

THE ECLIPSE INJECTOR.

It is generally conceded that if an injector is so constructed as to work under a varying pressure of steam and water, it is the most economical mode of feeding a boiler, costing much less than a steam pump, and heating the water by the steam used for its operation. It is claimed that the Eclipse injector, illustrated herewith, meets these requirements. The engraving shows the exterior of the apparatus in Fig. 1, and a sectional view is given in Fig. 2. A is the regulating handle, B the steam inlet, C the steam plug, D the water entrance, E the overflow, in which is a valve, and at F is the boiler conduit, also provided with a check valve. By unscrewing the nut, G, the working parts can be taken out, examined, and replaced without any connections being broken or the injector removed from its position. This is an important desideratum, as the openings in an injector are so small that any particles of dirt or waste getting into it are liable to stop its working. The adjustment to suit different steam and water pressures is effected by the steam plug, C, which gradually regulates both the water and the steam.

When the steam pressure is high a large amount of water and a small amount of steam are admitted, and as the steam pressure falls, more steam is allowed to enter and the water supply is reduced at one operation, by simply turning the handle of the regulating valve, A. The injector is claimed to work equally well with a steam pressure of 1 lb. or 200 lbs., and will lift the water at any pressure. The apparatus is made with an internal jet, H, for lifting. For further information and prices address R. W. Wilde, general agent, 108 Liberty street, New York city.

IMPROVED WAGON BOX ADJUSTER AND FASTENINGS.

The annexed engravings represent a new and easily applicable device for quickly and tightly securing together the sides, bottom, and ends of the body or box of a wagon, so that the box may be made in separate pieces, which may be easily put together or taken apart when desired. The inventor claims that a box thus ironed can be put together or taken apart by one man in two minutes. No nuts or screws are used in working the device, and the entire device is attached to the box so that none of its parts are liable to be lost. It is easily applied without the aid of a blacksmith. Eccentrics, A, are pivoted to iron bands attached, as shown in Fig. 1, to the sideboards. These bands are strips of merchant iron, through which the necessary holes are punched, and are therefore inexpensive. The brace fits into a socket in the crossbar. B is a stirrup fitted in a groove or bearing on the under side of the ends of the bottom bar to prevent slipping, and in such a manner that it may be placed with its upper end over the eccentric. By turning the latter so that its long radius points upward, the bottom board becomes tightly secured to the lower edges of the sides. The eccentrics are secured in position by a ring, C, slipped over the end of the handle. Fig. 3 shows the contrivance locked, and Fig. 2 unfastened.

The device is exceedingly simple, saves time and labor, and is well adapted to the uses of farmers and teamsters generally. The box is held in place on the bolsters by cleats as usual.

Patented through the Scientific American Patent Agency, February 26, 1878. For further particulars address the inventor, Mr. C. G. Conkling, Lock Box 47, Harrisburg, Pa.

Embossed Silk Velvet.

We see in the *Moniteur des Filés et Tissus* that two inventions have been patented in France, the object of which is to produce a new effect by embossing a design upon velvet in one or more colors, differing from that of the piece or ribbon. Each invention has different methods. We first consider the invention of M. David. The piece to be operated upon is rolled upon a drum behind the machine,

and falls in front into a box; during its passage the face is upwards, and goes under a glass rod, while the back passes over a small roller placed in a trough containing the mordant, or size, to be used; from this it passes again under a glass rod, and over a heated cylinder, which partly dries the mordant or size; it then goes over a paper bowl, and under a heated embossing roller, resting upon this latter, and thence into the box.

The pattern to be embossed is deeply engraved upon this roller, so that the pile of the velvet which passes into the sunken parts of the roller is unoperated upon, while the parts of the pattern where the pile is to be flattened are in relief on the roller. The color, or other substance, to be impressed

substance, are then deposited upon it, and made to adhere by heating the fabric. The piece is then passed under an engraved roller as in the method just described, and the patterns thus embossed upon it. The parts of the pile which pass into the recesses on the roller remain standing, and by submitting these projecting parts to the action of brushes, the substance deposited upon them is removed, but remains in the depressed portions, and, as before, the printer can obtain results which, for variety and effect, admit of variation almost without limit.—*Textile Manufacturer.*

New Inventions.

A Feed Water Heater for steam boilers, invented by Mr. H. G. Cady, of Belleville, Ark., is simply a coiled pipe, upon which the fire impinges before entering the boiler flues, one end of the pipe being connected with the boiler at the water line, and the other, by means of an outside pipe and valve, with the cold water supply pump.

