No. 639,124. Patented Dec. 12, 1899.

H. WILD.

ELECTRIC ALARM OR SIGNAL.

(Application filed Oct. 7, 1899.)

(No Model.)

Fig. 1.

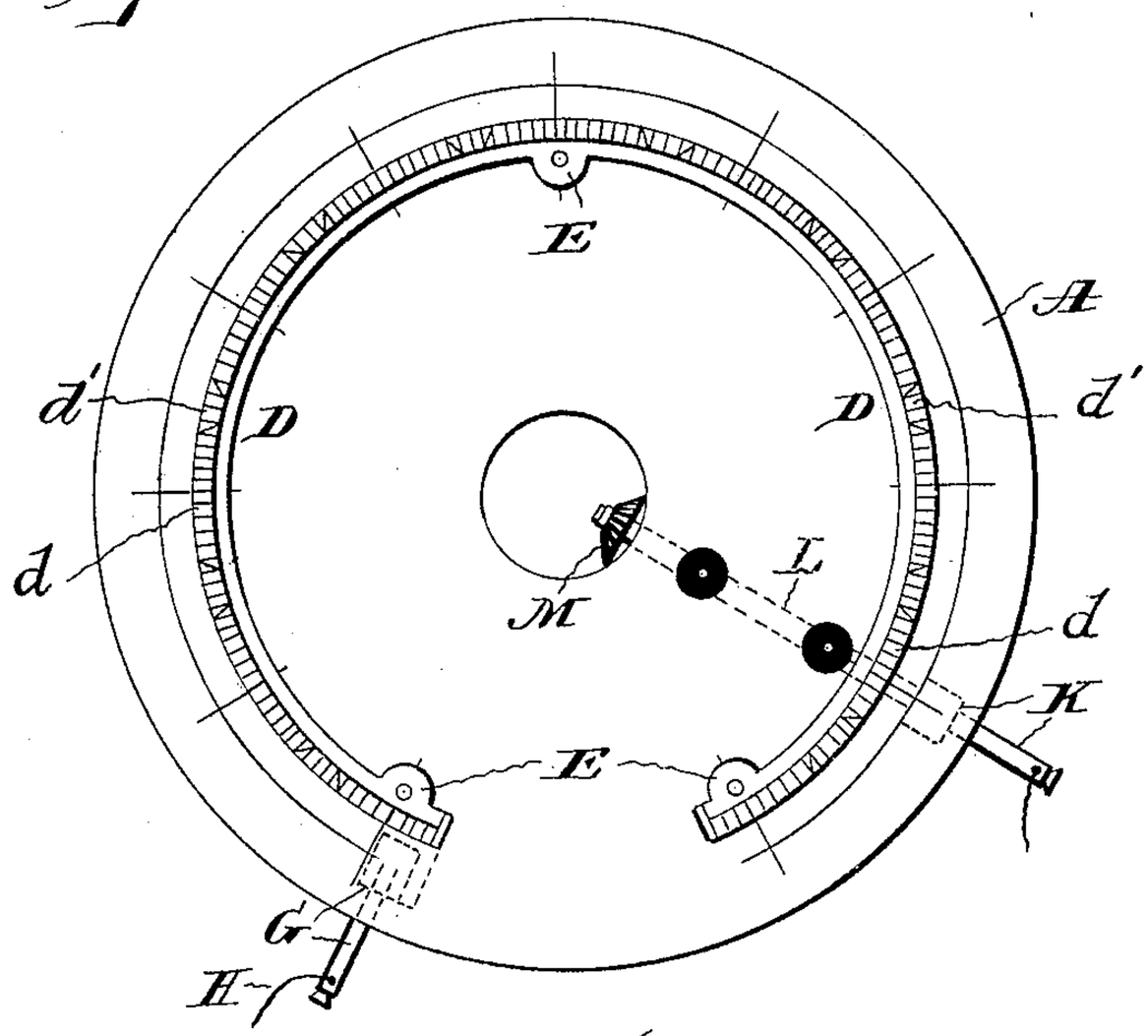

Fig. 2.

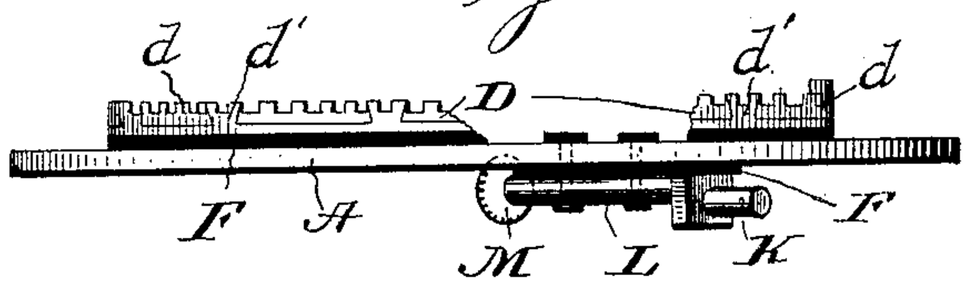

Fig. 3.

