

**FRATT, Meriden, Conn.**—By this machine the keyboards for melodeons, pianofortes, and other musical instruments, are smoothed very nicely and effectively, whereby a great saving of time and labor is effected, beside securing superior workmanship.

**HAY FORK AND CUTTER.**—J. B. DRAKE, Picture Rocks, Pa.—The tines are formed with cutting edges so that when closed they form a spear point to adapt the instrument to be readily probed into the hay in taking its load.

**OIL WELL GAS PIPE ATTACHMENT.**—L. W. TURRELL, SAMUEL STANTON, AND L. C. WARD, Newburgh, N. Y.—This invention consists in inserting in the gas pipe, at a point between the well and the furnace of the steam boiler, one or more partitions of wire gauze or wire cloth, so as to prevent, in case of the ignition of the gas, the flame communicating with the gas in the well, it being well known that a flame cannot pass through wire gauze or fine wire cloth.

**WATER WHEEL.**—G. E. CORBIN AND J. W. PUGH, Grand Rapids, Mich.—This invention consists in a peculiar shape and position of the buckets of the wheel, together with a ring and cloats or guides for directing the water properly to the buckets, and in a novel application of the case to the wheel, whereby several advantages are obtained over the ordinary wheels of the same class in use.

**WATER WHEEL.**—JESSE TUCKER, Adrian, Mich.—This invention relates to a new and improved water wheel of that class which are placed on a vertical shaft and are commonly termed horizontal wheels. The invention consists in a novel arrangement of issues, whereby it is believed that a greater per centage of the direct and reacting power of the water is obtained than with the ordinary horizontal wheels.

**FRICTION WINDOW SPRING AND FASTENER.**—H. NAYLOR, Pelem, Ill.—This invention consists in the employment of a catch and spring so constructed that when the window sash is closed, the catch will lock and fasten either the lower or upper sash, or when it be desired to raise or lower the sashes, will bear against the stile of the window with sufficient force to prevent the sash descending.

**PRIVY SEATS.**—J. M. DAVIS, Cincinnati, Ohio.—This invention consists of a cheap, simple and effective construction of a privy seat, the object being to prevent it being soiled.

**PADDLE WHEEL.**—CHARLES A. TODD, New York City.—The object of this invention is to obviate the lifting of the water by the floats of the paddle-wheel as they emerge from it, thus relieving them of their back pressure to a great extent.

**COMPOUND FOR SETTLING COFFEE.**—GEORGE W. CARLTON, Brunswick, Me.—This invention consists of a compound for clarifying coffee, by which it can be accomplished in a most satisfactory manner.

**SCREW AUGER HEADS.**—RUSSELL JENNINGS, Deep River, Conn.—This invention relates to swaging the heads of augers, and it consists in a novel arrangement of a die and mold, and the manner of operating the die, whereby the desired work may be performed in a very rapid manner and with great perfection.

**CAR COUPLING.**—W. VAN VALKENBURGH, Smithfield, N. Y.—This invention consists in applying springs to the draw head so that they will resist the movement of the draw head when forced backward under concussions, and when pulled forward, thereby avoiding the sudden jars now occasioned by the stopping and starting of cars. It also consists in a novel latch arrangement for securing the shackle in the draw head, and also in the application of side springs to the draw head to admit of an easy lateral movement of the latter under the side surging of the cars.

**PAINT BRUSH.**—EMIL HISS, Delaware, Ohio.—The material of which the brush is composed, whether of hair, bristles, or other material, is clamped to the end of the handle by a draw-band, which enables the brush to be tightened on the handle as occasion may require, and which also permits the brush-part to be readily renewed.

**COMPOSITION FOR ROOFING.**—R. B. SMITH, Mount Pleasant, Ohio.—This invention consists of a mixture of tar and a peculiar mineral which is composed of hydro-silicate of iron and alumina, and carbonate of lime and magnesia.

**WASHING MACHINE.**—WM. AND A. G. KELSEY, Delavan, Wis.—This improvement consists in combining a washing apparatus with a tub in such manner that it may be used alternately for both washing and rinsing clothes; the devices for washing are simple, convenient, and effective, and after using them they are readily turned up on one side of the tub so as to leave it clear for rinsing the clothes, thus making one article serve both purposes.

