

(No Model.)

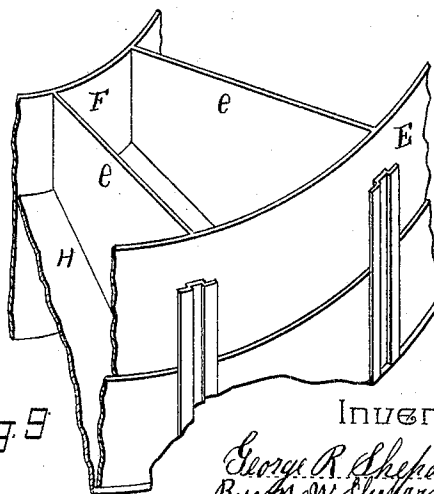
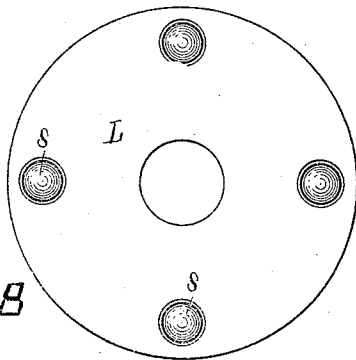
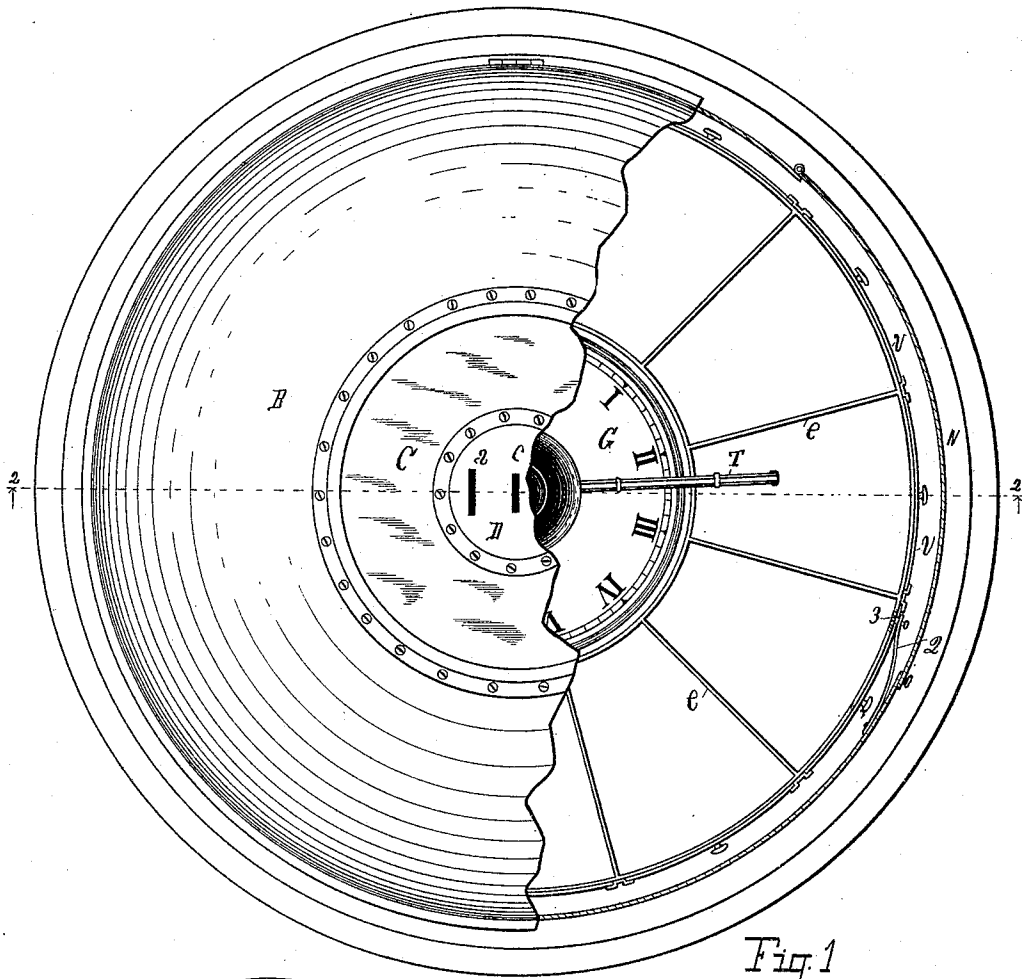
2 Sheets—Sheet 1.

