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2,366,754

HIGHWAY CONSTRUCTION AND METHOD

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Fig. 1.

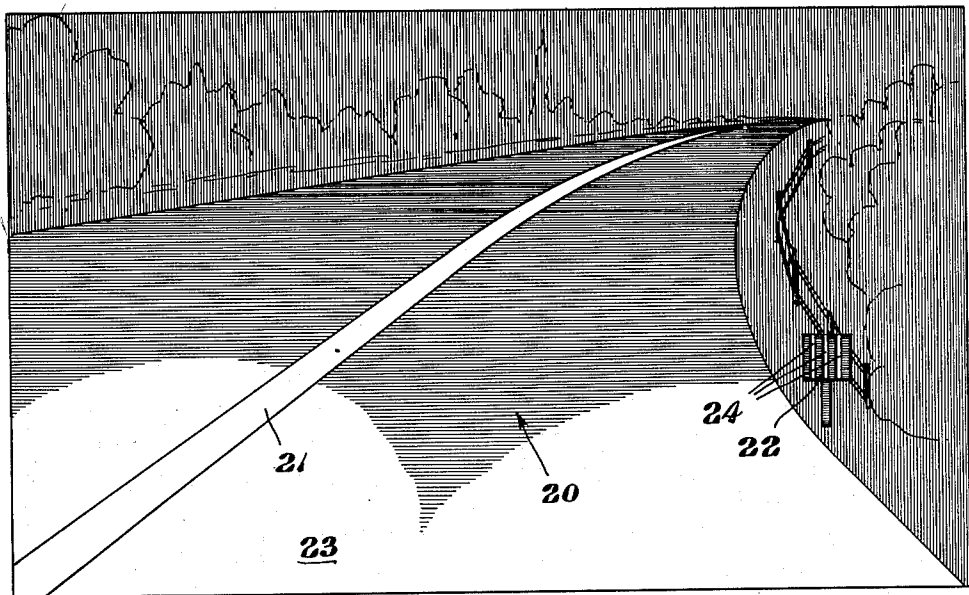


Fig. 2.



Fig. 3.

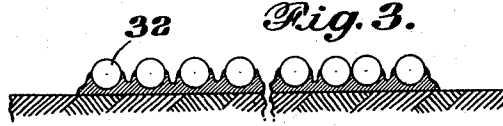
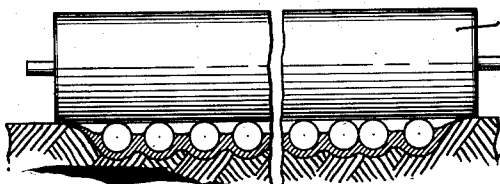


Fig. 4.



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HIGHWAY CONSTRUCTION AND METHOD

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2 Claims. (Cl. 94—1.5)

This invention relates to highways, combined highways and surface markers, and more particularly to highway markers involving a reflecting binder and transparent autocollimating units. Prior to the instant invention it has been proposed that center line markers on roadways involve a white or colored reflecting paint base in which is imbedded a plurality of transparent autocollimating units. Such prior installations, while they have been more or less efficient in reflecting light in the manner desired, yet they have not been sufficiently long lived.

It is an object of the instant invention to prolong the life of relatively efficient markers comprising paint-like binders and light refracting particles by sinking the same into a roadway a distance more or less corresponding to the height of the marker whereby the top of the marker may be substantially level with the roadway instead of projecting materially thereabove as is the case with prior markers.

It is a further object of the instant invention to deform the surface of a roadway or a surface to be marked prior to the application of a binder and light refracting units in order that the surface of the marker thus formed will be better protected.

It is still a further object of the instant invention to so arrange a binder bearing light refracting units on the surface of the highway so that portions of the marker thus formed will be at an angle to the surface of the marker whereby a relatively large percentage of the area of the units will be securely gripped by the binder and whereby a relatively large percentage of the units will be available for the refraction of light rays.

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

Fig. 1 is a view in perspective of a combined road and lane line surface marker and a vertical roadside surface marker;

Fig. 2 is a sectional view of a road surface with a reflecting binder applied thereto;

Fig. 3 is a view similar to Fig. 2 with autocollimating units embedded in said binder;

Fig. 4 is a view similar to Fig. 3 and depicting a roller effecting the sinking in of the bound autocollimating units to effect the combined road surface and marker.

