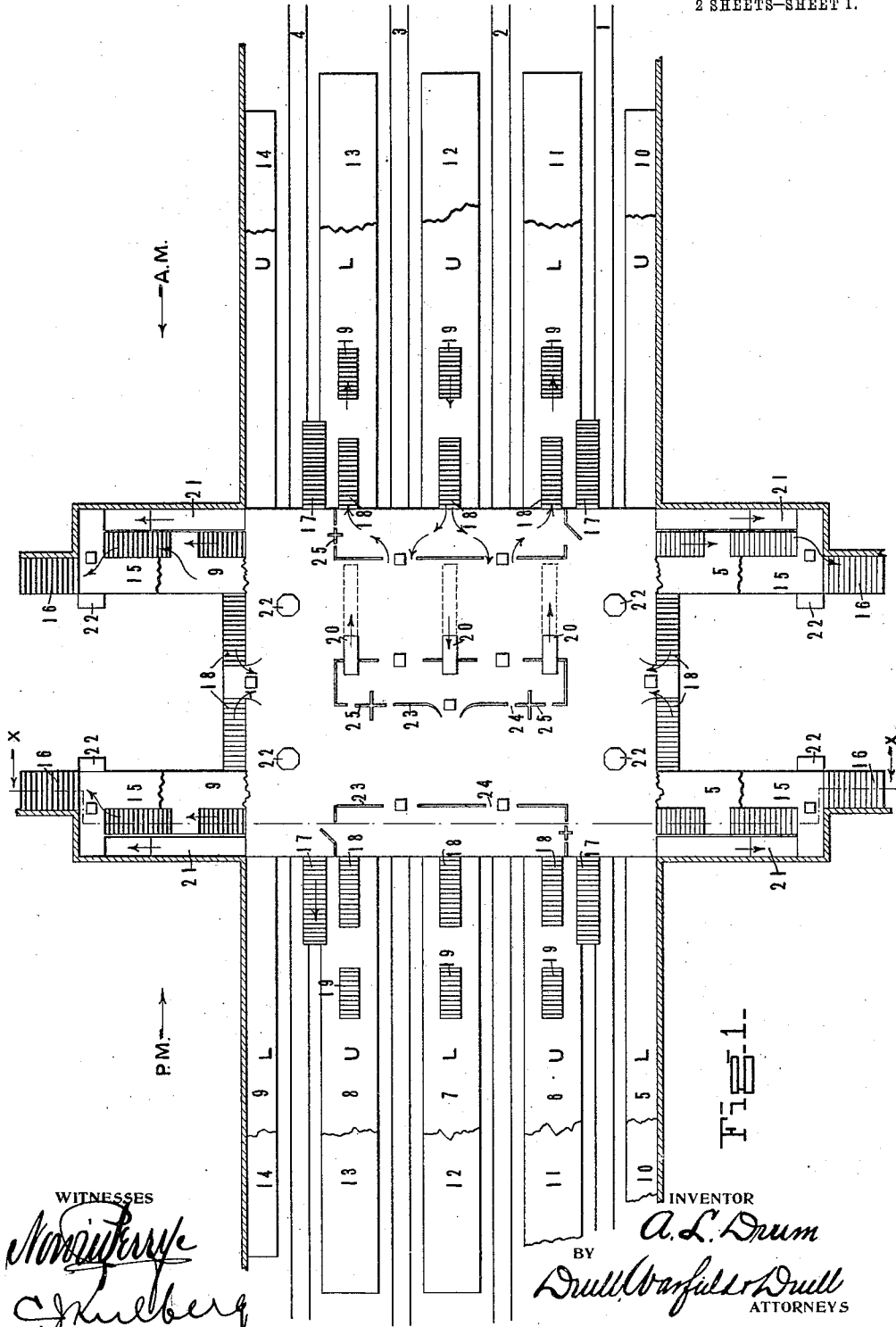


A. L. DRUM.
STATION CONSTRUCTION AND METHOD OF HANDLING TRAFFIC.
APPLICATION FILED OCT. 26, 1912.

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Patented Mar. 25, 1913.

