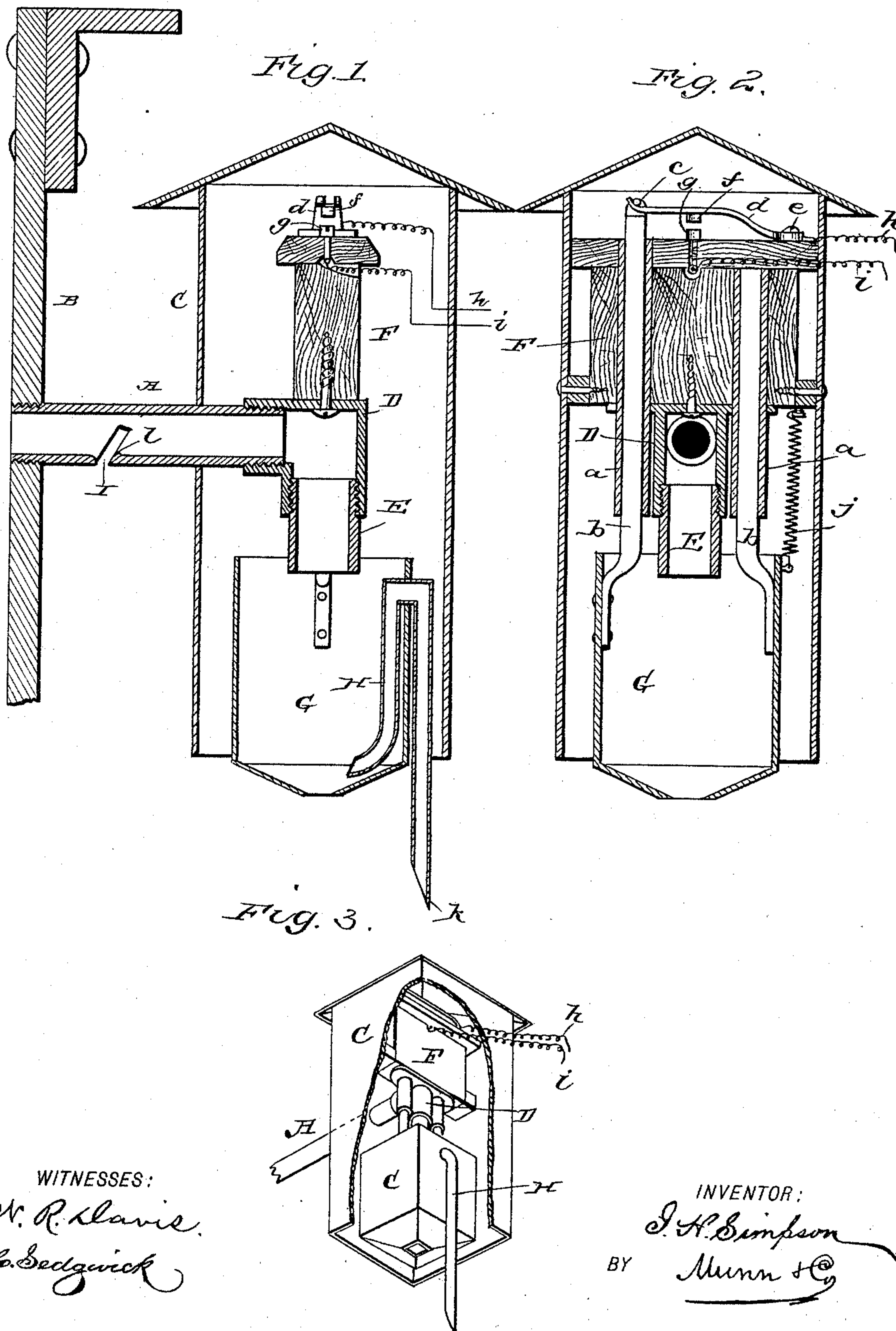


(No Model.)

I. H. SIMPSON.
HIGH WATER ALARM.

No. 441,982.

Patented Dec. 2, 1890.



WITNESSES:

W. R. Davis.
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INVENTOR:

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UNITED STATES PATENT OFFICE.

ISAIAH H. SIMPSON, OF BRUNSWICK, MAINE.

HIGH-WATER ALARM.

SPECIFICATION forming part of Letters Patent No. 441,982, dated December 2, 1890.

Application filed May 19, 1890. Serial No. 352,295. (No model.)

To all whom it may concern:

Be it known that I, ISAIAH H. SIMPSON, of Brunswick, in the county of Cumberland and State of Maine, have invented a new and Improved High-Water Alarm, of which the following is a specification, reference being had to the annexed drawings, forming a part thereof, in which—

Figure 1 is a vertical transverse section of my improved high-water alarm. Fig. 2 is a vertical transverse section taken on a plane at right angles to that of Fig. 1; and Fig. 3 is a perspective view, partly in section.

