(No Model.) 3 Sheets—Sheet 1.

G. M. STOUT.

ALARM TIME RECORDER FOR RAILWAYS, &c.

No. 332,020. Patented Dec. 8, 1885.

FIG. 2.

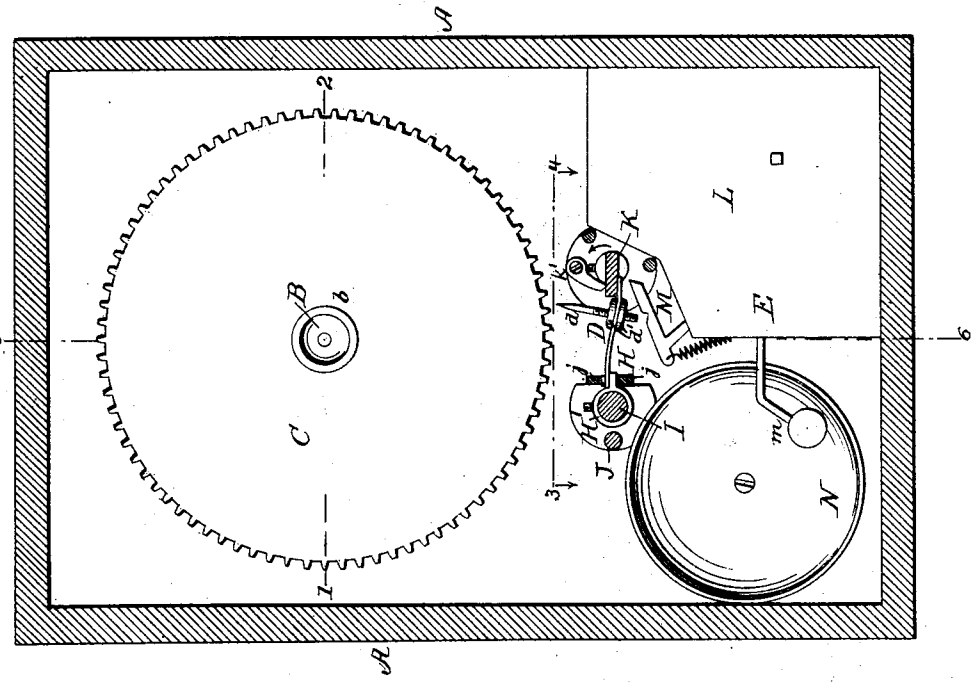
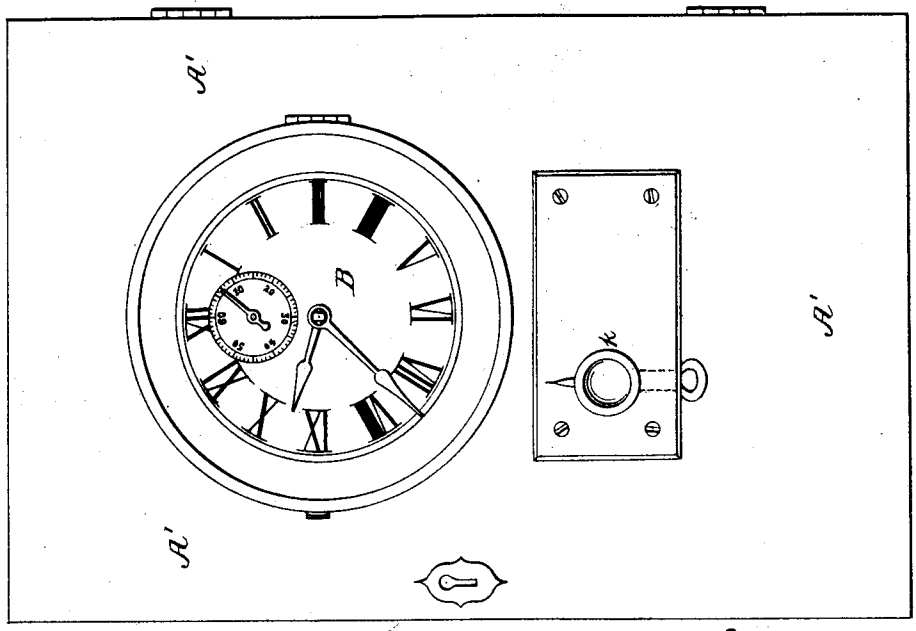


FIG. 1.