G. R. & B. W. SHEPARDSON.

TIME CHECK RECEIVER.

No. 529,468.

Patented Nov. 20, 1894.



Witnesses:

Walter S. Wood.
Ray Beckwith

Fig. 9

Inventors:

George R. Shepardson &
Bryon W. Shepardson
By Julius C. West
Att'y.

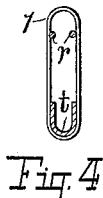
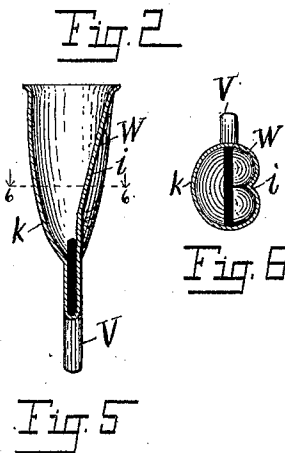
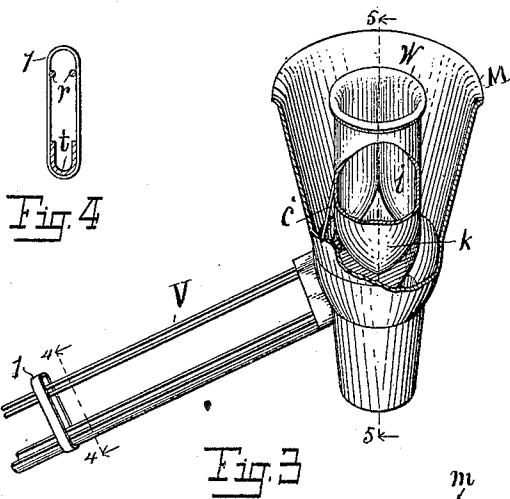
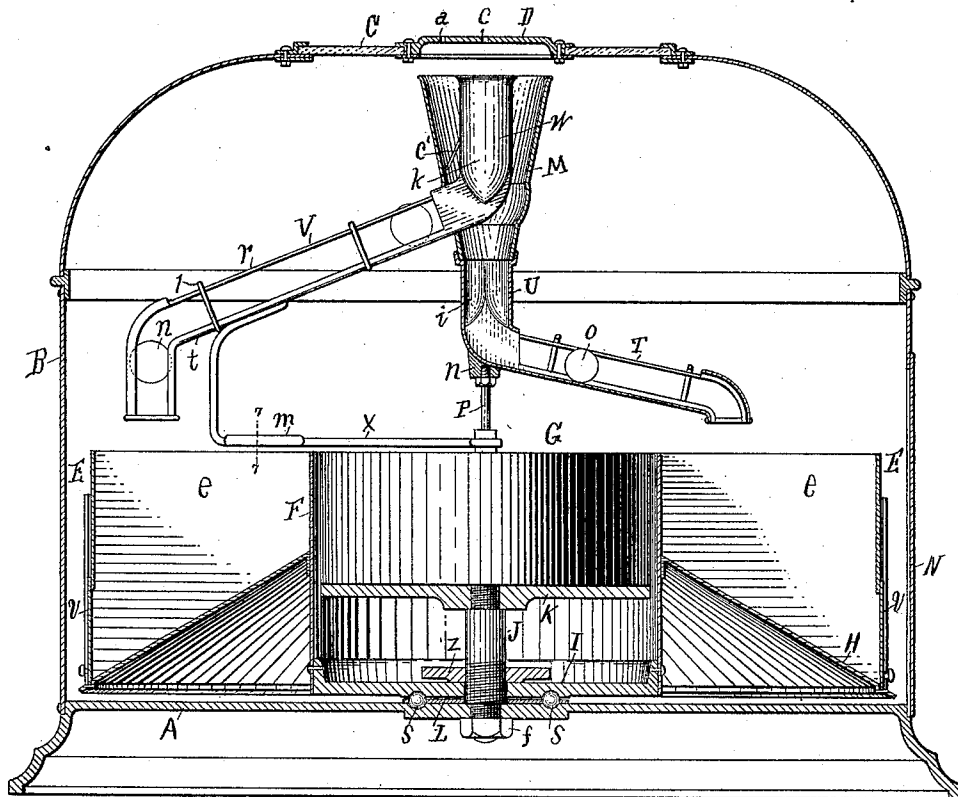
(No Model.)

