

WEEKLY SUMMARY OF INVENTIONS.

The following inventions are among the most useful improvements patented this week. For the claims to these inventions the reader is referred to the official list on another page:—

MACHINERY FOR STAMPING METALLIC VESSELS.

This invention has for its object the stamping or forming out of a sheet of thin metal, such as tinned sheet iron, brass, copper &c., vessels of any desirable shape or size or description, so that they will be seamless. The invention is an improvement on the present process of "drawing down" or stamping vessels, such as oval, round, or square pans, very deep or very shallow, whereby the work can be all done at one and the same operation, and with one die acting upon the blank or blanks in a corresponding counter-die; the work may thus be accomplished with great rapidity, and with less liability of injury to the metal, than with the present slow method of sinking the metal at many separate and successive operations with different dies. This invention consists in the employment of suitable dies and counter-dies, corresponding in shape and size to the kind of work to be made, and in using with these, in a novel manner, a device which is brought down upon the blank so as to hold it with sufficient firmness on the counter-die bed to prevent it from puckering or gathering while the die is brought down and the metal forced into shape; at the same time this device does not hold the blank with such rigidity to prevent it from gradually drawing or slipping over the edge or margin of the counter-die, as the die descends into the counter-die, or the counter-die descends on the die, which would be the same thing; still it is preferable to fix the counterpart or intaglio of the die, to the bed or base of the stamping machine. It further consists in arranging a device which is termed the blank-holder so as work in suitably adjustable guides, and to be acted upon with a reciprocating action by a screw or other mechanical means, in such a manner, and in such a relation to the die, that said blank-holder will be the guide for this die, and conduct the same to the work, after the holder has been brought down and kept in a firm central position with respect to the counter-die, while it completes its operation of sinking or stamping. J. B. Jones, of Brooklyn (E. D.), N. Y., is the inventor.

MORTISING MACHINE.

The object of this invention and improvement in mortising machines is to throw into and out of place the mortising tool, and for reversing the movement of the same at any desirable moment, without shifting the belts or stopping the rotary motion of the auger to adjust the parts; at the same time to have the mortising tool advance or recede from the timber, instead of the timber to the tool. The invention consists in giving a rotary motion to the auger, and at the same time an alternate reciprocating movement to the chisel stock by means of a friction wheel and counter shaft which is hung at one end in a movable bearing arm operated by a suitable treadle so as to bring the periphery in contact with the main shaft, and to relieve it from said shaft at pleasure; and in conjunction therewith, is arranged a pinion bevel-gear wheel for rotating a cam shaft, for giving the advancing and receding motion to the mortising chisel, and for giving a simultaneous movement to the belt wheel on the main shaft. It also consists in arranging above the friction roller a counter roller, which receives its motion from the main shaft by a belt, or suitable gearing whereby the friction roller may be made to reverse its motion, and thus give an instantaneous receding movement to the auger and chisel. The patentee of this invention is Lovett Eames, of Kalamazoo, Mich.

SMOOTHING MACHINE.

The object of this invention is to obtain a machine by which doors, window sash, slate-frames, &c., &c., may be finished or smoothed off in a better manner than can be done by hand, and with great rapidity. The machine can be made so that it will accommodate itself to the varying thickness and sizes of work, and so that it may be worked by manual as well as steam or horse power. For this purpose the invention consists in arranging in a suitable relation with a system of feeding pressure rollers, a number of rotary disks which are placed in a horizontal plane, and have roughened surfaces suitable for smoothing the work passed over or in contact with their faces; the whole to be operated simultaneously and with a rapidity commensurate with that of the feed rollers. The inventor of this device is George Munger, of New Haven, Conn.

WIND WHEEL

This invention relates to an improvement in that class of wind wheels, which are commonly termed portable, and which are more especially designed for driving light machinery. The object of the within-described invention is to simplify and economize in the construction of such class of wind wheels, and at the same time render the same more efficient than hitherto. The invention consists in the employment of a deflecting cone, placed on the gearing, and so arranged relatively with the wheel that it may serve as a vane and keep the frame facing the wind; the cam serving the triple purpose of vane, cover or protector to the gearing, and deflector to cause the wind to act in the most efficient manner against the wind wheel. The credit of this contrivance is due to E. F. M. Fletcher, of Georgia Plains, Vt.

PLANING MACHINE.

The first part of this invention consists in a peculiar construction of cutter-head for the purpose of more effectually turning and breaking the shavings, the duty of the cap being performed by a portion of the cutter-head which is peculiarly formed for the purpose, and also in using with said cutter-head a bar to prevent the board from casually rising from its proper place. The second part of this invention consists in a peculiar form of clamp, by which boards with inclined ends may be instantaneously and securely dogged, or pieces of different lengths planed at the same time. This improvement was designed by Solomon S. Gray and S. A. Woods, of Boston, Mass.

VALVE.

The object of this invention is to obtain a larger area of opening in proportion to the size of the valve than is obtained with the valves in common use, thereby obviating in a great degree the difficulty of filling a large pump with a quick stroke; and to this end the invention consists in making a valve of two parts, the first being of annular or frame-like construction and fitted and operating in relation to the seat in the usual manner, and the second being made like a separate valve and fitted to a seat form around the opening of the first one. The inventor of this improvement is William Jeffers, of Pawtucket, R. I.

TENSION FOR SEWING MACHINES.

