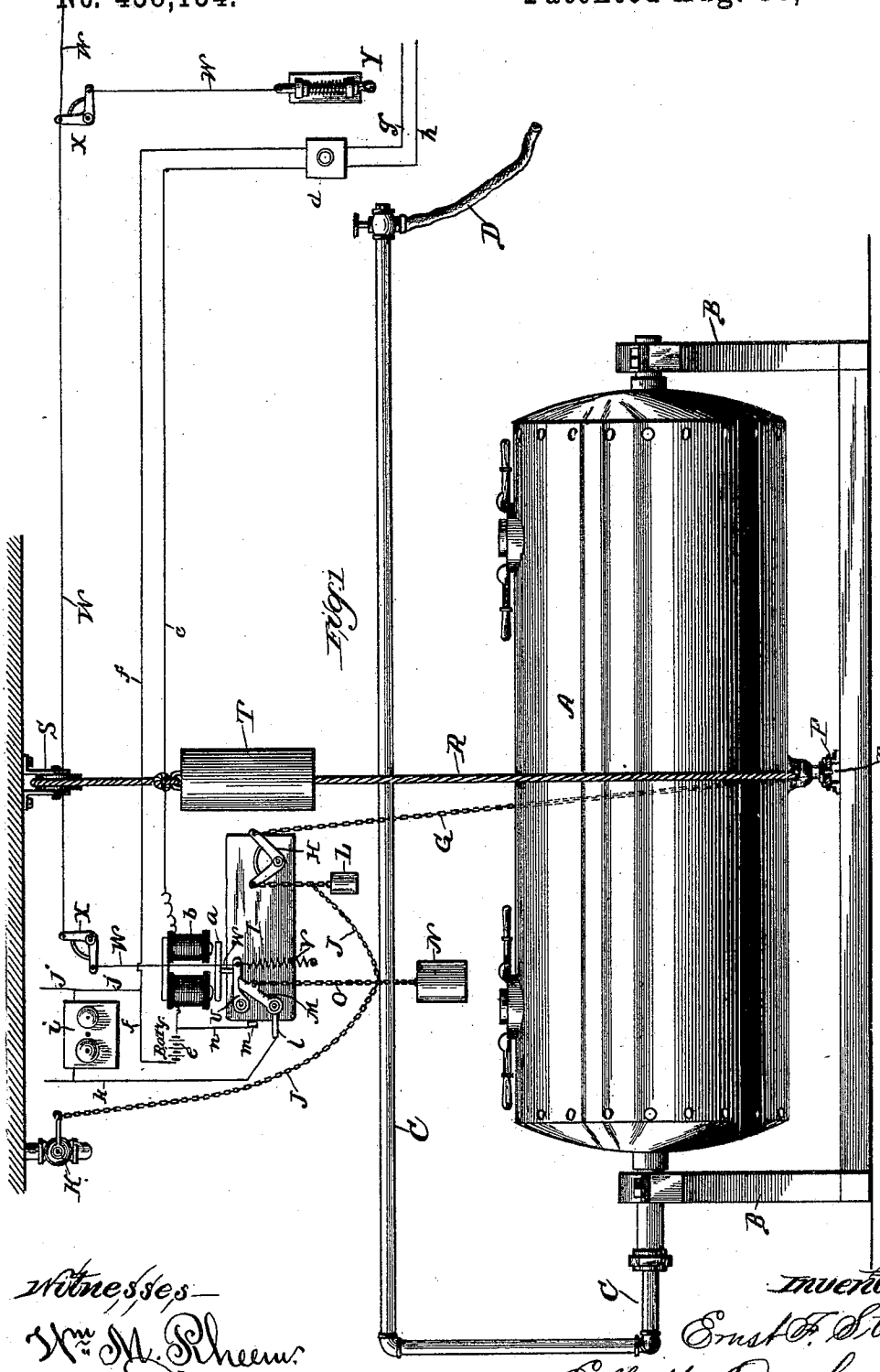
(No Model.) 2 Sheets—Sheet 1.

E. F. STECK.

CHEMICAL FIRE EXTINGUISHER.

No. 458,134. Patented Aug. 18, 1891.



