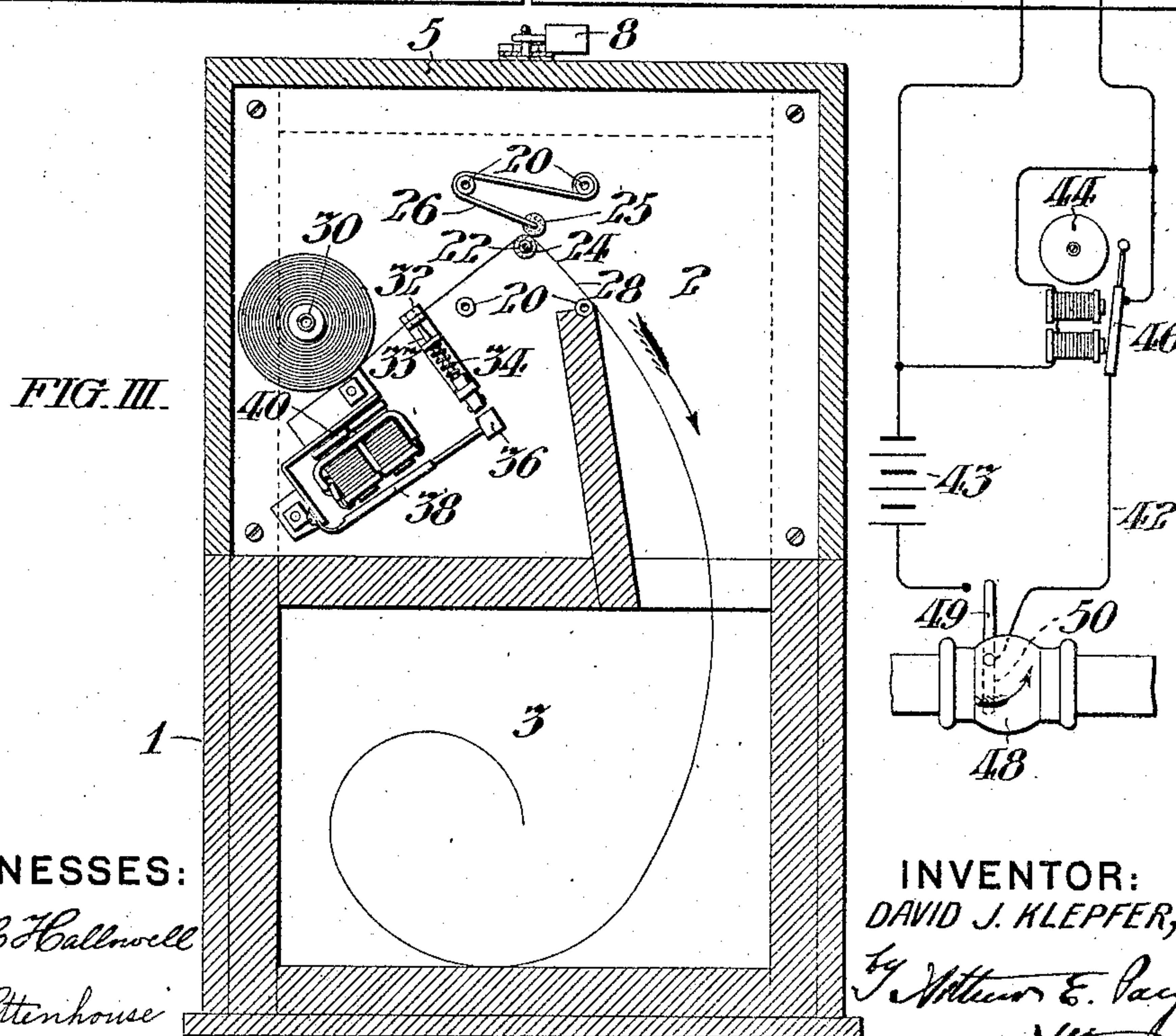
