(No Model.) 2 Sheets—Sheet 1.

J. S. GOLDSMITH.

APPARATUS FOR CONTROLLING THE ISSUE OF TIME CHECKS.

No. 326,493. Patented Sept. 15, 1885.

Fig. 1.

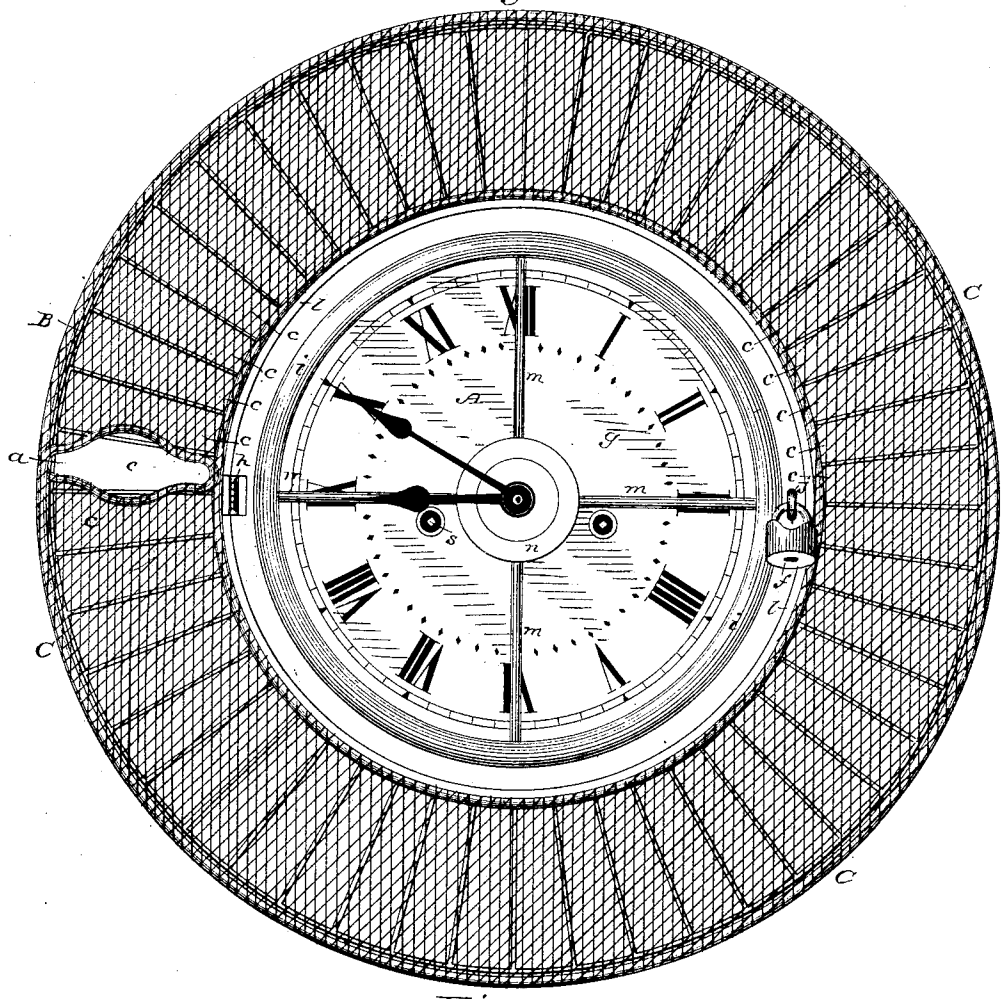
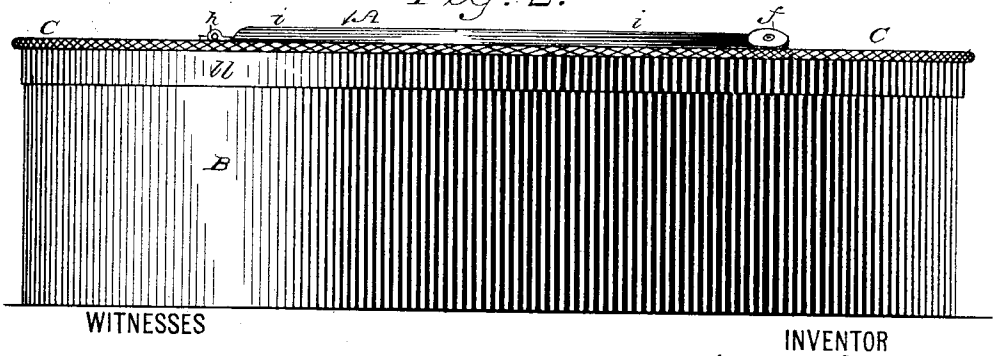


