(No Model.) 2 Sheets—Sheet 1.

J. W. ARNOLD.

FIRE ALARM.

No. 588,942. Patented Aug. 31, 1897.

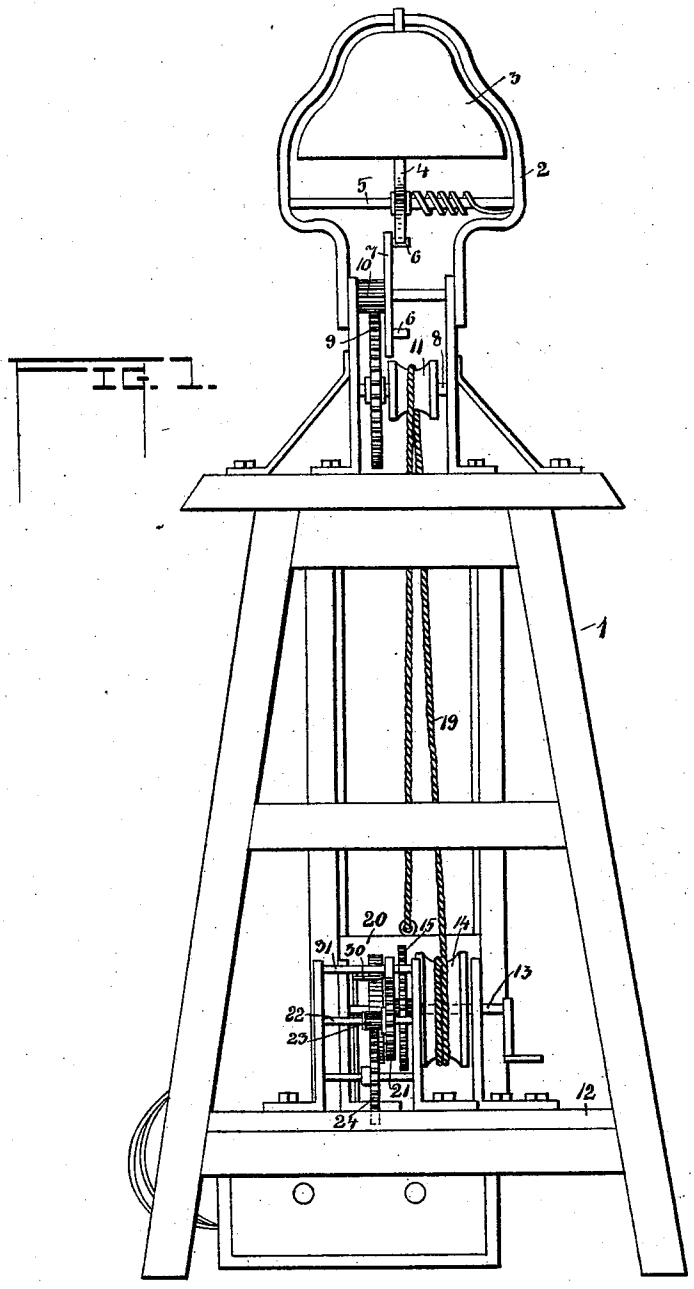


FIG. 1.

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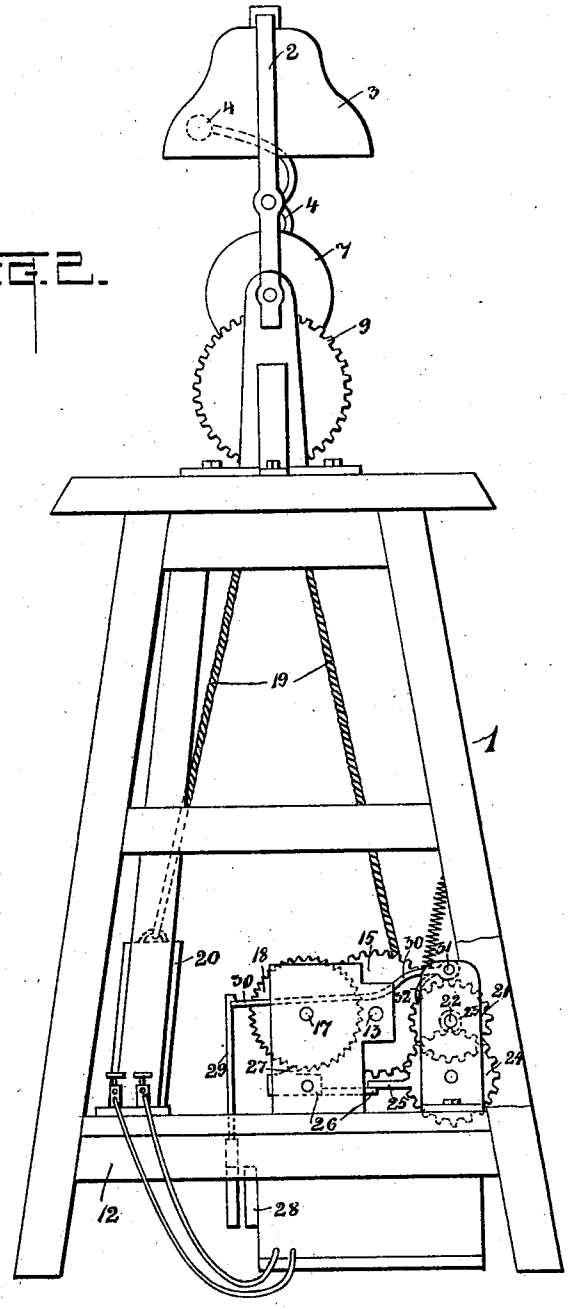
(No Model.) 2 Sheets—Sheet 2.