**QUARTZ CRUSHER.**—A. LINDSAY, Malone, Franklin county, N. Y.—This invention relates to that kind of quartz crushers, by which the quartz is powdered under so-called chasers, revolving in a groove sunk into a solid bed plate. The improvement chiefly consists in an arrangement by which the powdered quartz is swept from the bed plate, and in a device by which all those parts which are not crushed fine enough, are returned to the crushing apparatus. The machine appears to be very efficient and can be managed by one person.

**MEDICAL COMPOUND.**—P. M. DEVOS, New York City.—This invention relates to a medical compound, especially designed for the prevention and cure of cholera and other epidemic diseases, and is to be worn by means of a belt about the body of a person. From the characteristics of the several ingredients composing the compound, its use, at all times, would seem to be conducive to the general health of the person, but more particularly during the prevalence of any of the many epidemic diseases.

**LAMP EXTINGUISHER AND REGULATOR.**—C. E. LYON Worcester, Mass.—By this improvement the flame can be regulated at pleasure, or extinguished at any moment, and without danger of an explosion, or allowing a bad odor to escape into the room.

**AUTOMATIC BOILER FEEDER.**—B. CHALFAUT, Williamsport, Pa.—By this invention the level of the water in the boiler can be preserved with the greatest accuracy, and no further attention is required after the improved feeder has been adjusted.

**HOOP SKIRT.**—JULIUS SCHLESINGER, New York City.—The hoops of this skirt, instead of being united at the ends, are turned up and fastened to the edges of the open

part of the skirt, so that it is open all the way down, and the hoops do not interfere with the motions of the feet; the ordinary shape is imparted to it by a secondary skirt extending from the waist-band down a suitable distance.

**UNIVERSAL TOOL BOX.**—JAMES WOLFENDEN, Jersey City, N. J.—This invention relates to a universal tool box, and is intended for sliding off shafting, for cutting V and square threads, and also for steady rest. It is provided with two or more radiating tool holders, which are adjustable according to the size of the article to be turned, and which connect with a scroll in such a manner that the several tools close up simultaneously, and a uniform action of the tools on the work is effected.

**BILGE WATER GAGE.**—WILLIAM P. KIRKLAND, San Francisco, Cal.—This invention relates to a bilge water gage, composed of a perforated box, containing a float, which acts on an index rod extending through a tube to the deck, so that the depth of water can be ascertained at a glance.

**SHOE STRING FASTENER.**—E. S. SCRIPTURE, Brooklyn, N. Y.—This invention relates to a little spring catch, which when attached to a shoe or galter boot, serves to securely hold the surplus ends of the lacing strings after they have been drawn up snugly.

**PISTON PACKING.**—A. S. CAMERON, New York City.—This piston packing consists of a wire placed spirally around the circumference of the piston, and is retained in the working face thereof by a spiral groove, so that the wire will be pressed tight against the inner surface of the cylinder by its own elasticity, and a packing is obtained, which is cheap, and not liable to allow the steam to pass it, as it wears.

**STEAM VALVE.**—A. H. WOODRUFF, Lansing, Iowa.—By this invention large openings for the supply and discharge of the steam are obtained, with a valve of comparatively small area; the pressure of the steam on the back of the valve is partially or wholly balanced; a full supply of steam is obtained at the beginning of a stroke, and the steam may, by adjusting a slide, be worked expansively to any desired degree.

**HOOP SKIRT.**—CESAR NEUMANN, New York City.—This invention consists of a hoop skirt, the wires of which are fastened in the pockets of the tapes by thread of silk, cotton, linen, or other material, in such a manner that the rivets or other metal parts generally used for this purpose can be dispensed with, and all danger of tearing the skirts worn over them is avoided.

**REDYEING CUSHIONS OF RAILROAD CAR SEATS.**—THOMAS BROWN, Albany, Albany County, N. Y.—This invention relates to a method of redyeing cushions of car seats, by which the color is firmly united with the fiber, and by which also the dye will be held to one side of the cushion, in case both sides want to be differently colored.

**APPARATUS FOR COOLING MILK, ETC.**—J. OWEN MOORE, Washingtonville, N. Y.—This invention has for its object the cooling of milk to a temperature allowing it to be transported; and the invention consists in so constructing the apparatus that the milk will be cooled while passing through a narrow channel, which is surrounded by water or any other cooling liquid, and in so constructing the apparatus that it can be easily taken apart for cleaning purposes.



**J. B. B., of N. Y.**—A mixture of two parts brick dust to one of plaster of Paris will make a mold for type metal. It is mixed with water to the consistency of egg yolks. A mold can also be made of plaster alone. The only breech-loading rifle with which we are acquainted, designed for open powder and ball, is the Colt's repeating rifle.

