

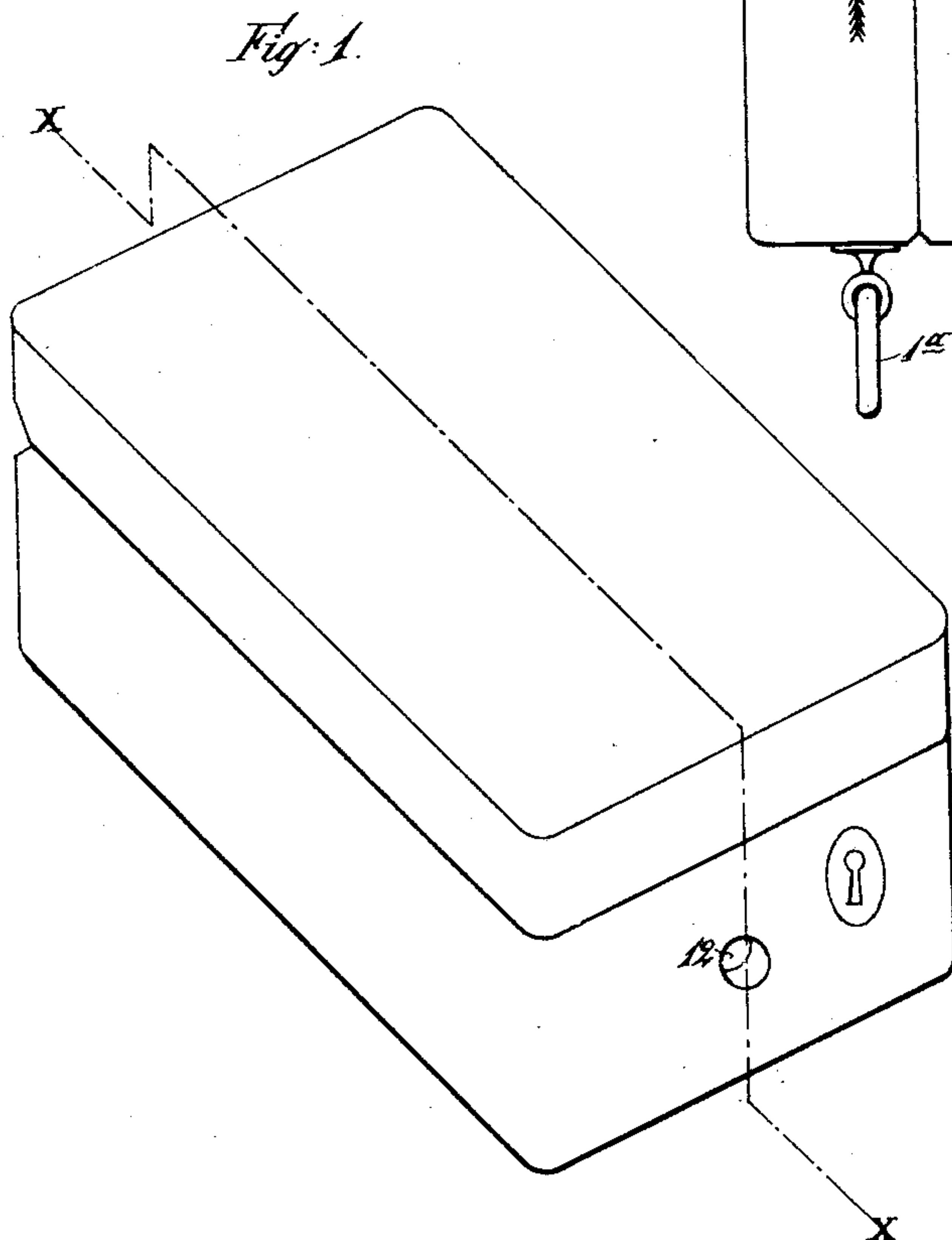