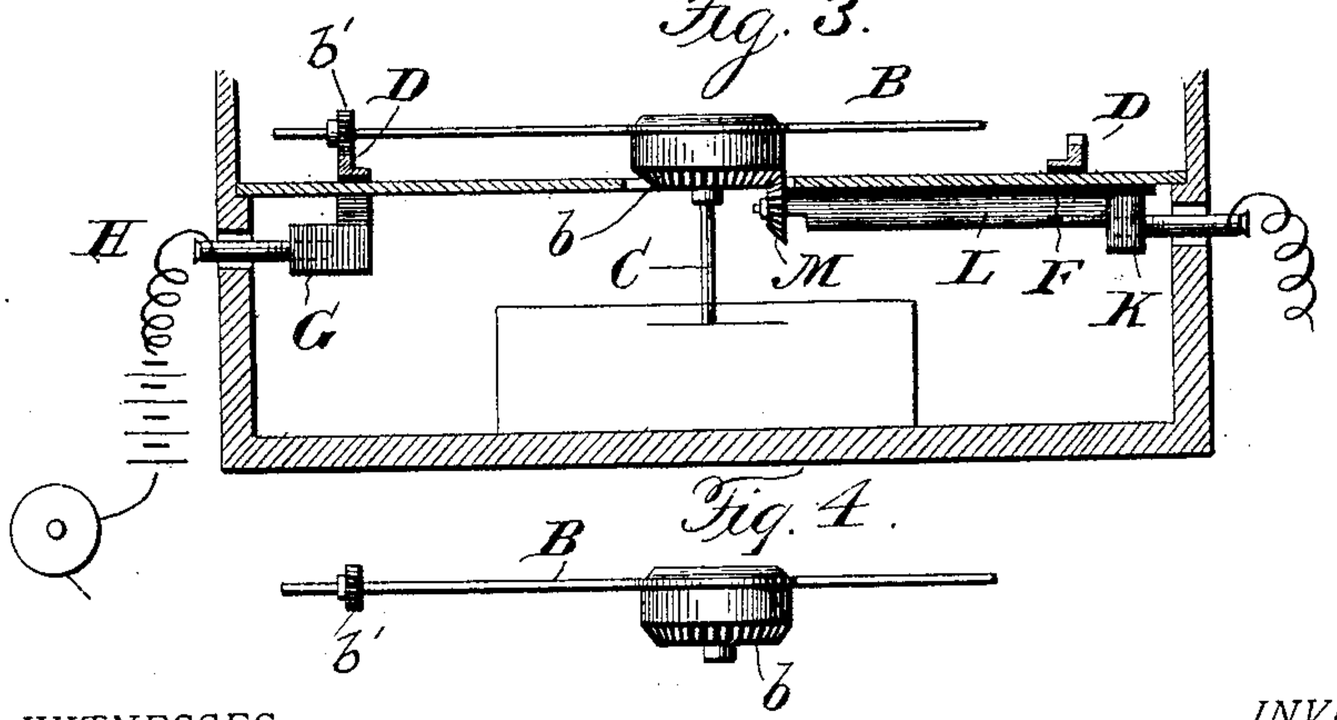

Fig. 4.

WITNESSES

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HENRY WILD, OF JOHNSTOWN, PENNSYLVANIA.

ELECTRIC ALARM OR SIGNAL.

SPECIFICATION forming part of Letters Patent No. 639,124, dated December 12, 1899.

Application filed October 7, 1899. Serial No. 732,911. (No model.)

To all whom it may concern:

Be it known that I, HENRY WILD, a citizen of the United States, residing at Johnstown, in the county of Cambria and State of Pennsylvania, have invented certain new and useful Improvements in Electric Alarms or Signals, of which the following is a specification.

The present invention relates to an improved electric alarm or signal device which is adapted for use in connection with a steam-gage or similar indicating mechanism.

My improvements are particularly applicable for attachment to a gage of that style or type in which an indicating finger or pointer is supported at the axis of a suitably-graduated dial and caused by variations in the liquid whose condition is to be ascertained from an inspection of the gage to vibrate or rotate about said support.

One of the objects of the invention is to provide an attachment for such a gage by which an alarm or signal will be intermittingly produced as the rotating pointer moves over the dial and successively comes into alinement with certain divisions or graduations thereon.

The invention consists in the peculiar construction and arrangement of parts that are illustrated in the accompanying drawings and will be hereinafter described.

