

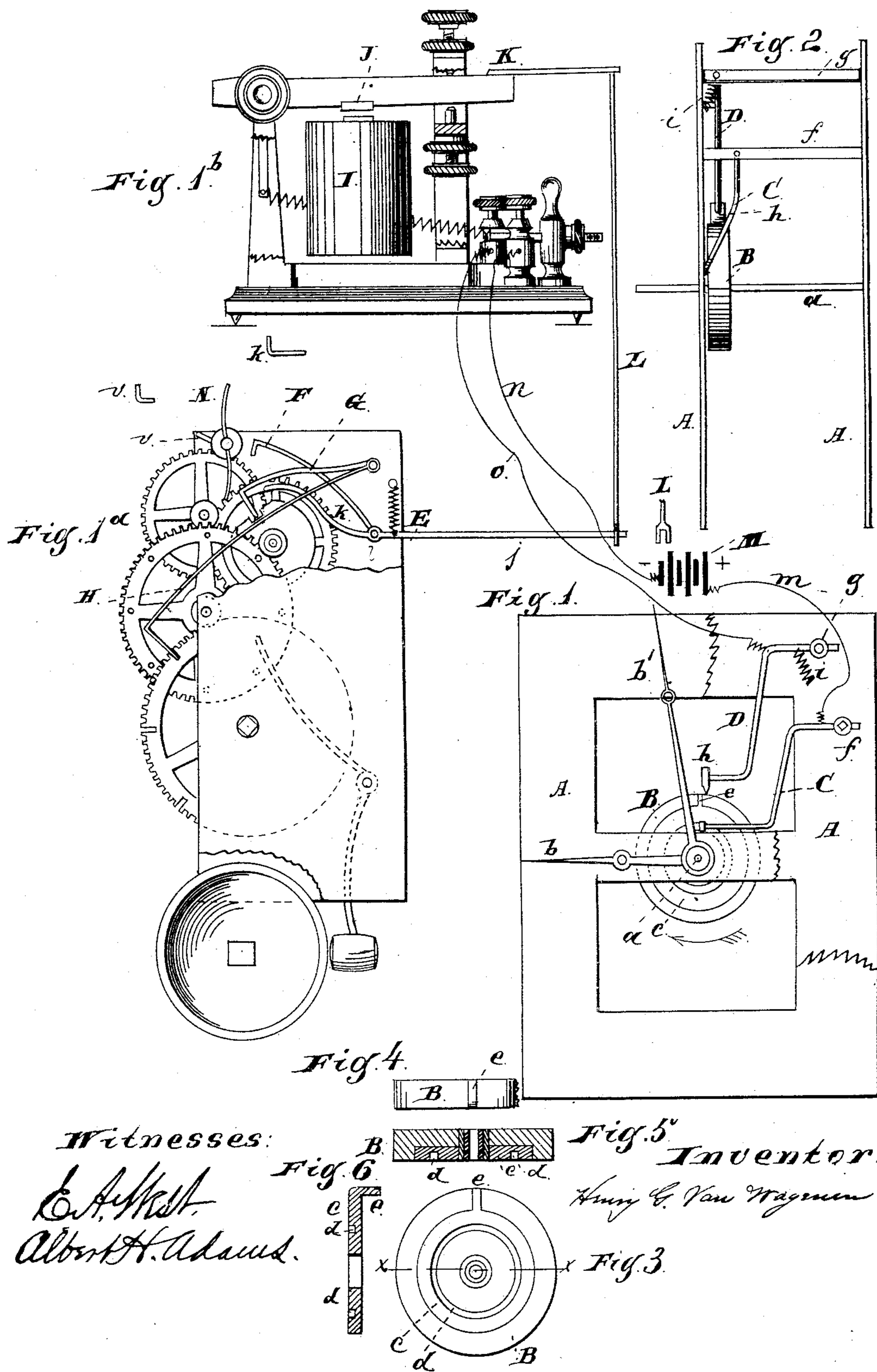
(No Model.)

H. G. VAN WAGENEN.

ELECTRIC TIME SIGNALING DEVICE.

No. 285,088.

Patented Sept. 18, 1883.



Witnesses:

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Fig. 5

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Fig. 3

# UNITED STATES PATENT OFFICE.

HENRY G. VAN WAGENEN, OF MONROE, WISCONSIN.