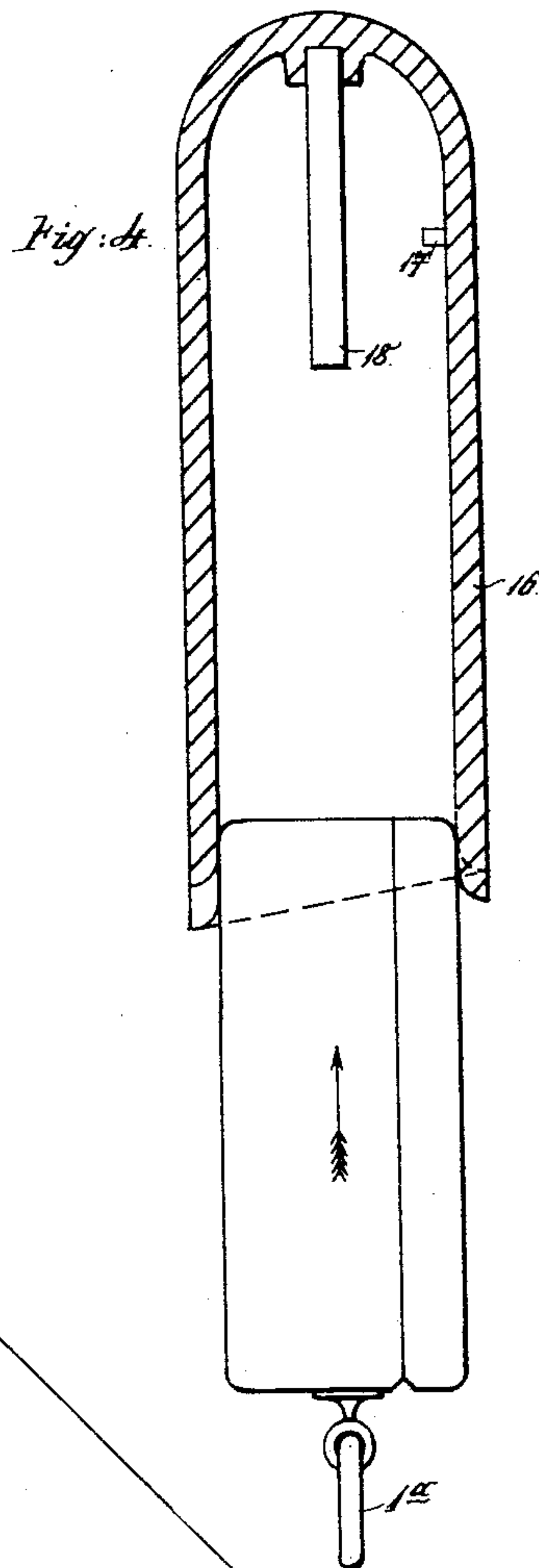
