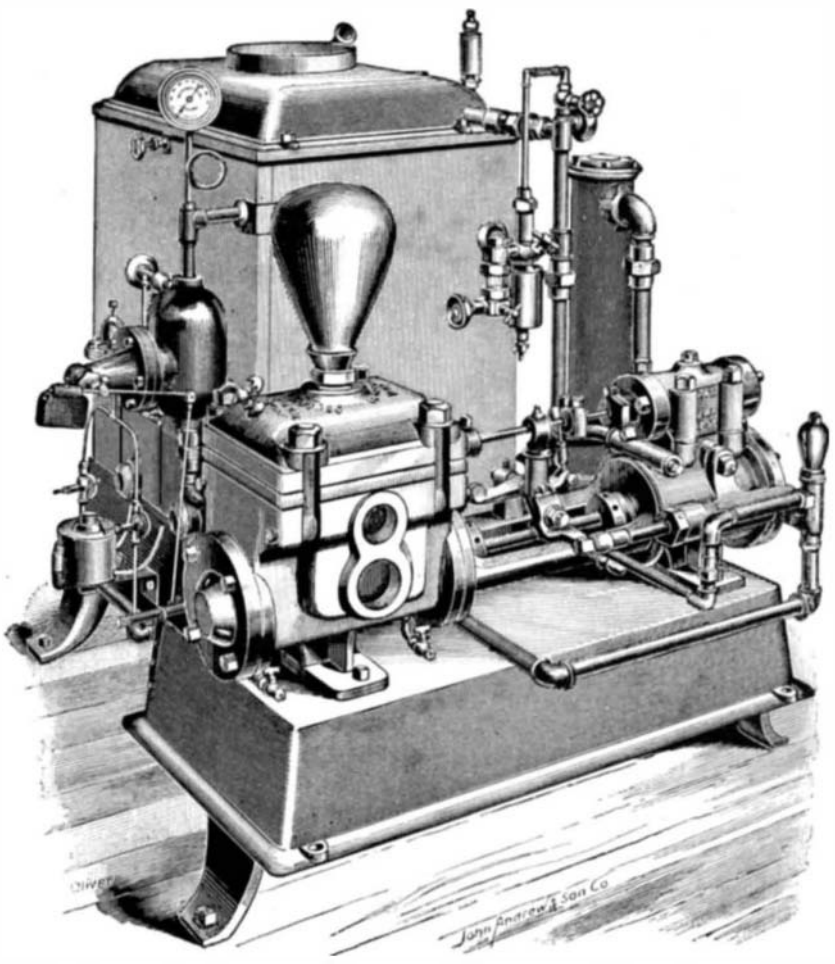
AN IMPROVED SHIPMAN PUMPING OUTFIT.

The illustration represents a new and improved pumping outfit, made by the Shipman Engine Company, consisting of a boiler and pump on one base, thus making a self-contained plant and dispensing with the old method of pumping water with an engine and belted pump. The steam being applied direct from the boiler to the pump saves the power heretofore lost on the engine, belt, and the gearing of the pump, consequently a greater amount of water can be delivered with the same boiler pressure. No engine being used, the services of a skilled engineer are dispensed with. The supply of fuel is automatically controlled by a diaphragm which can be set at any given pressure, and the pressure will vary but a few pounds either way. The water supply is also automatically controlled by ball float in float chamber connected direct with cut-off valve in pipe leading from feed pump to boiler. The feed pump is attached direct to the piston rod of large pump, as shown in cut. This arrangement of fuel and water supply leaves nothing for the operator to do, beyond the opening and closing of the throttle valve, when it is necessary to start or stop the pump, there being no small pet cocks or valves to adjust.

The economy of room is a very important feature, the plant we illustrate having a floor space, inclusive of legs, of only 38 x 39 inches. This is no more than is ordinarily occupied by the average small power engine commonly used for pumping purposes, and it does not require a skilled mechanic to set up or operate this machinery, as a person of ordinary intelligence can be taught its management in a few hours. The entire outfit is of the best manufacture, the boiler having been tested to 400 pounds pressure per square inch. All of these combined pumping plants are shipped complete, crated, so that no trouble is liable to occur, as there are no parts to adjust, and full and complete instructions are sent with each shipment.



THE SHIPMAN AUTOMATIC SELF-CONTAINED PUMPING OUTFIT.

A WISCONSIN RAILWAY COLLISION.

A railway collision took place in October last near Menomonie, Wis., in which, by rare good fortune, none of the passengers were hurt, although two locomotives were very badly broken up, as shown in our illustration. An Omaha train going west on the St. Paul and Minneapolis Railroad crashed into a stock train which was coming from an opposite direction on the same track. The engineer of the passenger train had forgotten an order to await the stock train at a switch, and, when it was seen that the collision was inevitable, the engineers of both locomotives put on the air brakes, reversed their engines, and, with their firemen, jumped for their lives. The speed of both trains was thus reduced so that they were running at the rate of only about ten miles an hour when they came together, but both engines were demolished, and the baggage and express cars and four stock cars were wrecked. Some of the train hands were slightly hurt, but none seriously, while about twenty-five head of stock were killed, and many others so wounded that they had to be put to death.

