

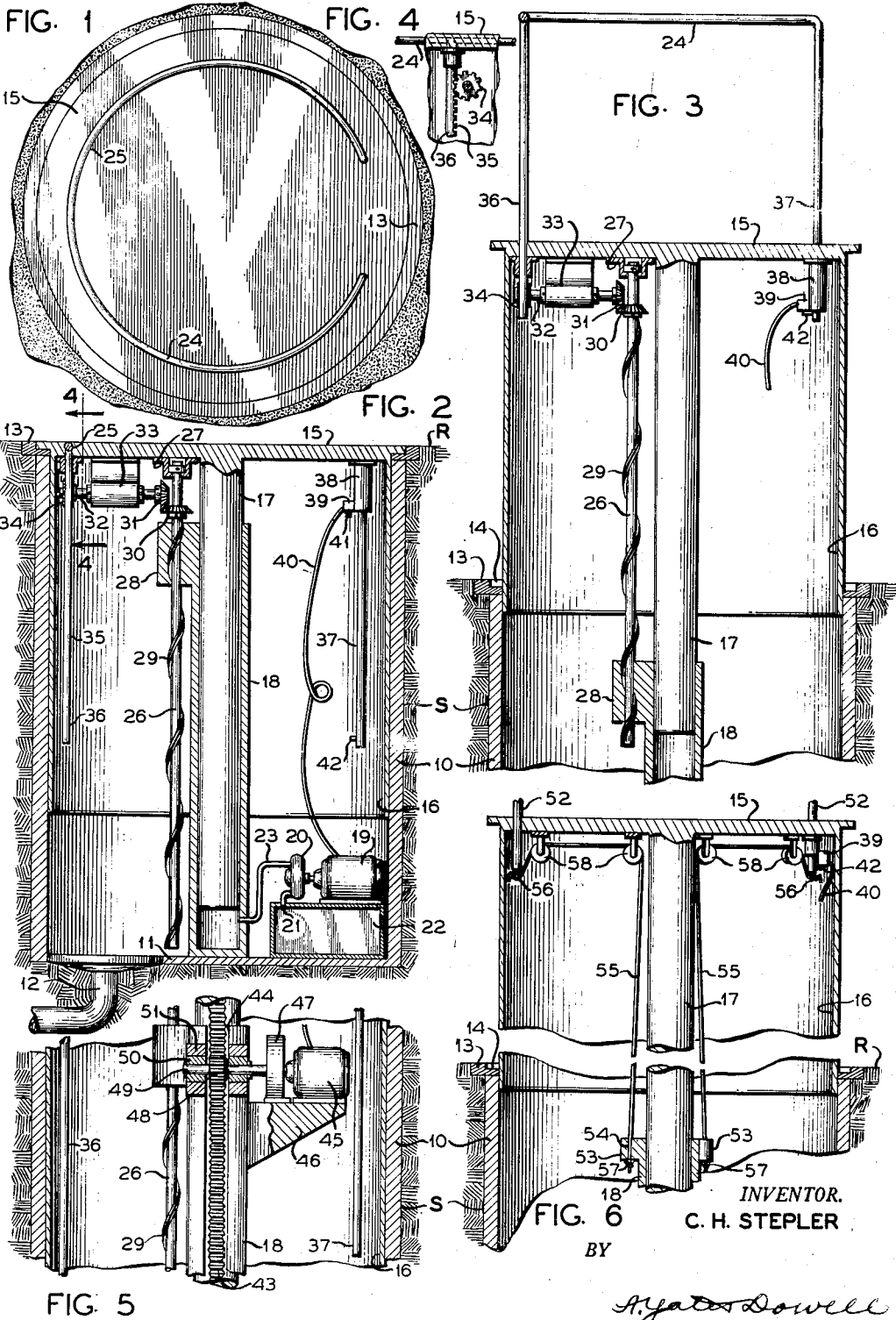
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ADJUSTABLE PLATFORM FOR TRAFFIC DIRECTIONS

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ADJUSTABLE PLATFORM FOR TRAFFIC DIRECTION

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This invention relates to a platform for directing traffic and more particularly to means whereby such a platform, when not in use, may be lowered to a position flush with the surface of the roadway or intersection thereof, so as not to interfere with or comprise an obstruction to the free movement of traffic.