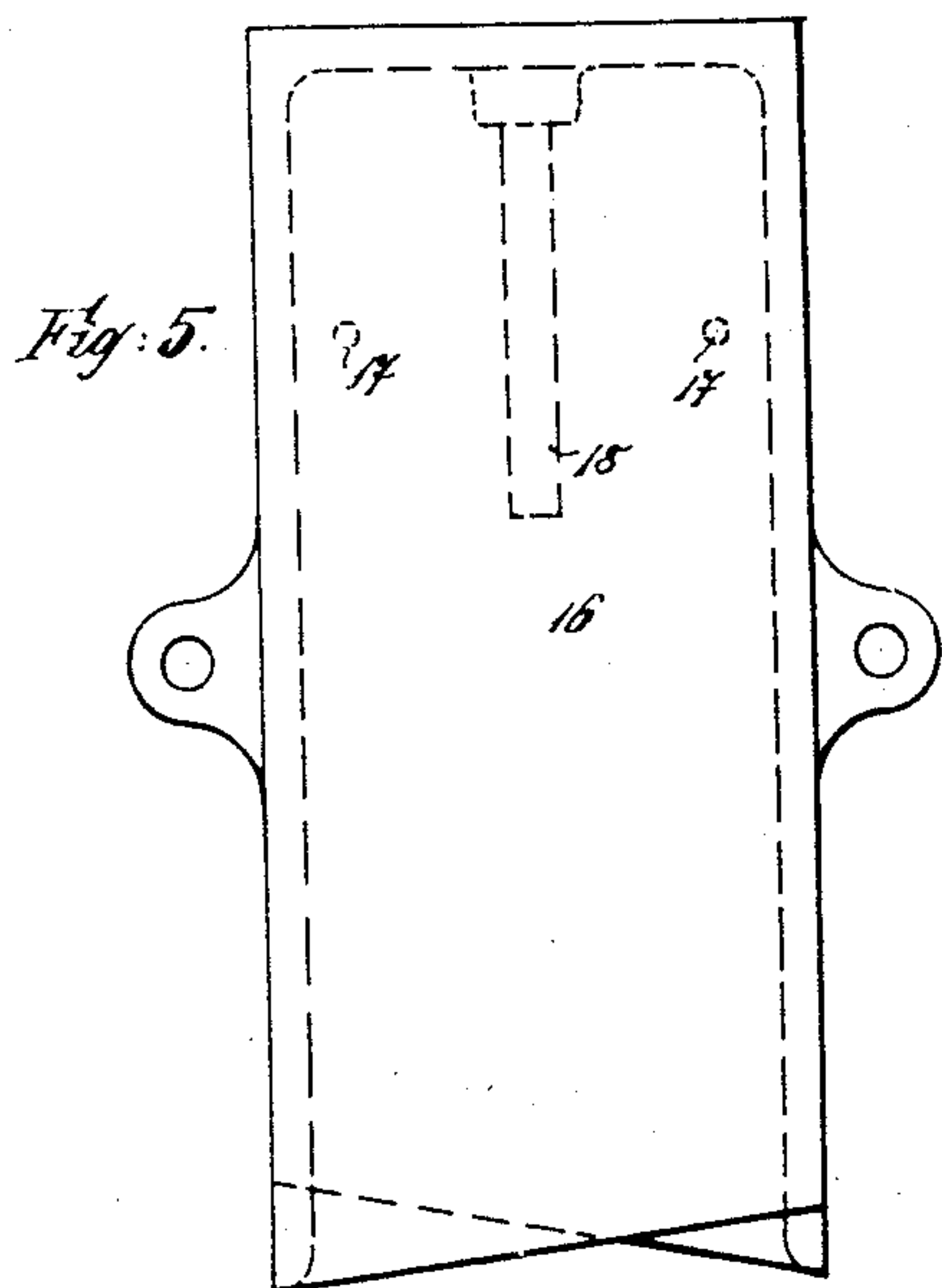
(No Model.)