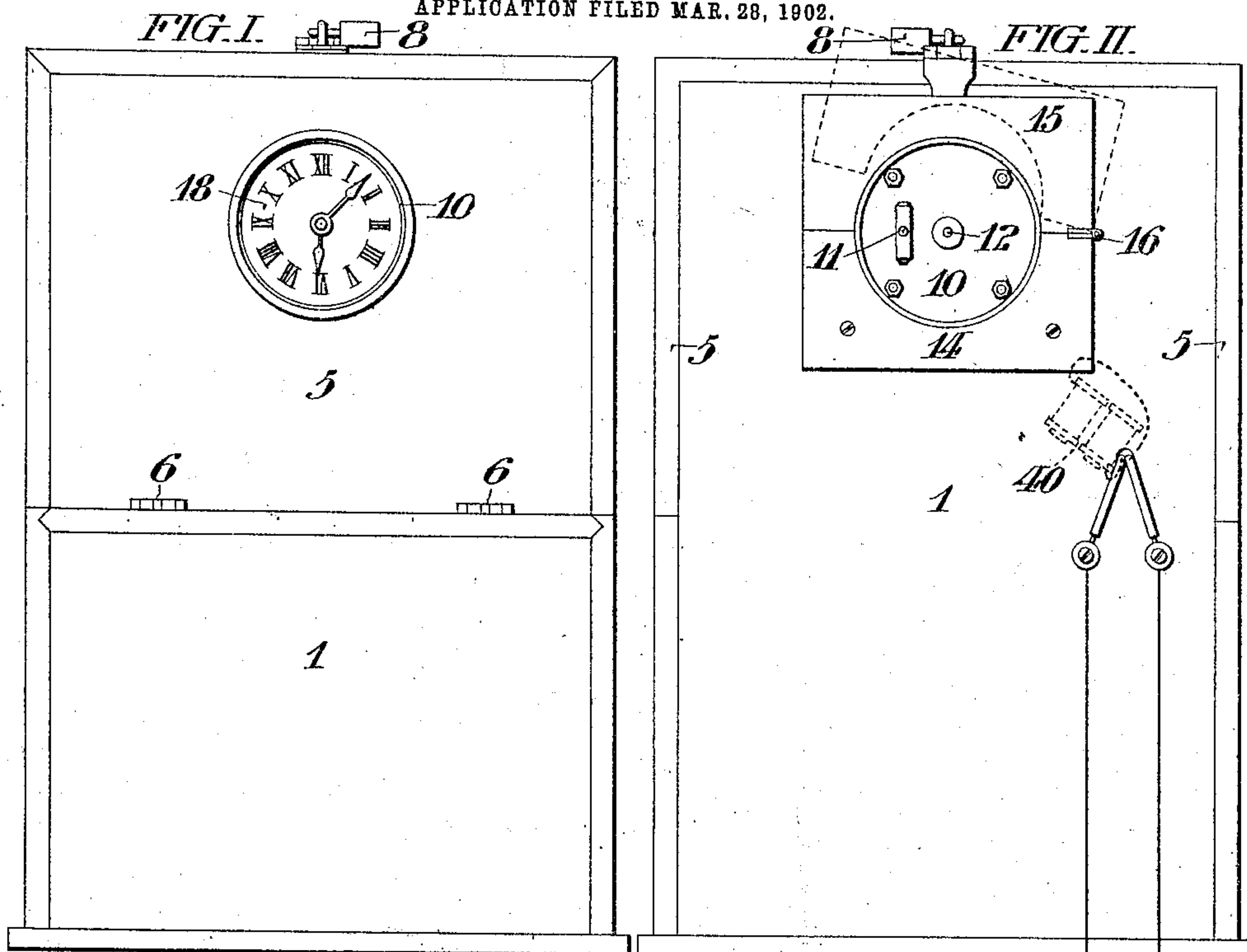


