



New Inventions.

Improvement in Working the Valves of a Locomotive.

Mr. Simeon Goodfellow, machinist, of Ida Mills, Troy, N. Y. has made some very ingenious improvements in the manner of working the valves of a locomotive, for which he has taken measures to secure a patent. The arrangement is very peculiar. A longitudinal shaft runs along directly under the boiler and on it is a drum with two eccentric grooves in it. This drum revolves with the longitudinal shaft and into the eccentric grooves which run around the periphery, are fitted two small heads of the valve rods. These valve rods are of peculiar construction. They are fixed on pivots to a plate secured below around the shaft spoken of and project up on a line to work the slides of the valves, in the form of bent knees. When the longitudinal shaft revolves, which is done by a cog wheel on the driving wheel shaft meshing into another connected to the shaft spoken of; the valve rods receive a reciprocating motion according to the forms of the grooves in the drum. These grooves are formed to operate the valves like cams, and by small guide rods below they can be altered to cut off at any point desired. The improvement embraces the principles of working the valves from a common centre below the boiler, giving them the rapid operation of the cam, and the benefit of employing the cut off or not at any desired point. It is true that it is more complex than the common simple eccentric, but experience may demonstrate it to have advantages to cover far more than the loss of simplicity.

A Petrified Oil Paint.

Messrs. Quarterman & Son, No. 114 John st. this city, have made a very valuable discovery of a petrified oil paint, which is fireproof and well adapted for roofs, walls, cisterns and many other purposes. We have a block of wood before us on which a layer of this paint is laid which possesses all the hardness of light drab freestone, and has the same beautiful appearance. It can be made to be applied either with brush or trowel to cover a brick wall, an under coat of mortar, or a wooden partition. The receipt which Messrs. Quarterman give us, is in the proportions, 1 lb. of Quarterman's drier, 1 lb. of white lead, 2½ lbs. of clean sand, the whole mixed with boiled linseed oil. It can mix with various colors and for a plaster coating, it will cost about 50 cents per square yard. Every person can thus make it up to suit himself, and use it in the state most suitable.

Improvement in Steamboat Flues.

The Cincinnati papers say that Mr. Josiah De Crews of that place has invented "what is called a patent draft, for steamers, that is placed in the flues so as to cause more oxygen of the air to burn, creates a stronger draft, makes more heat, distributes the white flame, and in short, makes two-thirds more steam of the same quantity of fuel than has been done heretofore."

[The invention may be a first rate one, but that it saves two-thirds of the fuel is news, which we would rather see with our eyes than hear tell of with our ears.]

The Fog Bell.

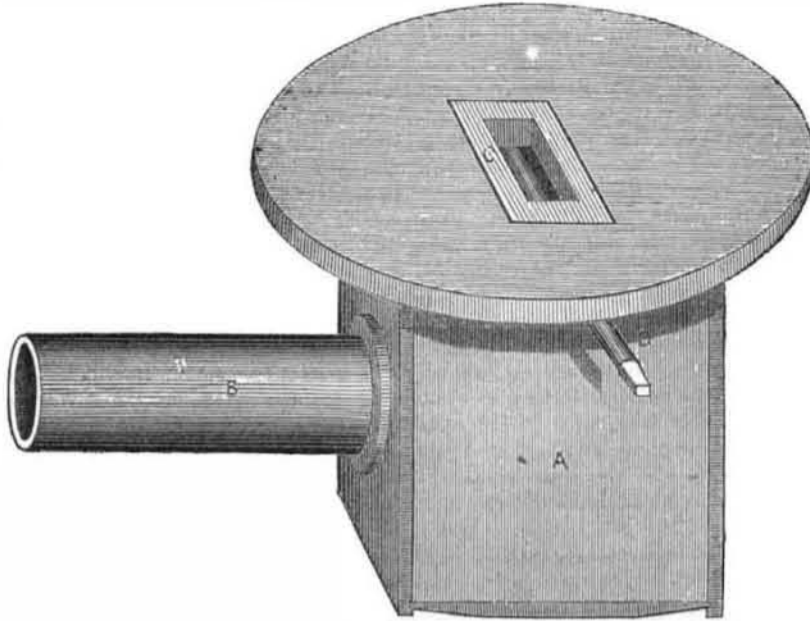
The Boston Journal states that a bell to be rung in foggy weather has been exhibiting in that city, as designed to be located near light houses and rung during the fog by means of machinery. The ringing from what we can learn (it being somewhat vaguely described) is performed by a weight operating the striking parts—like an escapement, we suppose. This is somewhat more reasonable than accounts which we have seen of this fog bell before, which stated that "it was operated by the fog." The inventor is a Mr. Daniel Jones, of St. John, N. B.

