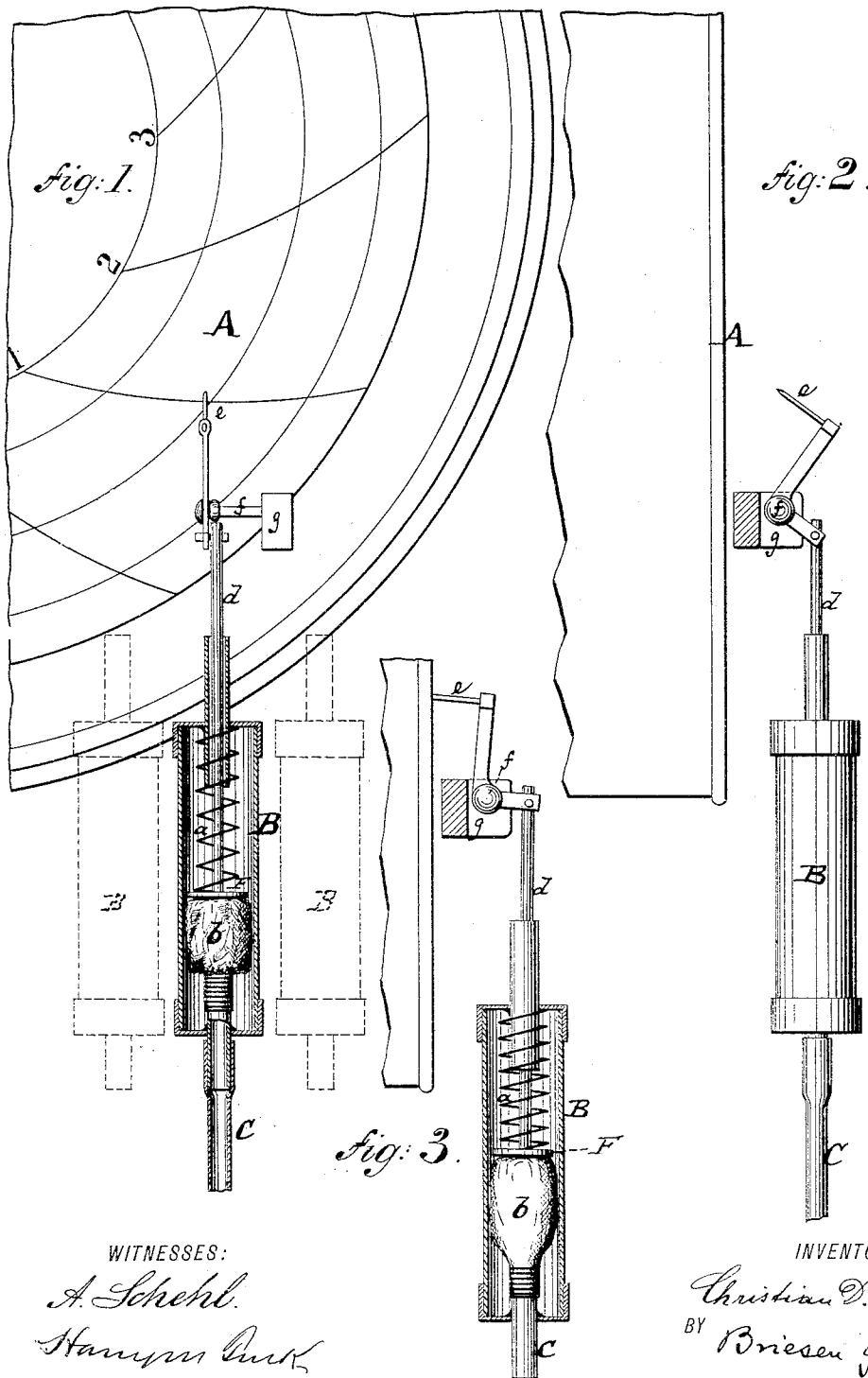


C. D. BERNSEE,

WATCHMAN'S PNEUMATIC TIME DETECTOR.

No. 349,780.

Patented Sept. 28, 1886.