## ELECTRIC TIME-SIGNALING DEVICE.

SPECIFICATION forming part of Letters Patent No. 285,088, dated September 18, 1883.

Application filed March 26, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY G. VAN WAGENEN, residing at Monroe, in the county of Green and State of Wisconsin, and a citizen of the United States, have invented new and useful Improvements in Electrical Signaling Devices, of which the following is a full description, reference being had to the accompanying drawings, in which—

Figure 1 is a front elevation of the parts shown. Fig. 1<sup>a</sup> is an elevation of a striking-movement. Fig. 1<sup>b</sup> is a side elevation of an electro-magnet. Fig. 2 is a side elevation of the parts shown in Fig. 1. Fig. 3 is a front view of the wheel B; Fig. 4, a top view of the same; Fig. 5, a section on line *x* of Fig. 3; Fig. 6, a section of the metal parts on the wheel B.

Tower-clocks are expensive, and from various causes are not usually good time-keepers. Frequently the ordinary purposes of a tower-clock would be gained if the hours were struck without having any clock in the tower to keep and indicate the time. There are other places where it would be desirable to have a signal given or the hours of the day struck at the proper time.

The primary object of my invention is to provide for striking the time in one or more places at the proper moment and from a single time-piece, and this I accomplish by means of special devices connected with a clock, by means of which—a battery, connecting-wires, and levers—striking-works can be operated at a distance from the clock.

In the drawings, A represents a frame in which any suitable clock-movement is located.

*a* represents the center post of such clock-work, which center post carries the hands, and *b b'* are the hour and minute hands. The other parts of the ordinary clock-work I have not represented.

B is a wheel, which is to be made of some material which is a non-conductor of electricity, such as glass, bone, rubber, ivory, &c. This wheel is located upon the center post of the clock-work, and is to be so connected therewith that electricity will not pass from the wheel to the center post.

*c* is an annular disk of metal, fitted upon and secured to one side, preferably upon the front

of the wheel B, in which metallic disk is a groove, *d*.

*e* is a narrow strip of metal, permanently connected at one end to the disk or ring *c*. This narrow strip of metal extends across the periphery of the wheel B, and is accurately fitted into the edge of the wheel, so that the upper edge of the metal *e* is flush with the periphery of the wheel.

C is a metallic rod, one end of which is permanently connected with the frame of the clock-work and so as to be insulated therefrom. As shown, this is done by connecting the end of this rod to a rod or staff, *f*, made of non-conducting material and supported in the frame-work of the clock. The other end of the rod C has a point or projection which is covered with or made of platinum, and which enters the groove *d*, and is constantly held therein and in contact with the metal disk *c*.

D is a metallic rod or bar, one end of which, as shown, is connected with a shaft, *g*, which is a non-conductor of electricity, which shaft *g*, as shown, is supported in the frame-work of the clock. The other end of this rod D is provided with a platinum point, *h*, which rests upon the periphery of the wheel B. This point must always rest upon the wheel B, and, if necessary, it may be held in contact therewith by means of a light spring, *i*. In Fig. 1<sup>a</sup> I have shown in elevation a striking-movement; in Fig. 1<sup>b</sup>, an electro-magnet.

All the parts of the striking-movement which are not fully described are such as are ordinarily used in clocks.

E is a lever, the two arms of which are marked, respectively, *j* and *k*. A bar or rod, F, is permanently connected with the lever E, and both the lever E and the rod F are pivoted together at the point *l* upon any suitable support. The outer end of the arm *k* of the lever E is arranged so as to engage with the under side of the rod or lever G, which is connected with the rod or lever H, both of which are pivoted at a common point, as usual.

I are the coils of the magnet, J the armature, and K the armature-lever.

L is a rod, the upper end of which is connected with the armature-lever K, while the

lower end engages with the outer end, *j*, of the lever E.

M is a battery, one pole of which is connected with the rod C by a wire, *m*. The other pole of the battery is connected with the electro-magnet through a wire, *n*, and the magnet is connected with the rod D by the wire *o*.