CAMP'S IMPROVEMENT IN TWERES FOR FORGES.

We here present three views of Mr. Samuel C. Camp's improvement in Twere. Fig. 1 is a perspective view of the whole Twere, and fig. 2, are views of the different sides of the revolving grate to admit the air to the forge or

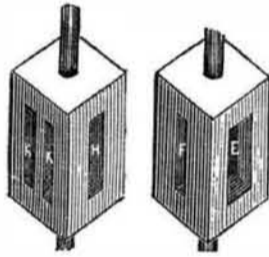
cupola. The management of the Twere is a very particular business. It requires very great care and experience. Every improvement, therefore, however simple, is very valuable.

Figure 1.



This Twere combines the pre-eminent qualities of fire regulator and fuel agitator, breaking off the scales that may be formed better than any other Twere with which we are acquainted. A, is a suitable air box. B, is the tube connected to the blower or bellows in the usual way, and C, is the opening in the hearth plate above, into which the revolving grate fits exactly. D, is the shaft to operate and turn the revolving grate. Figs. 2 and 3 exhibit this grate. It is of a rectangular square form, fitting snugly into the opening of the hearth plate. It is hollow and is pierced with different sized openings K K, H, and F E, showing the openings on the four sides.—

Fig. 2.

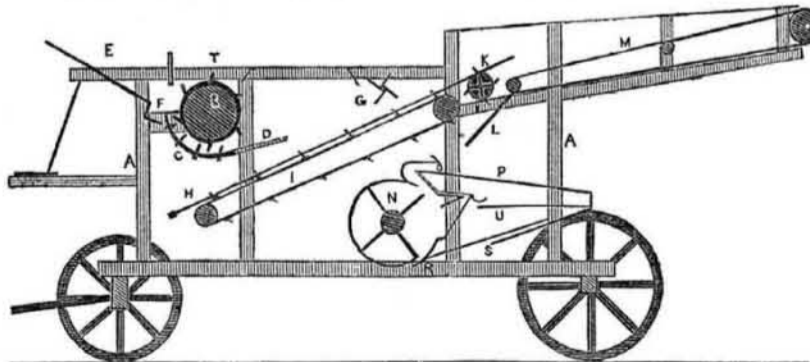


The openings regulate the supply of air, and the bars between the spaces prevent pieces of coal from falling down into the body of the grate. By the form of this revolving grate, it will be observable, that air can be admitted in greater or less quantities as may be desired,

in a most beautiful manner, for by turning round the grate till its edge becomes the apex, air will be admitted from both sides, while by turning the grate till its plane coincides with the face of the hearth plate, no more air will be admitted than the size of the opening or openings in one side will allow.— The edges too serve to break off the scales of metal that may be formed, being better for that purpose than a revolving perforated ball. Mr. Camp makes the hearth plate concave whereas in other Tweres it is convex. Therefore as the scale which forms on the top of the Twere is caused by impurities of the coal, sand, &c. melting and running over the surface, this red hot liquid spreads over a convex surface outwardly from the centre of heat and thereby spreading the fire beyond all necessary bounds and increasing the consumption of coal unnecessarily, whereas with a concave top the red hot liquid flows to the centre and readily passes through the grate bars out of the way or is removed, if sufficiently chilled, by a revolution of the grate. The fire in a forge with the concave top will always form an inverted cone, whereas with a convex surface the red hot liquid flowing outwardly instead of to the centre communicates the fire to the adjacent coal and will form almost a perfect cylinder in a short time.

Mr. Camp resides at the Grove Works Car Factory, Hartford, Conn., and has taken measures to secure a patent.

WOODBURY'S IMPROVED GRAIN SEPARATOR AND THRESHER.



