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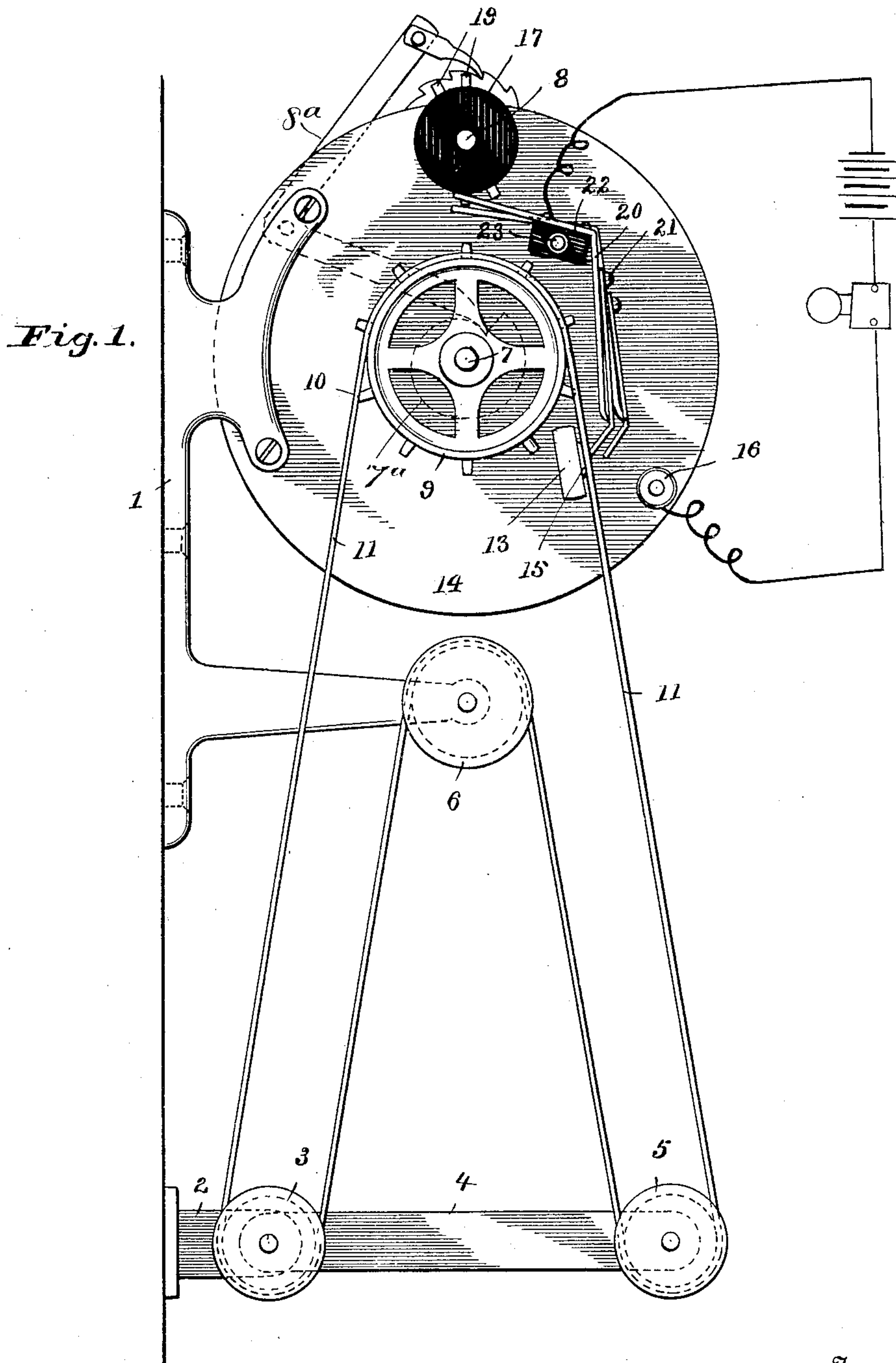
Patented June 17, 1902.