Witnesses:
Henry Bossert
Harry Drury

Inventor:
George M. Stout
by his Attorneys
Howson & Sons

(No Model.) 3 Sheets—Sheet 2.

G. M. STOUT.

ALARM TIME RECORDER FOR RAILWAYS, &c.

No. 332,020. Patented Dec. 8, 1885.

FIG. 4.

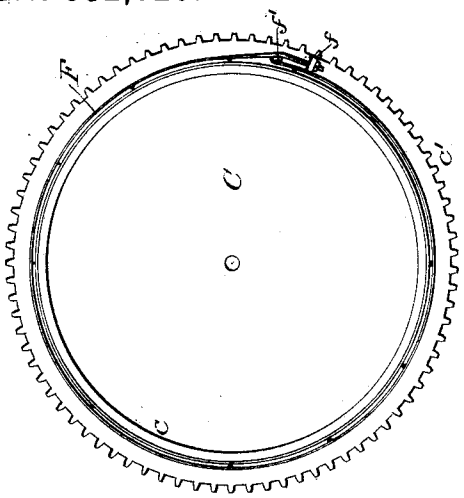


FIG. 3.

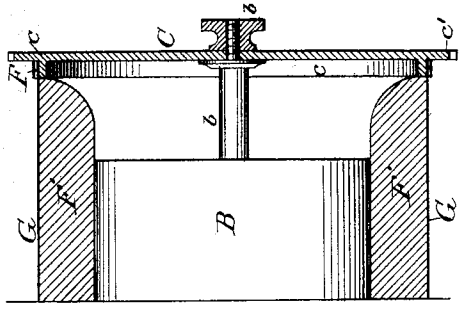


FIG. 6.

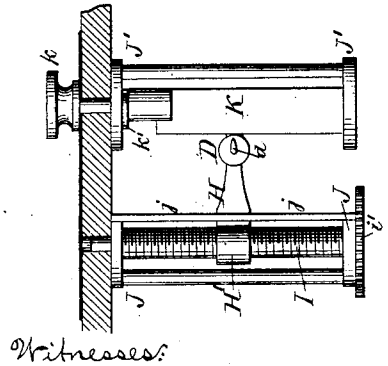
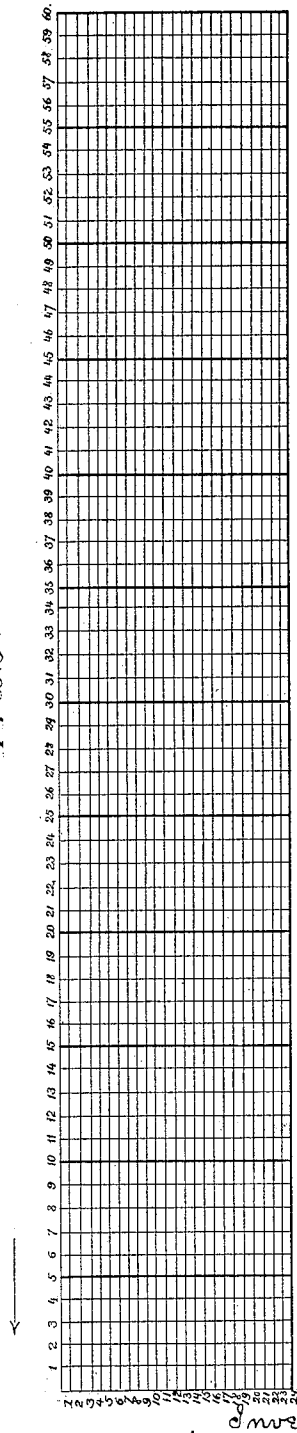


FIG. 5.



