Jan. 16, 1923.

1,442,441

H. W. PUGH.
TOLL TICKET DISTRIBUTING SYSTEM.
FILED NOV. 2, 1920.

2 SHEETS-SHEET 1

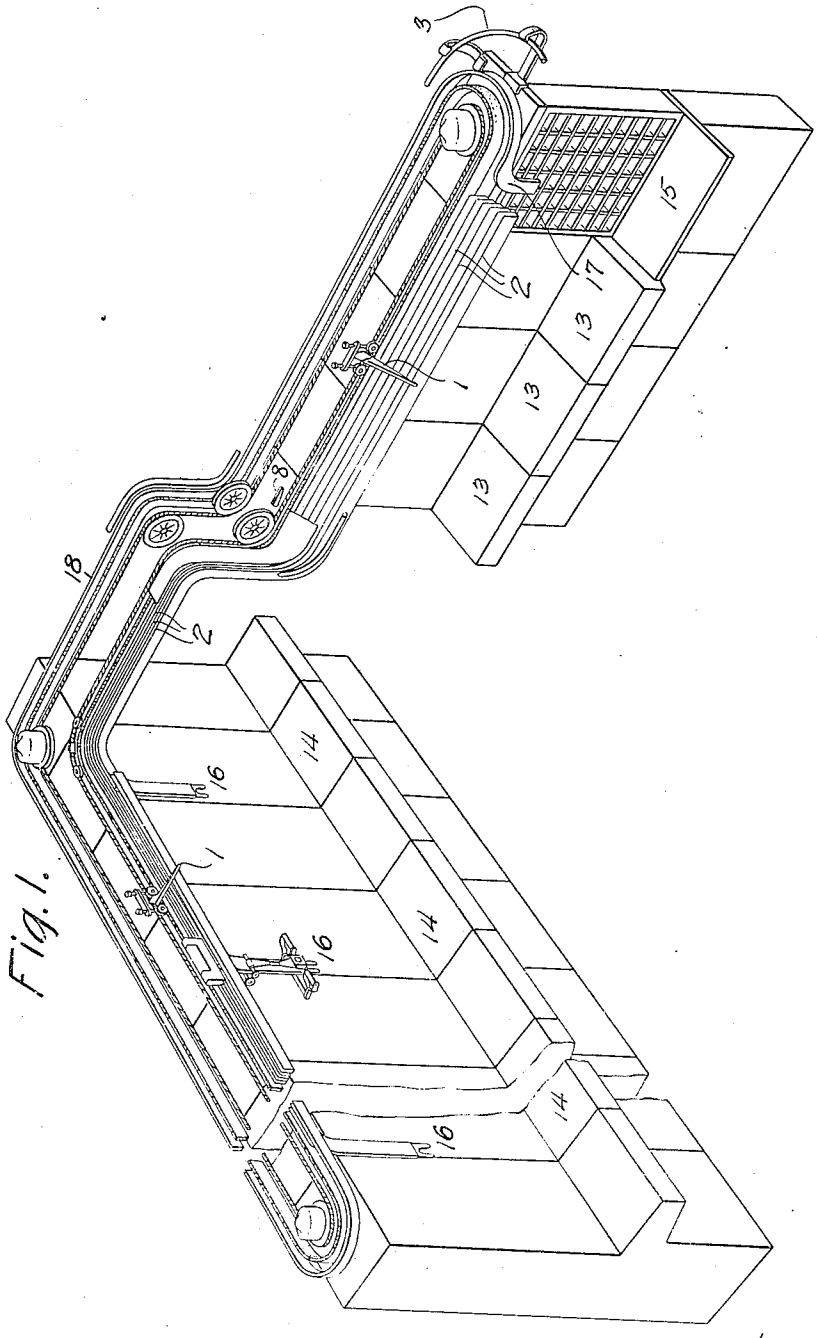



Fig. 1.

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2 SHEETS-SHEET 2

Fig. 2.