Referring to Fig. 1, a roadway 20 is marked with a center line or lane line 21 and a vertical

roadside unit 22. The unshaded area 23 of the road 10 represents the light from the head lamps of an automobile which, when it hits the road, is generally diffused and lost, only some of the light returning to the driver, with the exception of that light which hits the center or lane line 21 and the lines 24 of the vertical marker 22. As the line 21 and the lines 24 involve a reflecting binder and light refracting autocollimating units embedded therein, the light which hits these lines is returned to its source.

Referring to Figs. 2, 3, and 4, the road proper 30 may comprise a plastic top surface such as a freshly laid or old asphalt or macadam top surface. When the finished marker is to be a lane line or a center line on a roadway, a paint-like binder 31, such as described in copending application Serial No. 274,666, filed May 19, 1939 (now Patent No. 2,268,537 dated December 30, 1941) may be applied to the road surface 30 in a width of four or six inches or as required and for any length continuously along the length or in a dashed or interrupted effect. With the binder 31 in a wet or semiwet condition the autocollimating units 32, which may take the form described in copending application Serial No. 274,667, filed May 19, 1939, may be applied to or distributed thereover as described in this copending application. Application Serial No. 274,667 has now matured into Patent No. 2,275,597 dated March 10, 1942, and in the specification of that patent it is stated that the autocollimating units may be graduated in size from 0.005 to 0.040 inch in diameter. Subsequent to the setting of the binder or the bonding therewith of the road surface 30 and the autocollimating units 32, a heavy roller 33 of a width somewhat exceeding the width of the marker is applied thereover to effect the sinking of the stripe or marker as best illustrated in Fig. 4. If desired the roller may be hollowed out somewhat so that the marker will not sink as low as illustrated in Fig. 4, though it is preferred, in the instant case, to utilize a roller such as illustrated in Fig. 4. The finished combined road and marker thus effected is inherently as efficient as an ordinary exposed marker comprising binder and autocollimating units but is capable of much longer life as traffic shock to which the former is subjected is substantially eliminated.

The above described combined road surfaces and markers are particularly advantageous in that they are relatively long lived. As a practical matter, a lane line or center line may be effected

by simply painting the road surface at very small expense insofar as material is concerned. However, such markings are relatively short lived and not particularly efficient. Such markings may be improved by including glass autocollimating units, which materially increases the efficiency of the marker and increases to some extent the life of the marker. The cost of materials involved, however, is considerably more, though the cost of additional labor is just a little more. In order to justify the expense of the additional material; namely, the glass autocollimating units, or the more expensive binder required, it is essential that the marker have a very much longer life so as to require servicing very infrequently. This applicant has achieved by depressing the marker in relation to the major surface of the roadway and further by having some of the depressed portions angularly disposed so that the autocollimating units are gripped over a relatively large area and simultaneously have relatively great portions exposed for refraction and reflection purposes in a novel manner. Not only may the principles described be applied to horizontal surfaces, but they may also be applied to vertical surfaces, as for example the vertical surface road marker 22.

It will be obvious to those skilled in the art that various changes may be made in this de-

vice without departing from the spirit of the invention and therefore the invention is not limited to what is shown in the drawing and described in the specification but only as indicated in the appended claims.

What is claimed is:

1. The method of forming a combined highway and marker comprising applying a wet reflecting binder film to a portion of a relatively soft plastic surfaced highway, while the binder is in a wet or semiwet condition distributing a series of autocollimating units thereover, permitting said binder to set, and pressing the binder and autocollimating units into the surface of the highway.

2. The method of forming a combined highway and marker comprising applying a wet reflector binding film to a portion of a plastic surfaced highway such as an asphalt or macadam highway, while the binder is in a wet or semi-wet condition, distributing a series of glass spheres thereover in a manner such that the glass spheres will be partially embedded in said binder and partially exposed, and pressing the binder and autocollimating units into the surface of said plastic highway in such a manner that the relationship between the binder and the glass spheres is substantially maintained and the marked portion is protected from surface traffic.

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