

A. L. DRUM.
 STATION CONSTRUCTION AND METHOD OF HANDLING TRAFFIC.
 APPLICATION FILED OCT. 18, 1911.
 1,050,818. Patented Jan. 21, 1913.
 2 SHEETS—SHEET 1.

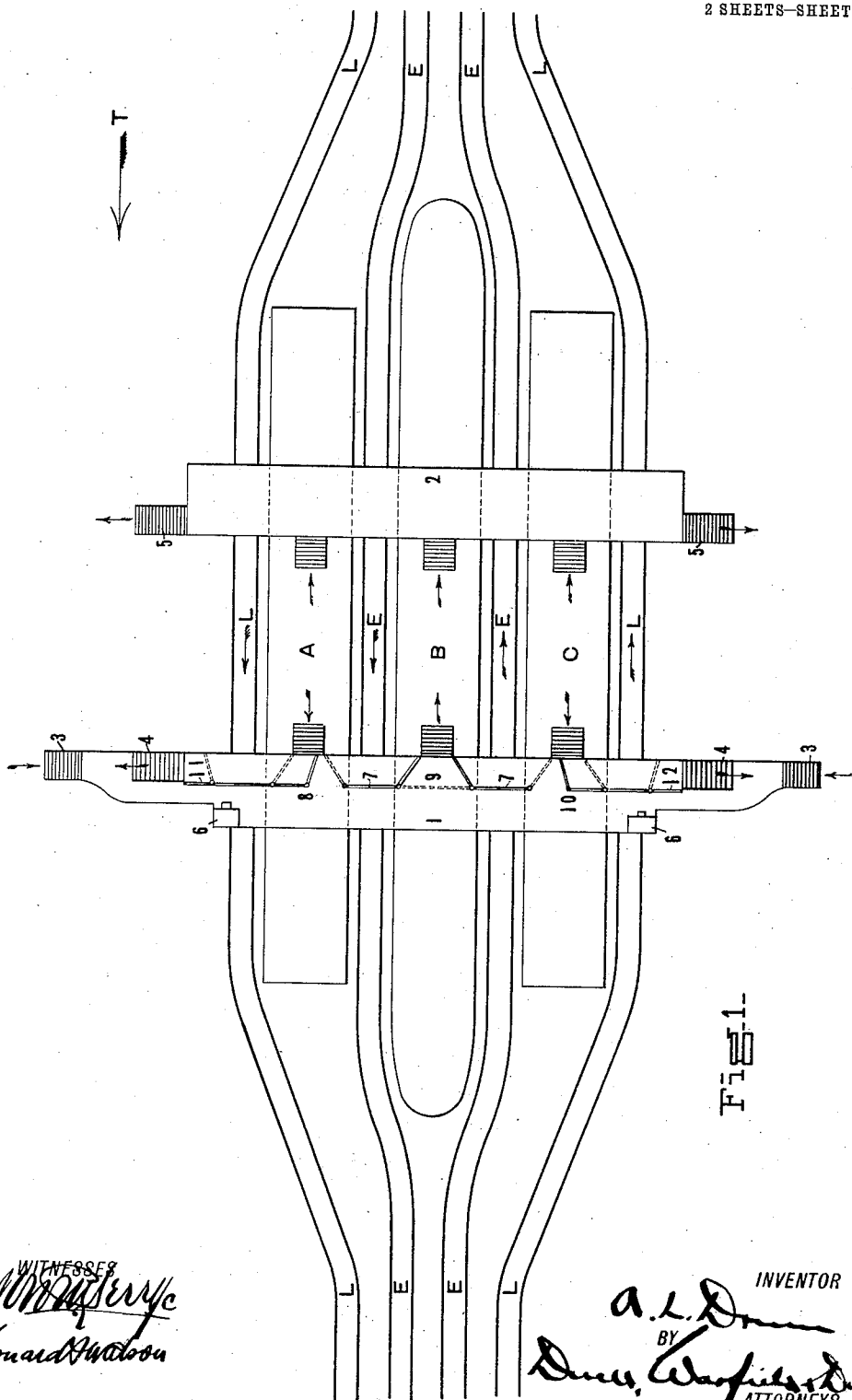


Fig. 1-

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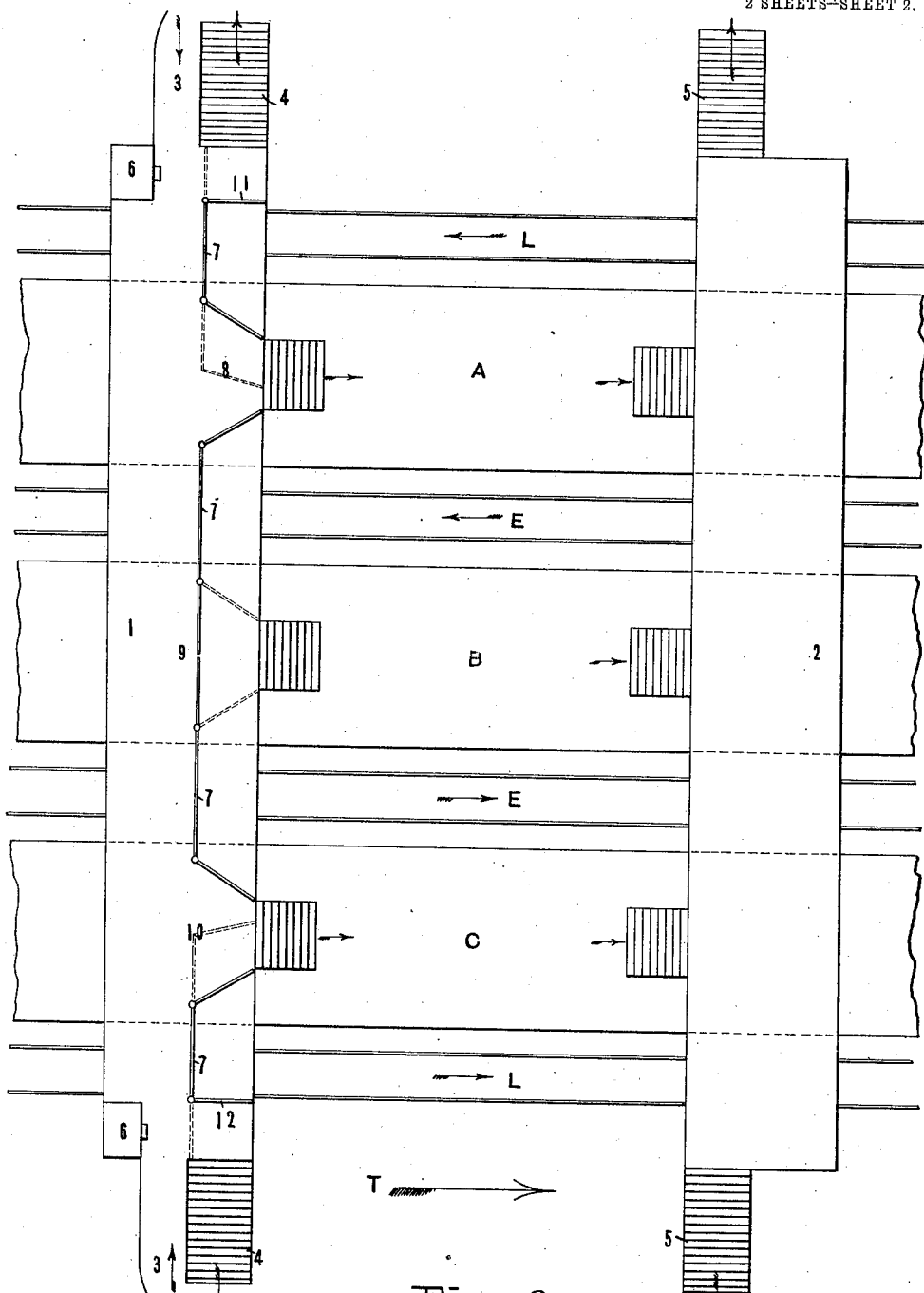


Fig. 2.

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STATION CONSTRUCTION AND METHOD OF HANDLING TRAFFIC.

1,050,818.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ALPHONSUS L. DRUM, a citizen of the United States, residing at Highland Park, in the county of Lake and State of Illinois, have invented certain new and useful Improvements in Station Construction and Methods of Handling Traffic, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to station construction and methods of handling the traffic therein, and with respect to the more specific features thereof, the express stations of a four-track railway system and methods of handling the passengers in loading and unloading the cars.

One of the objects of the present invention is to provide a simple and practical arrangement of station platforms, entrances, and exits whereby the passengers may enter and leave the station quickly and without interfering.

Another object is to provide an arrangement of station platforms that may be quickly changed from loading to unloading platforms in order better to handle the traffic passing therethrough according to the direction of the heavier traffic due to the time of day.

A further object is to provide an efficient method of handling passengers entering or leaving trains and stations.

Other objects will be in part obvious and in part pointed out hereinafter.

The invention accordingly consists in the features of construction, combinations of elements and arrangement of parts which will be exemplified in the construction hereinafter set forth, and the scope of the application of which will be indicated in the following claims.