Similar letters of reference indicate corresponding parts in all the views.

The object of my invention is to construct a high-water alarm for water-towers and tanks which may be used in freezing weather without danger of becoming inoperative, which will give instant alarm at the engine-room in case of high water, and which will automatically restore itself to its original condition after having given an alarm.

My invention consists in a spring-supported bucket having an apertured bottom and provided with a discharging-siphon, an electric circuit-closer arranged to be operated by the downward movement of the bucket, and means for discharging the water from the tower or tank into the bucket, all as will be hereinafter more fully described.

Upon a pipe A, projecting from the tank or water-tower B, is supported the housing C, within which is arranged an elbow D, which is screwed onto the end of the pipe A. The elbow projects downwardly and is furnished with a nozzle E. To the top of the elbow D is secured a block F, in which are inserted tubes *a a'* for receiving the guide-rods *b b'*, attached to the bucket G. The guide-rod *b* extends through the top of the block F, and is flattened and provided with a pin *c*. To the top of the block F is attached a spring *d* by the screw *e*, the said spring extending forward underneath the pin *c* of the rod *b*. The spring *d* carries the contact-point *f*, below which in the block F is inserted a contact-point *g*. The spring *d* and contact-point *g* are connected by wires *h i* with a battery and a distant-alarm device, such as a bell. The spring *d* supports one side of the bucket G,

the opposite side being suspended from a spiral spring *j*, connected with the bucket and attached to the block F. The bucket G is provided with a hopper-shaped bottom to insure the complete passage of all the water, and in one side of the bucket is inserted a siphon H, the longer arm of which projects below the bottom of the bucket, and is cut off diagonally to provide a point *k*, which will permit the passage of the last drop of water from the siphon, thereby preventing the formation of ice at the end of the siphon in cold weather.

Upon the pipe A, connecting the alarm device with the tower or tank B, is formed an oblique slot I, the material of the pipe at the tank side of the slot being rounded to facilitate the discharge of water through the slot, while the material at the opposite side of the slot is thickened, forming a shoulder *l*, which impedes the water and causes a small amount to pass through the slot I. When the water rises in the tank or tower so that it enters the pipe A in a small stream, it flows out through the slot I when it has risen sufficiently in the tank or tower to give the water discharged through the pipe A a velocity which will cause it to leap across the slot I. The discharge from the said slot I is diminished or stopped, and most or all of the water goes into the bucket G, and although a portion of the water is discharged through the hole in the bottom of the bucket G it will not all escape that way, and as soon as the bucket is filled, so as to overcome the resistance of the springs *j d*, it descends, carrying with it the spring *d*, and, forming an electric contact, gives an alarm at the distant point. When the bucket fills to such an extent as to flow out through the siphon K, the said siphon begins to act and the bucket is quickly emptied by the combined discharge of the siphon and the hole in the bottom of the bucket, when the circuit is broken between the points *f g*. If the flow of water continues, the bucket is again filled and the circuit is again closed, thereby giving a second alarm, and so on. When the water descends below the pipe A, the bucket G returns to its normal position, and is ready for another operation.

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

1. In a high-water alarm for tanks and water-towers, the combination of a discharge-pipe placed at the high-water mark of the tank or tower, a spring-supported bucket arranged to receive the water discharged by the discharge-pipe, an electric-circuit closer operated by the movement of the bucket, an electric alarm, and electrical connections, substantially as specified.

2. In a high-water alarm for tanks and water-towers, the combination, with the tank or tower, of the pipe A, placed at the high-water mark and provided with the oblique transverse slot I in the lower part thereof, the material of the pipe being cut away or beveled at the side of the slot nearest the tank and thickened at the opposite side of the slot, the spring-supported bucket G, arranged to receive the water passing through the outer end of the pipe A, and the electric-circuit closer, alarm, and electrical connections, substantially as specified.

3. In a high-water alarm for tanks and water-towers, the combination, with a water-

discharge pipe A, placed at the high-water mark, of the spring-supported bucket G, arranged to receive water from the discharge-pipe, and provided with a siphon H, entering the bucket near the top and adapted to be charged by the filling of the bucket, and alarm mechanism arranged to be operated by the movement of the bucket, substantially as specified.

4. In a high-water alarm for tanks and water-towers, the combination of a water-discharge pipe arranged at the high-water mark of the tank or tower, a spring-supported bucket arranged for receiving the water from the discharge-pipe and provided with a hopper-shaped bottom furnished with a discharge-aperture, and a siphon connected with the bucket near the top thereof and adapted to be charged by the filling of the bucket, the said siphon being provided with a pointed discharge end, and alarm mechanism arranged to be operated by the movement of the bucket, substantially as specified.

ISAIAH H. SIMPSON.

Witnesses:

HOWARD VINTON STACKPOLE,
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