

45° against the vertical, thus being grouped as a cluster, the spacing distance would be about 15 ft., with a vertical hanging distance of 6 ft. 6 in. from the working plane.

In Fig. 5 a fixture is shown built up of the above units, which is designed for use as a church fixture. This fixture is built up of the following: First, a group of six diffusers placed at 45° to the vertical, each 12 in. in diameter, and enclosing one 100-watt tungsten lamp; second, one diffuser placed vertically 16 in. in diameter and holding three 100-watt tungsten lamps; third, three reflectors each holding one 60-watt tungsten lamp, these being used for ceiling illumination.

From the picture it can be noted that the framework of the fixture is such that the reflectors are hidden from view. The bulb, also, of the electric lamp, which as I found really never adapted itself to be brought into an artistic shape, is covered up and a compact and efficient arrangement is found in which all parts serve a useful purpose, readily adaptable to decoration.

Many styles of fixtures can be created, almost all of which appear artistic and attractive in form.

The principle laid down through the combination of lamp, reflector and an efficient diffusing envelope is not exhausted. The field for application is a very large one to employ these means to eliminate glare. The combinations and applications of these units are so numerous that it is almost in order to call it a new system of illumination created through the employment of a diffusing envelope having a very high efficiency in connection with reflector into one unit.

To recapitulate, we have in this system:

- (1) Means provided to reduce the intrinsic brilliancy of a source of light to any desired extent.
- (2) The disc, being of flat shape, adapts itself admirably for building fixtures to give any desired lighting or artistic effects.
- (3) The reflector unit, being totally enclosed, makes it practically dustproof, which means minimum attention after installation.
- (4) On account of its independence upon actual surroundings it has a very large field for application.
- (5) Our experience in Europe shows that the high commercial efficiency, together with the small attention required after installation and the low cost of installation, more than offsets the slightly higher factory cost.

AMERICAN ROAD CONGRESS.*

By E. A. James.†

The American Road Congress, a conference composed of road users, road builders and road machinery men, held at Atlantic City, October 1st to 5th, was successful beyond expectation. Although held at the very busiest season of the year, yet the attendance was large, the exhibits varied and extensive and the papers and addresses of a high order.

In the exhibition hall the exhibitors of the United States Road Department and of the various state departments clearly demonstrated the progress being made in highway construction, both in theory and practice, while the displays by the manufacturers show clearly that they appreciate the large field opening in road work on this continent.

The delegates were welcomed by Woodrow Wilson, Governor of New Jersey, and in view of his place in the public

mind at the present some of his remarks are of unusual interest. Governor Wilson said in part:

"The question of highways is a question which has interested by thought, particularly in recent years, because it is one of the few great instrumentalities of our public life and of our communal life with which the government is of necessity connected. The government is not, in the United States, expected to build railroads. The government is not as yet expected to own railroads. Railroads differ from other highways, though we often speak of them as the highways of our commerce, in this important particular, that only those who own them can use them in the matter of putting vehicles upon them—that a particular set of individuals by reason of their control of the road, have the exclusive right-of-way over it.

"We must more and more engage the government in providing the general facilities of the common life. There is no breach in that of any of our older understandings of the function of government. We have never doubted that the government had the right to supply these facilities which private endeavor has never been expected to supply. Therefore, we are not upon a new ground of theory; we are merely upon a new ground of tactics, and when I think of what the highways mean, I seem to be thinking of the whole history of the human race. Whenever I used to read stories I remember my imagination was most fascinated when the characters went on a journey and met the rest of the world.

"On the old highway, particularly the old English highways, you met everybody from the King to the beggar, from the King to the highwayman. You were there in a way to have the adventure, the whole experience and adventure of English life, because it was there that English life interlaced and crossed and was fluid, flowing from one region to another, and by the same token it was upon the highways that men got the contacts which result in the building up of public opinion.

"I was trying to illustrate the fact one day that in some of our great cities there is no public opinion, in a way which led me into trouble. I said, that what generally happened to a man in a city was that when he got in a public vehicle or on a highway, he doesn't talk to anybody, but if he can hold himself steady enough, that wherever he happened to be he plunges his head into the morning newspaper and experiences a reaction which he calls his opinion, but it is not an opinion at all, it is simply the impression that a piece of news or an editorial has made upon him and he cannot be said to be participating in public opinion or in opinion at all until he has laid his mind alongside the minds of his neighbors and discussed with them the incidents of the day and the tendencies of the time.

"Where I got into trouble was, that I ventured to use this illustration. I said that public opinion was not typified on the streets of a busy city, but was typified around the stove in a country store where men sat and probably chewed tobacco and spat in a sawdust box and made up, before they got through, what was the neighborhood opinion both about persons and events; and then, inadvertently, I added this philosophical reflection, that whatever might be said against the chewing of tobacco this at least could be said for it: that it gave a man time to think between sentences. And ever since then I have been represented, particularly in the advertisements of tobacco firms, as in favor of the use of chewing tobacco.

As a means of reflection, I dare say that it is wholesome; otherwise I will not declare my opinion about it at all.

"But the illustration, nevertheless, was an illustration of what I think is pertinent to us, or rather pertinent to my thought in connection with what you are doing. You know

* *The Canadian Engineer* will publish from week to week verbatim reports of the more interesting addresses.

† Engineer for the York Highway Commission.