Fig. 2.



WITNESSES

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

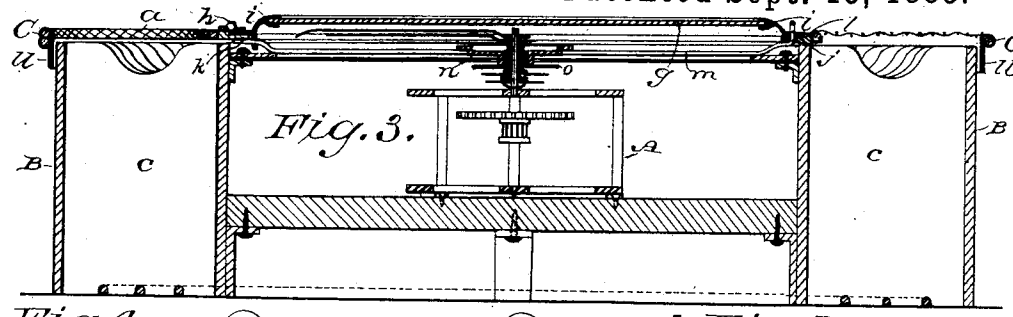


Fig. 4.

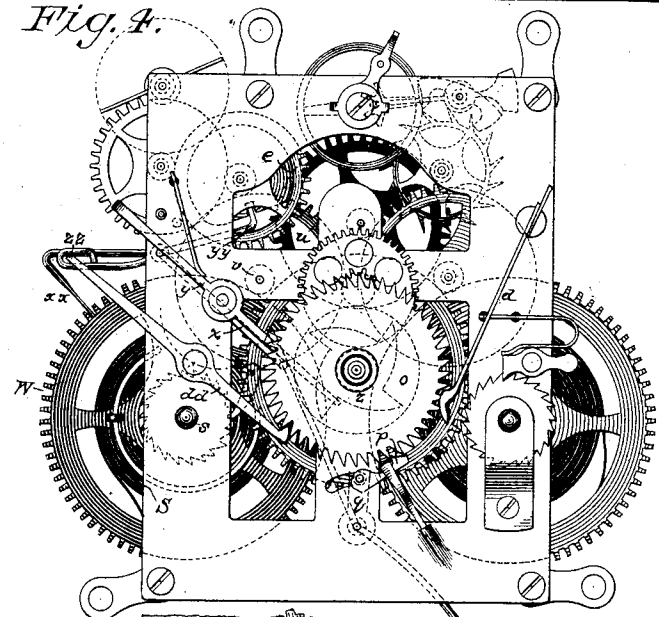


Fig. 5.

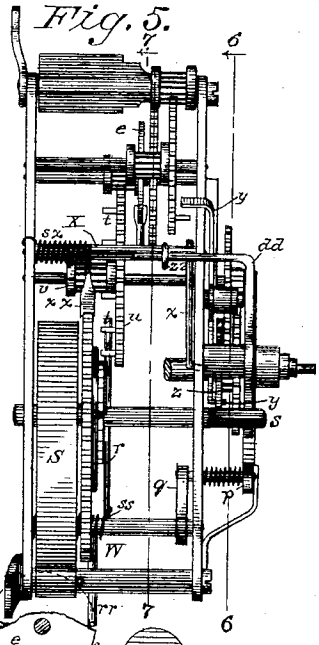


Fig. 6.