No. 848,468.

PATENTED MAR. 26, 1907.

D. J. KLEPPER, DEC'D.
S. L. KLEPPER, ADMINISTRATRIX.
ELECTRIC RECORDER.

APPLICATION FILED MAR. 28, 1902.



WITNESSES:

Clifton C. Halliwell
Edward Rittenhouse

INVENTOR:

DAVID J. KLEPPER,

By Arthur E. Paige
Atty.

UNITED STATES PATENT OFFICE.

DAVID J. KLEPFER, OF PHILADELPHIA, PENNSYLVANIA; SARAH L. KLEPFER ADMINISTRATRIX OF SAID DAVID J. KLEPFER, DECEASED.

ELECTRIC RECORDER.

No. 848,468.

Specification of Letters Patent.

Patented March 26, 1907.

Application filed March 28, 1902. Serial No. 100,359.

To all whom it may concern:

Be it known that I, DAVID J. KLEPFER, of Philadelphia, in the State of Pennsylvania, have invented certain new and useful Improvements in Electric Recorders, whereof the following is a specification, reference being had to the accompanying drawings.

My invention is particularly applicable to a fire-extinguisher system comprising automatic sprinklers and an alarm-signaling device in operative connection therewith to provide a record of the periodic tests required to be made of such a system in compliance with the rules of the National Board of Fire Underwriters.

The system hereinafter described comprises an alarm-valve arranged to close an electric circuit through an electric alarm-bell whenever the sprinklers are operated, and my recorder is operatively connected therewith, so that any movement of the valve mechanism which suffices to operate said alarm contemporaneously effects the operation of my recorder and makes a record of such operation upon a strip of paper or other suitable fabric which is continuously progressed by a suitable clock mechanism.

The form of recorder hereinafter described comprises a casing for the clock mechanism provided with a lock which prevents access to the record-strip and the portion of the clock mechanism which progresses it, but permits the clock mechanism to be wound, set, and regulated from the exterior of the casing. My invention comprehends the various novel features of construction and arrangement hereinafter specified and claimed.

In the accompanying drawings, Figure I is a front elevation of a recorder conveniently embodying my improvements. Fig. II is a rear elevation of said recorder, showing an electric circuit including the alarm-valve of the sprinkler system. Fig. III is a vertical sectional view of the recorder-casing, showing the electric recording mechanism inclosed therein.

In said figures, 1 is the recorder-casing, which comprises the chamber 2, containing the recording mechanism, and the chamber 3, in which the record-strip is stored. Said chamber 2 is provided with the door 5, which is hinged to the casing 1 at 6 and provided with the lock 8.

The clock 10 is fixed in the casing 1 with

its winding-spindle 11 and setting-spindle 12 accessible from the rear of the casing, as indicated in Fig. II. The rearwardly-projecting portion of said clock is mounted in the casing members 14 15, and, as indicated in dotted lines in Fig. II, the casing member 15 may be upturned upon its hinge 16 to permit of the regulation of the clock mechanism without giving access to the chamber 2, containing the recording mechanism.

The clock-face 18 projects through the door 5, as indicated in Fig. I, and is supported in fixed relation with the casing 1 by the standards 20.

The arbor 22 of the hour-hand of the clock is conveniently provided with a rubber facing or sleeve 24, opposed by the roller 25, mounted upon the spring 26, and the record-strip 28, which is primarily wound in a roll mounted upon the stud 30, extends between said sleeve 24 and roller 25 and is continuously progressed in the direction indicated by the arrow by the rotation of the clock mechanism. Said strip 28 is embraced by the frame 32, in which the plunger 33 is mounted for reciprocation with its pointed upper end normally withdrawn from the path of the strip by the spring 34. As shown in Fig. III, the lower end of said plunger registers with the hammer 36 upon the armature 38 of the electromagnet 40. The arrangement is such that the hammer 36 uplifts the plunger 33 against the stress of the spring 34 and perforates the strip 28 at each vibration of the armature 38.

As indicated in Fig. II, the electromagnet 40 is included in the circuit 42 with the battery 43 in parallel relation with the alarm-bell 44, the arrangement being such that vibration of the armature 46 of said bell serves to make and break the circuit through the magnet 40 and puncture the record-strip 28, and thus record the operation of said bell. Said circuit 42 includes the alarm-valve 48 of the sprinkler system, which valve is arranged to close said circuit 42 by the lever 49 when the valve-flap 50 is moved in the direction of the arrow marked thereon. It is to be understood that the aforesaid movement of the alarm-valve is occasioned by the flow of water therethrough whenever any sprinkler in the system is operated.

The rules of the National Board of Fire Underwriters, above referred to, provide that

every automatic sprinkler system shall be tested daily by closing the circuit through the alarm-valve circuit, and it is to be noted that such closure of the circuit 42 (indicated in Fig. II) effects the operation of the alarm-bell 44 and contemporaneously records the vibration thereof by puncturing the strip 28.