This invention consists in so applying, in combination with a friction apparatus for producing tension on the thread, a lever through or in contact with which the thread passes, on its way from said apparatus to the needle, in such a manner that the friction on the thread is in such degree counteracted by the draft of the thread on the lever, as to make the friction and consequent tension uniform or nearly so, notwithstanding variations in the size of the thread or other causes which would tend to vary the friction. The credit of this contrivance is due to Christopher G. Cross, of Chicago, Ill.

STUMP EXTRACTOR.

This invention consists in having two pawls fitted within a suspended rocking head, to which suitable levers are attached, the pawls being crossed and used in connection with a double-rack bar, which passes vertically through the head; the whole being so arranged that a good leverage power is obtained within a limited space, and an exceedingly simple, portable and efficient device obtained for the desired purpose. This device has been patented to C. Bates, of Kingston, Mass.

DISCOVERIES AND INVENTIONS ABROAD.

Purple Color from Quinine.—A patent has lately been taken out by C. H. Williams, of London, for obtaining a new coloring substance suitable for dyeing and calico-printing, from quinine, cinchonine, strychnine, or brucine. These substances are mixed with caustic alkali, and distilled, by which operation a liquid of an oily appearance passes over. This liquid is then re-distilled at a temperature of 320° and 350°, and it is divided into two substances, the one passing over at the lower, and the other at the higher temperature. The substance obtained at the highest heat is treated with an iodide or sulphate, to which are added water and ammonia in excess, when the mixture is boiled until the liquid assumes a deep purple color. When this liquid is afterwards applied to silk, it colors it a brilliant and permanent purple. The coloring matter is applied to the fabric in an alkaline solution, and as the coloring substance is not readily soluble in water, it is kept for constant use in alcohol. The portion of the distillate which has passed

over at the lower heat is mixed with any alcohol radical compound, such as amyl, and is heated in a close vessel up to 250°, when water and the red oxyd of mercury are added; the mixture is then boiled, when the liquid passes through the shades of blue and lilac, and finally becomes a deep purple. The brucine to be used for making this color may be obtained from coal tar, by distillation and subsequent purification by sulphuric acid and alkalies, and it is finally distilled again. The coloring matter obtained as described is always dissolved in alcohol before it is used for dyeing; the fabric is boiled in the solution. For calico-printing the extract is required to be considerably concentrated and mixed with albumen.

Chameleon Mineral.—The permanganates and manganates of potash and soda form this rare mineral, which is distinguished as a rapid oxydizing agent: When dissolved in water, it appears of a greenish hue at first, then it becomes purple, and subsequently a beautiful red. It is used for deodorizing, and, occasionally, as a medicine. Its chief use has been as an oxydizing substance; its extreme delicacy rendering it valuable in analytical chemistry. Hitherto it has been very high in price, and it could not be manufactured in large quantities. Quite recently, Mr. Wm. Wildsmith, analytical chemist, of Wolverhampton, has succeeded in manufacturing it upon a large scale, and at a price less than one-half of that at which it has hitherto been sold.

FOREIGN NEWS AND MARKETS.

North Atlantic Telegraph.—The "caution-money" of £20,000 on the concession of the North Atlantic Telegraph between Europe and the United States, for 100 years, granted by the Danish government, is stated to have recently been remitted to the Danish Minister of Finance at Copenhagen, by Messrs. Croskey & Co. The line will proceed from Scotland and Denmark, via the Faroe Islands, Iceland, Greenland and Labrador, to Canada and the United States; and its practicability is represented to have been recently demonstrated by a personal survey made by Colonel Shaffner, who, a short time since, gave evidence upon the subject before the House of Commons now sitting.

New Electrical Machine.—An electrical machine has been constructed in Paris, by an American, so powerful that it readily evolves electric sparks fifteen inches long. It charges an ordinary Leyden jar three times a minute, the discharge being as loud as the detonation of a musket. An observer writes:—"When the distance between the poles had been reduced to a single inch, producing an apparently continual electric current, I touched a cigar to the flame, literally igniting it by lightning. The experiments were conducted by Professor McCullough, of Columbia College, New York, and M. Foucault, of the Paris Observatory. It is probable that this machine, a triumph of American perfective industry, will be purchased by the French government for the Polytechnic Institute."

The Egg Trade in France.—A late number of Galignani's *Messenger* says that, in 1815, the number of eggs exported from France was 1,700,005; in 1816, it rose to 8,000,000. Six years later, in 1822, the number was 55,000,000; and 99,500,000 in 1824. In 1830, the number declined to 55,000,000; then gradually increased until 1845, when it was 88,200,000, for which an export duty of 114,000 francs was paid. Nearly all these eggs go to England. The yearly consumption of eggs in Paris is estimated at 165,000,000, and the total consumption of all France at 9,000,000,000; so that, reckoning eggs at a sou, this single article represents 465,000,000 francs.

Humanity of English Factories.—Fines amounting to nearly \$5,000 were imposed upon English manufacturers during the six months ending October 31st; principally for employing children and women after 6 o'clock P. M.

Indian Cotton.—The exports from Bombay (India) to England, during the last year, were 623,605½ bales; being an increase over the preceding year's exports of 268,352 bales. The exports to China, up to the end of 1859, were 161,916, which also shows an increase over the exports of 1858 of 59,872 bales. Thus, the total exports of cotton were 785,521½ bales, against 457,297 for 1858. Taking each bale at 380 lbs., and supposing (a low estimate) the price of Surat cotton at Liverpool to be 4d. a pound, this represents a cotton export trade of £5,000,000 sterling.