In the accompanying drawings, wherein is shown one of various possible embodiments of this invention, Figure 1 is a plan view, partially diagrammatic, showing the arrangement of an express station and tracks of a four-track railway system. Fig. 2 is an enlarged view of a portion of Fig. 1 showing a slight difference in arrangement of entrances and exits to accommodate better the traffic which is heavier in a direction opposite to that as provided for by the arrangement shown in Fig. 1.

Similar reference characters refer to sim-

ilar parts throughout the several views of the drawings.

For convenience and better illustrating the nature of the invention, it will be hereinafter described with relation to a four-track subway system, although it is, of course, to be understood that with slight modifications the same invention may be applied to elevated railroads or suburban steam railroads.

In the usual four-track subway system four or five local stations are arranged intermediate the express stations, which latter are substantially a mile and a half or two miles apart. If a person boards a local train at one of the intermediate stations and is traveling a considerable distance, on arriving at the next express station he changes to an express train and travels the remaining distance or to the express station nearest to his destination thereon, when he again boards a local train until he arrives at the proper station. In the subways as now arranged there is much confusion at the express stations in the loading and unloading of passengers from the same side of the express train and transferring them to and from local trains at the opposite side of the platform. This also causes some delay as time is first required to unload, through the waiting crowd, the passengers arriving at their destination or desiring to change to a local train usually going in the same direction, and then to load the waiting passengers who have gotten off of a local train from preceding intermediate stations. By the herein described arrangement of tracks and platforms this confusion is avoided and time saved by simultaneously loading and unloading the cars from opposite sides thereof. From observation, it has been noted that the average time for loading an express train during the rush hours is substantially seventy seconds, which, together with the time taken for the train to pull into the station, requires practically two minutes for each train to pass a station. If, however, the station is so located, that is, half way between "uptown" and "downtown" where there is less unloading, this time will, of course, be reduced thirty or forty seconds. It has been found by experience, however, that loading the train from one side while unloading from the opposite side saves thirty to forty seconds, thus reducing the average total time to sub-

stantially a minute and a half, thereby permitting forty trains instead of thirty trains to pass a station per hour, or increasing the capacity of the express track substantially 33 1/3%.

Referring now to the drawings in detail, particularly Fig. 1, let it be assumed that the tracks run beneath a main street extending in the direction of the length of the city and that the station shown is located downtown at a cross street. The platform entrances and exits are arranged to accommodate the morning traffic which is heavier in a downtown direction as indicated by the arrow T. As the tracks approach the station they diverge to provide intermediate space for three island platforms A, B and C, respectively, the two outer tracks being the local tracks on which the trains run in the directions as indicated, while the inner tracks are for the express trains. These platforms are connected by stairways with mezzanine or transverse platforms 1 and 2 positioned above the tracks and running in the direction of the cross street. The platform 1 may be considered as the entrance platform and is provided with two entering stairways 3, near its opposite ends. Two exits 4 may also be provided, if preferred, although it may be desired to confine the exit of the passengers to exits 5 leading from the platform 2 at the opposite side of the cross street. The platform 1 is provided with ticket windows 6 near the entrances past which the passengers must go to board the trains. A railing 7 divides the platform 1 longitudinally and is provided at the head of each stairway leading to platforms A, B, and C with swinging gates 8, 9 and 10, respectively. As herein shown in Fig. 1, the gates 8 and 10 are practically closed, a small space being provided to permit the few passengers wishing to take a local train to a closely adjacent station to enter the platforms A and C directly. The sections of the gates 8, 9 and 10 are freely movable so that they may be easily and quickly changed from one to another of the positions shown. When the gates are arranged in this position both stairways leading from the platforms A and C may be used as exits to accommodate people leaving the station, the number leaving being much greater than those entering. Swinging gates 11 and 12 are provided near the exits 4 for this purpose.

Referring now to Fig. 2, which shows the arrangement of the same station platforms for accommodating the evening traffic which is heavier in an uptown direction, as indicated by the arrow T, it will be noted that at this time there will be more people entering the station than leaving. The two platforms A and C which in the morning were used for unloading trains are changed to

loading platforms by opening the gates 8 and 10, and closing the gate 9 to the platform B. The platform B is used for unloading express trains only, there, of course, being comparatively few coming uptown from the few remaining downtown stations and leaving at this station. The gates 11 and 12 are moved to the position indicated so that the exits 4 may be used as entrances at this time. Changeable signs "Entrance" or "Exit only" should preferably be applied where necessary. Also signs in the cars should direct passengers to the discharging sides, although the latter could probably be dispensed with as people traveling the same route day after day soon learn the regulations while strangers naturally follow the crowd.