2 Sheets—Sheet 1.

C. MÜLLER.
WATCHMAN'S TIME RECORDER.

No. 542,445.

Patented July 9, 1895.



Witnesses:
Carl Nopsbach.
Emil Kayser,

Inventor:
Carl Müller
by *Paul Nopsbach*
Attorney.

(No Model.)

2 Sheets—Sheet 2.

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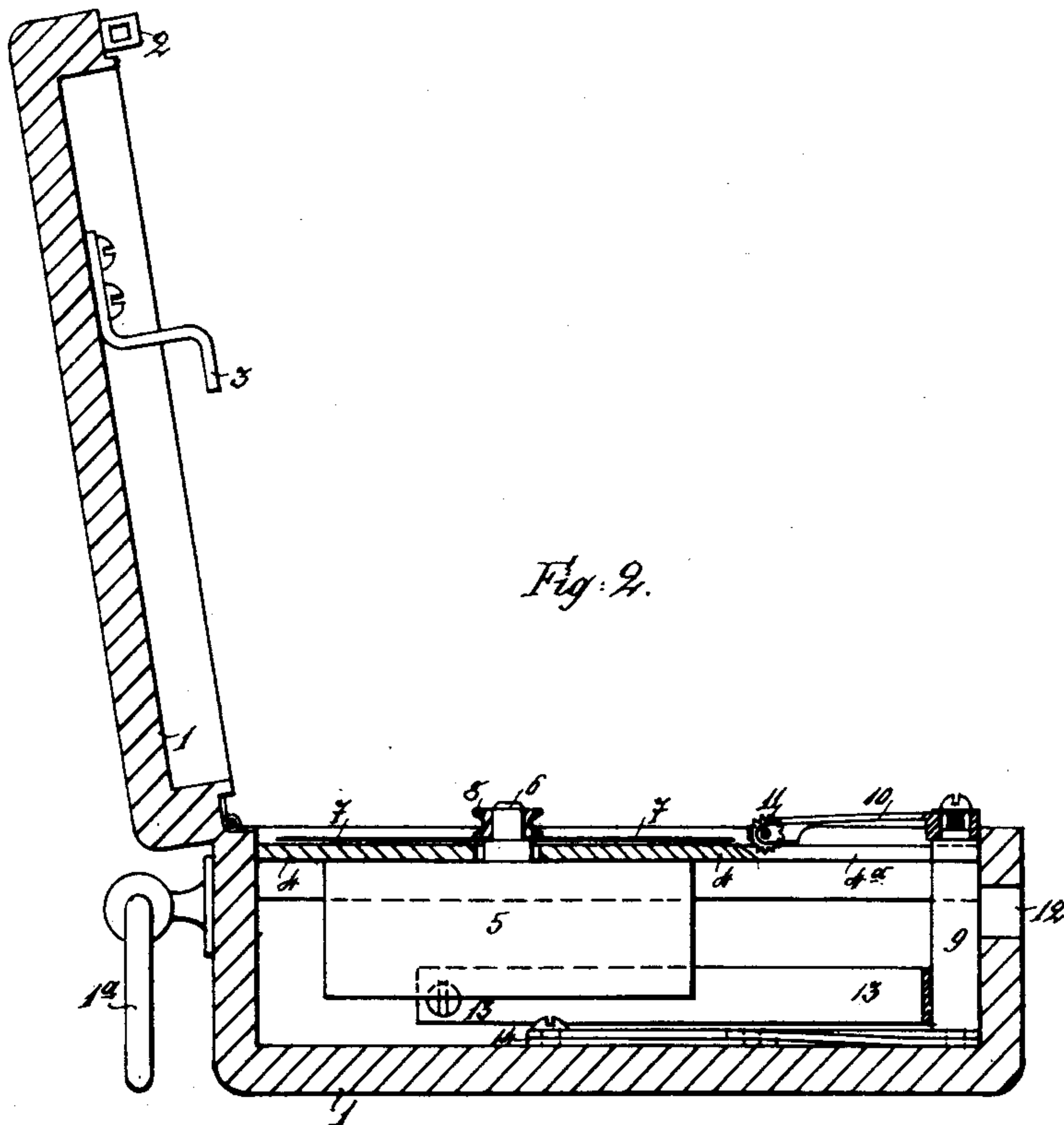


Fig. 2.