WITNESSES:

A. Schehl.
Hans von Dürk

INVENTOR

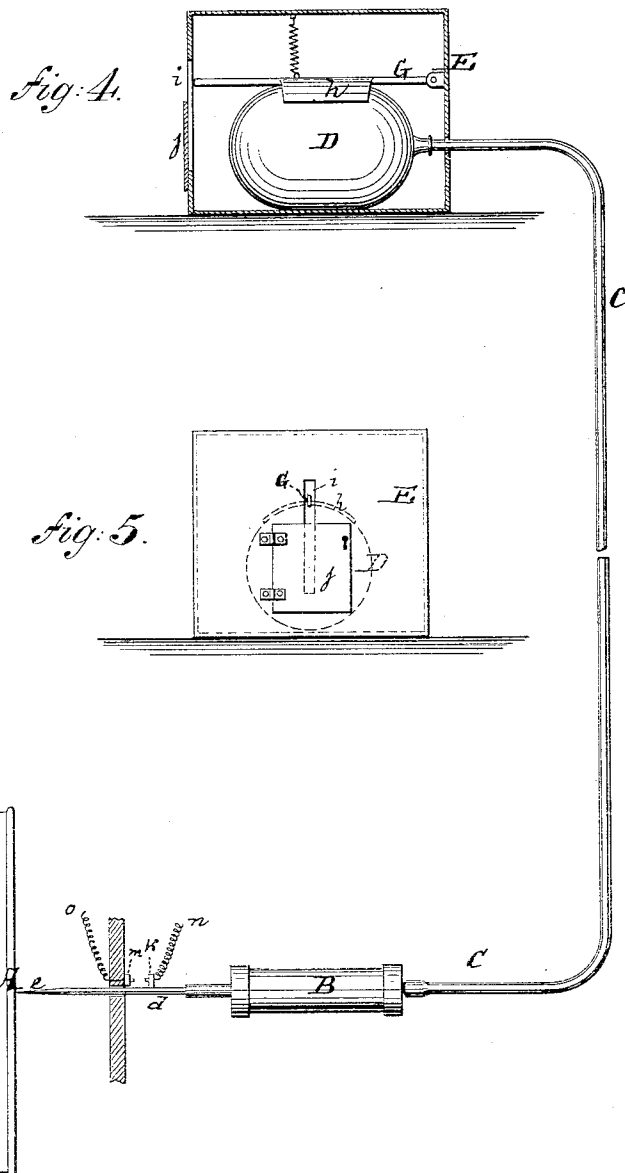
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Samuel Cook

INVENTOR

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BY

Briesen & Steele

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UNITED STATES PATENT OFFICE.

CHRISTIAN D. BERNSEE, OF BROOKLYN, NEW YORK.

WATCHMAN'S PNEUMATIC TIME-DETECTOR.

SPECIFICATION forming part of Letters Patent No. 349,780, dated September 28, 1886.

Application filed January 27, 1886. Serial No. 189,899. (No model.)

To all whom it may concern.

Be it known that I, CHRISTIAN D. BERNSEE, of Brooklyn, county of Kings, and State of New York, have invented an Improved Time-Detector, of which the following is a clear and exact description, reference being had to the accompanying drawings.

This invention relates to a new pneumatic time-detector, which necessitates the use of but one central clock, the dial of which is to be marked or punctured by a series of implements that are operated by a pneumatic power from distant stations.

The invention consists, first, in the new mechanism for operating the puncturing or marking tools; also, in the combination of such mechanism with means for closing an electric circuit and ringing an alarm in case of fire, burglary, or the like.

In the drawings, Figure 1 represents a face view of part of the dial and a longitudinal section of the cylinder which carries the marking or puncturing mechanism. Fig. 2 is a side view of said cylinder; Fig. 3, a longitudinal section of the same at right angles to the section which is shown in Fig. 1. Fig. 4 is a side view, partly in section, of the entire apparatus. Fig. 5 is a face view of the box at one of the sending stations.

A in the drawings represents a dial, of paper or the like, affixed to a suitable clock and divided by circular and radial or curved lines, in the manner usual in time-detectors. The clock having this dial is to be set up in the office or other central bureau of the premises to be watched.