This engraving is a vertical longitudinal section and represents the improved Grain Separator of Mr. Daniel Woodbury, now of Rochester, N. Y. formerly of Vermont, who is the inventor of a valuable Horse Power and many other inventions. This machine has been recently secured to Mr. Woodbury by patent, and the following explanation will explain its construction and operation.

A, is the frame. B, the cylinder to thresh the grain. C, the concave bed of thresher. D, is the grate frame to prevent the grain, &c. from injuring the web. E, is the feed board. F, box to receive stones, &c. that may be in the straw to keep them from passing into

the thresher. G, are revolving beaters. H, a number of light wooden rods inserted at their lower ends in a bar that crosses the frame K, in the corners of which are rollers to prevent the wear of the rods. Between the rollers are bars with teeth which agitate the straw and pass it from the ends of the rods to the straw carrier. I, is a broad web revolving on two small rollers. There are bars across the web fixed to it, and placed at intervals from one another. These cross bars have projecting vertical teeth or pins in them corresponding with the spaces between the rods H, spoken of above. These teeth carry forward the straw above the rods, while the grain falling

through between the rods is carried forward by the web below and discharged into the fanning mill by the slanting board L. M, is a broad band made by connecting together at their ends a series of light rods, the upper side of which carries forward the straw while the under side brings back the grain which may have fallen through upon the floor below. N, is a blower. O, a curved aperture through which part of the wind is discharged above the shoe P. O, is a sieve. The good grain is discharged at R, the light grain at S, which is supplied with screws to separate the foul seed from the grain.

Mr. D. Woodbury has erected extensive works at Rochester, and manufactures the machinery and furnishes to order the above Separator in combination with his Horse Power, and warrants them to be greatly superior to any in use. These Separators have been introduced into five different States and have in all cases given general satisfaction.

Improvement in the Manufacture of Metallic Compounds.

A patent has lately been secured in England, by Mr. John Davie Morris Stirling, of Black Grange, North Britain, for new metallic compounds, the specification of which we condense from our worthy exchange, Barlow & Payne's Patent Journal, as being of interest to many of our readers who are engaged in metallurgy.

1st. He produces a metal equal to the refined iron, by taking about one twentieth of scrap malleable iron and placing it in the hollows of the pig metal beds in the smelting, in which case the pig metal envelopes the wrought iron, which loses its character of tenacity and becomes more brittle and steely.— After this the whole mass is thoroughly puddled in the puddling furnace, where it is found he says, to be the best refined iron. Scrap iron has been mixed with cast iron before, but this smelting of the mass in the puddling furnace, is an improvement.

2d. Another plan is to introduce the scrap malleable iron into the puddling furnace, and then running in the molten cast iron from the smelting furnace, before the scrap iron was thoroughly smelted. This must be carefully done. The smelted iron has been run direct before, into the puddling furnace, but not mixed with the scrap in this manner. The inventor states, that a mixture of one fifth of scrap with rich pig iron produces an article of iron of great ductility and fibrousness, which may readily be worked under the hammer, in the squeezer, or between the rolls. For tyres of wheels and the surfaces of rails, he finds that scrap steel mixed with the cast iron is a great improvement.

By mixing one hundredth part of block tin with the cast and scrap iron in the puddling furnace, he produces a metal of a smooth exterior very hard, but which can be wrought under the hammer or between the rolls.

The addition of zinc or its oxides in the puddling furnace produces a metal of a bright color, with a clean surface, and it is very ductile and fibrous. He prefers to use calamine (a native carbonate of zinc) in this combination. He also finds that by mixing about a two hundredth part of copper, a beautiful compound is the result. [This is just an addition of brass in the scrap malleable and the cast iron in the puddling furnace.]

To make a very hard and steely character of iron, well adapted for the tyres of wheels and rails, he introduces some of the black oxide of manganese into the puddling furnace incorporating it thoroughly with the metal just before it is taken out, then rolled into bars.

Solid Milk.

A Mr. Felix Louis of Southwark, England, has lately taken out a patent in England for preserving cows milk, goats milk, &c., by converting it into solid cakes which are soluble in warm water, and which may be kept for a long time without losing their original sweetness. The process consists in using some loaf sugar, agitating the milk, evaporating it by heat and then pressing it into cakes while soft and evaporating them to dryness after being moulded.

Michigan used 7,600 reams of paper last year.