The operation is as follows: The wheel B revolves with the center post of the clock-work. The point *h* rests upon the periphery of the wheel B, and when it is not in contact with the metal strip *e*, the circuit will be open; but when this metal strip *e* comes in contact with the point *h*, then the circuit will be closed, the coils I becoming temporary magnets, which attract the armature J, carrying down the outer end of the armature-lever K, and also carrying downward the rod L, the lower end of which, being engaged with the arm *j* of the lever E, forces that arm down and raises the opposite end of the lever E, which lifts the rod G, and with it the rod H, away from the wheels with which they are engaged. At the same time the outer end of the rod F is lifted a little, so as to come in contact with a projection, *v*, connected with the fly N, preventing the revolution of the fly so long as the strip *e* and the point *h* are engaged; but the moment that the strip *e* passes away from the point *h*, so that contact ceases, the coils cease to be magnetic, the lever K, the rod L, and the lever E are released, returning to their former positions, the outer end of the rod F at the same time dropping and becoming disengaged from the projection *v*, leaving the striking-works free to operate in the usual manner. The wheel B, strip *e*, and point *h* must be so adjusted that the strip *e* will leave the point *h* at the time when it is desired to have the striking-movement operate. The wheel B and the rods C D being insulated from all parts of the clock-work, no electrical current can pass from these parts to the clock-work proper, which I regard as an important consideration. I thus provide for operating by electricity a striking-movement for the purpose of striking the hours by means of a clock located at any convenient point away from the striking-movement.

A single clock may be connected with and made to operate, by means of suitable wires, a number of striking-movements located in different places. Half-hours and quarter-hours can also be struck in the same manner by providing the wheel B with additional strips *e*, located so as to come in contact with the point *h* at the proper times.

While my improvement is primarily designed to be used in operating a striking-movement to strike the time, it is not limited to this single use. By arranging the wheel B upon some other portion of the clock-work a striking-movement or other signal can be operated at other intervals greater than hourly. Two or more wheels, B, might be used in the same clock on different parts thereof.

It is not essential that the metal connections upon the wheel B be located one upon the side and one upon the periphery. They might be upon opposite sides, being of course properly connected, or both might be upon the same side, or both might be upon the periphery if it were wide enough, the rods C D being in these cases properly arranged to come in contact with the metal parts upon the wheel B. When the metallic connections are located upon opposite sides or upon the same side of the part B, it is not essential that the same should be circular.

If the circuit were to be closed only at long intervals, it would be necessary to apply the wheel B to some portion of the movement other than the center post, and a complete disk, *c*, will not be required; but the wheel must have a suitable metal connection.

I have described the wheel B as being made wholly from material which is not a conductor of electricity. This is not a necessity, but it is essential that such wheel and other parts be so connected with the clock that the electrical current will not pass to the clock-works.

The magnet might be located below the striking-movement, and the armature-lever may be made to operate a lever or tripping device in various ways, which will readily occur to one skilled in the art.

I have not specified definitely the various uses to which my invention might be applied; but it will readily occur to any one familiar with electrical apparatus.

I do not claim the combination of rotating disks or wheels and means for closing circuits, as shown and described—as, for instance, in the patent of L. Bradley, September 28, 1869, No. 95,310, and the patent of R. J. Sheehy, February 1, 1876, No. 173,072, and reissue patent of E. Holmes, May 18, 1880, No. 9,209, and the patent of G. W. Gray, March 20, 1883, No. 274,445—nor do I claim a cylinder rotated by hand and connected with a battery and alarm-clock, as shown and described—for instance, in the patent of Joseph B. Stearns, September 17, 1867, No. 69,039. My invention differs therefrom, among other particulars, in having the wheel which operates to open and close the circuit actuated by clock-work and insulated therefrom.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination of a clock-work movement, an insulated rotating wheel mounted on and operated by a moving part of the clock-work, rods or points connected with the poles of a battery and the said insulated wheel, metallic connections on the insulated wheel adapted to be brought by the revolution of the wheel in contact with the rods or points connecting with the battery, and a signaling or alarm device, the several parts operating to give an alarm or signal at regular stated intervals, as set forth.

2. The combination, with a clock-move-

ment, a battery and a signaling or alarm mechanism connected therewith, of a rotating insulated wheel, B, operated by the clock-work and provided with metallic connections *c* and  
5 *e*, a rod, C, held in constant contact with plate *c*, a rod, D, adapted at regular intervals to be brought into contact with plate *e*, and wires

connecting rods C and D with the poles of the battery, substantially as described.

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