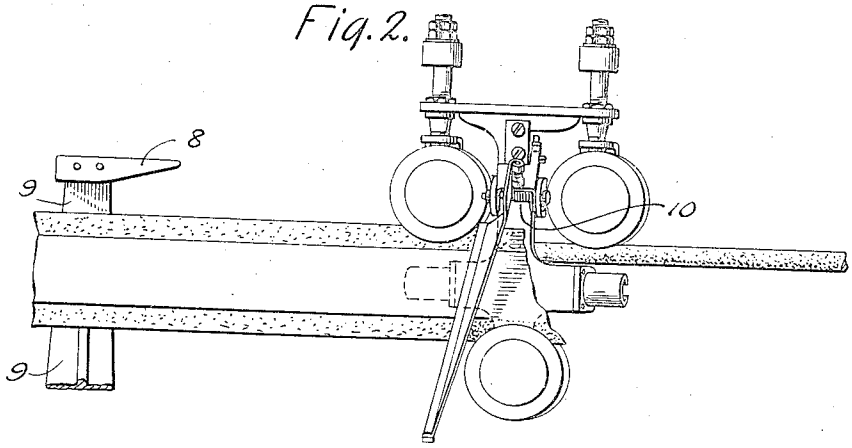



Fig. 3.

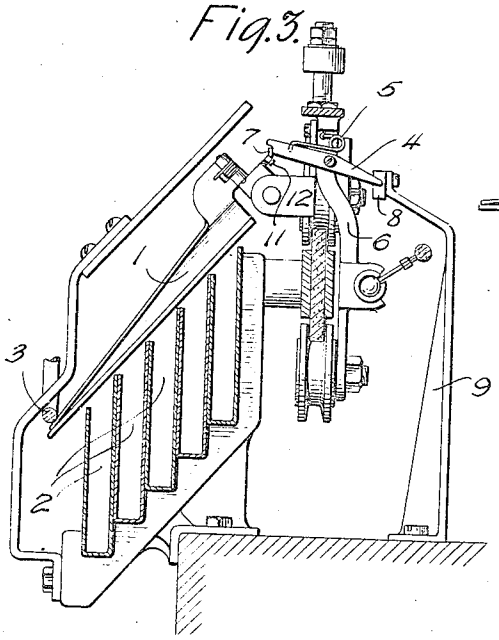
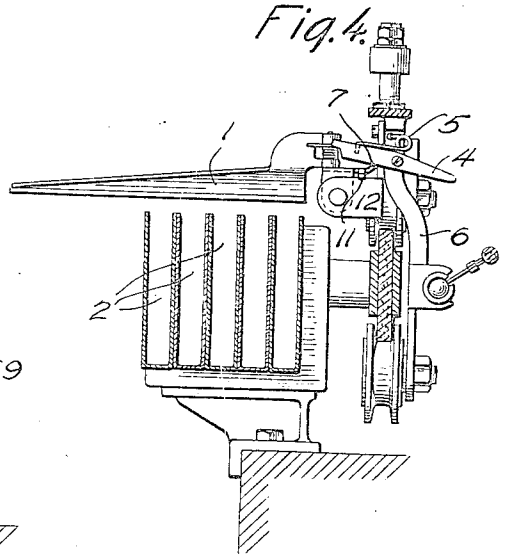



Fig. 4.




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Patented Jan. 16, 1923. 1,442,441

# UNITED STATES PATENT OFFICE.

HARRY W. PUGH, OF NEW YORK, N. Y., ASSIGNOR TO WESTERN ELECTRIC COMPANY, INCORPORATED, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

## TOLL-TICKET-DISTRIBUTING SYSTEM.

Application filed November 2, 1920. Serial No. 421,219.

*To all whom it may concern:*

Be it known that I, HARRY W. PUGH, a citizen of the United States, residing at New York, in the county of Bronx, State of New York, have invented certain new and useful Improvements in Toll-Ticket-Distributing Systems, of which the following is a full, clear, concise, and exact description.

This invention relates to toll ticket distributing systems for use in telephone exchanges.

The object of this invention is to improve the means for operating card propellers in toll ticket distributing systems. In systems of this type card tickets, on which information concerning a required telephone connection has been entered, are propelled along guide channels, in which they have been placed, until they reach outlets in the channels mentioned and are received by switchboard operators having charge of the class of service desired.

