

IMPROVED COMPOUND REVERSING ENGINES.

In recent numbers of Engineering an illustrated description has appeared of the extensive works of the Glasgow Iron and Steel Company's works at Wishaw, which are known throughout the world for the excellence of their iron productions. Of plates alone, some thirteen hundred tons are turned out weekly. We herewith give an engraving of the engines pertaining to the plate rolling mill of the establishment, for which and the following particulars we are indebted to Engineering:

These engines, massive in design, were constructed by Messrs. Duncan Stewart & Company, Glasgow. The cylinders are 52 inches in diameter by 60 inches stroke, and the engines are geared in the ratio of about 2 to 1. The large spur and pinion wheels are made of steel, and have straight teeth covered over with a neat, serviceable, plated hood fitted with steps and hand-rail. The engines are fitted with piston valves and reversing straight-link motion. The eccentric rods have adjustable brasses for taking up the wear. The valve motion is reversed by a steam cylinder, with regulating oil pressure cylinder of the most modern type, having steam and handling gear worked from the platform. The engines are also fitted with a reservoir oil tank fixed on the platform, from which pipes are

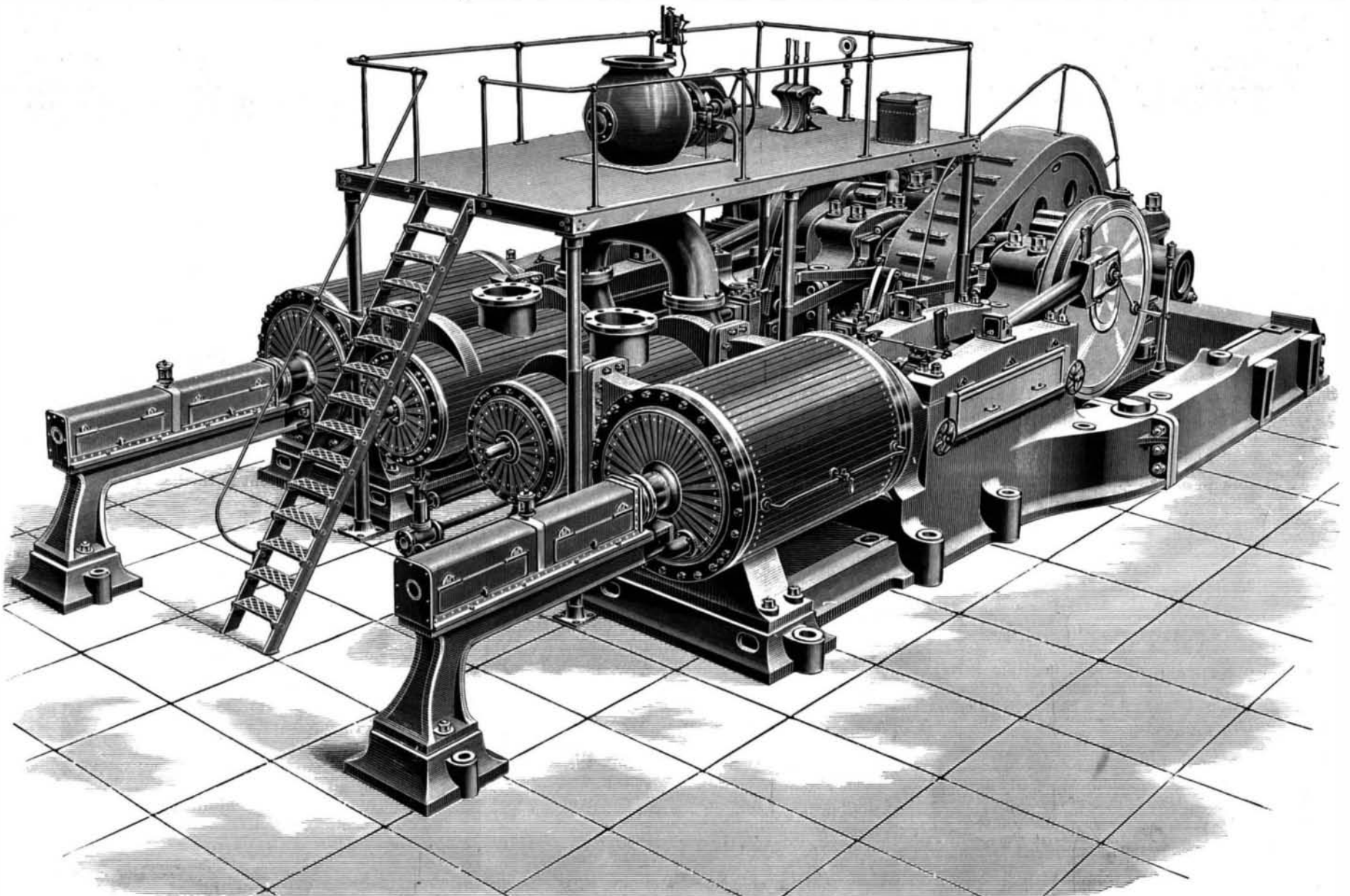
the fingers; when the older clerk would plan disagreeable surprises for the boy, in the educational line, utilizing for the purpose his superior knowledge of drugs like cowhage, hellebore or capsicum pods, or setting him to work on a batch of mercurial ointment, supplying him with the freshest of lard and highly enjoying his perspiring efforts to incorporate the coy and elusive mercury.