2 SHEETS—SHEET 1.



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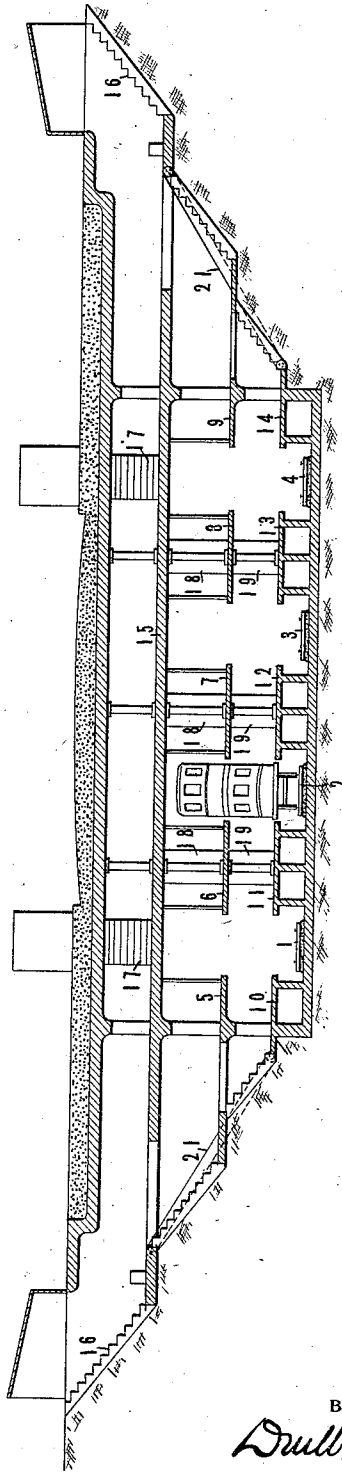


Fig. 2-

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STATION CONSTRUCTION AND METHOD OF HANDLING TRAFFIC.

1,056,979.

Specification of Letters Patent.

Patented Mar. 25, 1913.

Application filed October 26, 1912. Serial No. 727,822.

To all whom it may concern:

Be it known that I, ALPHONSUS L. DRUM, a citizen of the United States, residing at Chicago, in the county of Cook 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 railway station construction and the method of handling traffic therein.

One of the objects of this invention is to provide an efficient and practical method of handling traffic.

Another object is to provide a station of practical construction which will permit traffic therethrough more expeditiously and with less interference and confusion.

Another object is to provide a station of the above-mentioned character particularly adapted for use with double-deck cars.

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

The invention accordingly consists in the several steps and the relation and order of one or more of such steps with relation to each of the others thereof, and in the features of construction, combinations of elements and arrangement of parts, which will be exemplified in the method hereinafter disclosed and the construction hereinafter set forth, and the scope of the application of each of which will be indicated in the following claims.

In the accompanying drawings, wherein is shown one of the various possible embodiments of this invention, Figure 1 is a sectional plan view showing the arrangement of tracks and platforms as applied to a four-track subway system; certain parts being broken away for the sake of clearness; Fig. 2 is a transverse sectional view in elevation of the same station taken on line $x-x$, Fig. 1.

Similar reference characters refer to similar parts throughout both views of the drawings.

The present invention will be hereinafter described as applied to a four-track subway system in which the two central tracks are for express trains running in opposite directions, while the adjacent outside tracks are for the local trains. It will, of course, be

understood, however, that with slight modifications the same invention may be applied to elevated railroads or surface roads.

Referring now in detail to the drawings, and more particularly to Fig. 1, the station shown may be considered a downtown express station located, for example, at the intersection of two prominent streets running at substantially right angles to each other. The local and express east-bound tracks 1 and 2, respectively, and the west-bound express and local tracks 3 and 4 running in the opposite direction, pass between five platforms 5, 6, 7, 8 and 9, platforms 6, 7 and 8 being hereinafter referred to as island platforms. These platforms represent the upper level platforms, while immediately therebelow is another set 10, 11, 12, 13 and 14, from which passengers may enter or leave the lower decks of the cars. It is thus seen that each track has a double-deck platform at each side thereof. Extending transversely above these superimposed platforms is a mezzanine floor or platform 15 which may be reached by means of stairways 16 from the level of the street crossing the tracks. There are also provided other stairways 17 leading to this platform from the street running parallel to and above the tracks. Extending from the mezzanine floor to each of the high level platforms 5, 6, 7, 8 and 9, are flights of stairs 18, at the foot of which, separated by a short strip of platform, are other flights of stairs 19 continuing to the low level platforms. Connecting the central part of the mezzanine floor with the low level platforms 11, 12 and 13 are three escalators 20. Similar escalators 21 are also provided at each end of the mezzanine floor communicating with the outside low level platforms 10 and 14. These escalators are preferably of a reversible type, as they require less space and are more economical in use, although, of course, double escalators running in opposite directions may be installed in each of these places if so desired.