Witnesses—
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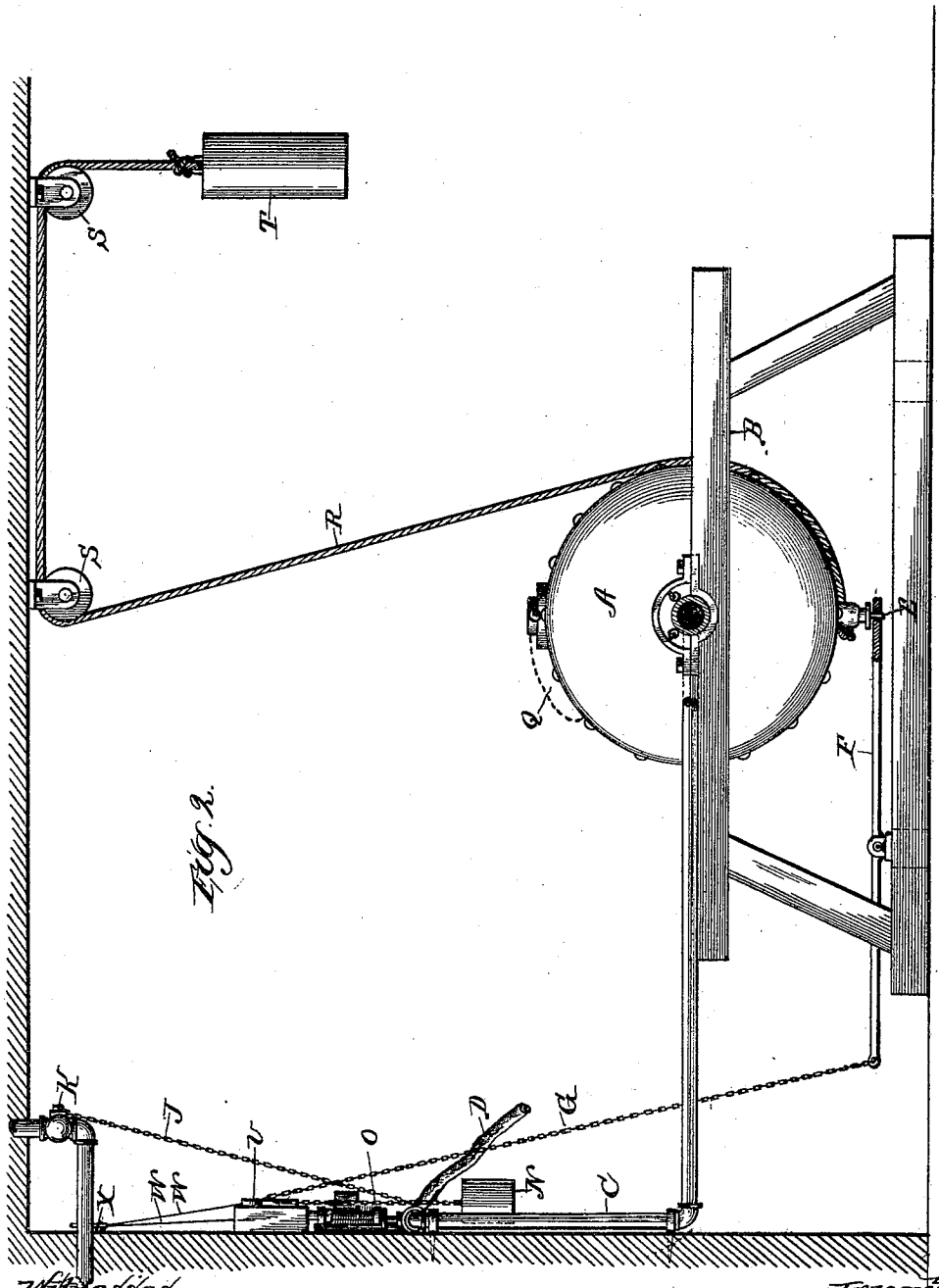


Fig. 2.

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UNITED STATES PATENT OFFICE.

ERNST F. STECK, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE FIRE EXTINGUISHER MANUFACTURING COMPANY, OF NEW YORK, N. Y.

CHEMICAL FIRE-EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 458,134, dated August 18, 1891.

Application filed January 31, 1890. Serial No. 338,812. (No model.)

To all whom it may concern:

Be it known that I, ERNST F. STECK, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Chemical Fire-Extinguishing Systems, of which the following is a specification.

