

their product is as powerful as dynamite. The principal difficulty in arranging the experiments was to decide in what way the strength of the explosives should be tested, as no method yet invented can be considered entirely satisfactory. Finally Lieut. Walke decided to use the Quinan pressure gauge. The instrument used consisted of a heavy block of wood upon which was bolted a cast-iron block. In this block four wrought-iron guides were twisted around the circumference of a circle four inches in diameter, and were connected by a ring at their outer ends. A steel plate was let into the block, and was flush with its upper surface. The piston, which rested on a plug of lead, was of tempered steel four inches in diameter and five inches long, and moved freely between the guides. It weighed twelve pounds and a quarter. On the top of this piston was a parabolic cavity to hold the charge of explosive. The shot, made of tempered steel, was four inches in diameter and ten inches long, weighing four pounds and a half. It was bored down its centre to receive a capped fuze. To operate the instrument, a plug or cylinder of lead was placed on the steel plate, and the piston lowered gently down on it. The charge of explosive being placed in the cavity, the shot was gently lowered upon the piston. On firing the charge, the shot is thrown out and the piston forced down on the lead plug, which it compresses, the amount of compression being a measure of the strength of the explosive. Twenty-seven explosives in all being tried, the results were compared with those obtained with a sample of nitroglycerine, the strength of which was reckoned as 100. The results placed explosive gelatine and hellhoffite first with a strength of 106.17; gun-cotton and dynamite had each a strength of over 80; emmensite, a new American explosive, one of nearly 78; bellite, one of 65.70; and melenite, the famous French explosive,

which is not nearly so safe to handle as bellite, had a strength of only 50.82. The above figures are of course not absolute, but they, at any rate, show the order in which the various explosives come.

INDUSTRIAL NOTES.

A Model Electric-Light Plant.

IN April of last year the electric-light system of the Eureka Electric Light Company of this city, then known as the Loomis system, was illustrated and described in these columns. Since that time the progress of the Eureka Company has been steady, though not as rapid, perhaps, as that of its older and larger competitors. Lighting and power plants have been installed in many parts of the country, and many improvements, both mechanical and electrical, have been made in minor details of the apparatus.

One of the latest of the Eureka Company's installations is a five-hundred light plant in the Vanderbilt Building, a large office building on Nassau Street, this city. The dynamo, of five-hundred-light capacity, is driven by a fifty-horse-power Fitchburg engine the Evans friction cone (also described in these columns some time ago) being used instead of belting, to transmit the power from engine to dynamo. This friction cone admits of a very compact arrangement of machinery, much less floor-space being required, as the engine and dynamo stand close together. This is an important consideration in modern office buildings, especially where space is valuable. The installation as a whole is one of the simpler and yet most complete, both electrically and mechanically, to be found in this city.

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