Ticket booths 22 are provided at convenient places on the mezzanine floor near the stairway and escalator entrances which are guarded by suitable railings 23 provided with openings 24 therein as desired. Changeable signs marked "Entrance" or "Exit" are placed above the openings as may be necessary, and are changed to direct the traffic.

The operation and method of handling traffic at a station of this character is substantially as follows: As above stated, the station shown is a downtown express station, and the traffic in the early morning hours will be heavier in the direction toward this station, in which case three of the five platforms, that is, 5, 7 and 9, together with their respective low level platforms 10, 12 and 14, are used as unloading platforms from both decks of the cars. Passengers leaving the trains to go to the street level may use the escalators on these platforms which are running in an upward direction at this time to carry them to the mezzanine floor, or they may use the stairways, if for any reason the escalators are not running, passing thence through gates or turn-stiles 25 in the railing 23, and by the stairways 16 or 17 to the street. The comparatively few people who are going uptown in the early hours are directed to the escalators running down to the loading island platforms 6 and 8, or their lower levels 11 and 13, whereby they enter the opposite side of the car simultaneously with the discharging of the passengers. If there are passengers who desire to change from an express train going west on track 3 to a local going in a similar direction on track 4, they may cross the loading platform 8 directly, instead of leaving the car at platform 7 and going up the stairs across the mezzanine floor, thence down to platform 8. In the evening when the traffic is heavier in an uptown direction, the loading and unloading platforms are changed to unloading and loading platforms, respectively, thus providing a greater number of loading platforms. The direction of the escalators is also reversed in order to carry the passengers more rapidly to the desired loading platforms. In order that this arrangement may be more readily understood, the reference characters U and L, denoting "unloading" and "loading", respectively, have been applied to the right hand end of the platforms for the morning hours in which the traffic is in the direction to the station, and to the left hand end of the platforms for the evening hours when the traffic is in the opposite direction. The arrows in the figures indicate the direction of the heavier traffic going from the cars to the street in the morning hours.

It will thus be seen that this invention provides a simple and practical station construction, and a rapid and efficient method of handling traffic therethrough, adapted to accomplish, among others, all of the objects and advantages above set forth.

As many changes could be made in carrying out the above method, and in the above construction, and many apparently widely different embodiments of this inven-

tion 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. The herein described method of handling passenger traffic in a station of a four-track railway system, which consists in loading double-deck cars from a certain number of superimposed platforms from which passengers enter the cars simultaneously with the unloading of passengers to a less number of platforms when the traffic is heavier in a direction from the station and reversing the relative number of loading and unloading platforms when the preponderance of traffic is toward the station.

2. In station construction, in combination, a multiple-track system adapted to accommodate double-deck cars running in different directions, superimposed platforms at each side of each track, a pair of superimposed island platforms between said tracks, a transverse platform positioned at a different level from said first-mentioned platforms, means for connecting the platforms of different levels with each other to permit the passengers to pass from one to the other, and means connecting the superimposed platforms with said transverse platform.

3. In station construction, in combination, a multiple-track system adapted to accommodate double-deck cars running in different directions, superimposed platforms at each side of each track, a transverse platform positioned at a different level from said first mentioned platforms, and means for connecting the platforms of different levels with each other to permit the passengers to pass from one to the other.

4. In station construction, in combination, a multiple-track system adapted to accommodate double-deck cars running in different directions, superimposed platforms at each side of each track, a transverse platform positioned at a different level from said first mentioned platform, and means connecting the platforms of different levels with each other to permit the passengers to pass from one to the other, said means including reversible escalators.

5. In station construction, in combination, a four-track system adapted to accommodate double-deck cars running in different directions, superimposed platforms at each

side of each track, a transverse platform positioned at a different level from said first mentioned platform, and means connecting the platforms of different levels with each other to permit the passengers to pass from one to the other, said means including a plurality of sets of escalators and stairs.

6. In station construction, in combination, a four-track system adapted to accommodate double-deck cars running in different directions, superimposed platforms at each side of each track, a transverse platform positioned at a different level from said first mentioned platforms, reversible escalators connecting the platforms of different levels with each other to permit the passengers to pass from one to the other, and means adapted to permit or prevent the passage of passengers from one platform to another as desired.

7. In station construction, in combination, a plurality of tracks adapted to accommodate local and express cars of the double-deck type running in opposite directions, superimposed platforms at each side of each track, a transverse platform located at a different level, means adapted to carry passengers from the transverse platform to any of the other platforms as desired, and means for permitting passengers to move from the street level to the level of said transverse platform, said means including escalators.