J. O. LYMAN.
ELECTRIC PROGRAM CLOCK.

(Application filed Aug. 16, 1901.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses

H. J. Devitt
R. H. Newman

Inventor
James O. Lyman

By
Chamberlain & Newman
Attorneys

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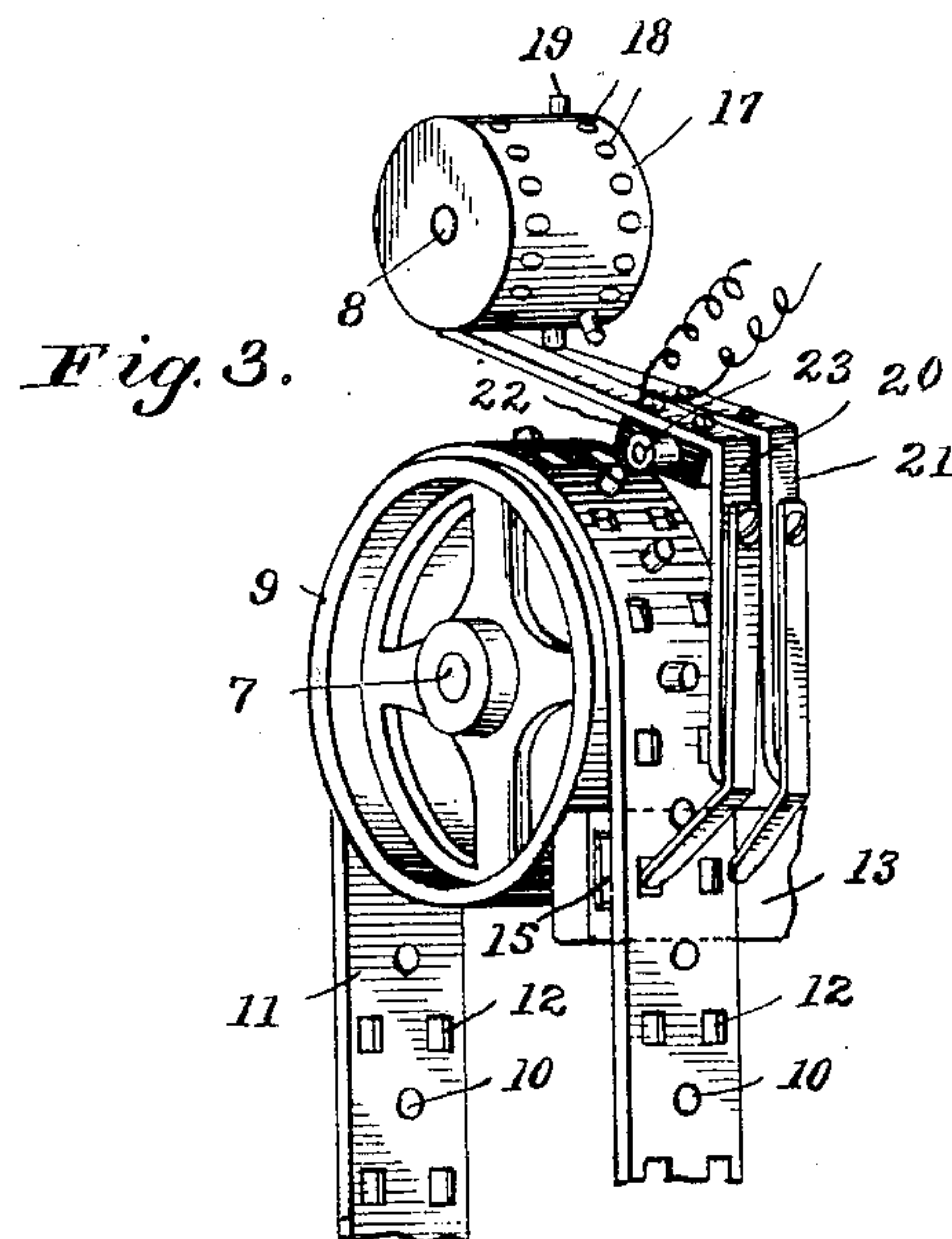
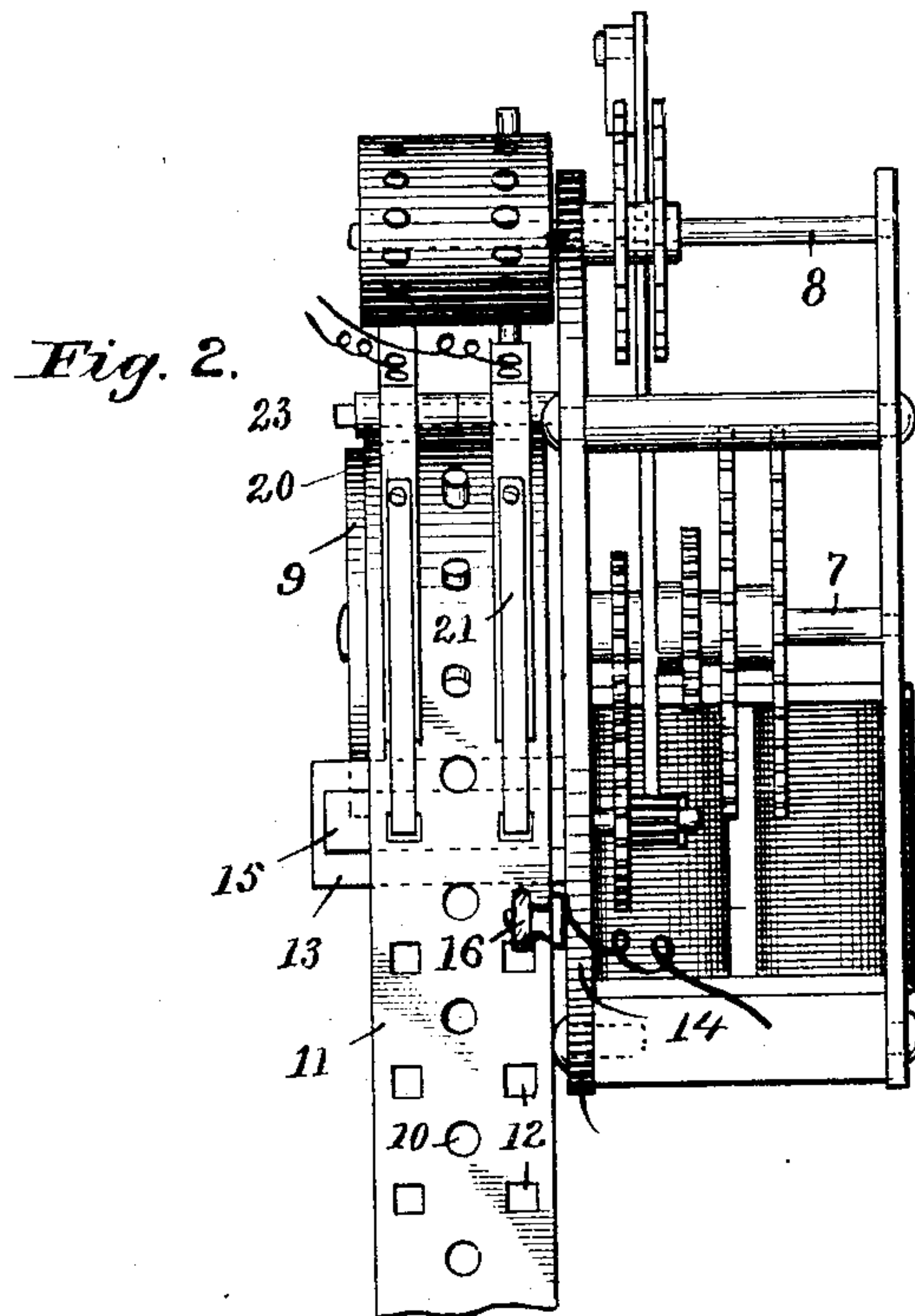
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UNITED STATES PATENT OFFICE.