The occupational hazards of police officers and other individuals directing traffic continue to increase, particularly where such directing is accomplished, of necessity, from a position on a level with the roadway. Statistics reveal that many hundreds of such persons suffer injuries annually either through errors in judgment on the part of drivers of motor vehicles or by reason of various forms of reckless driving.

It has further been discovered that not only is the position of the traffic director standing on the roadway particularly vulnerable but, except where such individuals are of unusual heights, they are not readily discernible, especially during heavy movement of traffic and on relatively narrow highways or intersections.

The advantages of a raised platform to elevate the traffic officer or other individual above the level of the roadway are too numerous to require particular discussion, however, since there are but extremely few places where continuous direction is required, the existence of such a structure as a permanent installation has generally been frowned upon and considered a needless traffic obstruction during many hours, generally the greater part of the combined day and night, and one which interfered with the smooth flow of traffic.

In many localities portable platforms are provided, designed for ready and convenient movement to appropriate positions substantially in the centers of busy street or other roadway intersections. However, such platforms, by the very nature of the portable characteristics thereof, are far from substantial or sturdy structures and do not provide adequate protection to the traffic director since they are not possessed of sufficient rigidity or weight to withstand an impact from a motor or other vehicle without transmitting the shock to an individual standing thereon.

It is accordingly a major purpose of the present invention to provide a platform for directing traffic which, when not in use may be lowered to a substantially concealed position flush with the surface of the roadway so as not to interfere with normal flow of traffic.

It is a further object of the invention to provide novel means for raising and lowering a

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traffic directing platform from a position flush with the roadway to a selective height thereabove, in accordance with the stature of the traffic director.

It is a further object of the invention to provide a platform of the class set forth including a guard rail to assist in the convenient and steady support of the traffic director, operative mechanism being provided to raise and support said guard rail above the level of the platform simultaneously with the elevation of the platform above the level of the roadway.

It is a still further object of the present invention to provide a platform of the class set forth which will be particularly sturdy, providing a rigid structure when elevated, which may be lowered to a concealed position except for the top thereof flush with the surface of the roadway when not in use, which will be simple in operation and economical of manufacture, and which will be substantially proof against deterioration by reason of weather conditions.

Further objects and advantages of the invention will be readily apparent from the following description taken in conjunction with the accompanying drawing, wherein:

Fig. 1 is a top plan view of a traffic directing platform constructed in accordance with the present invention;

Fig. 2, a vertical sectional view through the novel platform and illustrating a portion of the surrounding roadway;

Fig. 3, a vertical sectional view through the novel platform, similar to Fig. 2, but illustrating the platform in elevated position;

Fig. 4, a fragmentary sectional view, taken on the line 4—4 of Fig. 2;

Fig. 5, a fragmentary vertical sectional view through the platform shaft or housing, illustrating a modified form of operative mechanism; and,

Fig. 6, a vertical sectional view through the platform, parts being broken away, illustrating a still further modified form of operative mechanism.

With continued reference to the drawing, there has been illustrated a portion of a roadway R in which there has been sunk an appropriate shaft S of a sufficient depth and diameter to house the novel traffic directing platform of the present invention and its associated operative mechanism.

Preferably the shaft S is provided with a suitable metallic lining or sleeve 10 having a closed bottom wall 11 provided with a drain 12. A collar 13 is seated upon the upper extremity of the

sleeve 10, or may be formed integrally therewith as a peripheral flange, and the upper surface of this collar is preferably flush with the surface of the roadway. Collar and sleeve have been illustrated as of circular or cylindrical conformation, however, any other suitable configuration may be employed with equal facility. As will be more readily apparent from an examination of Figs. 2 and 3 of the drawing, the collar is formed with an annular recess 14 comprising a peripheral seat for the platform proper, as will be hereinafter more fully described.

