

from using boxes or packages for their lubricators bearing the words "Detroit," or "Detroit, Mich." unless their firm name be also given. It appears, for some time past, the Michigan Lubricator Co. had been making lubricators resembling those made by the Detroit Lubricator Co. in outward appearance, and they had stamped on these lubricators and on the boxes containing them only the words, "Detroit, Mich.", making no mention of their firm name, the object apparently being to have such lubricators substituted for the Detroit Lubricator Co.'s make.

SECRETS BURIED WITH THEIR INVENTORS.

A recent issue of *Power* reviews a number of interesting instances which cannot but convince the most doubtful that engineering is to-day very, very far from having reached a pinnacle of perfection. Among other notes, it states that it is hardly twenty years since John Waymouth, the Wolverhampton engineer and designer, discovered the motive power of heat, exhibited it in one of the simplest, cheapest, and most useful engines imaginable, and then deprived the world of its benefit. He had produced beforehand a round dozen of excellent inventions which still bear his name, including the modern revolving chimney cowl; and, having made a large fortune, he devoted himself to harnessing the ordinary heat of a fire and making a new power of it. The idea was laughed at by all his friends; but, after four years of study and experimenting, he produced a stationary engine that gave double the power of any steam-driven mechanism at about one-third of the cost, and also a small model heat locomotive large enough to draw a truck with a man in it. He invited a committee of scientists and engineers, including Priors, Huxley and Forbes Brown, and showed them that his two machines worked to perfection. The affair made a great stir, and it was proved that a great power of unlimited scope had been discovered. Waymouth was flooded with offers of huge sums for his invention, but, for no apparent reason, except, perhaps, the alleged madness of genius he absolutely refused to either bring it out himself or to sell the secret. He announced himself satisfied with the triumph of the invention, and before his death, a year later, he destroyed all the papers and plans explaining the system and removed the essential parts of the two engines. These engines are still possessed by his heirs, but nobody has been able to make anything of them.

Still stranger was the famous loss of the receipt for the manufacture of diamonds, some fifteen years ago. Herbert Warner, who alone discovered and held the secret of diamond making, did not live to wreck the diamond industry, as people thought he would, and the circumstances of the loss was mysterious and tragic. Inferior diamonds can still be produced artificially, but only at a cost of about ten times their value. Warner, after years of experimenting, was able to turn out a genuine diamond of large size and of the first water at the cost of a small fraction of the complete stone's worth. He, like Waymouth, of heat power fame, manufactured his diamonds before an audience of scientists and produced three fine stones, which were tested and pronounced faultless. Two of them are still in existence and are the greatest curiosities the jewel world has ever seen. But within a fortnight of this triumph, before any new stones were put on the market, Warner utterly disappeared from his house on Harley St., London, leaving no trace whatever. So complete was his disappearance that from that day to this not the smallest explanation has been hit upon.

Then there is the lost secret of the wonderful new metal called talium, which would certainly have been worth many millions to the inventor. Grantley Adams discovered it just eight years ago, and during its short life it was one of the greatest wonders of the science and commerce world. Talium was an alloy of metals electrically treated, nearly 55 per cent. lighter than steel, both stronger and tougher, and costing 30 per cent. less to produce. It was the fruit of four years' hard work and study, and eventually Adams completed it and exposed it to every kind of test. Trains or any other vehicles, as it was proved, would be able to travel at nearly

double their present speed if constructed of talium, and there was no kind of edged tool that would not be as keen, as well as much lighter, if made of the new metal. The commotion caused by this discovery was extraordinary, and still more so was the upshot of it, for the magnitude of its success overcame Adams' reason, and he became insane before ever the secret of the construction of talium was given out. Adams died a year later, a hopeless lunatic, and as there were no papers explaining his method, the great secret was lost. All the tools and engines of talium, which he had made, remain, but no analysis has revealed the method by which the metal was blended.

The extraordinary perpetual lamps of Henry Mills, which he invented, perfected and proved the worth of, twelve years ago, were lost in quite a different manner. The Mills' lamp was an incandescent light produced without any using up of materials—it had nothing to do with combustion, and the flame of it was perfectly cold. It was certainly one of the most wonderful inventions of the age, and not at all an expensive affair. Mills made two of these lamps and demonstrated their absolute success, but an extraordinary thing happened before the invention was put at the disposal of the public. On the night of May 20th, 1899, Mills' laboratory in Hampstead was broken into, both lamps broken into fragments, and all the papers describing the invention, involving years of work, stolen. There was not the slightest clew to the perpetrators of the burglary, which was done most scientifically, and the crime has never been traced. Even the reason for it is not known—whether it was malice, jealousy or theft. No use has been made of the stolen papers, and Mills who was dependent on these papers set to work again, but two months later he contracted typhoid fever and died, and the world was thus deprived of his secret.

In one way it is perhaps as well that the new gun-powder fulmite, invented by Herbert Sawbridge, six years ago, never came to head. Sawbridge discovered this powder by accident in his little chemical experimenting room at Exeter, England. He perfected the powder, after a good deal of study and trouble, and finally showed that in an ordinary service rifle this powder could drive a bullet accurately a distance of nearly six miles, and that at ordinary ranges it gave over ten times the penetration that cordite gives. A bullet propelled by it at 600 yards would penetrate twelve men. It would have been a terribly destructive invention, and one of its best points was that it did not strain or corrode a gun in any way; and, above all, damp could not harm it. But such is the extraordinary fatality that seems to dog inventors that Sawbridge was killed in an explosion in his laboratory, which wrecked the entire cottage. This happened soon after the British Government had begun to negotiate with Sawbridge for the purchase of his invention; but the explosion that killed him destroyed any records there might have been of his work. It was not fulmite that killed him, but an accident with ordinary nitro-glycerine.

HORSE-POWER OF SLIDE VALVE ENGINE.

To find the horse-power of a plain slide valve engine: Square the diameter of the cylinder and divide by 4. This estimate is based on a piston speed of 300 ft. per minute, and a pressure of 60 to 70 lbs. of steam. Doubling the speed would double the power, the ports being of sufficient area.

—The American Steam Gauge & Valve Mfg. Co., have again been compelled to seek new quarters, owing to the increase of their business, and are at present removing their entire plant and offices from Bismarck street, Roxbury district, to the large brick buildings, 208-220 Camden street, Boston, Mass. The buildings have floor space of 85,000 square feet. The Mowry & Phillips foundry department will also be removed from South Boston, and every branch of the business consolidated at the Camden street factory. The new plant will afford them more than double the present capacity, and will be employed in producing their valves, gauges and indicators; also special metals and foundry work in the Mowry & Phillips department.