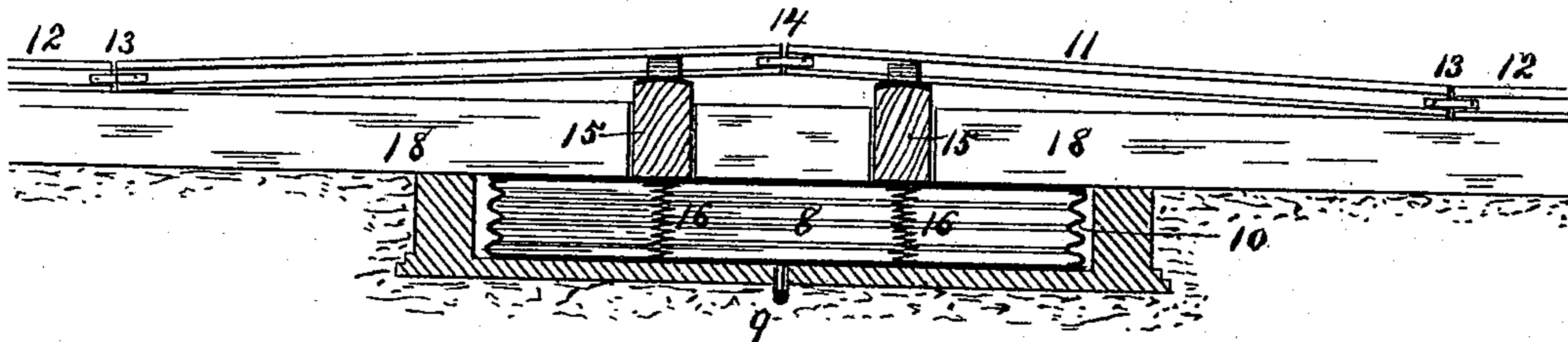
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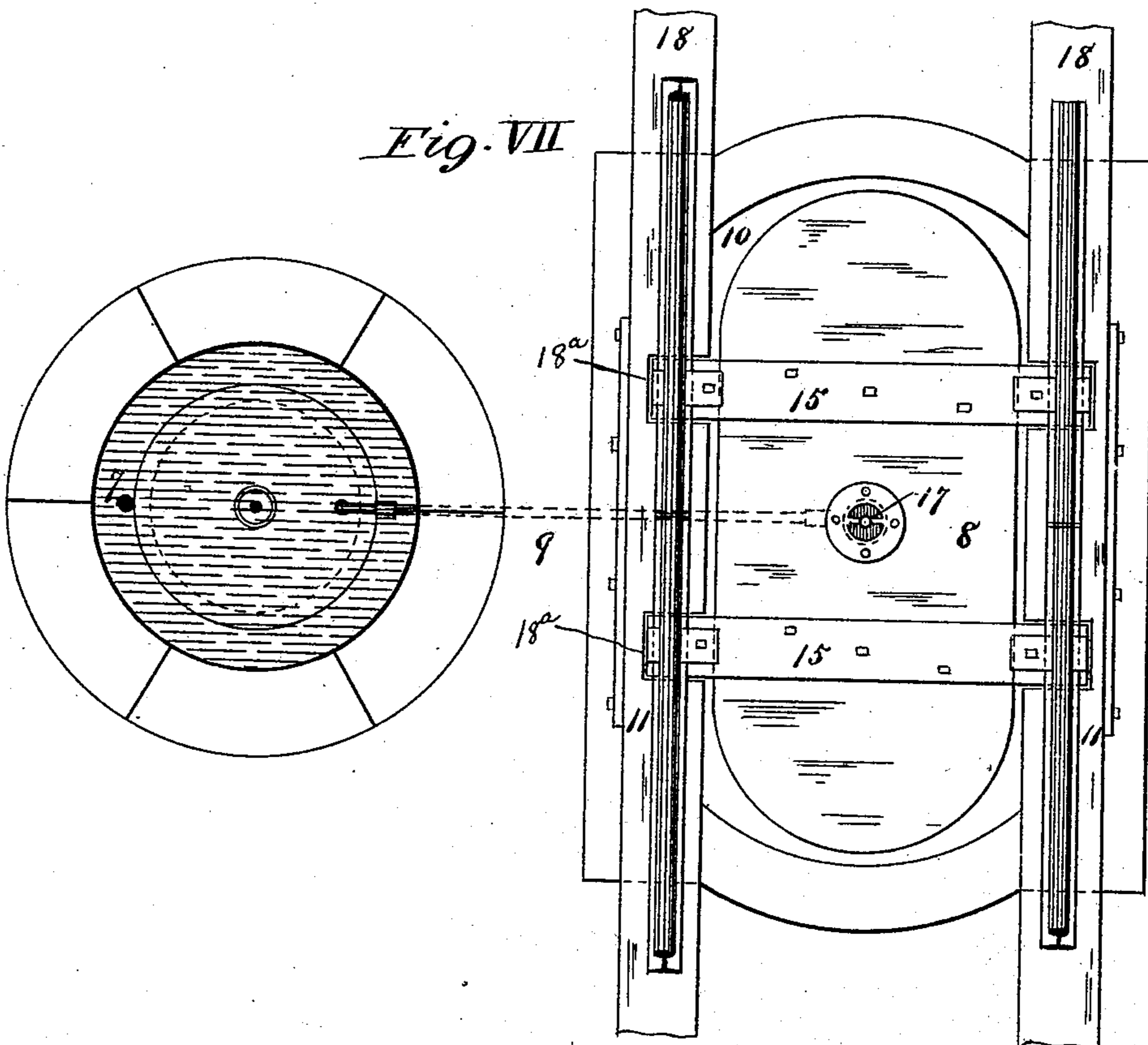
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*Fig. VI.*



*Fig. VII*



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# UNITED STATES PATENT OFFICE.