The traffic directing platform 15, which is preferably metallic and of sufficient thickness to support a substantial weight as well as withstand the pressure of traffic moving thereover when the platform is flush with the roadway and not in use, includes a downwardly depending skirt 16 of a suitable cross sectional conformation so as to fit snugly within the sleeve 10. This skirt is of sufficient height that the lower extremity thereof will remain engaged within the sleeve 10 even when the platform is elevated to its maximum height, as indicated in Fig. 3 of the drawing. Further, this skirt, which may be formed integrally with the platform proper, is of sufficient inherent strength and rigidity that it will not be damaged in the event that it be accidentally or otherwise struck by a vehicle or other object.

When the platform is in lowered position, it seats within the annular recess 14, a snug fit being provided to substantially prevent any undue drainage of water, as from rain, snow or the like, into the sleeve 10. In like manner, when the platform is in elevated position, the snug fit between the skirt and the inner periphery of the sleeve 10 and collar 13, also prevents drainage into the sleeve.

Any suitable means may be provided for raising and lowering the traffic directing platform. In the form of the invention disclosed in Figs. 2 and 3 of the drawing, such means or mechanism has been illustrated as of hydraulic character. Preferably the platform 15 is supported upon a centrally located rod or piston 17 which is receivable within a cylinder 18 supported upon or formed integrally with the bottom wall 11 of the sleeve 10. Fluid pressure may be provided from any suitable source, as for example, an electric motor 19 connected to a pump or the like 20. An inlet conduit 21 connects the pump 20 to a suitable source of fluid supply 22 and an outlet connection 23 is provided between the pump and the cylinder. Preferably the motor 19 receives current from a remote source (not shown) and a suitable switch, also not shown, may be installed or positioned upon a corner of the intersection immediately adjacent the point where the traffic platform is located. Energization of the motor 19 will pump fluid into the cylinder 18, elevating the piston 17 and carrying the platform 15 therewith. When the platform has been raised to the desired height, the source of current may be cut off. Automatic shut off means, as will be hereinafter more fully described, are also provided, to cut off the motor 19 when the platform has reached a maximum height. Reversal of the motor, with resulting lowering of the platform, may also be accomplished at the point of remote control (not shown) as is well known in this art.

It has been found in practice that an elevation of from approximately two to three feet above the roadway is desirable both from the point of view of providing maximum visibility to both operators of vehicles and traffic director as well as

to place the traffic director a sufficient distance above the roadway level to adequately protect him from any possibility of injury from oncoming vehicles, the rigidity of the skirt 16 of the platform 15 being such as to insure the withstanding of any reasonable impact.

To protect the traffic director from inadvertently stepping off or falling from the platform 15 a partially encircling railing 24 is provided. When the platform is in normal lowered position, the railing 24 seats snugly within a recess or groove 25 provided in the upper surface of the platform, however, when the platform is elevated, the railing 24 rises thereabove to a suitable height, as indicated in Fig. 3 of the drawing. Any form of mechanism may be provided, operable, if desired, by the raising and lowering of the platform per se, for properly controlling the movement of the railing 24. One form of such mechanism has been illustrated as a vertically disposed shaft 26 supported within a bearing 27 carried upon the lower surface of the platform 15, the cylinder 18 being provided with a boss or the like 28 through which the shaft 26 extends. Preferably the shaft 26 has a spiral spline 29 formed thereon and the boss 28 is provided with a complementary spiral groove within which this spline engages. A bevel gear or the like 30 is mounted upon the shaft 26, above the boss 28, and meshes with a complementary bevel gear 31 mounted upon one extremity of a horizontally disposed stub shaft 32 journaled within a suitable bearing 33 carried upon the lower surface of the platform 15. A pinion or gear 34 is mounted upon the opposite extremity of the stub shaft 32 and engages with the teeth 35 of a rack 36 which depends from the railing 24, projecting through a suitable aperture in the platform 15. From an examination of Figs. 2, 3, and 4 of the drawing it will be obvious that as the platform is elevated by reason of fluid pressure upon the piston 17 within the cylinder 18, rotative force will be imparted to the shaft 26 by reason of the spiral spline 29 thereof engaging within the spiral groove in the boss 28. Such rotative movement will be transmitted to the pinion 34 which, engaging with the teeth 35 of the rack 36, will elevate the railing above the platform 15 simultaneously with the raising of the platform above the level of the roadway.