However, the mill has taken the place of the mortar, and the clerk no longer makes mercurial ointment, nor powders crude drugs, and he now charges the soda fountain from a cylinder and saves his shirts. Occasionally the accidents of the druggist partake of the comic, as when a young friend of ours, just ready one Sunday evening to go out with his best girl, was called upon to prepare a pint of "black oil" and, adding the acid sulph. all at once with a vigorous shake to the other ingredients, was transformed instantaneously from a well dressed and scented beau to a lugubrious specimen of disappointed hope and ill-smelling clothes. The spot on the ceiling long showed the center shot of the prescription.

A large bottle of stronger ammonia, in the hands of a clerk who was on a step ladder, having been broken by an unlucky tap against a step, no little trouble and pain was caused by some of the contents running

had [it been in the way. During the same week we saw in another store the effects of an explosion of a tube of nitrite amyl, where thousands of particles of glass were blown into the near-by woodwork. The pharmacist was almost directly in front of and near the tube when it "went off," but most fortunately for his countenance, not to say eyes, he had moved his head to one side at the moment of explosion—a close call.

Probably sulphuric acid has left its mark in the form of scars upon more druggists than has any other article in his line. We once knew a clerk in an Eastern city who broke in handling it a carboy of the acid, and was pretty thoroughly saturated with the fluid. It was sheer good luck in his case that the back door opened upon the Erie Canal, into which he jumped instantaneously, saving his flesh though losing his trousers. The same establishment furnished another victim a little later, who in pouring acid from the carboy into a pitcher (the old way), splashed his face with a little acid, which struck the corner of his eye. The pain caused him to quickly jerk the carboy to an upright position, which movement threw out an additional quantity of the caustic fluid upon his arm, which was bared to the shoulder. This accident left our friend with a bad scar on his face and caused running sores lasting many years upon his arm. Instances of similar accidents



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conducted to each of the main shaft bearings. Steam can also be turned into the oil pipes to clean them out, should they get choked at any time. Sight-feed lubricators are also provided. The engine bed plates are strong and massive, having a large base for fixing down to the foundations, which are of concrete. The main stop valve is fitted with a screw-stop by-pass valve, so that the engines can be started or stopped without opening the large valve. Disengaging gear is fitted to the main shaft, so that the clutches can be thrown out when required.

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Some of the Trials of Druggists.

The California Druggist says: The life of the pharmacist is not always free from adventure nor his path from thorns, and even though he may gather in seven hundred per cent profit on an emetic or a dose of salts, there are contingencies in his business that the average merchant does not share. From the time when the druggist's boy burns holes in his shirt with acid, charging soda fountain, to the halting of him before the county judge, as proprietor, for repeating a "prescription" once too often, he must ever be on his guard against calamity.

The time was—we know a few old fellows who remember—when the long green vial was in common use, and when the thin glass was fain to crush in the process of corking, entailing painful consequences to

down the front of him, beneath his loose overalls. It was no fun for the young man, though his companions took it that way. This was in a wholesale store, and a somewhat similar accident befell another of the boys, again by the step ladder route. In taking down a bottle of nitro-muriatic acid, some of the acid was spilled directly on the top of his head in some unaccountable way, and such a mass of capillary stickiness resulted! The near-by water faucet and the ready resources of the chemist prevented very serious consequences. Not so easily, though, did the packer escape, when agutta percha bottle of hydrofluoric acid, which he was pressing into a small space in a box of goods, threw out its stopper, sending a small quantity of the acid into his eye. The incident furnished another instance of the value of the gold-medal chemist, whose promptness and skill saved the victim from blindness. A still more serious trouble came upon a poor fellow we knew whose position as under-porter obliged him to repack Paris green. Disregarding instructions as to protecting his nose and mouth thoroughly from the dust, he inhaled enough of the poison to render him a physical wreck. For a long time he was under pension from his employers, till death came to his relief.

Recently we were shown a rough hole in a drug store shelf, made by the top of a bottle of peroxide of hydrogen which exploded beneath and which would just as readily have gone through the druggist's head

might be multiplied indefinitely, and almost every old drug store could furnish reminiscences of startling explosions and sudden combustions more or less serious in their effects, but which the progress of pharmaceutical knowledge is rendering less and less frequent.

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Seasoned Railway Cars.

The Railway Master Mechanic says: The quality of the "well seasoned" wood ordinarily employed in freight car construction was nicely demonstrated recently by the reweighing of some cars which were built by a carbuilding concern nearly two years ago, and which could not be accepted by the road for whom they were built because of its financial straits. When completed they were weighed and the weight stenciled on each car. When disposed of a few months ago they were again weighed for some reason and each car was between 1,000 and 2,000 lb. lighter than when placed on the side track. The drying out process was, we trust, complete. This incident provides an argument in favor of a standard freight car, or at least standard dimensions for all the principal timbers of a car, for then the roads could insist on drier lumber being used, while as things are at present no builder can purchase in advance a stock of material which can be utilized without excessive waste, and he has, therefore, to obtain the best seasoned lumber available at the time the contract is made.