Witnesses:
Henry Bossert
Harry Drury

Inventor:
George M. Stout
by his Attorneys
Howson & Sons

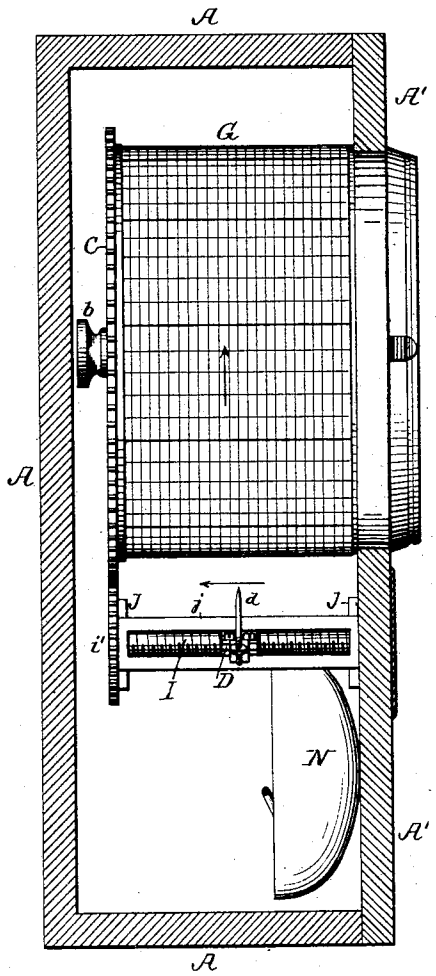
(No Model.) 3 Sheets—Sheet 3.

G. M. STOUT.

ALARM TIME RECORDER FOR RAILWAYS, &c.

No. 332,020. Patented Dec. 8, 1885.

FIG. 7.



Witnesses:
Henry Bossert
Harry Drury

Inventor:
George M Stout
by his Attorneys
Howson & Sons

UNITED STATES PATENT OFFICE.

GEORGE M. STOUT, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO WARREN H. POLEY, OF SAME PLACE.

ALARM TIME-RECORDER FOR RAILWAYS, &c.

SPECIFICATION forming part of Letters Patent No. 332,020, dated December 8, 1885.

Application filed April 23, 1885. Serial No. 163,181. (No model.)

To all whom it may concern:

Be it known that I, GEORGE M. STOUT, a citizen of the United States, and a resident of Philadelphia, Pennsylvania, have invented a certain Improvement in Alarm Time-Recorders, of which the following is a specification.

The object of my invention is to construct a time-detector which is more especially adapted for use on street-railways to record the time of passing certain points along the route, so that the superintendent or other officer can always ascertain whether or not the car has been run on schedule time throughout the trip.

In the accompanying drawings, Figure 1 is a front view of the recorder. Fig. 2 is a vertical section, looking from the rear of the recorder. Fig. 3 is a sectional plan on the line 1 2, Fig. 2. Fig. 4 is a detached view of the cylinder which carries the record-card. Fig. 5 is a diagram view of the record-card to be used in connection with the instrument. Fig. 6 is a sectional plan view of a portion of the device on the line 3 4, Fig. 2; and Fig. 7, a transverse vertical section on the line 5 6, Fig. 2.

A is the case of the instrument, which is provided with a hinged front door, A′, and on this I prefer to mount all the parts of the recorder, so that they can be readily got at by the superintendent or other officer at any time to inspect the recorder by unlocking the door.

The mechanism consists of the following principal parts: The clock mechanism B, which it has not been thought necessary to show in detail, consists of a card-carrying disk, C, mounted on the axis *b*, which may be either a continuation of the main axis of the clock mechanism or an axis driven thereby, a spring-punch, D, and the alarm mechanism E, to strike a bell each time a record is made. The clock mechanism may be of any suitable construction. I prefer, however, to provide it with the usual dial and hands, which show through the front door of the case, as indicated in Fig. 1. The disk C, which is mounted on the axis *b* by means of a removable nut, *b′*, is constructed to carry the record-card, as shown in Fig. 4, and for this purpose it is provided on its inner face with a flange, *c*, Figs. 3 and 4, and around this flange is arranged a flexible metal strip, F, one end of which is secured at *f′*, Fig. 4, to the face of the disk, while its opposite end is formed into or provided with a nut, by which the strip may be tightened around the flange *c*. The inner face of the strip or the outer face of the flange I prefer to provide with pins for the more secure holding of the sheet of paper G, which is placed with its edge around the flange, so as to form a tube or cylinder, and then firmly grasped by the tightening of the sheet-metal strip F. By the removal of the nut *b′* the disk, together with the paper record, may be readily withdrawn and replaced at any time.

On the inner face of the door A′, I mount a wooden or other suitable cylinder, F′, around the clock mechanism, which cylinder forms a back or support for the sheet of paper G, without interfering with its free rotation around the same; or, in place of this cylinder, a simple projecting strip may be used, the cylinder or strip being preferably covered with rubber, cloth, or like yielding material capable of being easily penetrated by the recording-punch.