8. In station construction, in combination, a plurality of tracks adapted to accommodate local and express cars of the double-deck type running in opposite directions, superimposed platforms at each side of each track, a transverse platform located at a different level, means permitting passengers to move from the transverse platform to any of the other platforms as desired, and means permitting the passengers to move from the street level to the level of said transverse platform, said means including reversible escalators and stairways.

9. In station construction, in combination, a four-track system adapted to accommodate local and express trains running in different directions, a platform adjacent each side of each track whereby the cars may be loaded and unloaded simultaneously from opposite sides, a transverse platform positioned at a different level, escalators between said transverse platform and the first mentioned platforms, and means adapted to permit or prevent the passage of passengers from the transverse platform to one or more of the other platforms according to whether said platforms are to be used as loading or unloading platforms.

10. In station construction, in combination, a multiple-track system adapted to accommodate local and express trains running in different directions, a platform adjacent each side of each track whereby the cars

may be loaded and unloaded simultaneously from opposite sides, a transverse platform positioned at a different level, escalators between said transverse platform and the first mentioned platforms, and escalators adapted to permit or prevent the passage of passengers from the transverse platform to one or more of the other platforms according to whether said platforms are to be used as loading or unloading platforms, said escalators being reversible to run in the direction of traffic to or from the platform to which they are connected.

11. In station construction, in combination, a plurality of tracks adapted to accommodate local and express trains running in different directions, a platform positioned at each side of each track whereby the cars may be simultaneously loaded and unloaded from opposite sides, a transverse platform positioned at a different level from said first mentioned platforms, escalators and stairways connecting said transverse platform with the other platforms, stairways connecting said transverse platforms with the street level, means for changing said first mentioned stairways from entrances to exits at will according to whether said platforms with which they connect are used as loading or unloading platforms.

12. In station construction, in combination, a plurality of tracks adapted to accommodate local and express trains running in different directions, a platform positioned at each side of each track whereby the cars may be simultaneously loaded and unloaded from opposite sides, a transverse platform positioned at a different level from said first mentioned platforms, escalators and stairways connecting said transverse platform with the other platforms, stairways connecting said transverse platform with the street level, and means adapted to change said first mentioned stairways from entrances to exits at will, according to whether said platforms with which they connect are used as loading or unloading platforms, said escalators being reversible whereby they may be moved in the direction of the heavier traffic.

13. In station construction, in combination, a plurality of tracks running in different directions for double-deck cars of express and local trains, superimposed platforms adjacent each side of each track whereby both decks of the cars may be simultaneously loaded and unloaded from opposite sides, a transverse platform positioned at a different level from said first mentioned platforms, escalators and stairways adapted to permit or prevent the passage of passengers from one platform to another according to whether said platforms are used as loading or unloading platforms, and stairways connecting said transverse platform with the street level, said escalators

tors being of a reversible type whereby they may be run in the direction of the heavier traffic.

14. 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 escalators 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 the first platforms become unloading platforms and the remaining platform or platforms become loading platforms.

15. In station construction, in combination, a plurality of through tracks, a plurality of double-deck platforms arranged adjacent said tracks comprising island platforms between each track and the adjacent track or tracks, and escalators 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 the first platforms become unloading platforms and the remaining platform or platforms become loading platforms.

16. In station construction, in combination, a pair of through express tracks, a pair of through tracks for local trains respectively arranged outside of 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 escalators 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 guide said traffic in the opposite directions whereby said first platforms become unloading and the remaining platform or platforms, loading platforms.

17. In station construction, in combination, a pair of through express tracks, a pair of through tracks for local trains respectively arranged outside of said express

tracks, a plurality of double-deck 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 escalators 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 guide said traffic in the opposite directions whereby said first platforms become unloading and the remaining platform or platforms, loading platforms.

18. In station construction, in combination, a pair of through express tracks, a pair of through tracks for local trains respectively arranged outside of said express tracks, a plurality of double-deck 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 guide said traffic in the opposite directions whereby said first platforms become unloading and the remaining platform or platforms, loading platforms.

19. In station construction, in combination, a plurality of through tracks, a plurality of double-deck platforms arranged adjacent said tracks comprising island platforms between each track and the adjacent track or tracks, and reversible 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 the first platforms become unloading platforms and the remaining platform or platforms become loading platforms.

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

ALPHONSUS L. DRUM.

Witnesses:

R. C. CHOATE,
E. L. PALMER.