Preferably the railing 24 is provided with a depending bar or the like 37, positioned in opposed relation to the rack 36, which depends through a suitable bearing 38 mounted upon the lower face of the platform 15. A cut-out switch 39, in circuit with the electric motor 19 through the conductors 40, is mounted upon the bearing 38 and one of the contacts of this switch is provided with an extension or button 41 which depends therebeneath. A stop 42 is secured to the bar 37 and, when the said bar reaches the limit of its upper movement, as indicated more particularly in Fig. 3 of the drawing, the stop 42 engages the button 41 and opens the switch 39, shutting off electric current from the motor 19 and preventing further elevation of the platform 15 and railing 24.

When the platform 15 is in lowered position, flush with the surface of the roadway, it rests securely within the seat or recess 14 and is supported thereupon. Further, the guard rail 24 is securely seated within the recess 25, and vehicular or other traffic may pass over the lowered platform with complete freedom and with-

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out possibility of inflicting any injury upon said platform or guard rail.

Mechanical means for raising and lowering the traffic platform 15 has been illustrated in Fig. 5 of the drawing, rather than hydraulic. In this modified arrangement, the piston 17 supports a rack 43 integrally formed therewith or securely mounted thereupon. The cylinder 18, which houses the piston 17, is slotted as indicated at 44 and the rack 43 projects therethrough. A driving motor 45 is mounted upon a suitable supporting bracket 46, and is adapted to transmit power through reduction gearing indicated diagrammatically at 47 to a pinion 48 which engages with the rack 43. The pinion 48 is mounted upon a stub shaft 49 which is journaled in bearings 50 positioned within ears or lugs 51 carried by the cylinder 18.

The motor 45, similar to the motor 19 of the form of invention disclosed in Figs. 1 through 4 of the drawing, is suitably connected to a source of electrical energy and is intended to be controlled by an appropriate switch, remotely positioned, as on the corner of the intersection where the traffic platform may be installed.

Modified means for elevating the guard rail 24 has been illustrated in Fig. 6 of the drawing, the remaining structure and mechanism being substantially identical whether hydraulic or mechanical elevating means are employed. In the form disclosed in this figure of the drawing, the guard rail 24 is provided with opposed depending supporting bars 52 which project through suitable apertures formed in the platform proper. The cylinder 18 is provided with a pair of opposed ears or lugs 53, apertured as at 54, and a flexible cable or the like 55 is secured at one end thereof to the lower extremity 56 of each bar 52. The opposite extremity of each cable 55 is passed through an aperture 54 in the related lug 53 and prevented from removal therefrom by any suitable securing means as indicated at 57. For ready functioning, pairs of pulleys 58 are secured to the lower face of the platform 15 and each cable 55 is intended to pass over a pair of such pulleys. It will be obvious, from an examination of this figure of the drawing that, when the platform 15 is elevated, the securing means for the cables 55 will engage the lower surfaces of the lugs 53 and a force will thus be exerted upon the extremities 56 of the bars 52. This force, pulling in nature, will raise the guard rail to its proper position, simultaneously with the elevation of the platform 15 above the level of the roadway. In this form of the invention, the automatic cut-off switch 39 is positioned upon the lower surface of the platform 15 so that a stop 42 carried upon one of the bars 52 may engage the projecting button 41 (indicated in Figure 2) of a spring element of said switch.