Near the dial A are held on suitable supports a series of cylinders, B B, one for each station the watchman is to visit. Each of these cylinders is connected by a tube, C, with a compressible and self-expanding bag, D, which is secured in a locked box, E, at one of the said stations. Each cylinder B contains a plunger, F, which, by a spring, *a*, or by its own weight is held in contact with a flexible bag, *b*. This bag is contained within the cylinder B, and has its neck secured to the end of the tube C. By compressing the bag D at the distant station the air is forced out of it, through the tube C, into the bag *b*, expanding

the same within the cylinder and moving the plunger F outward. The cylinder B only serves as a guide and containing-vessel for the plunger F and bag *b*, and may be supplanted by any suitable frame which will answer the same purpose.

For the purpose of the first part of my invention the box E may be dispensed with, as the apparatus would be operative if the bag or bulb D is suspended at the station in such manner that the watchman can compress it in his hand. The plunger F carries a stem, *d*, which either carries or connects with the marking or puncturing tool *e*. In Figs. 1, 2, and 3 this tool *e* is represented in form of an elbow-lever pivoted at *f* to a fixed support, *g*, and connected with the stem *d*. When the plunger is moved by the expansion of the bag *b*, as in Fig. 3, the tool *e* will be swung on its pivot against the dial A, so as to puncture or mark the same.

In Fig. 4 the tool *e* is represented as a point of the stem *d*, which, when said stem is moved toward the dial, will mark or puncture the latter.

Each of the marking or puncturing tools *e* is placed opposite a concentric division of the dial, so that the mark produced by it will show from what station it emanated. The rotation of the dial by clock-work will cause each mark to show also at what period of time it was produced by the attendance of the watchman at the respective station.

In order to prevent unauthorized persons from tampering with the bulbs or bags D, I inclose every such bag in a locked box, E. Within this box is pivoted a lever, G, which carries a shield, *h*, that partly embraces the bag G, as indicated in Figs. 4 and 5. The free end of the lever G is shaped so as to fit a key, which the watchman carries. This key, when introduced through a slot, *i*, in the box, can be coupled to the lever G, and can then be moved along the slot so as to move said lever on its pivot and compress the bag D, thereby marking the dial in the office. The key may have a socket of square or other form, to fit the correspondingly-shaped free end of the lever; or the end of the lever may have such a socket to fit the key. The connection is

analogous to that of a watch-key with the winding-stem of a watch. Instead of swinging the lever G on its pivot, the key may, if desired, be made to turn the said lever the same as a watch-stem is turned by a watch-key, thereby also causing the shield or plate *h* to compress the bag D. The watchman may be provided with separate keys—one for each station—or with only one key which will fit the levers in each box E.

In order to enable the watchman, besides marking the time on the dial A, to call assistance from a suitable distance in case of an attack by burglars or rioters, or in case of fire, the apparatus can be so arranged that by an additional—that is, more than usual—compression of any one of the bags D an electric connection, sounding an appropriate alarm, will be established. To this end the slot *i* is elongated beyond its normal length, but has the additional length covered by a locked or fastened door, *j*. In case of necessity, the watchman opens this door *j*, thereby enabling him to move his key coupled to the lever G farther than usual, and consequently to compress the bag D more than ordinarily and move the stem *d* farther than usual. The stem *d* carries a metal projection, *k*, which by this extra motion is carried against a fixed plate, *m*, thereby establishing metallic connection between two electrical conductors, *n o*, and giving the desired signal. When the door *j* is shut, the stem will not be moved far enough

to make the connection *k m*. In order to let the tool *e* pierce the dial A farther than usual when the alarm-connection *k m* is to be established, the dial A should be placed upon a felt or other flexible support. Instead of making the part *j* in form of a door, a pin interrupting the continuity of the slot *i* may be used.

I claim—

1. The combination of the dial A with the marking-tool *e*, stem *d* on plunger F, bag *b*, tube C, and bag D, all arranged to establish a pneumatic time-indicator, as specified.

2. The combination of the actuating-bag D of a pneumatic time-indicator with the box E, having slot *i*, and with the compressing-lever G, substantially as and for the purposes shown and described.

3. The combination of the dial A, marking-tool *e*, and stem *d* of a pneumatic time-indicator, and of mechanism, substantially as described, for moving said stem, with the projection *k* on said stem, plate *m*, and conductors *n o*, as specified.

4. The combination of the slotted box E with the door *j*, which is adapted to partly close the slot in said box, and with the lever G and pneumatic actuating bulb or bag D, substantially as shown and described.

CHRISTIAN D. BERNSEE.

Witnesses:

AUGUST F. NANZ,
HARRY M. TURK.