WRECK OF TWO LOCOMOTIVES IN A WISCONSIN RAILWAY COLLISION.

The Treatment of Tachycardia.

The most distressing affection known as paroxysmal tachycardia, or "rapid heart," has unfortunately not generally proved as amenable to treatment as could be desired; but Dr. Poulet, of Plancher-les-Mines, has recently found a remedy in a little known plant indigenous to Alsace, which appears to exert a rapid and beneficial influence over the paroxysms. The plant in question is the Coronilla varia, or *faucille*, which, like some other species of Coronilla, is sometimes used as a household remedy, being considered to have cathartic and diuretic properties. Some recent researches by MM. Spillmann and Haushalter on a closely allied species—Coronilla scorpioides—showed that that plant acts as a powerful heart tonic, causing an increase in the arterial tension and in the fullness of the pulse, exciting diuresis and diminishing œdema and dyspnœa—acting, in fact, very similarly to digitalis. Dr. Poulet was induced by these researches to make trial of Coronilla varia in heart cases. He employs a tincture made from the entire plant (1 in 5), also a powder made from the flower. The dose per diem of the tincture is from half a drachm to a drachm, and that of the powder from fifteen to thirty grains. These preparations, though they have a strong characteristic odor, are not nearly so disagreeable to the taste as those of Coronilla scorpioides. Details are given of two very severe cases in which these preparations of the Coronilla varia gave almost immediate relief. M. Poulet recommends this drug also in other heart cases where digitalis has been used, and where it seems to have been given for too long a period, or, as sometimes occurs, where it has begun to act on the gastro-intestinal canal.—*Lancet.*

Composition for Printers' Rollers.

There are several modes of making roller composition, and nearly every country printer has his own pet method. You do not say what proportions of the various ingredients you use, so it is difficult to tell in what direction you err. Here is a recipe that may suit you. One and a half parts of best glue to one part molasses. Place the glue in a basin and let it soak for half an hour in clean water, then drain off the water and let the glue remain covered for about three hours. It should then be put into a melting kettle, and when thoroughly melted the molasses must be added, pouring it in slowly and stirring well, the whole boiling about one hour longer. It can then be poured into the mould, which should be perfectly clean and well oiled before using. Another recipe is glue five parts, sugar five parts, and glycerine six parts. Of course the proportions must be varied according to the time of year, using more glue in the summer and less in the winter. To prevent mouldiness add a little carbolic acid to the composition when melted. In washing rollers containing glycerine, water should not be used; benzine, turps, or what is more preferable, oil of camphor. This cleaning agent is extensively used in Germany for cleaning ink off rollers, type, machines, etc., and has many qualities to recommend it. We may ask, why do you trouble about casting your own rollers, or making composition, when there are reliable firms that will supply a much better and more economical article than you can ever possibly make? —*Printer and Stationer.*

Prospective American Coal Exports.

The United States have made such remarkable progress in all the arts and manufactures within the last ten years that it is important to the rest of the world, and more particularly to industrial nations like our own, to ascertain, if possible, how far that progress is to be continued in the future. Two of the most essential elements of such progress—cheap coal and efficient labor—are not only at the command of American manufacturers, but are being enjoyed by them in an increasing degree. As regards fuel, indeed, no country of industrial importance possesses such an ample store. The known area of the United States coal fields is stated at 98,430 square miles, or nearly six times the area of the coal fields of the United Kingdom. But this does not include any of the States in the Rocky Mountain section, such as Dakota, Montana, Wyoming, Utah, Colorado, nor does it embrace the Pacific States of California, Oregon, and Washington, of which the coal areas are less accurately known. There is reason to believe that the coal areas of the United States are much larger than is commonly supposed, but in any case they are larger than those of all Europe.

It will naturally excite some surprise that with such remarkably cheap coal at command, the United States do not, like England, Germany, and Belgium, send considerable quantities to other countries. Coal at 4s. per ton at the mines should certainly be able to compete with coal costing nearly 6s. per ton like that of Germany, or about 8s. per ton like that of Belgium. The explanation is that, although the United States do export a certain quantity of coal to South and Central America and Canada, they have never hitherto laid themselves out to any extent to cultivate this branch of the trade, having enough on hand in meeting the vast requirements of their own arts and industries. But there is no reason to doubt that the time will come when the United States will be in a position to compete successfully with English coal in markets where the latter has now a practical monopoly. Whether this will be hurtful to England may be a moot point. There are many who think it would be well for our future, if not for our present, if some embargo were placed on the unrestricted export of British coal to countries that use that coal to promote their industrial interests against our own. —*Engineering.*

Mastodon Remains, New York City.

The Museum of Natural History has been enriched with a mastodon's tusk, which was lately uncovered by the laborers employed in excavating the Harlem Canal, in the northern part of the city of New York. It is four feet long and six inches diameter at the base. It is in a good state of preservation. It was found in the bog, sixteen feet below the surface, in peaty ground.