There has thus been described a novel traffic directing platform which is particularly economical of manufacture, installation and operation. In lowered position, the platform will in no manner interfere with free flow of traffic and, when elevated to a suitable height, an individual standing thereon will be adequately protected against injury from approaching vehicles. The height to which the platform may be elevated is selectively adjustable, in accordance with the desires or stature of the traffic director, and automatic means are provided to insure against any excessive elevation thereof. Operative mechanism is completely concealed beneath the surface of the roadway and essentially protected against

damage by the elements. The platform is especially sturdy and so constructed as to provide a substantial structure which may not be readily damaged, when in elevated position, by collision or otherwise.

It will be obvious to those skilled in this art that various changes may be made in the invention without departing from the spirit and scope thereof, and therefore the invention is not limited by that which is shown in the drawing and described in the specification but only as indicated in the accompanying claims.

What is claimed is:

1. In a supporting platform for traffic direction mounted for vertical movement within a shaft disposed below the surface of a roadway, a vertically disposed sleeve lining said shaft, a closed bottom wall on said sleeve, a drain in said bottom wall, a collar supported upon said sleeve, the upper surface of said collar being flush with the surface of the roadway, an annular seat in said collar, a platform seated within said annular seat, the upper surface of said platform being flush with the surface of said roadway, a skirt depending from said platform and adapted to slidably engage the inner surface of said sleeve, a centrally located and vertically disposed cylinder within said sleeve, a centrally located piston depending from said platform and slidably disposed within said cylinder, fluid pressure means operatively connected to said cylinder beneath said piston for raising and lowering said piston and platform, a partially encircling vertically reciprocable guard rail for said platform normally seated within a recess formed in the upper surface thereof, supporting bars depending from said guard rail through said platform and into said sleeve, a rack on one of said supporting bars, a pinion for engaging said rack, driving means for said pinion comprising a vertically disposed shaft depending from said platform, a lug on said cylinder slidably engaging said shaft, a spiral spline on said shaft, a complementary spiral spline in said lug engaging said first mentioned spline, gearing for transmitting rotative movement from said shaft to the pinion engaging the rack on the supporting bar whereby said guard rail will be raised and lowered from a position within the recess in said platform to a position thereabove simultaneously with the raising and lowering of said platform, and a cut-off switch mounted upon the other supporting bar operable to disconnect said fluid pressure means when said platform has reached a maximum height.
2. In a supporting platform for traffic direction mounted for vertical movement within a shaft disposed below the surface of a roadway, a vertically disposed sleeve lining said shaft, a closed bottom wall on said sleeve, a drain in said bottom wall, a collar supported upon said sleeve, the upper surface of said collar being flush with the surface of the roadway, an annular seat in said collar, a platform seated within said annular seat, the upper surface of said platform being flush with the surface of said roadway, a skirt depending from said platform and adapted to slidably engage the inner surface of said sleeve, a centrally located and vertically disposed cylinder within said sleeve, a centrally located piston depending from said platform and slidably disposed within said cylinder, means operatively connected to said piston for raising and lowering said piston and platform, a partially encircling vertically reciprocable guard rail for said platform normally seated within a recess formed in

the upper surface thereof, supporting bars depending from said guard rail through said platform and into said sleeve, a rack on one of said supporting bars, a pinion for engaging said rack, driving means for said pinion comprising a vertically disposed shaft depending from said platform, a lug on said cylinder slidably engaging said shaft, a spiral spline on said shaft, a complementary spiral spline in said lug engaging said first mentioned spline, and gearing for transmitting rotative movement from said shaft to the pinion engaging the rack on the supporting bar whereby said guard rail will be raised and lowered from a position within the recess in said platform to a position thereabove simultaneously with the raising and lowering of said platform.