Mr. J. H. Wygant, of Hackensack, N. J., has patented an ingenious Wheeled Toy for children, in which springs, acted upon by crank pins on the axle, cause an alternate and rapid movement of two balls, which appear to be thrown by a figure.

Mr. W. T. Doremus, of New York city, has patented a new Sash Stop and Lock, which is so constructed that the sash cannot be raised without throwing the device into such a position that it will lock the sash automatically when lowered, and which may be locked in position when fastening the

sash down, so that it cannot be unfastened from outside the window. It is an improvement on patents Nos. 189,088 and 199,194, issued to the same inventor.

Mr. F. A. Sawyer, of Houston, Texas, has improved upon a former patent issued to him for a Vapor Burner, by making alterations which permit ready adjustment of the size of the flame. An exterior tube, having a closed top, fits on the wick tube, and has a number of exit holes which register with corresponding slots in the wick tube. The outer tube is turned by a lever arm provided with stop devices, thus increasing the number of flame jets to six or more, or reducing it to a single jet when used as a night lamp.

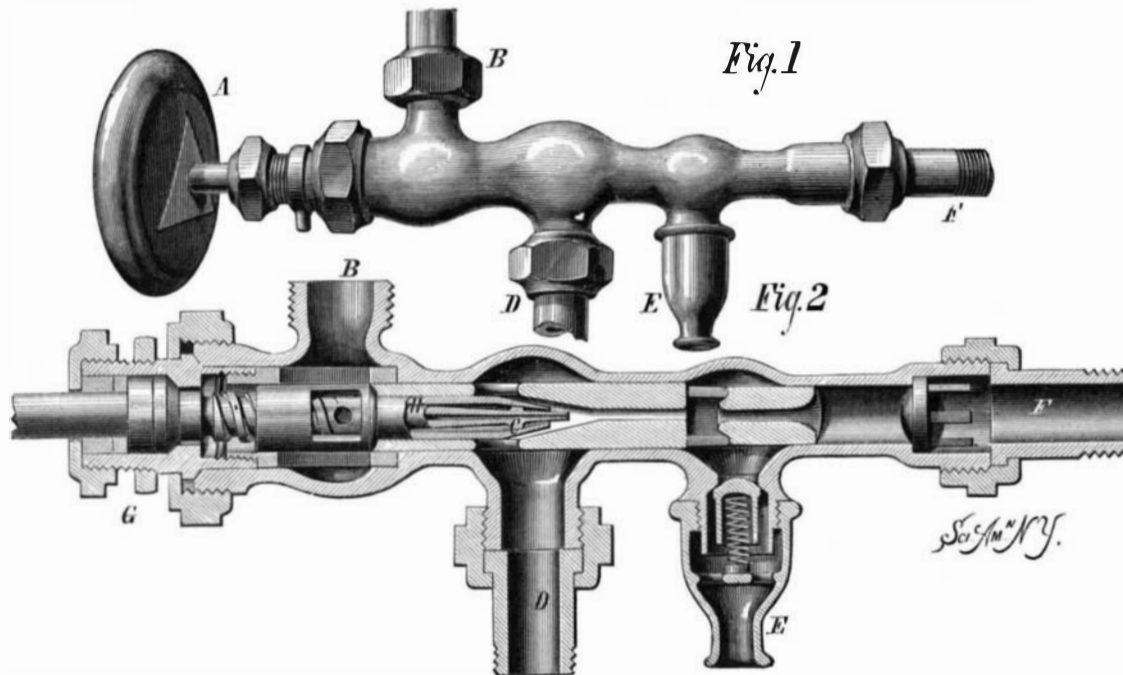
Mr. John Kirkland, of Menomonee, Wis., has patented an improved Spark Arrester for Smoke Stacks, consisting of a series of inverted and perforated cones and a perforated cylinder, which form eddies into which the sparks fall and are consumed. The inventor claims that the draught is but slightly retarded by this arrangement.

Shelf Steps, or Brackets, of the form lately patented by Mr. J. C. Thomas, of Milroy, Ind., are applicable to use as step ladders, as brackets in show windows, or for the support of temporary shelving. A mortised upright carries a sliding and turning step, which is held in horizontal position, when drawn out, by a recessed shaft and casting, or in a vertical position when folded back into the mortise of the upright.