JAMES O. LYMAN, OF WATERBURY, CONNECTICUT.

ELECTRIC PROGRAM-CLOCK.

SPECIFICATION forming part of Letters Patent No. 702,808, dated June 17, 1902.

Application filed August 16, 1901. Serial No. 72,247. (No model.)

To all whom it may concern:

Be it known that I, JAMES O. LYMAN, a citizen of the United States, and a resident of Waterbury, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Electric Program-Clocks, of which the following is a specification.

My invention relates to an electrical alarming device which is connected with and operated at prearranged intervals by a clock mechanism and by means of which alarms may be automatically sounded in different rooms and apartments of colleges or schools for announcing the times of the various studies, according to the order of the work of the institution in which it is placed.

It is the object of the invention to produce an efficient and simple mechanism whereby predetermined signals can be placed into and out of action at certain predetermined times.

I further construct my device in such a manner that it will not only sound an alarm on certain days of the week, but also a given number of times on all or any of such days.

With the above objects in view my invention resides and consists in the novel construction and combination of parts shown upon the accompanying two sheets of drawings, forming a part of this specification, upon which similar characters of reference denote like or corresponding parts throughout the several figures, and of which—

Figure 1 shows a front elevation of a program or alarming device constructed in accordance with my invention. Fig. 2 is a side elevation of Fig. 1, the program-tape being broken away. Fig. 3 is a detail perspective view of the essential operative parts of my invention.

Referring in detail to the characters of reference marked upon the drawings, 1 indicates a suitable bracket for supporting my program mechanism and which in practice may be attached to the inside of a suitable casing. (Not shown.)

2 indicates a smaller bracket, which may also be attached to the casing and carries an idler 3. To this bracket 2 is loosely hung an extension 4, carrying a second idler 5.

6 indicates a third idler, located above the idlers before mentioned and employed in con-

nection with them to receive, guide, and hold the tape taut.

This invention is equally applicable to any of the popular forms of time-movements. Consequently I do not lay any particular stress upon the movement illustrated and will not go into an extended description thereof. As will be apparent, however, it is an electrically-operated movement employing magnets to transmit movement to the shaft 7, which turns once each hour. This shaft, through a cam 7^a and a lever 8^a, transmits movement to the shaft 8, which makes a complete rotation every seven days. Upon the forward end of this main shaft 7 is a tape-wheel 9 geared to turn once an hour and has thereon a series of spurs to engage corresponding openings 10 in the program-tape 11, which it operates. The tape referred to contains a single or double series of perforations 12 at desired intervals apart, and serve to form connections for the sounding of the signals, as will again be described. These perforations are preferably square, arranged adjacent to either edge of the tape to better preserve the same, and insures a stiffer and more reliable device. Beneath the tape and adjacent to the driving-wheel is a post 13, secured to the front plate 14 of the movement, and upon this post is attached a contact-platen 15, serving as the prime conductor of the current and is connected with the binding-post 16 through the front plate of the movement.

The escapement-shaft 8 is operated one notch or one-fourteenth of a turn to every complete rotation of the central shaft 7 and carries on its forward end a program-wheel 17, of insulating material, having one or more series of holes 18 therein, adapted to receive interchangeable contact-pins 19, as illustrated in the drawings. These pins in practice are frictionally held within the holes and may readily be withdrawn and inserted into any hole desired, so as to change the order of the signals, as will later be more fully explained. In the path of these holes and the pins carried therein is a pair of bell-crank levers 20 and 21, attached to insulating-blocks 22, pivoted to post 23, secured to the front plate of the movement. The depending fingers of these arms normally ride upon the face of the tape and drop into the holes thereof and

against the platen to make the contact for sounding the signal. One of the field-wires from the alarm and battery is connected to these arms, while the other wire is attached to the binding-post 16 of the front plate. In practice the depending extremities of these arms ride upon the face of the tape in line with the openings 12 therethrough, so as to drop through and form a contact with the platen 15 upon the opposite side. Thus it will be apparent that at such times as the arms are riding upon the tape alarms will be given regularly in accordance with the number and location of the holes, and that if one or both of said fingers are withheld, as shown in Figs. 1 and 3, such contact cannot be made and the alarm will be skipped until the program-wheel has advanced and allowed the arm to drop back.

