Improved Pipe Leak Stopper.

This is a very practical invention, having for its object the stopping of leaks which frequently occur in metal pipes. In the use of steam, leaks in the pipes are of more or less frequent occurrence, sometimes owing to the bursting of the pipes from over pressure, and often in cold weather from the freezing of the condensed steam. The difficulty of making repairs, in such cases, has been a source of trouble to most users of steam. A leak in the supply pipe of a boiler or engine often causes the stoppage of a factory for hours. By use of this invention, the delays incident to such cases are avoided. This leak stopper can be put on in from two to three minutes, and it not only quickly but effectually closes the leak. If, when making general repairs, the old pipes are replaced by new ones, the stoppers can be saved to be used again, as they will last indefinitely. It is believed that a supply of these, kept on hand against times of need, will save many times their cost to any user of steam. For dye houses especially, where pipes corrode rapidly, they are invaluable. Hundreds of manufacturing corporations and manufacturers in New England have proved these facts during the last twelve months.

The device consists of an overlap, A, a piece of rubber packing, B, and clamps, C, to hold the overlap and packing firmly down upon the leak. The application is so obvious as to need no further description.

This invention was patented July 6, 1869, by Stephen Moore, of South Sudbury, Mass., who has assigned his right to himself and Homer Rogers, of the same place. The stoppers are manufactured and sold by James J. Walworth & Co., 1 Bath street, Boston, Mass., whom address for further information.

Fig. 1

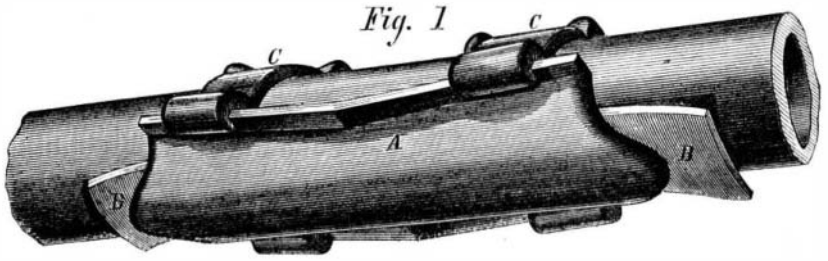
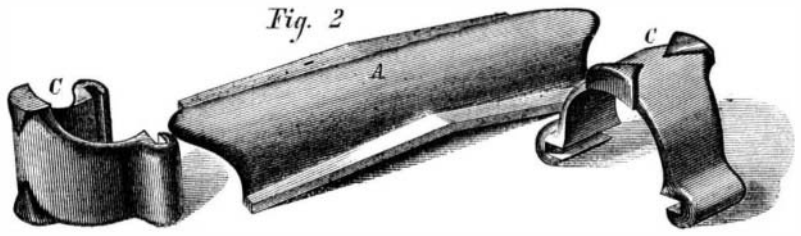


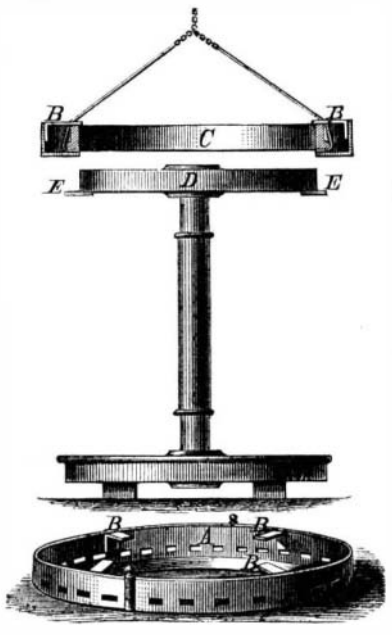
Fig. 2



MOORE'S PIPE LEAK STOPPER.

SMITH'S PORTABLE FURNACE FOR SHRINKING ON TIRES.

We regard this invention as one of those practical, common sense improvements, meriting notice, not only on account of its simplicity and adaptation to the purpose designed, but because it is calculated to cheapen and render more perfect an operation that requires much exercise of judgment and care on the part of the workmen performing it. It also spares the workmen exposure to the intense heat to which they are subjected in the old method of setting tires.



Mr. William S. Henerey, of Meeting Street Foundery, Charleston, writes, in a letter to the inventor, as follows:

"To give an idea of its capacity, I will state that I saw a five feet tire, two and a half inches thick, hung in one of your furnaces, with shavings and kindling and one bushel of charcoal spread around it, and in 20 minutes from the time of lighting the fire the tire was set in position on the wheel. It is due to you to state that in this trial the work would have been done in three to five minutes less but for the haste of the workmen trying it on in thirteen minutes when the tire was not sufficiently expanded, thereby giving out heat to the wheel and causing a loss of at least three minutes to overcome this extra expansion, but at the same time clearly showing its great superiority over the old process, where the tire is taken out of the furnace; for instead of a disagreeable and troublesome failure, it only required to wait on the increasing heat for a few minutes to see it drop nicely into its place. I look upon its adoption as certain by all who have this class of railroad work to do, as it certainly is a great labor saving machine."