2 Sheets—Sheet 2.

G. R. & B. W. SHEPARDSON.
TIME CHECK RECEIVER.

No. 529,468.

Patented Nov. 20, 1894.



Witnesses:

Walter S. Wood
Ray Beckwith

Fig. 7

Inventors:

George R. Shepardson &
Bryce W. Shepardson
By Lucius C. West
Att'y.

UNITED STATES PATENT OFFICE.

GEORGE R. SHEPARDSON AND BYRON W. SHEPARDSON, OF KALAMAZOO,
MICHIGAN.

TIME-CHECK RECEIVER.

SPECIFICATION forming part of Letters Patent No. 529,468, dated November 20, 1894.

Application filed December 20, 1892. Serial No. 455,847. (No model.)

To all whom it may concern:

Be it known that we, GEORGE R. SHEPARDSON and BYRON W. SHEPARDSON, citizens of the United States, residing at Kalamazoo, county of Kalamazoo, State of Michigan, have invented a new and useful Time-Register, of which the following is a specification.

This invention relates to that class of workmen's time registers in which a clock is employed having conveyers which take the place of the hour and minute hands of the clock, and in which is also employed a series of check-receptacles arranged in a circle around said clock.

A principal object of this invention is to make the delivery of the checks through the conveyers into the check-receptacles positive and absolutely without error and delay, by means of peculiarly constructed funnels, at the receiving end of the conveyers, the shape of said funnels, which are below described in detail, being such as to cause the checks to make a quarter turn, so as to roll edgewise into the narrow rectangular passage through said conveyers.

Another object consists in certain improvements in the construction of the check-receptacles and their base, making them integral and revoluble around the clock.

Other objects consist of improvements in the support of the clock and in the construction of the conveyers, all of which is more particularly described and claimed below.

In the drawings forming a part of this specification, Figure 1 is a plan view, with parts broken away; Fig. 2, a sectional elevation on line 2—2, in Fig. 1; Fig. 3, an enlarged perspective of details from Fig. 1, with parts broken away; Fig. 4, a cross section on line 4—4, in Fig. 3, looking from a point at the right; Fig. 5, a vertical section of one of the funnels, on line 5—5, in Fig. 3. Fig. 6 is a cross-section on line 6—6, in Fig. 5, looking from a point above; Fig. 7, a cross section on line 7—7, in Fig. 2, enlarged; Fig. 8, an enlarged plan view of a detail from Fig. 2; and Fig. 9 shows a perspective view of a check-receptacle and connections, parts being broken away.

Referring to Fig. 2 in the drawings, A is a

base upon which the time register is supported. An outer case, preferably rounding at the top, which forms a cover to the register proper, is shown at B. At the top of this case is a glass, C, through the center of which is a hole, covered by a plate, D, through which plate are the openings, *a, c*, for the insertion of the checks, one larger than the other, as explained hereinafter.

The check-receptacles are made by employing two circular walls, one outer one, as at E, and an inner one, as at F, said walls having a space between them, and the inner one, F, surrounding a circular space around the clock, G. The check-receptacles are partitioned off by walls, *e*, Figs. 1 and 9, which walls radiate from the inner wall F. The floor or bottom of these check-receptacles is on a downward incline toward the outside and consists of a lamp-shade-like plate, H, rigidly secured at the lower edge to the outer wall, E, and at the upper edge to the inner wall, F, and to the lower edges of the partition walls *e*. Thus the check-receptacles, walls and bottom are all integral, or rigidly attached. This check-receptacle, as a whole, has rigidly attached within the inner circle and at the base thereof and to the wall F, a plate, I, which plate has a central hole through same, through which hole is loosely passed a stud, J, which stud supports the clock, G, said stud being screw threaded at the top and screwed into a shelf K, which supports said clock, Fig. 2. The lower end of this stud, J, is screw threaded beyond its lower shoulder and is passed through a hole in the top of the base A, and provided below said top of the base A with a nut, *f*, which firmly secures the stud in place.