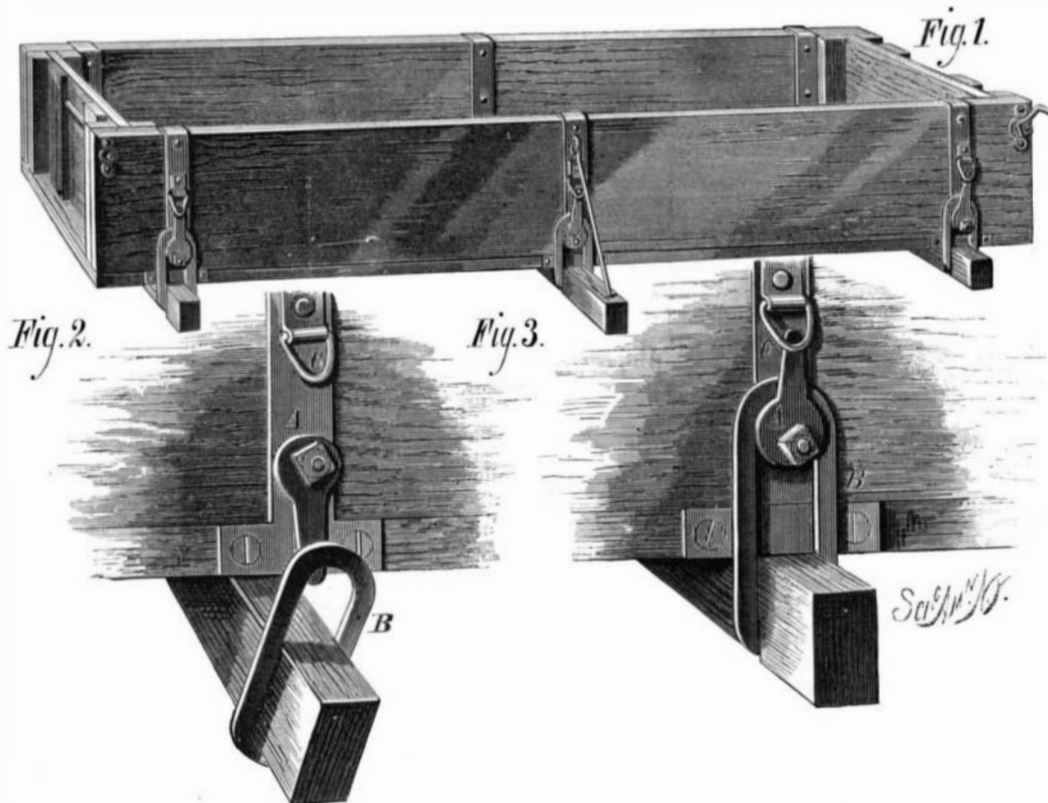
An Inhaling Apparatus, to be used for relieving throat and lung diseases, for the inhalation of the vapors of different medicinal substances, such as that of chloride of ammonia, for instance, has been invented by Dr. L. E. Felton, of Potsdam, N. Y. It is a convenient arrangement, and effectually prevents the escape of fumes when not in use, and of acid in case of tipping over.

Mr. Chas. Everts, of St. Louis, Mo., has patented an improved Washboard, made of sheet metal, and having transverse continuous ridges joined by intermediate longitudinal ridges at right angles, between which ridges are inclined rubbing surfaces and soap pockets.

Mr. T. W. Cardozo, of Brooklyn, N. Y., has patented an improved flexible and metallic Spring Pillow, which is claimed not to be liable to receive permanent indentation by compression, and to always resume its normal shape and size when left intact, without shaking or other manipulation.

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on the velvet, is contained in a box provided with a roller, which, as usual in printing machines, deposits it rather thickly upon the parts of the roller which are in relief. If the color is crushed, or runs into the recessed parts of the pattern, it will be deposited upon the pile, but this does not matter, as it can easily be brushed off afterwards, for the color can only be fixed upon the piece where it is pressed into the pile, and the latter flattened, and thus comes in contact with the size, or mordant, penetrating from the back of the piece, and which also tends to keep the flattened pile permanently in position. The face of the raised parts on the roller is slightly fluted, the better to retain the color, and also to give to the parts which they flatten the appearance of a twill or any other design. It will thus be seen that

**CONKLING'S WAGON BOX ADJUSTER AND FASTENINGS.**

where the roller is recessed the pile of the velvet forms a pattern in its natural condition, while the embossed parts, especially if done in colors, form, as it were, a ground of a different kind, by means of which very striking and pretty effects may be produced, the details of which may safely be left to the ingenuity and fancy of the printer.

Messrs. Vignets proceed somewhat differently. In this case the face of the velvet has a mordant or adhesive substance, such as gum, stearine, etc., applied to it, and the coloring matter in a powder, or flocks of any material from the shearing machine, silk waste ground fine, or any other