In view of the foregoing construction it will be apparent that in the operation of my device a tape having the required number of perforations therein properly located would be provided and placed upon the wheels in the position shown in Fig. 1. With this tape in place the pins in the program-wheel would be located in accordance with the number of skips which were necessary to give the desired results on one or both levers. For instance, if I wanted to sound the alarm twice in every hour during the day and omit it at night a pin would be inserted in every other hole. If, in addition, I wanted to omit the soundings on Saturday and Sunday, two additional pins would be used in each series of holes at the proper location, thus employing nine pins in the fourteen holes of each set.

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

1. In a program-signaling device, the combination with a plate, a shaft projecting there-through, and means for rotating said shaft, of a wheel mounted upon said shaft, a program-tape carried by said wheel and driven thereby, said tape being provided with a series of openings arranged at spaced intervals in accordance with the number of signals to be transmitted, a gravitating lever pivoted upon said plate and normally riding upon the program-tape, a stationary post also carried by said plate and provided upon one of its faces with a contact-platen over which said tape passes, said lever, post and plate forming part of an electric circuit including a signaling mechanism, a program-wheel arranged adjacent to the driven wheel and provided with detachable pins arranged therein in accordance with the periods of time during which it is desired to prevent the transmission of signals, said pins contacting with said lever to hold the latter out of contact with the program-tape, and means for rotating said program-wheel.

2. In a program-signaling device, the com-

bination with a plate, a shaft projecting there-through, and means for rotating said shaft, of a wheel mounted upon said shaft, a program-tape carried by said wheel and driven thereby, said tape being provided with a series of openings arranged at spaced intervals in accordance with the number of signals to be transmitted, a series of idler-wheels arranged in proximity to the driven wheel and over which said tape passes, one of said wheels being bodily movable and adapted to gravitate for tensioning said tape, a gravitating bell-crank lever pivoted upon said plate and normally riding upon the program-tape, a stationary post also carried by said plate and provided upon one of its faces with a contact-platen over which said tape passes, said lever, post and plate forming part of an electric circuit including a signaling mechanism, a program-wheel arranged adjacent to the driven wheel and provided with detachable pins arranged therein in accordance with the periods of time during which it is desired to prevent the transmission of signals, said pins contacting with said lever to hold the latter out of contact with the program-tape, and means for rotating said program-wheel.

3. In a program-signaling device, the combination with a plate, a shaft projecting there-through, and means for rotating said shaft, of a wheel mounted upon said shaft, a program-tape carried by said wheel and driven thereby, said tape being provided with a series of openings arranged at spaced intervals in accordance with the number of signals to be transmitted, a series of idler-wheels arranged in proximity to the driven wheel and over which said tape passes, one of said wheels being bodily movable and adapted to gravitate for tensioning said tape, a gravitating bell-crank lever pivoted upon said plate and normally riding upon the program-tape, a stationary post also carried by said plate and provided upon one of its faces with a contact-platen over which said tape passes, said lever, post and plate forming part of an electric circuit including a signaling mechanism, a program-wheel arranged adjacent to the driven wheel and provided with detachable pins arranged therein in accordance with the periods of time during which it is desired to prevent the transmission of signals, said pins contacting with said lever to hold the latter out of contact with the program-tape, a lever for operating the program-wheel, and a cam carried by the shaft of the driven wheel for operating said lever.

Signed at Bridgeport, in the county of Fairfield and State of Connecticut, this 1st day of July, A. D. 1901.

JAMES O. LYMAN.

Witnesses:

C. M. NEWMAN,
W. V. DEWITT.