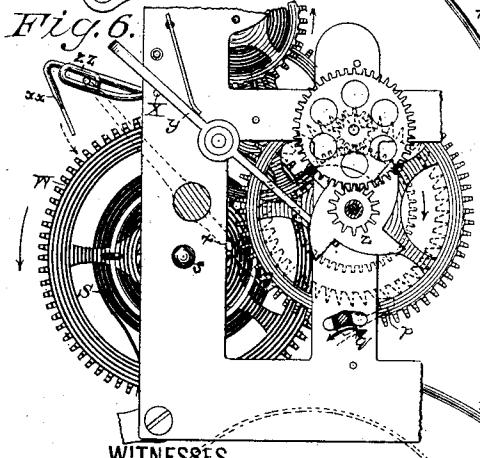
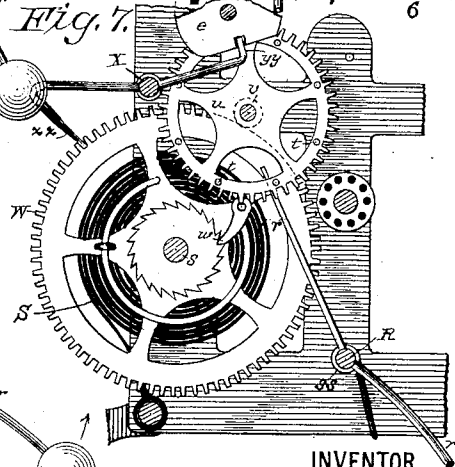


Fig. 7.



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UNITED STATES PATENT OFFICE.

JOHN S. GOLDSMITH, OF NEW YORK, N. Y.

APPARATUS FOR CONTROLLING THE ISSUE OF TIME-CHECKS.

SPECIFICATION forming part of Letters Patent No. 326,493, dated September 15, 1885.

Application filed December 8, 1884. (No model.)

To all whom it may concern:

Be it known that I, JOHN S. GOLDSMITH, a citizen of the United States, residing at New York, in the State of New York, have invented a new and useful Improvement in Apparatus for Controlling the Issue of Time-Checks, of which the following is a specification.

In common with an "improvement in check-tickets for messenger service" and an "improvement in apparatus for receiving time-checks," described and claimed in two other specifications of even date herewith, this invention relates primarily to means for insuring promptness and correct charges in messenger service, and for preventing the concealment of pilfering other fraudulent practices on the part of those employed to collect and account for all that class of monetary charges which are determined as to amount wholly or in part by the duration of the service or privilege charged for. The apparatus may also be used as a substitute for watchmen's and workmen's time-recorders.

The present invention consists in an automatic apparatus adapted to contain check-tickets, check-disks, or the like, the issue of which is intended to be limited to successive periods of time, and to preclude access during each period to all the checks save those marked for this individual period.

It consists, further, in peculiar mechanism for periodically actuating a rotary mask which effects said control, and in means for securing it against rotation at other times; also, in a peculiar construction of said mask whereby it is rendered light and strong, and the inspection of the whole of the contents of the apparatus at any time is facilitated, and in means for securing said mask in place, with provision for readily removing it when it is unlocked to replenish the several check-compartments.

Two sheets of drawings accompany this specification as part thereof. Figure 1 of these drawings is a face view, and Fig. 2 a side or edge view, of my said apparatus for controlling the issue of time-checks. Fig. 3 represents a vertical axial section of the same; Fig. 4, a top view of its clock-work on a larger scale; Fig. 5, a part edge view of the latter; and Figs. 6 and 7, horizontal sections on the lines 6 6 and 7 7, Fig. 5, showing sectional plans of the clock-work illustrating its operation.

Like letters of reference indicate corresponding parts in the several figures.

The said apparatus is designed for use in horizontal position on a table, counter, or shelf, with its clock-face, Fig. 1, at the top, as indicated in the drawings.

The apparatus comprises a central clock or time-piece, A, which, apart from certain clock-work peculiarities hereinafter set forth, may be of any approved kind. An ordinary spring-driven time-movement is represented. One driven by electricity or otherwise may be used instead without effecting the apparatus as regards the present invention.