In systems of the type mentioned it is usual to have the ticket guides parallel at all points except where the guides terminate in outlet chutes at the operators' positions. The bottom or base line of the guides perpendicular to the guide walls at all points except over the recording and assignment desk where the guides are banked or arranged in step formation so that the base line of the guides is at an angle other than 90° to the guide walls, to facilitate insertion of tickets therein. A travelling ticket propeller moves along the open face of the guides engaging the edges of the tickets and moving them edgewise as above mentioned. At the place of transition of the guides from banked or stepped formation to rectangular formation and at other possible locations throughout the system, the propeller arm must be altered in position to conform with the guide edge contour. In accordance with this invention means are provided for efficiently accomplishing this movement.

This invention provides in a toll ticket distributing system, having a plurality of U-shaped ticket guides arranged in rectangular formation or in stepped or banked formation at any given point in the system, with a hinged travelling ticket propeller attached to a belt driven trolley running on a trolley track and sweeping over the open ends of the said guides, a means arranged to retain the propeller in an oblique position over said banked guides until subsequently released, whereupon the arm may swing to its normal position.

The invention is illustrated in the accompanying drawings in which Figure 1 is a perspective view of a telephone exchange switchboard system embodying the improved ticket distributing system of this invention. Figure 2 discloses the trolley track, front view of the combination of trolley, ticket propelling arm and arm control mechanism. Figure 3 discloses an end sectional view of ticket guides and trolley track and side view of the trolley, ticket propelling arm, mechanism thereof and cam for operating said control mechanism all in a position for propulsion of tickets through guides in banked or stepped formation. Figure 4 discloses the same apparatus as Figure 3 but without the propeller arm guide and housing and control operating cam, showing apparatus in position for propeller arm control operated and in position for propulsion of tickets through guides arranged in rectangular formation.

In Figure 1 is disclosed a perspective view of a recording and assignment desk 13 where information tickets are filled out, a series of operator's switchboard positions 14 and a filing desk 15. Also, located above all of these is a ticket distributing system arranged with a plurality of ticket guides in banked or stepped formation at the assignment desk 13, said guides being within easy reach of the attendants for the insertion of information tickets which are periodically engaged by propeller arm 1 and pushed through the ticket guides 2 until outlets 16 in said guides are reached at the operator's switchboard positions 14, whereupon said tickets fall through said outlets and are received by said switchboard operators for their action. At the beginning and, upon completion of the calls the time is stamped on the tickets by the operators, whereupon they are placed in the outside guide 18, and propelled therethrough to outlet 17 at the filing desk 15.

The propeller arm 1 attached to the trolley mechanism is moved along the tops of the ticket guides 2 in their banked or stepped formation, being brought into an oblique position to conform to the formation of said ticket guides by a cam or guide rod 3 so lo-

cated as to engage said propeller arm near its outer end, in which position the arm becomes locked. This locking is accomplished by the trigger pawl 4, actuated by spring 5 and pivoted to the trolley upright 6, riding on the propeller arm locking jaw 7 until said jaw has been moved to such a position by lowering of the said arm that the trigger pawl 4 falls behind it latching the said jaw into a notch in said trigger and thus holding the said arm in its oblique position independent of cam 3, which ceases to function, until said trigger is released as hereinafter set forth.

The change in the ticket guide arrangement from banked or stepped formation to rectangular formation requires that propeller arm 1 be swung up to conform to the new alignment of ticket guide edges. This is accomplished by the action of a cam 8 placed and held by support 9 as to engage the free end of trigger 4 moving it out of engagement with the propeller arm locking jaw and allowing retractile spring 10 to swing said arm into a position conforming to the new alignment of ticket guide edges, said position being determined by stop 11 engaging the retaining fork 12 in which position the propeller arm remains while traversing the course of the ticket guides until further changes in alignment of said guides again occurs, whereupon the operations before mentioned are repeated.

The economy and advantage made possible by use of this device resides in the shortening of the depressing cam or guide rod 3 to only that length necessary to allow latching of the propelling arm in an oblique position, thus economizing in material and adjustments and gaining the advantage of more noiseless operation due to lack of continued friction between the propeller arm and the said guide rod.