3. In a supporting platform for traffic direction mounted for vertical movement within a shaft disposed below the surface of a roadway, a vertically disposed sleeve lining said shaft, a collar supported upon the said sleeve, the upper surface of said collar being flush with the surface of the roadway, an annular seat in said collar, a platform seated within said annular seat, the upper surface of said platform being flush with the surface of said roadway, a skirt depending from said platform and adapted to slidably engage the inner surface of said sleeve, a centrally located and vertically disposed cylinder within said sleeve, a centrally located piston depending from said platform and slidably disposed within said cylinder, means operatively connected to said piston for raising and lowering said piston and platform, a partially encircling vertically reciprocable guard rail for said platform normally seated within a recess formed in the upper surface thereof, supporting bars depending from said guard rail through said platform and into said sleeve, a rack on one of said supporting bars, a pinion for engaging said rack, driving means for said pinion comprising a vertically disposed shaft depending from said platform, a lug on said cylinder slidably engaging said shaft, a spiral spline on said shaft, a complementary spline in said lug engaging said first mentioned spline, and gearing for transmitting rotative movement from said shaft to the pinion engaging the rack on the supporting bar whereby said guard rail will be raised and lowered from a position within the recess in said platform to a position thereabove simultaneously with the raising and lowering of said platform.

4. In a supporting platform for traffic direction mounted for vertical movement within a shaft disposed below the surface of a roadway, a vertically disposed sleeve lining said shaft, a platform normally seated upon the upper end of said sleeve, the upper surface of said platform being flush with the upper surface of said roadway, a skirt depending from said platform and adapted to slidably engage the inner surface of said sleeve, a centrally located and vertically disposed cylinder within said sleeve, a centrally located piston depending from said platform and slidably disposed within said cylinder, means operatively connected to said piston for raising and lowering said piston and platform, a partially encircling guard rail for said platform normally seated with a recess formed in the upper surface thereof, supporting bars depending from said guard rail through said platform and into said sleeve, a rack on one of said supporting bars, a pinion for engaging said rack, driving means for said pinion comprising a vertically disposed shaft depending

from said platform, a lug on said cylinder slidably engaging said shaft, a spiral spline on said shaft, a complementary spline in said lug engaging said first mentioned spline, and gearing for transmitting rotative movement from said shaft to the pinion engaging the rack on the supporting bar whereby said guard rail will be raised and lowered from a position within said recess to a position thereabove simultaneously with the raising and lowering of said platform.

5. In a supporting platform for traffic direction mounted for vertical movement within a shaft disposed below the surface of a roadway, a vertically disposed sleeve lining said shaft, a platform normally seated upon the upper end of said sleeve, the upper surface of said platform being flush with the upper surface of the roadway, a centrally located and vertically disposed cylinder within said sleeve, a centrally located piston depending from said platform and slidably disposed within said cylinder, means operatively connected to the piston for raising and lowering said piston and platform, a partially encircling guard rail for said platform normally seated within a recess formed in the upper surface of the platform, supporting bars depending from said guard rail and extending through said platform, a rack on one of said supporting bars, a pinion for engaging said rack, driving means for said pinion comprising a vertically disposed shaft depending from said platform, a lug on said cylinder slidably engaging said shaft, a spiral spline on said shaft, a complementary spline in said lug engaging said first mentioned spline, and gearing for transmitting rotative movement from said shaft to the pinion engaging the rack on the supporting bar whereby said guard rail will be raised and lowered from a position within the recess in the platform to a position thereabove simultaneously with the raising and lowering of said platform.

6. In a supporting platform for traffic direction mounted for vertical movement within a shaft disposed below the surface of a roadway, a vertically disposed sleeve lining said shaft, a platform normally seated upon the upper end of said sleeve with the upper surface of said platform substantially flush with the surface of the roadway, a centrally located and vertically disposed cylinder within the sleeve, a piston depending from said platform and slidably disposed within said cylinder, means operatively connected to the piston for raising and lowering said piston and platform, a guard rail for said platform normally disposed in a position substantially flush with the upper surface of said platform, supporting bars depending from said guard rail and through said platform, a rack on one of said supporting bars, a pinion engaging said rack, driving means for said pinion comprising a vertically disposed shaft depending from said platform, a lug on the cylinder slidably engaging said shaft, a spiral spline on said shaft, a complementary spiral spline in said lug engaging said first mentioned spline, and gearing for transmitting rotative movement from said shaft to the pinion engaging the rack on the supporting bar whereby said guard rail will be raised and lowered from a normally retracted position to a position above the platform simultaneously with the raising and lowering of said platform.

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