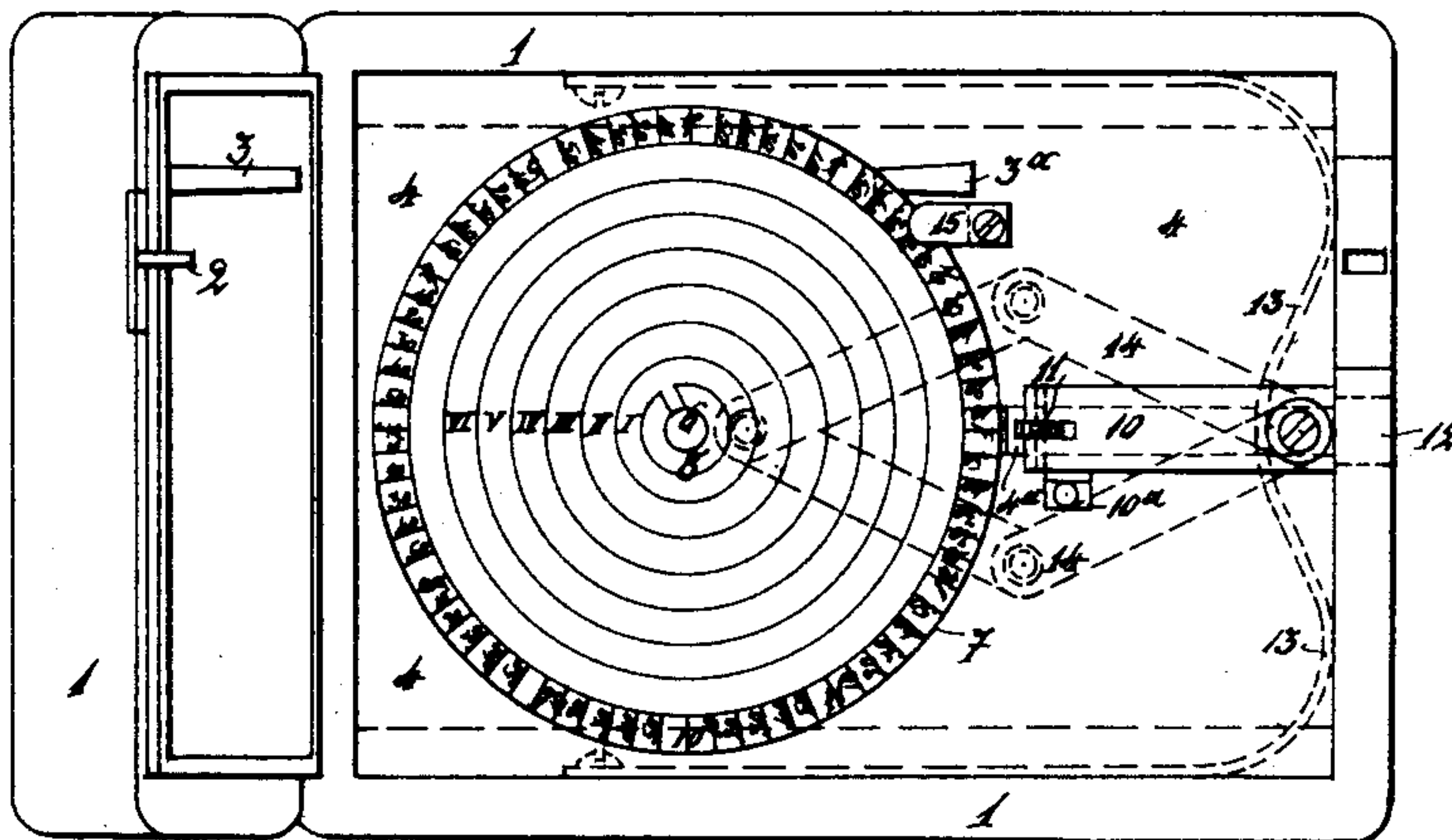


Fig. 3.

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UNITED STATES PATENT OFFICE.

CARL MÜLLER, OF EBERSWALDE, GERMANY.

WATCHMAN'S TIME-RECORDER.

SPECIFICATION forming part of Letters Patent No. 542,445, dated July 9, 1895.

Application filed April 19, 1894. Serial No. 508,208. (No model.) Patented in England March 27, 1894, No. 6,192.

To all whom it may concern:

Be it known that I, CARL MÜLLER, a subject of the King of Prussia, German Emperor, and a resident of Eberswalde, in the Province of Brandenburg, Kingdom of Prussia, Germany, have invented certain new and useful Improvements in Controlling-Clocks for Watchmen, (for which a patent has been filed in Great Britain, under No. 6,192, dated March 27, 1894,) of which the following is a specification.