HUBERT R. ESTES, OF ST. LOUIS, MISSOURI.

## AUTOMATIC WATER-ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 450,062, dated April 7, 1891.

Application filed September 8, 1890. Serial No. 364,293. (No model.)

*To all whom it may concern:*

Be it known that I, HUBERT R. ESTES, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Automatic Water-Elevators, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to an improved device for automatically raising water for railway-trains; and my invention consists in features of novelty hereinafter fully described, and pointed out in the claims.

Figure I is a vertical section illustrative of my invention. Fig. II is an enlarged detail vertical section showing part of the bellows. Fig. III is an enlarged detail vertical section showing the valve of the bellows. Fig. IV is an enlarged detail top view showing the valve of the bellows. Fig. V is an enlarged detail vertical section, showing the valve of the water-reservoir. Fig. VI is a view, part in elevation and part in section, showing the compressible portion of the track of a railway and the bellows located beneath. Fig. VII is a top or plan view.

Referring to the drawings, 1 represents a well, in which is submerged a tank or reservoir 2, provided at top with a valve 3. An enlarged view of the valve is shown in Fig. V. When the reservoir is emptied, the valve will open and the water in the well fills the reservoir 2, and then the valve would be closed as soon as pressure is applied to the reservoir.

6 represents a tank into which the water is forced from the reservoir 2 through a pipe 7.

My present invention relates to an automatic means for forcing the water from the reservoir 2 into the tank 6. It consists of the bellows or other suitable form of compressible air-chamber 8, communicating with the reservoir 2 through a pipe 9. The bellows is located in an opening 10, located beneath a section 11 of a railway-track 12. The section 11 has a spring-connection 13 with the track 12 at each end, and it also has a hinged joint 14 at its center or middle portion. 15 represents cross-ties supporting the section 11 near the joint 14, and which rest upon the upper surface of the bellows 8. The bellows

has the ordinary flexible sides, which permit of its expansion and contraction, and located within it are springs 16 by which it is opened and by which the section 11 of the track is raised into the position shown in Fig. VI when the weight of the train or of the locomotive is not on the section, the strength of the springs being sufficient to open the bellows and to lift the section of the track into the position shown. As the bellows is raised air enters through a valve 17, which may be made of any ordinary construction, and which will close as the bellows is depressed. The parts being in the position shown in Fig. VI and a train passing over, the section 11 of the track will be pressed onto the sills or timbers 18, the cross-ties 15 having their ends arranged in and guided vertically by ways or notches 18<sup>a</sup>, formed in the sides of the timbers 18. The cross-ties in descending cause the bellows 8 to contract or close and the air therein to be forced through the pipe 9 into the reservoir 2, (the valve 3 closing under the pressure and preventing the water from escaping thereat.) The air entering the reservoir forces the water through the pipe 7 into the tank 6. As soon as the train leaves the section 11 of the track the springs 16 lift the bellows again, together with the section 11 of the track, and the air enters the bellows through the valve 17, ready for operation again when the next train passes over the section 11 of the track.

I thus provide a cheap and automatic water-elevator for railway-tracks, which will cost little or nothing to maintain.

I claim as my invention—

1. In combination with a submerged reservoir, a water-tank, a pipe forming a communication between the reservoir and the tank, a suitable valve through which the reservoir is filled with water, a bellows or compressible air-chamber, a pipe forming a communication between the bellows and said reservoir, and a movable section 11 of a railway-track located over and adapted to operate said bellows, substantially as and for the purpose set forth.

2. The combination of a submerged water-reservoir provided with a supply-valve, a tank, a pipe forming a communication between the reservoir and tank, a bellows 8, a

pipe forming a communication between the bellows and reservoir, a valve 17 and springs 16 in said bellows, a hinged section 11 of a railway-track, and the cross-ties 15, located 5 between the section 11 of the railway-track and the bellows, substantially as and for the purpose set forth.

3. The combination of the bellows, springs for holding said bellows open, a cross-tie supported on said bellows, the track supported 10 on said cross-tie, and the side timbers 18, arranged under the track and having vertical ways in which the ends of the cross-ties rise and fall, substantially as set forth.

15 4. The combination, with the rails 12, the bellows, and springs for holding said bellows open, of the section of track supported by

said bellows, and the yielding joints 13, connecting the said section to the rails 12, the said section having the hinged joint 14 over 20 the bellows, substantially as set forth.

5. The combination, with the rails 12, the bellows, and springs for holding said bellows open, of the section of track supported by said bellows, the yielding joints 13, connecting 25 both ends of said section to the rails 12, the rails of said section being hinged over the bellows, and timbers for supporting the rails of said section when depressed, substantially as set forth.

HUBERT R. ESTES.

In presence of—

E. S. KNIGHT,

THOS. KNIGHT.