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FIRE ALARM.

No. 588,942. Patented Aug. 31, 1897.

FIG. 2.



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UNITED STATES PATENT OFFICE.

JOHN WESLEY ARNOLD, OF OTSEGO, MICHIGAN.

FIRE-ALARM.

SPECIFICATION forming part of Letters Patent No. 588,942, dated August 31, 1897.

Application filed April 29, 1897. Serial No. 634,464. (No model.)

To all whom it may concern:

Be it known that I, JOHN WESLEY ARNOLD, a citizen of the United States, residing at Otsego, in the county of Allegan and State of Michigan, have invented certain new and useful Improvements in Fire-Alarms; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has relation to fire-alarms, and more particularly for sounding the fire-alarms in small villages and towns where the fire-department is composed of volunteers comprising the residents.

The object of the invention is to provide an audible alarm which may be turned in from several parts of the town, thus not requiring a person to run to the engine-house and sound it from that point, as is now the common custom.

With this object in view the invention consists of certain features of construction and combination of parts, which will be hereinafter fully set forth.

In the accompanying drawings, Figure 1 is a side view of the tower, illustrating the application of my invention; and Fig. 2 is a view taken at right angles to Fig. 1.

In said drawings, 1 denotes the tower, to the upper end of which is mounted a bell-frame supporting a bell 3.

4 denotes the spring-actuated hammer, which is pivoted to a cross-bar 5 and has its lower end in the path of the stud 6, secured to a disk wheel 7, journaled in said frame.

8 denotes a shaft journaled beneath this disk wheel, and to which is fixed a cog-wheel 9, meshing with a pinion 10, projecting laterally from the sides of the disk wheel. On the shaft of the cog-wheel 9 is a fixed sheave 11.

Secured below the top of the tower, to a platform 12, is a shaft 13, supporting a winding-drum 14 and a cog-wheel 15. This wheel 15 meshes with a pinion 16 on a shaft 17, which carries an escapement-wheel 18.

19 denotes a cord or rope, which is wound around the drum and extends upwardly and passes around the sheave or pulley 11. To the lower end of this rope is secured a weight 20.

The releasing device employed consists of a gear-wheel 21, secured to a shaft 22 and provided with a pinion 23, which meshes with a gear-wheel 24, having an arm 25, which projects laterally and engages the free end of an escapement-lever 26, which has its toe 27 in engagement with an escapement-wheel 18. It is evident that when the free end of this lever is released the escapement-wheel 18 will be permitted to rotate, owing to the pull on the cord or rope by the weight 20, and that in the passing of the cord or rope around the sheave or pulley 11 the disk wheel will be rotated and successively bring its pins or studs into engagement with the free end of the bell-handle, and thus sound the alarm. To release this escapement-lever, I provide an electromagnet 28, the armature of which is provided with a rod 29, that connects with a rod 30, secured to a shaft 31. This rod 30 is provided with a dog 32, which engages the wheel 21 and prevents its rotation. The rod 30 is made of spring metal, so that when its free end is released the dog 32 will spring from engagement with the wheel 21 and allow it to be rotated, as hereinafter described.

In operation, when an alarm is sent in and the armature is attracted by the magnet the dog 32 will be released from the wheel 21, thus allowing the inner end of the escapement-lever 26 to press the arm 25 of the wheel 24 upward out of its way and allow the wheel 18 to rotate in the unwinding of the rope from the winding-drum. The wires from this electromagnet may extend to all the public buildings and principal corners of the town or village and connect with a call-box, so that should a fire break out in any portion of the town all that is necessary is to close the switch in the call-box and the alarm will be sounded from the tower of the engine-house.

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

A fire-alarm, comprising the following essential elements, to wit: a tower, a bell mounted therein, a bell-clapper, a disk wheel provided with pins adapted to actuate the clapper, a gear-wheel for rotating the disk wheel, a pulley secured on the shaft of the gear-wheel, a winding-drum, a rope wound about said winding-drum and passed over a pulley and provided with a weight moving in vertical guides, a gear-wheel 15 secured on

the drum-shaft, a shaft 17, a pinion 16 on said shaft in mesh with the wheel 15, an escapement-wheel 18 on shaft 17, a shaft 22, a ratchet-wheel 21 and a pinion 23 on said shaft 22, a wheel 24 journaled below said shaft and engaging said pinion 23 and provided with an arm 25, a pivoted lever 26 having a toe 27 engaging wheel 18 and having its other end held by arm 25 against movement, a spring-rod 30 having a toe 32 that engages the wheel 21, an electromagnet, the armature of which is provided with a rod 29 that holds the rod 30 with its dog 32 in engagement with the wheel 21, substantially as set forth.

In testimony whereof I hereunto affix my signature in presence of two witnesses.

JOHN WESLEY ARNOLD.

Witnesses:

ULYSSES S. ARNOLD,

JOHN G. MCKAY.