It will be evident that the device set forth may be employed in other mechanisms than that herein disclosed without departing from the spirit of this invention.

What is claimed is:

1. In a ticket distributing system, the combination of ticket guides having collecting surfaces of different contours, a trolley track, cooperating means for the propulsion of tickets, means for causing said propulsion means to accommodate itself to one contour in the collecting surface and other means for causing said propulsion means to accommodate itself to another contour.

2. In a ticket distributing system, the combination of ticket guides having collecting surfaces of different contours, a trolley track, cooperating means for the propulsion of tickets, means carried by said track for restricting said propelling means to the contour of the collecting surfaces, and means for allowing said propelling means to return to its original condition at predetermined points.

3. In a ticket distributing system, the combination of ticket guides, a trolley track, a trolley operable thereon, a ticket propelling arm for said guides and attached to said trolley, a cam carried by said track and arranged to move said propelling arm into an oblique position at predetermined points and a latching mechanism attached to said trolley and cooperating with said propelling arm to lock it in its oblique position until subsequently released at predetermined points.

4. In a ticket distributing system, the combination of ticket guides, a trolley track, a trolley operable thereon, a ticket propelling arm for said guides and attached to said trolley, a cam carried by said track and arranged to move said propelling arm into an oblique position at predetermined points and a pawl arranged to engage a jaw on said propelling arm on the opposite side of arm's attachment to the trolley, locking said arm in an oblique position until subsequently released at predetermined points.

5. In a ticket distributing system, the combination of ticket guides, a trolley track paralleling said guides, a trolley operable thereon, a ticket propelling arm attached to said trolley, a cam separate from said trolley arranged to move said propelling arm into an oblique position at predetermined points and a spring actuated pawl arranged to engage the jaw on said propelling arm on the opposite side of arm's attachment to the trolley, locking said arm in an oblique position until subsequently released at predetermined points.

6. In a ticket distributing system, the combination of ticket guides, a trolley track paralleling said guides, a trolley operable thereon, a ticket propelling arm attached to said trolley and latched in an oblique position by a spring actuated pawl and a cam at a predetermined point held on a support separate from said trolley in a position to engage said pawl and disengage same from a propelling arm jaw, releasing said arm to swing to its normal position by action of its retractile spring.

7. In a ticket distributing system, the combination of a set of ticket guides in banked formation, a set of ticket guides in rectangular formation, said second mentioned set being a continuation of said first mentioned set, a trolley, a propelling arm attached to said trolley for said ticket guides, means for causing said propelling arm to accommodate itself to the alignment of said guides and locking means for holding said propelling arm in a desired position.

8. In a ticket distributing system, the combination of sets of ticket guides in various formation, a trolley track, a trolley operable

thereon, a propelling arm hinged to said trolley for said ticket guides, means located at predetermined points along said track for causing said propelling arm to accommodate itself to the alignment of said guides and a trigger pawl engaging said propelling arm at its trolley end to lock said propelling arm in any position effected by the aforesaid means.

9. In a ticket distributing system, the combination of sets of ticket guides in various formations, a trolley track, a trolley operable on said track, a ticket propelling arm for said ticket guides carried thereby, a cam engaging said propelling arm at its outer end and positioning said propelling arm to conform with the guides in one formation, a trigger pawl to engage said propelling arm and lock said arm in said position, means to release said pawl and means to change said propelling arm to a position to conform with the guides in another formation.

10. In a ticket distributing system, the combination of a set of ticket guides in banked formation, a trolley track paralleling said guides, a trolley operable thereon, a propelling arm for said ticket guides carried thereby, means to position said propelling arm to conform with the guides in banked formation, a trigger pawl to lock said arm in said position, a set of ticket guides in rectangular formation, a cam to engage the free end of said pawl to release it from locking engagement with said propelling arm, and a retractile spring operable upon the release of said pawl to raise said propelling arm to a horizontal position to conform with the guides in said rectangular formation.

In witness whereof, I hereunto subscribe my name this 30th day of October, A. D. 1920.

HARRY W. PUGH.