**A. F. P., N. Y.,** desires to know if the fact, that a large wheel passes over a greater distance in a given time than a smaller one, could not be applied to the rounding of curves by rail cars. We answer, yes, if all the curves were of the same radius and trended the same way, but if the wheels were rigidly secured to their axles, as usual, how would they run on a straight track? The principle of adapting the diameter of the wheel to a curve is applied to the carriages for heavy guns in fortifications.

**A. C. K., of N. Y.**—Geo. C. Round, Wesleyan University, Middletown, Conn., can probably give you the information you desire as to the method of reading the Signal Corps' cipher.

**J. S., of N. Y.**—The "Miller, Millwright and Engineer's Guide," published by Henry Carey Baird, 406 Walnut street, Philadelphia, gives instructions about hanging the sash saw, and Holly's "Art of Saw Filing," or Parsons's "Sawyer's Companion" explains the methods of filing and setting the saw.

**D. C. M., of Pa.**—We do not think fire armor is now used. The description in this paper, to which you refer, was intended mainly to furnish good air to firemen, when in burning buildings. Your plan of making coffee is not new.

**J. G. B., of Ky.**—We cannot tell you the exact process of welding cast iron and steel. We think, however, it is done by means of a flux and compression or percussion.

**G. W. H., of Pa.**—Woolen goods are bleached by the same process as straw goods, viz: fumigation by the fumes of burning sulphur, or soaking in a solution of sulphurous acid. The goods must first be thoroughly cleaned from grease, etc. A soap which will promptly remove the stains of crude petroleum oil from woolen and other goods is now a great desideratum. Some remedy for the evils attendant on the use of petroleum lubricating oil, in cloth factories, is in demand; here is a chance for the inventor. Watson's treatise on weaving, published by Baird, Philadelphia, is the book you want.

**B. C., of L. I.**—Newspaper controversies as to priority of invention are interesting to but few, and the public generally sympathize with the one who puts his ideas into some tangible form. In this case Dr. Andrews antedates your claim, as we heard him state that he discovered and applied the principle 16 years ago.

**A. L. H., of Ohio.**—You will fail in attempting to drive a mill and propel said mill through the water by wind power.

**J. T., of Del.**—To set a slide valve, put the valve in the chest, connect the gear and turn the crank to see if the eccentric rod is of theright length. If it opens one part more than the other, shorten or lengthen the rod one-half the amount required to make both parts open alike. When the valve runs square put it at the lead you require, turn the engine on its center and move the eccentric on the shaft, until the rods will connect. It will be then nearly in the right place, but will require some adjustment. You should give twice the lead you require if the valve is set cold, for the springing of the rods, lost motion and expansion will shorten the lead materially.

#### NEW PUBLICATIONS.

"HAYES'S RAILROAD FAST EXPRESS WAGES COMPUTING TABLES," is the imposing title of a very useful compendium of calculations, the value of which is not enhanced by the title. The volume is an elaborate and comprehensive arrangement intended for railroad men, and admirably adapted to the requirements of the managers of large concerns who have to calculate the pay per hour, day, week, and month for men employed at varying rates of wages. The tables contained in the volume are calculated by tenths, and range from the rate of sixty cents per day to five dollars. With the plan adopted by the compiler, no fraction between these two points can escape observation, and all the calculations which so often occupy valuable time and snarl overtaxed brains, are avoided.

From a careful examination of the volume, and several experimental analyses of the compiler's plan, we judge that the publication is of great value to all who are compelled to make calculations from data so varying as the difference in amounts and time, and the wages of employes in large concerns.

It is handsomely got up, the paper printed on only one side, and the calculations mathematically correct. Published by Rockwell, Baker & Hill, Buffalo, or by Lester Hayes, the compiler, Kent, Portage county, Ohio.

#### THE MARKETS.

**GOLD** has ruled quiet and steady. There is but a moderate demand for export, and only a fair amount is being taken for C & M duces. The bulk of the transactions have been at about 150 7/8 cent. Call loans on stock securities are readily obtained at from 4@5 per cent; on bond and mortgage 6@7. First-class bills, sixty days, endorsed, 6 1/2 cent, and for three or four months, 7 1/2 cent additional. Government securities are held firmer, and prices rule a shade higher. Stocks in fair demand and without decided change. There is a quiet market in most standard articles. Holders are firm and buyers not over anxious. Building materials have slightly advanced. Coffee has experienced a rise, particularly in West India varieties. The grain and flour market is steady without much foreign demand. Corn is somewhat lower. Iron, pig, is dull, and the demand for bar and scrap light. Lead in fair demand and prices somewhat lower. The market for leather is looking up. The largest advance is noticeable in builders' materials, for which there is a good demand. Nails, especially some varieties of cut, have advanced 1/4 cent 7/8.