This invention refers to clocks for controlling watchmen—i. e., for registering and indicating the time at which a watchman has visited a certain place or station. In the clocks of this kind known up to now the watchman is compelled in every case to put a key, hung up at the respective station, into the controlling-clock. The turning of the key, the peculiarly-shaped bit of which acts on the registering and indicating mechanisms of the clock, causes the same thereby to make the signs necessary for controlling the respective watchmen. Simple as this operation apparently is there are, nevertheless, some circumstances which render the said operation difficult. The keys are but small and their bits in most cases of a somewhat-complicated configuration, so that they are very liable to damage. These keys, now, are to be introduced in small holes, which oftentimes must be done in darkest night and in very bad conditions of weather—for instance, in severe cold—so that irregularities in the registrations and indications occur even if the watchman tries to fulfill his duty with all faithfulness.

The disadvantages aforementioned may be completely avoided by using the improved controlling-clock represented in the accompanying drawings. This clock does not require a key for being influenced in any manner. All that is necessary is to put the whole clock into casings arranged at the respective stations, each station having, as a matter of course, one casing. This manipulation does not require any cleverness and may be performed perfectly independent of the weather, as the watchman may have on even thick and clumsy gloves without being hindered from operating his clock.

In order to make my invention more clear, I refer to the accompanying drawings afore-

mentioned, in which similar numerals denote similar parts throughout the several views, and in which—

Figure 1 shows a perspective view of the closed clock. Fig. 2 is a vertical longitudinal section through the casing with its lid, the latter being opened and the section being taken on line *xx* of Fig. 1. Fig. 3 shows a plan of the inner portion of the clock, the lid being opened. Fig. 4 is a vertical longitudinal section through one of the casings adapted to receive the clock as a whole, and Fig. 5 a front view of such casing.

The shape of the casing, Fig. 1, of the clock is not the usual round one but an oblong one. The casing is provided with a lid which may be opened and closed as well as fastened by a lock. The lower part of said casing contains the controlling mechanism proper and the lock, which latter is set into the small front wall. The lid has secured to it the eye 2 for the lock, and also a detecting device 3, that will be more fully described hereinafter.

The lower part of the casing—i. e., the casing proper—is closed by a board 4, Figs. 2 and 3, arranged near the rim of said part. A clockwork 5, without dial and without hands, is fastened to the under surface of board 4, the shaft 6 of said clockwork carrying in lieu of a hand a disk 7, made of strong Bristol paper, which is held by an elastic ring 8. The disk 7 is arranged above board 4, and is rotated one time within twelve hours.

The front part of the casing—i. e., the right-hand part in Figs. 2 and 3—contains the registering and indicating device proper, which, when at rest, is not in contact with the controlling-disk 7. The said device consists of a vertical post 9, Fig. 2, carrying at its upper end an elastic arm 10 with a cog-wheel 11, the teeth of which latter are pointed, so as to be adapted to produce small perforations in the disk 7 when wheel 11 is moved over said disk. Post 9 may be displaced sidewise—i. e., in the direction of clockwork 5—by means of a pin that is introduced into the inside of the casing, Fig. 1, through a hole 12, provided in the front wall of said casing. When displacing the post—i. e., when moving the cog-wheel in a radial line over disk 7—a flat spring 13 is strained, which spring afterward brings post 9 back to its former position. Post 9 is guided

during its movement in its upper part by a slit 4^a in board 4 and in its lower part by a movable parallelogram 14, to the front end of which said post 9 is fixed. The elastic arm 10 of the post is secured against undue side movements by an angular piece 10^a fixed to board 4.

The periphery of disk 7 is divided into twelve equal parts designated by figures 1 to 12. Each of these parts is divided in six portions representing, each, ten minutes. The disk contains, further, some concentric circles, the number of which corresponds to the number of the station at which a control shall be exercised. There are shown in Fig. 3 of the drawings six concentric circles designated by figures 1 to 6. The designations may, as a matter of course, be other ones, but they should correspond to the designations of the respective stations. If the cog-wheel 11 is moved a certain way it runs upon the disk 7, furnishing the latter thereby with a straight row of fine holes. In order to make the latter more visible the part of board 4 below the way of cog-wheel 11 is provided with a corresponding number of fine cavities, the distance between each two of them corresponding to that of the teeth of cog-wheel 11, so that the points of the latter may readily penetrate disk 7 and may produce real holes within it. There is thus produced on the disk at each such movement of wheel 11 a distinct line, the point of commencement of which indicates the time at which the indicating device 9 10 11 was operated. The length of that line, or the circle up to which that line extends from the periphery, indicates the station at which the indicating device was operated. It is to be seen herefrom that one and the same indicating device is employed in my improved controlling-clock for indicating the various times, as well as the several stations, the differences in the indications being produced by the longer or shorter strokes of post 9 and by the rotation of disk 7. This arrangement and manner of working also show the differences between my improved clock and those used hitherto for the purpose in question, those older clocks requiring for each station not only a special key, but also a special indicating device.