Surrounding said clock A is an annular check-holder, B, partitioned to form radial check-compartments *c*, corresponding with the respective quarter-hour divisions of the clock-dial and open at top, and only at top. This part of the apparatus may be constructed of any approved material or materials, and in any approved way as regards mechanical details.

Applied to the top of said check-holder is a rotary mask, C, having a single aperture, *a*, conformed to the open top of each of said compartments *c* of the check-holder, and preferably widened at its middle to freely admit a finger and thumb, owing to the narrowness of the quarter-hour compartments, the tops of the partitions which separate the latter being correspondingly indented, as shown in Fig. 3. Said rotary mask is supported centrally, so as to move freely close above said check-holder, and is actuated at the beginning of each quarter of an hour, as represented by an arrow in Fig. 1, to give access to the corresponding check-compartment in the manner and by the means best shown on Sheet 2 of the drawings.

The clock A, in addition to its ordinary time-movement aforesaid, (shown at the right in Fig. 4,) is provided with supplemental clock-work, (seen at the left in Fig. 4,) and shown more in detail by Figs. 5, 6, and 7, having an independent driving-spring, S, the winding-arbor of which is shown at *s*, and this supplemental clock-work imparts to said mask C its step-by-step rotary motion, being simply liberated by the time-movement in a manner similar to the liberation of ordinary striking

mechanism, but at the beginning of every quarter of an hour in the example. This is accomplished by a cam-wheel, *z*, Figs. 4, 5, and 6, carried by the sleeve-arbor of the minute-hand of the clock, a spring-retracted lever, *y*, the inner end of which is upturned to engage with the four peripheral wings of said cam-wheel, and an upturned lever-arm, *x*, of a rock-shaft, X, having a detent arm or claw, *xx*, which engages in customary manner with the spur-teeth of a large main wheel, W, which is mounted on and connected by pawl and ratchet *w* to said spring-arbor *s*. When the summit of either wing of said cam-wheel *z* reaches the upturned end of said lever *y*, said detent-arm *xx* becomes fully retracted, as shown in Fig. 6, and the supplemental movement is free to run until it is stopped. Its motion is transmitted from said main wheel W through a pinion, *v*, to a wheel, *u*, provided on one of its faces with a series of perpendicular tappet-pins, *t*, which engage successively with a lever-arm, *r*, and therethrough actuate a rock-shaft, R, which may carry a bell-striking hammer, *rr*, in customary manner, a retracting or striking spring, *ss*, being applied to this rock-shaft. Near the top plate of the clock-work frame said rock-shaft is provided with a rigid arm, *q*, carrying a vertical stud, which, as shown, is accommodated by a curved slot in said top plate. (Seen in Figs. 4 and 6.) This stud forms the pivot of a driving-pawl, *p*, the engaging spring of which is coiled around said stud in the illustration, and this pawl at each movement of said rock-shaft R, corresponding with the action of each of said tappet-pins *t*, acts on one of the forty-eight teeth of a ratchet-wheel, *o*, and turns said wheel the space of one tooth, or imparts to it one forty-eighth of a revolution corresponding with that of the hour-hand of the clock in a quarter of an hour. The aforesaid motions which immediately follow the liberation of the supplemental clock-work are represented by arrows in Fig. 6. The energy stored in the spring *ss* during the effective motion of the pawl *p* causes said rock-shaft R and its arms to return instantaneously to normal position, carrying the face of said pawl behind another tooth of the ratchet-wheel *o*, the latter being held against retrogression by a spring-detent, *d*, Fig. 4. At the end of this sudden return movement the hammer *rr* strikes the bell of the clock once. (See Fig. 6.)