Mr. H. T. Peake, Superintendent of the South Carolina Railroad, says: "I would earnestly advise its adoption by all railroad companies, engine builders, etc."

Mr. E. F. Raworth, General Superintendent of the Vicksburg and Meridian Railroad Company, says, "the method is unquestionably superior to any now in use."

These testimonials from practical men show that the invention is worthy the attention of railway officials and builders of engines throughout the country, and their interest thus attracted will be hightened by the simplicity of the apparatus as it is shown in the accompanying engraving.

It consists of a fire box, A, made in halves, of No. 10 sheet iron, open at the top, and held together by hinge joints, so as to be easily separated. Brackets, B, are secured to the sides of the box, to rest on the top of the tire and support the box. Holes are punched around the sides and bottom of the box for the admission of air to the fuel (charcoal), which occupies the space of four inches around the tire.

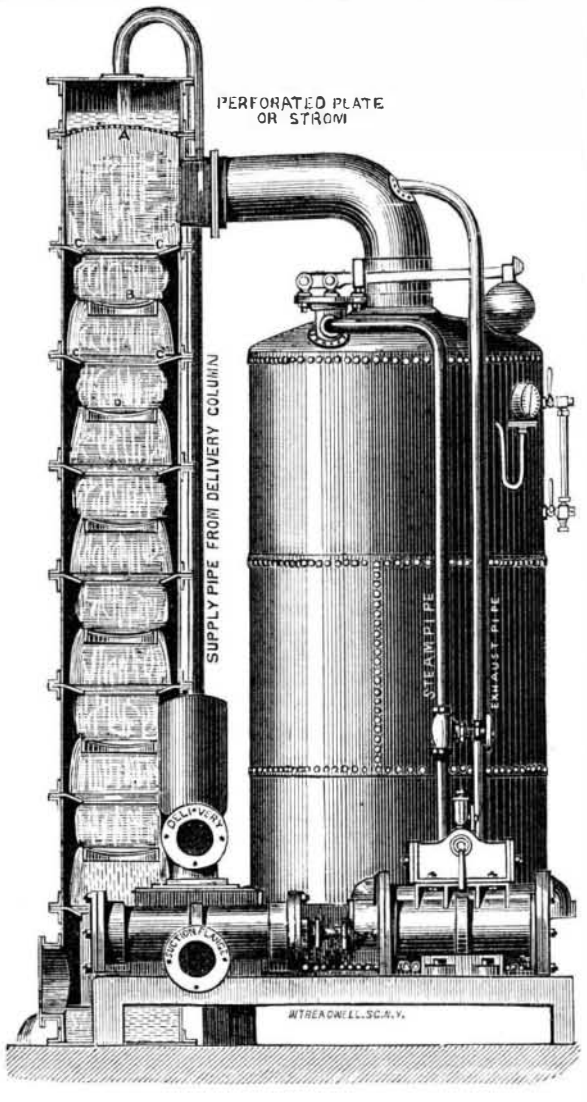
The tire, C, is suspended to a crane, the furnace then placed around it, and the charcoal put in and ignited. When the tire is sufficiently expanded (which may be readily determined by measuring with a rod), it is then placed on the wheel, D, resting on the gages, E; the furnace is then removed, the tire cooled off, and the unburned charcoal saved for the next operation. The furnace remaining around the tire until the operation is completed, obviates all danger of the tire sticking before reaching its destination.

It is claimed that one bushel of charcoal will shrink on any size tire, two and a half inches thick, with one sixteenth allowance for expansion, in less than thirty minutes from the lighting of the fire; and will remove an old tire in less than twenty minutes, not heating the wheel center sufficiently to injure the paint, and employing the labor of only four men.

For further particulars address the patentee, Mr. Wm. Bell Smith, M. S. C. R. R., Charleston, S. C.

TANGYE'S SMOKE AND HEAT PRECIPITATOR.

The annexed engraving shows an apparatus manufactured by Messrs. Tangye Brothers and Rake, St. Nicholas' buildings, Newcastle-on-Tyne, for precipitating soot and smoke arising from steam boilers, etc., in coal mining and underground and confined operations, and also for condensing sulphurous and other fumes from copper and chemical works.