In the drawings, Figure 1 is an elevation of a steam-gage having my improvements applied thereto, the gage being conventionally illustrated only. Fig. 2 is an edge view of the parts shown in Fig. 1. Fig. 3 is a sectional view taken on the line 3 3 of Fig. 1. Fig. 4 is a detail view of the rotating pointer.

Like letters of reference indicate corresponding parts in the several figures of the drawings, referring to which—

A designates the graduated dial-plate, and B the rotatable finger or pointer of an ordinary gage. The pointer B is mounted upon and adapted to rotate about a stud or post C and is provided on its lower face or surface with a bevel-pinion *b*, arranged concentric with the stud C.

To the outer graduated face of the dial-plate A, I secure a rack, which is arranged to extend concentric with the pinion *b* and with the teeth of which meshes a pinion *b'*, that is loosely mounted on but in electrical connection with the pointer. This rack D is composed of a series of sections *d* electrically connected together and formed of conducting material and a series of sections *d'* of non-conducting material, said sections *d d'* being arranged alternately throughout the length of the rack. It will be noticed that in the embodiment of the invention herein illustrated the non-conducting sections *d* are of greater length than those formed of conducting material and that the latter are arranged between graduations or divisions on the dial A. Preferably the sections *d* of the rack are formed integral with a base-plate having suitably-arranged ears or lugs E, by means of which it can be secured to the dial A, and the gear-sections *d'*, formed of papier-mâché or other similar non-conducting material, are fitted in grooves formed in said base. The entire rack D is insulated from the dial A by means of a layer or sheet F of non-conducting material. One end of the rack, being one end of one of the conducting-sections *d*, is electrically connected with a binding-post G, that is supported in a wall of the casing or shell of the gage, and to this post G is connected one terminal of an electric circuit H, that includes a suitable battery and bell. The other terminal of this alarm-circuit is connected with a binding-post K, which is mounted in the outer end of a bar L, that is secured to but insulated from the lower surface of the dial-plate A. On the inner end of the bar or rod L is mounted a bevel-pinion M, that meshes with the aforesaid pinion *b* on the pointer B.

The operation of my improved signal mechanism or attachment will be readily understood. The electric circuit H is completed through the bar or rod L, pinions M *b*, pointer B, pinion *b'*, and either of the sections *d* of the rack D. As the pointer B is rotated over the dial the said circuit will be intermittingly broken by the pinion *b'* traversing the non-conducting rack-sections *d'*, and therefore the alarm will be intermittingly sounded.

The sections *d d'* of the rack D may be arranged relative to the graduations or divisions on the dial A in any preferred manner. By arranging them in the manner shown in the drawings and employing an alarm-bell adapted to be sounded by the closing of the circuit the attendant will be notified when a certain

pressure has been exceeded, as the conducting-sections *d* are arranged out of line with the graduations on the dial.

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

1. In an electric alarm or signal mechanism, the combination of a rotatable arm, a rack arranged concentric with the axis about which said arm moves and consisting of alternately-arranged sections of conducting and non-conducting material, a pinion carried by the rotatable arm and meshing with said rack, and an electric circuit, including a signal device, having one terminal electrically connected with the rotatable arm and its other terminal electrically connected with each of the conducting-sections of said rack.

2. In an electric alarm or signal mechanism, the combination of a rotatable arm, a rack of conducting material, arranged concentric with the axis about which said arm moves, a series of blocks of insulating material arranged in sockets formed in the upper surface of said rack and serving to divide said upper surface into a series of alternately-arranged conducting and non-conducting sections, a pinion carried by the rotatable arm and meshing with the teeth of said rack, and an electric circuit, including an alarm or signal device, having one terminal electrically connected with said pinion and its other terminal connected with said rack.

3. The combination with a gage of the character described, of a rack secured to but insulated from the face of the dial and consisting of a series of relatively short conducting-sections and relatively longer non-conducting sections arranged between those aforesaid, an electric circuit, including a signal device, having one terminal connected with the conducting-sections of said rack and its other terminal electrically connected with the rotatable pointer of the gage, and a pinion mounted on the gage-pointer and meshing with the teeth of said rack.

4. The combination with a gage of the character described, of a rack arranged upon the face of the gage-dial and extending concentric with the axis about which the pointer moves, said rack consisting of a series of sections, electrically connected but having their operative faces insulated one from another, an electric circuit having one terminal connected to one of said rack-sections, and its other terminal connected to a bar or rod arranged beneath the gage-dial, electrical connections between said bar and the pointer of the gage, and a pinion carried by said pointer and meshing with the rack.

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

HENRY WILD.

Witnesses:
C. H. STRIMEL,
WM. H. GABLE.