When setting a fresh disk into the apparatus, care must be taken that the designation corresponding to the hour of the respective time of the day is placed exactly in the way of wheel 11, so that the false indications, which would be the result of a false position of disk 7, are avoided. After having secured the disk in place the casing is closed and the clock then ready for use. For, now, having the certainty that the casing has not been opened afterward by an unauthorized person, the lid of the casing is provided at its inner side with an angular projection 3, the end part of which corresponds with a hole 3^a in board 4. The said end part is wedge-shaped and is adapted to make a cut in the periphery of the disk

when the lid of the casing is closed. The wedge, after having passed the periphery of the disk, grips below the latter, so as not to hinder the further rotation of the same. When reopening the lid, disk 7 is lifted a little by angle-piece 3, as much as allowed by the holder 15, Fig. 3, and the disk is passed then by part 3 without being injured. If thus more than one cut is found in the periphery of the disk, proof is given thereby that the controlling-clock has been opened and again closed by an unauthorized person.

The manner in which the clock must be operated by the watchman is a very simple one. There is arranged for that purpose at each station a casing 16, Figs. 4 and 5, into which the clock may be shoved from below. The watchman holds the clock by its handle 1^a and shoves the same into casing 16 on that side which contains the hole 12. The clock is shoved into said casing as deep as possible—i. e., as deep as allowed by the projections 17, which latter are arranged invisibly within casing 16. The latter contains also a pin 18 of a certain length, which pin enters the casing of the controlling-clock through hole 12 of the latter. The various pins at the several stations are of a different length, so that also the stroke imparted to cog-wheel 11 by the influence of the respective pin on post 9 is a more or less long one, and thus lines of different length are produced at different stations. These lines then form radii on disk 7 on account of the rotatory movement of the latter.

It is of importance that the watchman does not know the lengths of the several pins and that he is not in a position to measure the same himself or to measure the distance of the projections 17 from the lower edge of casing 16. For this purpose the front and rear edge of the casing is made at inclines, the incline of the front edge differing from that of the rear edge, as best seen in Fig. 5. For the same reason the casing 16 is made so long that its rims project over the clock when the latter is perfectly shoved into the casing; also, the head of the latter may be artificially heightened for rendering measurements more difficult or making them impossible at all.

If the clock shall be employed as a stationary one—for instance, in hospitals and the like—the special casing 16 need not be used, but simply a loose pin with a handle is required for the operation.

Having thus fully described the nature of this invention, what I desire to secure by Letters Patent of the United States is—

1. In a watchmen-controlling plant, in which the marks are produced by putting a portable clock into a fixed casing containing a pin adapted to operate the marking-device of said clock, the combination, in each of said fixed casings, with said marking-pin, of a stopping pin or pins adapted to limit the inward movement of said clock; the side-wall carrying said stopping pin or pins having an

inclined edge at the open end of the said fixed casing, for the purpose as described.

2. In a watchmen controlling-plant, in which the marks are produced by putting a portable clock into a fixed casing containing a pin adapted to operate the marking-device of said clock, the combination, in each of said fixed casings, with said marking pin, of a stopping pin or pins adapted to limit the inward movement of said clock; the side-wall carrying said stopping pin or pins having an

inclined edge at the open end of the said fixed casing, the opposite edge of the latter being also inclined, but having another degree of inclination, for the purpose as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

CARL MÜLLER.

Witnesses:

W. H. EDWARDS,

FRIEDRICH SPULING.