The principle of the invention is at once seen on reference to the sketch, and consists in leading the chimney of the boiler into the top of the vessel termed the "precipitator," immediately beneath a jet of cold water, taken from the delivery pipe of a pump, which is distributed over the area of the vessel by means of the "strum," A. The water, in falling, has the effect of reducing to a minimum the heat passing from the boiler, and, at the same time, precipitating and absorbing the particles of soot and other products of combustion. In cases where a large supply for the jet is available, the cups and saucers, B C D, are unnecessary and not used, the copious shower falling from the strum to the bottom of the precipitator being quite sufficient.

IMPROVEMENT IN THE MANUFACTURE OF WHITE LEAD.

Mr. Decius Wadsworth, of Brooklyn, N. Y., has invented an improvement in the manufacture of white lead, for which he has recently obtained a patent through the Scientific American Patent Agency.

It is an improved arrangement of means for introducing and distributing the carbonic acid, used in the manufacture of white lead, in the basic solution of lead for precipitating, which consists in the application to the bottom of a tank containing a stirrer or agitator of one or more—preferably two—perforated pipes extending across the bottom in a groove or grooves, so that the stirrer or agitator will pass over them, the pipe or pipes extending through the side of the tank and being connected with a main pipe leading from the furnace in which the gas is generated, and having an air pump connected with it for forcing the gas into the solution in fine jets at intervals along the pipe, for exposing the whole mass uniformly to the action of the acid. The pipes are also arranged, at the projecting ends, to admit of the introduction of a brush or scraper from time to time, on the removal of a plug, for clearing them of the deposit of lead which enters the holes and obstructs the passage of the air and gas.

The tank is provided with a strong thick floor, in which are arranged two grooves, extending across it, one on each side of the center and parallel with each other. At one side of the tank are holes through it, coinciding with the grooves. These grooves are of suitable size to admit perforated tubes —say about three inches in diameter—so that they will not rise above the level of the floor. The tubes are arranged in the grooves, with one end projecting through the wall of the tank, and connecting with a supply pipe, which communicates with the furnace in which the gas is generated and has an air pump connection for forcing the gas into the tank through the small perforations. The agitator is kept in motion, while the acid is thus introduced, to thoroughly mix the acid with the solution. The pipes are connected with the main pipe in such a way that the outer ends, which are closed by plugs, may admit, when opened, a brush or scraper for removing the deposit of lead accumulating in them by settling in the holes. The pipes may be made of wood, copper, galvanized iron, or other suitable material.

By this improved means, the inventor claims to make the necessary uniform application of the acid to the lead with certainty and rapidity.

The process above described, namely, the distribution of carbonic acid over lead by means of a complicated arrangement of tanks, pipes, and other auxiliary parts, is old; but the improvement is intended to facilitate the operation and render it much more economical.

Curtis' Improvement in the Manufacture of Gunpowder.

Mr. Charles William Curtis, of London, England, has invented and patented, through the Scientific American Patent Agency, an improvement in gunpowder for use in heavy ordnance, known as "pellet" powder, which is usually made by compressing meal powder in molds, whereby it is formed into pellets of cylindrical form. Mr. Curtis' improvement consists in splitting such pellets longitudinally into halves, forming grains of semicylindrical form, the result attained in use being claimed to be a higher velocity of the projectile without increasing the strain on the gun.

He takes unglazed pellet powder, or powder compressed into short cylinders or pellets, the manufacture of which is completed with the exception of the glazing and stoving processes, and subjects each pellet to the action of a knife or other instrument, operated by hand or otherwise, whereby the pellet is fractured or split in a longitudinal direction. The split pellets are afterward glazed and stoved in the ordinary manner, which completes the process of manufacture.

The pellets, when whole, instead of being cylindrical, may be of other form, cubes or parallelopipedes, for instance, according to the shape of the molds in which the meal powder is compressed, and the shape of the pellets when split will be varied accordingly, instead of being semicylindrical. In any case, each split pellet has one roughened or fractured surface, as above mentioned. The compression of the powder into pellets may be effected by the aid of any suitable machinery, as the present invention does not consist in the machinery for molding the powder, or in any particular construction of knife or other sharp or pointed instrument or machine for splitting the pellets, as any suitable instrument or machine may be employed for that purpose.

The Boiler Experiments at Sandy Hook.

The experiments in the explosion of steam boilers under the authority of the United Railroad Companies of New Jersey, and the immediate direction of Mr. Francis B. Stevens, were commenced Nov. 22nd, on the U. S. Reservation at Sandy Hook. Nine boilers were set up and three were exploded under conditions which will form the subject of a future article. We prefer to defer a comprehensive review of the experiments until they have proceeded farther. The only important result yet reached seems to be the final corroboration of the fact, heretofore supported by much reliable testimony, that boilers may explode with terribly destructive violence, when amply supplied with water, and when the pressure is not in excess of that commonly used in high pressure engines.