To limit each action of the supplemental clock-work to a single effective stroke of the pawl *p*, as above described, said tappet-pins *t* on the wheel *u* correspond in number with the teeth or rounds of the pinion of the next arbor in the escapement-train of this clock-work driven by said wheel *u*, which pinion is provided with a one-notch stop-disk, *e*, Figs. 5 and 7, and said rock-shaft X is provided with another arm or claw, *yy*, pressed against the periphery of said disk *e* by an engaging spring, *sx*, which is applied to said rock-shaft X, as shown in Fig. 5. When the notch of said disk *e* admits said claw *yy*, as shown in Fig. 7, the supplemental clock-work is stopped, and said return motions effected by said spring *s s* (indicated by dotted arrows in Fig. 6) are all that follow until another of the wings of said liberating-cam *z* acts as aforesaid.

Simultaneously with each liberation of said main wheel W a locking-piece, *dd*, Figs. 4 and 5, preferably in the form of a lever, is retracted so as to unlock said wheel *o*, and therewith the mask C. As shown, said locking-piece *dd* turns on a vertical pivot and is connected by a depending arm with a fourth arm, *zz*, of said rock-shaft X. At the end of each actuation of the mask said locking-piece is re-engaged with the wheel *o* by said engaging-spring *sx*, so as to relock the mask, and thus prevent fraudulent hand-movements thereof.

The means by which the wheel *o* is connected with the mask C, together with the construction of the mask, and the means whereby its surreptitious removal is prevented, while its removal by the proper person, when the check-compartments *c* are to be replenished, is facilitated, are best shown in Figs. 1 and 3. Said wheel *o* has a sleeve-hub which loosely embraces that of the hour-wheel of the time-movement, so that the motion of each of these wheels shall be unaffected by that of the other. Said sleeve-hub of said wheel *o* is tightly embraced by a collar-disk, *n*, having radial arms *m*, the outer ends of which support a ring, *l*, soldered fast within the annular mask. The outer end of one of the arms is interlocked with said ring by a hook, *k*, and an opposite arm terminates in a staple, *j*, which projects through said ring *l*, and through an inner frame, *i*, opposite a point at which the latter is connected with said ring *l* by a hinge, *h*. Said frame *i* is provided with the clock-face glass *g*, of which said ring *l* forms the customary outer frame, and a seal or lock fastening, *f*, applied to said staple *j* secures the whole. After said inner frame, carrying the clock-face glass, is unfastened, a lifting motion will disengage the mask from said staple *j*, and a lateral motion will disengage it from said hook *k*, after which it can be lifted off, and access to all the check-compartments be thus had. The mask C, outside of said ring *l*, apart from a depending marginal rim, *ll*, Fig. 2, which is not considered essential, is composed of wire-gauze stretched upon an annular frame of wire sufficiently light, with frame-wire bordering said aperture *a* in the mask, as indicated in Fig. 1.

I have set forth in detail the best construction known to me at the date of this specification; but I do not wish to be understood as thereby limiting myself or my assigns to any details not essential to the respective parts or features of my invention, as hereinafter claimed.

To prepare the apparatus for use, the several check-compartments are supplied with successive time-checks of a corresponding series. The time-movement and supplemental

clock-work are wound. The former is set, if need be, so as as to indicate the time correctly, and the fastening *f* is applied to the closed apparatus. The aperture *a*, substantially in line with the hour-hand of the clock, affords access through the closed mask to the checks of the time period corresponding with the time indicated—9 to 9.15, for example, and none other. The mask is shifted at the beginning of the next time period—9.15 to 9.30—by the liberation of the supplemental clock-work, and immediately thereafter is relocked by the locking-piece *d d*, as aforesaid, and thus the operation proceeds.

This issue-controlling apparatus is primarily designed for controlling the issue of my said check-tickets for messenger service, and for use in connection with my said apparatus for receiving time-checks, as set forth in specifications of even date herewith, hereinbefore referred to; but it may be used instead in connection with ordinary check-disks of metal card-board or other materials successively numbered or otherwise marked, so that their appropriation to successive time-periods can be noted, and in connection with ordinary collecting-boxes, or in connection with time-checks alone, where it is designed as a check upon patrons or salesmen, or other workmen who are chargeable from the time indicated by the check, or fineable, for example, for tardiness. Employed as a substitute for ordinary workmen's time-recorders, each workman would be required to take a time-check from the issue-controlling apparatus, and after adding thereto his name, number, or mark to deposit it in a collecting-box or to hand it to a tally-clerk. A watchman might simply be required to produce a check from each compartment of the issue-controlling apparatus, or to give satisfactory explanation for his failure to do so.