Between the plate I and the upper surface of the base A, are ball bearings, S, preferably four in number, and equi-distant from each other. These balls are held equi-distant from each other by a thin plate, L, which has a central hole surrounding the stud J and four holes in which the balls S are located, to keep them spaced as stated, said plate of course being thinner than the diameter of the balls, so that the balls will be in the circular groove in the lower side of the plate I and in the

upper side of the top of the base A; all as clearly shown in Figs. 2 and 8. This stud, J, is provided with screw threads on the body thereof, above its lower shoulder, and onto said threaded portion is screwed a check-nut, Z, for the purpose of controlling the pressure of the check-receptacle upon its ball bearings.

Each one of the check-receptacles has an upwardly sliding door, *v*, Figs. 1 and 2, and the outer stationary case, B, is provided with a door, N, the object of which doors will be explained in the description of the operation.

The stem of the clock which would ordinarily bear the minute hand has an upward extension or stud, P, attached thereto, the top of which stud is screwed into a lug of the minute conveyer T, at *n*. The top of the conveyer T terminates in a check-receiving funnel U, into the top of which funnel U loosely fits the lower end of the check-receiving funnel M. Thus the minute conveyer will move around like the minute hand of a clock, independently of the check-receiving funnel M.

At V is a conveyer called the hour conveyer, because it takes the place of the hour hand on a clock and is supported to the hour stem of said clock by a bar, X, as shown in Fig. 2. The upper end of this conveyer V extends into one side of the check-receiving funnel M, as shown in Fig. 2, and there connects with the check-receiving funnel W, which latter named check-receiving funnel is centrally located in the check-receiving funnel M; these two funnels being located below the plate D and the openings *a c*. Being thus arranged, the hour conveyer passes around like the hour hand of a clock, independently of the minute conveyer, and of course, in thus traveling around the clock revolves the check-receiving funnels M W. These conveyers are inclined and terminate at the lower end a little above the open top of the check receptacles, so that when the time checks are inserted through the slots *a c* they will be conveyed to their proper receptacles.

The bar X which supports the hour conveyer V, is provided at a point over the check-receptacles with an apex, *m*, Figs. 2 and 7, the object of which apex is to prevent the time checks from lodging on the bar *x* or being interrupted by contact therewith, when the delivery end of the minute conveyer is over said apex. These conveyers are made in skeleton form, for the purpose of lightness and so as to be readily accessible to the sight. They consist of the grooved or channeled base, *t*, in which the time checks, *o n'*, roll down to their destination, and of two separated parallel wires, *r* above said parts *t* and *r* being held in their proper and relative relations by loops, 1, Figs. 2 and 4, to which loops they are attached.

Heretofore it has been found very difficult, if not utterly impossible, so far as we are aware, to so construct check-receiving funnels that the time checks, *o n'*, will always be delivered

edgewise and into the conveyers in such a manner as not to lodge in the check-receiving funnels.

The peculiar check-receiving funnels herein illustrated consist of a funnel, W, which may be described in general terms as being internally heart-shaped on one side, as at *i*, and internally spoon-shaped on the opposite side, as at *k*, as is clearly illustrated in Figs. 3, 5, and 6. The virtue of this very important feature of the invention rests in the peculiarities of form as follows: The general shape of the funnels is round, tapering toward the lower end, where it terminates in a flattened portion which connects with and opens into the receiving end of the conveyer. Thus the interior shape of the flattened portion of the funnels is rectangular, corresponding to the interior of the conveyers, so that the checks therein will be held upright on their edge. The interior of one side of these funnels W U, is concaved, like the inside of a spoon, and converges at the lower end and terminates in the rectangular interior of the flattened portion of the funnels, Figs. 2, 3 and 5. The interior of the funnels on the side opposite to the spoon shaped side is convexed, said convexed surface beginning very narrow at the upper end and diverging and enlarging toward the lower end and terminating in the rectangular interior of the flattened portion of the funnels.

It should be observed that the checks enter the funnels edgewise but at right angles to the narrow interior of the flattened lower portion of said funnels. Hence it is necessary for said checks to make a quarter turn in order to enter the interior of said flattened portion, so as to roll from thence edgewise into the conveyers. The converging concaved spoon shaped interior on one side and the diverging convexed interior on the opposite side, cause the checks to make this quarter turn or tilt.

It will be observed, as stated, that the upper end of each conveyer terminates in one of these check-receiving funnels, while the upper one is surrounded by an ordinary funnel, M, which in reality constitutes an upward extension to the check-receiving funnel U.