The device above described is operated as follows: A quantity of the recording-strip 28 sufficient to last any required length of time is mounted upon the stud 30 within the chamber 2 and the latter closed and secured with the lock 8. The clock 10 being maintained in operation, each test of the sprinkler system or the alarm-circuit thereof is recorded upon the strip 28 by the imprinting or perforating action of the plunger 33, and the record-strip is continuously progressed and deposited within the chamber 3, awaiting the visit of the inspector representing the Board of Fire Underwriters, who alone is provided with a key to the lock 8. At any desired intervals said inspector may open the door 5, withdraw the perforated strip 28 from the chamber 3, and note the record of tests made thereon.

I do not desire to limit myself to the precise details of construction herein set forth, as it is obvious that various modifications may be made therein without departing from the essential features of my invention.

I claim—

1. The combination with an automatic sprinkler system including a valve normally obstructing the flow of fluid in said system; of a recording device, comprising mechanism arranged to chronologically progress a record-strip; a plunger arranged to imprint said strip; a spring arranged to normally retract said plunger from the path of said strip; an electromagnet; an armature for said magnet distinct from said plunger, arranged to operate said plunger to imprint said strip; an electric circuit connecting said valve with said electromagnet; an electric signaling device comprising an electromagnet bridged across said circuit in parallel relation with the electromagnet of said recording device; an armature for said magnet of the signaling device; a battery in said circuit between said bridge and said valve; whereby when said circuit is closed by said valve, said signaling device contemporaneously interrupts the circuit leading to said recording device and produces an audible signal; a casing comprising two chambers, one inclosing said recording mechanism and the other arranged to receive the imprinted portion of said strip; and, means normally maintaining closed, the chamber containing said recording mechanism; said chamber for the imprinted portion of the strip being normally accessible, substantially as set forth.

2. The combination with an automatic sprinkler system including a valve normally

obstructing the flow of fluid in said system; of a recording device comprising mechanism arranged to chronologically progress a record-strip; a plunger arranged to imprint said strip; a spring arranged to normally retract said plunger from the path of said strip; an electromagnet; an armature for said magnet distinct from said plunger, arranged to operate said plunger to imprint said strip; an electric circuit connecting said valve with said electromagnet; an electric signaling device comprising an electromagnet bridged across said circuit in parallel relation with the electromagnet of said recording device; an armature for said magnet of the signaling device; and, a battery in said circuit between said bridge and said valve; whereby when said circuit is closed by said valve, said signaling device contemporaneously interrupts the circuit leading to said recording device and produces an audible signal, substantially as set forth.

3. The combination with an automatic sprinkler system including a valve normally obstructing the flow of fluid in said system; of a recording device comprising mechanism arranged to chronologically progress a record-strip; an electric circuit connecting said recording device with said valve, arranged to be opened and closed in correspondence with the movement of the latter; and, an electric signaling device bridged across said circuit in parallel relation with said recording device, comprising means arranged to contemporaneously interrupt said circuit including the recording device, and thereby contemporaneously produce an audible signal and a chronological record of the same, substantially as set forth.

4. The combination with an automatic sprinkler system including a valve normally obstructing the flow of fluid in said system; of an electrical alarm-circuit arranged to be opened and closed by the movement of said valve; an electric bell in said alarm-circuit; mechanism located apart from said bell arranged to record the operation of the latter, comprising a clock and mechanism arranged to chronologically progress a record-strip; a plunger arranged to imprint said strip; a spring arranged to normally retract said plunger from the path of said strip; an electromagnet connected across said alarm-circuit in parallel relation with said bell; an armature for said magnet, distinct from said plunger, arranged to operate said plunger to imprint said strip; a casing comprising two chambers, one inclosing said recording mechanism and the other arranged to receive the imprinted portion of said strip; and, means normally maintaining closed the chamber containing said recording mechanism; said chamber for the imprinted portion of the strip being normally accessible, substantially as set forth.

5. The combination with an automatic sprinkler system including a valve normally obstructing the flow of fluid in said system; of a recording device comprising mechanism
5 arranged to chronologically progress a record-strip; an electric circuit connecting said recording device with said valve, arranged to be opened and closed in correspondence with the movement of the latter; and, an
10 electric signaling device comprising a coil included in said circuit and means arranged

to automatically interrupt said circuit, and thereby contemporaneously produce an audible signal and a chronological record of the same, substantially as set forth.

15

In testimony whereof I have hereunto signed my name, at Philadelphia, Pennsylvania, this 27th day of March, 1902.

DAVID J. KLEPFER.

Witnesses:

ARTHUR E. PAIGE,
E. L. FULLERTON.