Other time-limits may be adopted instead of the quarter-of-an-hour limit, as five or ten minutes, half an hour, or hour, according to the requirements of the business in which the apparatus is employed. The aperture *a* and check-compartments *c* with the clock-work to be correspondingly modified, or substitutes for the described clock-work, may be employed in connection with the remainder of the apparatus—for example, either of those described in the specification of my said receiving apparatus.

I do not claim herein any part or feature of my said check-tickets, nor any part or feature of my said receiving apparatus, as the same are claimed in my aforesaid specifications of even date herewith; nor do I limit the present issue-controlling apparatus to employment or use in connection therewith, for reasons above set forth.

Having thus described my said improvement in apparatus for controlling the issue of time-checks, I claim as my invention and desire to patent under this specification—

1. An apparatus for controlling the issue of time-checks, having a check-holder with check-compartments corresponding in number with uniform divisions of time, and guarded by a rotary mask having an aperture affording access to one of said compartments at a time, and automatically actuated to open successive compartments at the beginning of the corresponding time periods, substantially as herein specified.

2. The combination, in an apparatus for controlling the issue of time-checks, of a central clock, an annular check-holder having radial check-compartments corresponding in number and distribution with given divisions of the clock-dial, and a rotary mask having an aperture affording access to one of said compartments at a time, and shifted periodically to open successive compartments, the shifting of said mask being controlled as to time by the movement of said clock, substantially as herein specified.

3. The combination, in an apparatus for controlling the issue of time-checks, of a central clock provided with a supplemental movement driven independently and liberated periodically by the main movement, an annular check-holder having check-compartments corresponding in number with said time periods, and a rotary mask having an aperture affording access to one of said compartments at a time, and instantaneously shifted at the beginning of each of said time periods by said supplemental movement, substantially as herein specified.

4. The combination, substantially as herein specified, of an annular mask having an aperture to afford access to a series of check-compartments, one at a time, in periodical succession, spring-driven clock-work liberated by a time-movement at given periods, and having an escapement which suitably limits its motion at each liberation thereof, an arbor central to said mask, driven by said clock-work, and a collar applied to said arbor, connected by radial arms with said mask for supporting and rotating the latter in the manner set forth.

5. The combination, with a rotary mask serving to guard time-check compartments, of clock-work connected with the arbor of said mask by a pawl and ratchet-wheel, and liberated periodically by a time-movement, said pawl being carried by an arm of a rock-shaft having a retracting-spring applied thereto, and which also carries a bell-striking hammer for giving audible notice of the shifting of said mask in each act of retracting the propelling-pawl, as herein specified.

6. The combination, with a rotary mask serving to guard time-check compartments, of clock-work connected with the arbor of said mask by a pawl and ratchet-wheel, and liberated periodically by a time-movement, and a locking-piece connected with the escapement of said clock-work, and thereby interlocked with said ratchet-wheel at the end of each shifting of said mask, substantially as herein

specified, to prevent turning the mask by hand.

7. In an apparatus for controlling the issue of time-checks, a mask for guarding the check-compartments, having an aperture to afford access to the latter, one at a time, and composed of wire-gauze stretched upon an annular frame of wire, with frame-wire bordering said aperture, substantially as herein specified.

8. In an apparatus for controlling the issue of time-checks, having a central clock surrounded by a check-holder open at top, substantially as herein specified, a rotary annular mask to guard the check-compartments, united with the outer hinge-frame of the clock-face glass, in combination with radial arms for carrying and attaching said mask projecting from a collar which embraces a sleeve-arbor behind the hour-hand, interlocked at their outer ends with said hinge-frame, and fastened together with said clock-face glass by a lock or seal, substantially as shown.

Dated at Brooklyn this 3d day of October, 1884.

JOHN S. GOLDSMITH.

Witnesses:

JACOB G. CARPENTER,

NEVILLE MCEVOY.