To obviate any danger of the time checks lodging on that portion of the conveyer V which is in the check-receiving funnel M (which danger would take place only at the time when the conveyer V was directly beneath the slot *a*) we have provided said check-receiving funnel M with a small rod or wire, *c'*, set shearing, so that the time check which passes through the slot, *a*, into the check-receiving funnel M will strike on said wire and be sheared off into the funnel. This wire, *c'*, is attached to the side of the check-receiving funnel W and inclines downward and outward, and also inclines laterally, so as to cross over the upper edge of the conveyer V, as shown in Figs. 2 and 3.

Referring to Fig. 1, at 2 is shown a spring catch, having a projection which enters a

hole in the outer wall of the conveyer, at 3. This serves as a lock to hold the check receptacles in the same position from the time of commencing work until the contents of said receptacles are examined, at the close of work. As here arranged, in use, the check-receptacles would be marked on the outer face, representing the hours and subdivisions of hours in five minute periods, so that by examining the contents of each tray, the hour and the minute at which the workman deposited his checks could be ascertained within five minutes.

To illustrate, in the operation, we will suppose a workman (who has been provided with hour checks and minute checks, varying in size and thickness and bearing numbers or characters to indicate which workman has said checks) comes to the shop at seven o'clock and fifteen minutes. He will put an hour check in the slot *c*, which will be delivered into the seven o'clock tray, through the conveyer *V*, and a minute check into the slot *a*, which will be delivered into a tray representing the quarter hour, through the minute conveyer *T*. At the close of work the time-keeper opens the door *N*, of the outer case, and disconnects the latch, 2, from the revoluble receptacle, and then by opening the door *v* of each receptacle, the contents of the receptacle will slide out, owing to the inclination of the bottom of the receptacle, into a tray carried for the purpose of receiving said time checks for examination, which process he continues by revolving the receptacles upon their ball bearings, stopping as each receptacle is presented at the door *N*.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a time-register, the check-conveyers consisting of the channeled base, the upper separated parallel wires, and the loops attached to said base at the lower end and attached to the parallel wires at the upper end; substantially as set forth.

2. The combination of hour and minute-conveyers, check-receiving funnels terminating the receiving ends of said conveyers, the funnel of the minute-conveyer surrounding the funnel of the hour-conveyer, said funnel of the hour conveyer being provided with a small rod or the like extending at a downward, outward and laterally oblique angle above the receiving end of the minute-conveyer, whereby the checks are sheared to one side; substantially as set forth.

3. In a time-register, check-conveyers representing the hour and minute hands of a clock, and a bar supporting the hour conveyer, said bar being provided with an apex at a point where the delivery end of the minute conveyer passes over it during the transit of said conveyers around the clock; substantially as set forth.

4. In a time-register, a revoluble check-receptacle, comprising as a whole the series of receptacles and inclined base integral therewith; substantially as set forth.

5. The combination of a base support, a clock, an upright stud attached to said base, a shelf attached to the upper end of the stud and supporting the clock, the check-receptacle as an integral whole, a plate having a central hole through which said stud is loosely passed, said plate having a series of holes equi-distant from each other, and balls in said holes, upon which balls the base is mounted; substantially as set forth.

6. The combination of a suitable base, an outer case having a door, a clock, check-conveyers and funnels, integrally connected check-receptacles surrounding the clock and revolubly mounted upon said base, each individual receptacle being provided with a door; substantially as set forth.

7. The combination of a suitable base, an outer case having a door, a clock, check-conveyers and funnels, integrally connected check-receptacles surrounding the clock and revolubly mounted upon said base, each individual receptacle being provided with a door, and a catch to lock the revoluble receptacle; substantially as set forth.

8. The combination of a base, an outer case, a clock, a stud attached to the base, a shelf attached to the upper end of the stud and supporting the clock, the receptacles with inclined bottoms, all integral with each other and surrounding the clock, a plate at the base of the central circular opening beneath the clock, a check-nut on the stud above said plate and ball bearings between said plate and base; substantially as set forth.

In testimony to the foregoing we have hereunto subscribed our names in the presence of two witnesses.

GEORGE R. SHEPARDSON.
BYRON W. SHEPARDSON.

Witnesses:

N. G. LESLIE,
W. P. HOLMES.