This invention relates to improvements in that class of chemical fire-extinguishers in which a rotatable cylinder is employed for containing an alkaline solution and an acid-containing vessel, and which when the cylinder is inverted will cause the acid and alkali to mix, and thereby generate gas under pressure whenever it is desired to use the chemical apparatus for extinguishing a fire.

The prime object of this invention is to enable the automatic operation of the cylinder from any portion of a building when desired and at the same time the automatic sounding of an alarm or alarms notifying the occupants of the building of the existence of the fire.

Other objects are to have the alarm-operating mechanism of such a character that the alarm will sound continuously after the operation of the cylinder until the apparatus is reset, and to provide certain details in the carrying out of my invention, all as illustrated in the accompanying drawings, in which—

Figure 1 represents a side elevation of a chemical fire-extinguishing apparatus embodying my invention; Fig. 2, an end elevation thereof.

Similar letters of reference indicate the same parts in both the figures of the drawings.

Referring by letter to the drawings, A indicates a cylinder of any suitable construction and dimensions in which is contained the usual alkaline solution and also the acid-vessel, the acids in which are held free from contact with the alkali until the cylinder is inverted, when the acids and alkali will mix and generate a gas under pressure to be used for extinguishing fires, as usual in this class of apparatus. This cylinder is rotatably supported upon a suitable frame B and has leading therefrom a valved pipe C, with which connects a flexible hose D, which may have any desirable number of branches for the distribution of the gas generated in the cylinder to the various portions of the building. The cylinder is also provided, and preferably on the under side thereof, with a pin or projection E, engaging a corresponding perforation in the free end of a lever F, pivoted upon the frame of the machine, with the opposite end of which connects a chain, rod, or cable G, leading to one arm of a bell-crank or other lever H, pivotally secured to a suitable board I, located in convenient proximity to the cylinder. To the opposite end of this lever is secured a slack cord or chain J, connecting the same with the valve-stem of a valve K for a steam-whistle, which latter may be located at any suitable point within or outside of the building. If the connection between the levers F and H be a chain or cable, the slack therein may be taken up by a weight L, attached to the chain J, although if a rod be employed this weight may be dispensed with. To the board I is also pivotally secured a trip or drop lever M, from which is suspended a weight N by means of a chain O, which is also connected with the chain J, so that when the lever is tripped and the weight dropped the gravity thereof will act upon the chain J and through the medium of the connections before described simultaneously actuate the whistle-valve and the lock-lever of the cylinder, which latter, immediately upon its release, may be caused to rotate on its bearings automatically in any suitable manner, either by means of the weight Q, (indicated by dotted lines in Fig. 2,) secured to the cylinder to one side of the longitudinal center thereof, or by means of the cord R, working over the pulleys S, to one end of which is secured a weight T, while the opposite end thereof is attached preferably to the under side of the cylinder, as shown.

The trip-lever M is held in a normally-elevated position, suspending the weights N by means of a catch U, with a notch in which the end of the lever engages and which is normally held in engagement with the lever by means of a retractile spring V, or in any other suitable manner. This catch may be manually operated to release the lever from any part of the building by means of a cord or wire W, connected therewith and led over

suitable bell-crank levers X to any desirable point in the building, at which may be located a draw-bolt knob or hand-pull Y of any suitable construction, which may or may not be spring-actuated, and which when manually operated will effect the release of the trip-lever from the catch and simultaneously permit the automatic operation of the cylinder and the sounding of the whistle-alarm.

With this apparatus either the engineer in the basement or a person in any portion of the building may give the alarm of fire to all the other occupants of the building and also operate the chemical apparatus, preparing the same for instant use in extinguishing the fire.

My invention also contemplates the electrical as well as the manual control and operation of the apparatus, and, if desired, the substitution of electric bells throughout the building for the whistle-alarm. When this is desired, the wire W, bell-cranks X, and hand-pull Y are dispensed with and an armature *a* is secured to the catch U, opposing the poles of an electro-magnet *b*, one coil of which is connected by a wire *c* with a circuit-making device or push-button *d*, while the other coil is connected with a battery *e*, which is in turn connected by a wire *f* with the circuit making and breaking device *g*, so that when the latter is operated the magnet will be energized and cause the tripping of the lever M in exactly the same manner as in the case of the manually-operated devices.

Any number of push-buttons may be employed, located in convenient places throughout the building, and preferably all connected into the same line-circuit through the wires *g h*, so that the circuit through the battery *e* and electro-magnet may be completed by the operation of any one or more of the push-buttons.