The punch D, which makes the indentations in the record-card, consists of a point, *d*, carried by a spring-finger, H, which, as shown in Figs. 2 and 6, is attached to and carried by a collar, H′, mounted on a threaded shaft or axis, I. This axis I is mounted in bearings in the front of the case and in a suitable open frame, J, secured thereto, this frame being provided with guide-bars *j*, between which the spring-arm H passes. The point *d* is secured to the spring-arm by set-nuts *d′*, adapted to the threaded stem of the point, so that the latter may be adjusted to penetrate the record-card to the desired extent.

Parallel with the shaft I is a cam-shaft, K, mounted in bearings in a frame, J′, somewhat similar to the frame J, and this cam-shaft is provided on the front of the case with a thumb-piece, *k*, by which it may be turned. This cam-shaft bears such relation to the spring-arm H that when it is turned by its thumb-piece *k* in the direction of the arrow, Fig. 2, it will act on the end of the spring-arm H, as indicated, to pull the pointer back from the record-card some little distance until the cam passes the end of the spring-arm, and the latter, being then released, will immediately

spring back toward the card, and, striking the latter, will make an indentation at that point which it happens to be opposite. A spring-pawl, *k'*, is provided to prevent the turning back of the cam-shaft through any mistake of the conductor.

Instead of furnishing the projecting end of the cam-shaft with a thumb-nut for facilitating its manipulation, the shaft may have a crank-handle, as shown by dotted lines in Fig. 1.

As shown in Fig. 5, the record-card is divided into twenty-four hours in one direction and into sixty minutes in the other direction, and as the cylinder in rotating will move the card in the direction of the arrow, Fig. 5, the punctures during the first hour will be somewhere along the top line of spaces. At the expiration of the hour the collar and spring-arm carrying the point *d* will have been so moved automatically along the carrying-shaft I that the punctures during the next hour will be along the second line of spaces, and so on during the twenty-four, after which the time-card may be removed and replaced by a new one. The shaft I is so geared to the disk C through the wheel *i'* (on the said shaft I) engaging with the toothed periphery of the disk that the latter will be automatically turned by the clock mechanism to gradually move the indenting-punch laterally, so that the record-marks during each hour will gradually pass across the line of spaces, and if these marks were made continuously they would form a diagonal line at the end of the first hour passing across from the upper side of the first row of spaces to the upper side of the second row.

When my improved time-recorder is used on street-cars, it will be the duty of the conductor to turn the cam-shaft at certain designated points along the route, so as to release the punch-arm and form a record-mark on the time-card, so that when the superintendent at the end of the trip, or at the end of the day, examines this card he can tell whether the trips have not or any particular trip has not been run upon schedule time.

I prefer to combine with the above-described recording mechanism an alarm device for giving a signal each time the conductor makes a registry. This alarm may be of any suitable construction.

In the drawings, L represents the case of clock mechanism, which so long as the arm M is in the position shown in Fig. 2 is out of action; but when the cam K, turning in the direction of the arrow, comes into contact with this arm and moves it, it will release the clock mechanism L, so as to act on the hammer *m* and ring the gong N. The special device for ringing the gong, however, forms no essential part of my invention.

I claim as my invention—

1. The herein-described time-detector, comprising a clock mechanism and a record-card moved thereby, in combination with a spring indenting-punch, a cam acting to draw the spring-punch back from the card and release it again, and an alarm operated by the said cam.

2. The herein-described time-detector, comprising a time mechanism, a disk operated thereby and carrying a record-card, with a spring indenting-punch, and a cam adapted to draw the said punch away from the card and release it again, substantially as set forth.

3. The herein-described time-detector, comprising a time mechanism and a rotary disk, C, operated thereby and carrying a record-card, in combination with a fixed support, F', within the card carried by the disk, a spring-punch, and a cam for withdrawing the punch and releasing it again.

4. The combination of the time mechanism and rotary disk carrying the record-card with a laterally-adjustable spring-punch and cam-shaft K, adapted to withdraw the spring-punch from the card and release it again, substantially as specified.

5. The combination of the time mechanism, a record-card operated thereby, with a screw-shaft geared to said time mechanism, a spring-punch and collar mounted on the screw-shaft, and a cam for acting on the spring-punch, substantially as set forth.

6. The combination of the time mechanism and a record-card operated thereby with a screw-shaft, a spring-punch and collar mounted on the screw-shaft, and a cam for acting on the spring-punch.

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

GEO. M. STOUT.

Witnesses:
HENRY BOSSERT,
HARRY SMITH.