**ASHES**—Pots are quite dull, but with continued light receipts, market steady; the sales are 50@60 bbls. at \$8 87 1/2. Pearls are nominal; we hear of no business.

**BRICKS**—Common Hard have advanced to \$12. Croton and Philadelphia are unchanged at \$14@15 for the former, and \$40 for the latter.

**COFFEE**—Laguayra, 12 1/2@13 1/2 Gold, in bond. No shipments from Rio for the States.

**COPPER**—Detroit, \$1@31 1/2; Portage Lake, \$1.

**COTTON**—Market steady. Ordinary, 37@38; middling, 36@37. FLOUR—Common brands, \$8 10@9 30; Genesee extra, \$10 10@13 00; Canada, \$8 30@12 00.

**MEAL**—Dull; Rye-flour and corn lower.

**GRAIN**—Corn, 84; medium Western, 87 1/2; Oats, 60@65.

**IRON**—Market inactive. No. 1 American pig \$47@48. Scotch, \$47@50. Bar and scrap very quiet.

**LATHS**—Are firm, with sales of Easter , at \$5 25@5 85, three months.

**LEAD**—Pig has been offered at lower prices, and buyers have purchased more freely; the sales are 400 tons best (Graville), to arrive at 7 1/2 cents; 25 do common Spanish, 7 gold; 20,000 lbs Spanish and German, on terms not made public; best English is held at 7 1/2. The bulk of the stock of Foreign, however, is not offered, holders awaiting the turn of events in Europe. Bar, Pipe, and Sheet are steady and active at 11 1/2 cents, cash.

**LEATHER**—The market for Hemlock Sole continues active, and prices are very firm. We quote Rio Grande and Buenos Ayres Light Weights, 35@34 cents; Middle do., 35@36; Heavy do., 36@37; California Light, 31@32; Middle do., 31 1/2@32 1/2; Heavy do., 32@35; Orinoco, 4c. Light, 31@32; Middle do., 32@34; Heavy do., 23@24; Slaughter Upper in Rough, 31@33. Oak Sole is in light stock, and the market is firm. French and American Calf Skins are firm with a fair demand.

**LIME**—Rockland is in good demand, with sales of 5,000 bbls. Common at \$1 50; Lump is nominal at \$2 10, cash.

**LUMBER**—There is an active demand for Eastern Spruce, with sales of 1,483,000 feet at \$23 50@26, usual terms; 143,000 feet Georgia Pitch Pine Lumber, at \$38 for Flooring Boards and Step Plank, as they run; \$40 for Scantling, and \$45 for 5 by 12 Timber, 3 mos.

**NAILS**—Cut are very firm and scarce, with a tendency to advance; some sizes are scarce, and for these 1/2 cent more is paid. We quote: Cut, 6 1/2@7 cents; Clinch, 8 1/2; Forged Horse, 33@34; Pressed do., 23@24; Copper, 50; Yellow Metal, 83; Zinc, 20; and Wrought Ship and Boat Spikes, 70@ cents, as to sizes, net cash.

**SUGAR**—Prices have favored sellers, and we have to notice an advance of 1/4 of a cent 7/8 on Refining grades, bringing Fair Refining Cuba to 10 1/2@10 3/4 cents; Good, do., to 11 1/2@11 3/4, and No. 12 Box to 11 1/2@11 3/4 mos. Grocery grades are without particular change, but are the turn dearer. Refined continues in good demand, but is less active than before. Messrs. Stuart quote their best Crushed, Granulated, and Ground, 16 1/2 cents; White A, 16 1/2; and Yellow C, 15 1/2—the range of other manufacture is 16 1/2@17 cents for Hard; 15 1/2@16 1/2 for Soft White (B and A only), and 14@15 1/2 for Yellow.

**WIRE**—Telegraph, 9c@10c. for Nos. 7 and 11, and for hoop skirt, 55c. for No. 13 covered, and 55c. for uncovered.

**WOOL**—Market unsettled, and prices 10@20 1/2 cent lower.

**ZINC**—9 1/2c. less 4 per cent. for gold. Market dull.