As the construction and arrangement of the parts of the station have been fully described, the operation and method of handling the traffic is substantially as follows: In the morning when the traffic is heavier in a downtown direction, the passengers are unloaded from both the downtown express and local trains onto the platform A, while the uptown express and local trains unload onto the platform C, both express trains loading from the platform B. the entrance to which is open at the gate 9, gates 8 and 10 being partially closed, Fig. 1, for the reasons above explained. All three platforms discharge their passengers to the transverse platform 2 hence by the exits 5 to the street. Some of the passengers may also leave by the exits 4 by using the wider part of the steps near the gates 8 and 10. In this way a large number of people may quickly leave the station without in any way interfering with the few people going uptown during the early rush hours. In the evening the situation is reversed, that is, the heavier traffic is in an uptown direction and the platforms A and C are converted into loading platforms while the platform B is confined to the unloading of passengers from the express trains. The passengers may go direct through the gates 8 and 10 to the loading platforms where they enter either an express or a local train as desired. If any one should be going uptown, for example, on an express train and wished to take a local train, it is necessary for him to go up the stairs to the platform 2 and cross over to the platforms A or C, according to the direction in which he wishes to go.

As above stated, the present invention is shown as applied to a subway system although it may be very easily applied to an elevated railroad by positioning the platforms 1 and 2 below the tracks instead of above.

It is thus seen that this invention provides a simple and practical arrangement of station platforms whereby the traffic may be

quickly and efficiently handled without confusion or interference between the entering and leaving passengers.

As many changes could be made in the above construction and many apparently widely different embodiments of this invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense. It is also to be understood that the language used in the following claims is intended to cover all of the generic and specific features of the invention herein described and all statements of the scope of the invention, which, as a matter of language, might be said to fall therebetween.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In station construction, in combination, a plurality of through tracks, a plurality of platforms arranged adjacent said tracks comprising island platforms between each track and the adjacent track or tracks, and reversible traffic-guiding means adapted at certain periods to guide passengers toward the majority of said platforms as loading platforms and from the remaining platform or platforms as unloading platforms, and at certain other periods to guide said traffic in the opposite directions whereby said first platforms become unloading platforms and the remaining platform or platforms become loading platforms.

2. In station construction, in combination, a pair of through express tracks, a pair of other tracks for local trains respectively arranged outside said express tracks, a plurality of platforms comprising island platforms arranged between each track and the adjacent track or tracks, whereby passengers may pass from either express track to the adjacent local track, and reversible traffic guiding means adapted at certain periods to guide passengers toward the majority of said platforms as loading platforms, and from the remaining platform or platforms as unloading platforms, and at certain other periods to guide said traffic in the opposite directions, whereby said first platforms become unloading and the remaining platform or platforms loading.

3. In an arrangement of the character described, in combination, a four track railway system, an island platform between each pair of tracks, two of which are adapted to be used as unloading platforms and one as a loading platform when the traffic is heavier of passengers arriving at the sta-

tion, a transverse platform, stairways connecting said transverse platform with each of the island platforms, and a rail longitudinally dividing said transverse platform, portions of said rail being movable to form gates adapted to open or close the entrances to the several island platforms, the gates to the loading platform being opened to permit entrance of the passengers thereto while the gates to the unloading platforms are closed against entrance of passengers but permit an exit for the unloading passengers.

4. In an arrangement of the character described, in combination, a four track railway system, an island platform between each pair of tracks, two of which are adapted to be used as unloading platforms and one as a loading platform when the traffic is heavier of passengers arriving at the station, a transverse platform, stairways connecting said transverse platform with each of the island platforms, a rail longitudinally dividing said transverse platform, portions of said rail being movable to form gates adapted to open or close the entrances to the several island platforms, the gates to the loading platform being opened to permit entrance of the passengers thereto while the gates to the unloading platforms are closed against entrance of passengers but permit an exit for the unloading passengers, and additional exits from each of said platforms.

5. In an arrangement of the character described, in combination, a four track railway system, an island platform between each pair of tracks, two of which are adapted to be used as unloading platforms and one as a loading platform when the traffic is heavier of passengers arriving at the station, a transverse platform, stairways connecting said transverse platform with each of the island platforms, a rail longitudinally dividing said transverse platform, portions of said rail being movable to form gates adapted to open or close the entrances to the several island platforms, the gates to the loading platform being opened to permit entrance of the passengers thereto while the gates to the unloading platforms are closed against entrance of passengers but permit an exit for the unloading passengers, and a second transverse platform connected with each of said island platforms forming additional exits for the passengers.

In testimony whereof I affix my signature, in the presence of two witnesses.

ALPHONSUS L. DRUM.

Witnesses:

E. A. TURPIN,
E. LOUISE PALMER.