Obviously when the trip-lever falls the cylinder would be automatically operated and the steam-whistle alarm sounded in the same manner as before described; but it may be desirable to dispense with the whistle-alarm and substitute electric bells therefor, in which case any number of bells *i* may be connected by the line-wires *j k*, one with the wire *f* leading to one side of the battery and the other with an insulated arm or projection *l* on the trip-lever M, which is adapted and arranged, when the lever is tripped, to swing over and engage a contact *m*, which is connected by wire *n* with the opposite side of the battery, so that immediately after the electro-magnet is energized and the lever M tripped the bell-circuit will be made through the battery and all of the bells will continue to ring until the circuit is again broken by the resetting of the trip-lever. I do not desire, however, to limit myself to the construction, location, or operation of the various apparatus herein shown and described, for they are simply employed to illustrate one of the many various forms of apparatus obvious to one skilled in the art to which my invention appertains for carrying out the broad idea of my invention, which consists in the simultaneous and automatic operation of the chemical-mixing cylinder or gas-generator and the sounding of an alarm of fire.

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

1. In a chemical fire-extinguishing system, the combination, with an invertible generator containing the gas-producing chemicals and alkaline solution held in separation and a lock device therefor, of manually-operated devices connected with and operating to release said lock from a distance, substantially as and for the purpose described.

2. In a chemical fire-extinguishing system, the combination, with an invertible generator containing the gas-producing chemicals and alkaline solution held in separation and a lock device therefor, of an alarm, and manually-operated devices connected with said lock and alarm for simultaneously operating the same, substantially as described.

3. In a chemical fire-extinguishing system, the combination, with an invertible generator containing the gas-producing chemicals and alkaline solution held in separation, a lock device therefor, and an alarm, of a weighted trip-lever for simultaneously actuating said lock and alarm, and manually-operated devices connected with the lever for tripping said lever from a distance, substantially as described.

4. In a chemical fire-extinguishing system, the combination, with an invertible generator containing the gas-producing chemicals and alkaline solution held in separation, a lock-lever therefor, and an alarm device, of a weighted trip-lever connected with and operating both the lock-lever and alarm, and manually-operated devices connected with the trip-lever for causing the operation of the same from a distance, substantially as described.

5. In a chemical fire-extinguishing system, the combination, with an invertible generator containing the gas-producing chemicals and alkaline solution held in separation, a lock-lever therefor, and an alarm device, of a weighted trip-lever connected with and operating both the lock-lever and alarm, a spring-actuated catch therefor, and manually-operated devices connected with said catch for releasing the same from a distance, substantially as described.

6. In a chemical fire-extinguishing system, the combination, with an invertible generator containing the gas-producing chemicals and alkaline solution held in separation, a lock device therefor, and a weighted cord attached eccentrically to said generator, of an alarm and a weighted trip-lever connected with and simultaneously operating said lock and alarm,

and manually-operated devices connected with the trip-lever for tripping the same, substantially as described.

7. In a chemical fire-extinguisher system, the combination, with the loosely-journaled generator-cylinder containing the gas-producing chemicals and alkaline solution held in separation, a lock-lever therefor, and a weighted cord attached eccentrically to said cylinder, so as to rotate the same when released by the lock-lever, of a weighted trip-lever connected with so as to operate said lock-lever, and manually-operated devices connected with said trip-lever for operating the same, substantially as described.

8. In a chemical fire-extinguishing system, the combination, with a loosely-journaled generator-cylinder containing the gas-producing chemicals and alkaline solution held in separation, a lock-lever therefor, and a weighted cord attached eccentrically to said cylinder, so as to rotate the same when released by said lock-lever, of an alarm, a weighted trip-lever connected with and operating both the lock-lever and alarm, and manually-operated devices connected with the trip-lever for operating the same from a distance, substantially as described.

9. In a chemical fire-extinguishing system, the combination, with a loosely-journaled generator-cylinder containing the gas-producing chemicals and alkaline solution held in separation, a lock-lever therefor, and a weighted cord attached eccentrically to said cylinder, so as to rotate the same when released by the lock-lever, of an alarm, a weighted trip-lever connected with and operating both the lock-lever and alarm, a spring-actuated catch therefor, and a manually-operated device connected with said catch for actuating the same from a distance, substantially as described.

ERNST F. STECK.

Witnesses:
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W. R. OMOHUNDRO.