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CENTER VENT WHEEL WITH HYDROSTATIC

CHAMBER.

## **INUMBER 6.**

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G. Courtenay, Charleston, S.W. Pease, Cincinnati, O. 'ery, Bellford & Co., London MM. Gardissal & Co., Paris tesponsible Agents may also be found it interest. Responsible Agents may also be found in all the princi-pal cities and towns in the United States. Single copies of the paper are on sale at all the periodi-cal stores in this city. Brooklyn, and Jersey City. 

## Recent Foreign Inventions.

A NEW CANNON.-A patent has been obtained by Capt. T. A. Blakely, of the Royal Artillery, England, for making cannon as follows: He takes a tube of cast steel, and then surrounds this with external rings of wrought iron shrunk on. He also employs a buffer or spring of air at the butt of mortars to moderate their receil. He also claims the method of strengthening old guns, by shrinking wrought iron bands on them.

WOODEN COMPOSITION PIPES .- B. Blackburn, of Clapham Common, Eng., has obtained a patent for the following method of making pipes. He takes thin strips of wood, and bends them spirally and diagonally, and fills up the interstices with asphalt, or cement.

NEW MATERIAL FOR PAPER.-Alex. Brown, of Tarbet, North Britain, has obtained a patent for the use of fern, or the bracken plant, in making fibrous materials to be used in the manufacture of paper. He has also produced a textile fabric from the bracken, (our common brake,) and other plants of the cryptogamic series, and claims the manufacture of cloth from such. Our Patent Office has refused, in times gone past, patents for the application of a wellknown material to a new purpose, but it should be generous in such cases when the results produced are improvements.

PICKERS OF POWER LOOMS .- Thos. Helliwell & Joseph Barker, of York, Eng., manufacturers, have taken out a patent for preserving pickers and picker-sticks, and for preventing caps coming off the shuttle during the process of weaving. The invention consists in the use of a spring of steel or whale-bone fixed behind the back end of the shuttle-box, such spring being attached at one end to a raw hide, and it has a hole in the other end passing around the sirspindle of the shuttle-box. The raw hide forms a buffer bringing the shuttle gradually to a state of rest, and preventing it going too far into the box, and it also assists in returning it for the next shot.

AN IMPROVED SOAP .--- W. A. Armand, of London, has secured a patent for the following method of making a soap called "saponitoline," and which is stated to be of a superior quality. He places in a copper 88 gallons of soft water and mixes with it 112 lbs. of crystal soda, or whole to 40° or 45° centrigrade, and adds 17 sented. lbs. of pearlash, and 17 lbs. of quick lime. it to boil on a slow fire for 3-4 of an hour. The brake or dynamometer. N N are weights susover, and the temperature allowed to fall to number of revolutions performed by the wheel, 55° or 50°. He then pours the liquid into bar- it being struck with a hammer operated by a rels, where it becomes solidified in about 24 cam, as shown. L is the lever of the dynamostate.



Reuben Rich's patent Center Vent Wheel with plain, and will be readily understood. a cast iron scroll, to which is applied Winters' Hydrostatic Chamber. This view represents a wheel in successful operation at the cotton its bottom being a solid plate. Between the 79 lbs. of salts of soda, and after two or three mills of the Tallassee Manufacturing Co., at hours have elapsed, agitates it, and adds 112 Tallassee, Ala. A "Prony Brake" for ascer- rings, R R, in which it revolves-although the all the ship yards the sounds of hammer, mallbs. of common soap. He then heats the taining the power of the wheel, is also repre-

The accompanying figure is an elevation of wheels, G G, at the foot. These parts are all

In this illustration it will be observed that the wheel discharges its water at the top only, periphery of the water wheeel, W, and the rings and wheel are fitted very accurately to let, and adze ring merrily from morning till one another-there will still escape a certain night. There has been a partial failure of the A is the shaft of the wheel, W. R R are quantity of waste water between the lower crops in France and England during the present When ebullition has commenced in the copper adjustable rings in which the wheel revolves. ring and the wheel, into the hydrostatic chamhe slowly agitates the heated mass, and pours | C is the hydrostatic chamber. O is the step | ber, C; this chamber soon fills, and an upward into it about 5 gallons of mucilage of linseed and support of the wheel. S S is the section pressure is thereby exerted on the sole or boter marshmallow seed, after which he adds 7 1-2 of the cast iron scroll. F is the fore-bay or tom plate of the wheel, proportioned to the pounds of borax, or about 2 1-2 pounds of cal- water flume. P is a discharge pipe, having a head of water employed and the area of the tal invested in our commercial navy, which is cined alum. When the whole is well mixed in stop cock, I, for regulating the upward pres- wheel. This pressure is regulated by the valve the copper, and the liquid presents the appear- sure on the disk of the wheel from the hydro- in the discharge pipe, P, so as to proportion ance of being perfectly homogeneous, he leaves static chamber, C D is the Prony's friction the discharge with the quantity of water that escapes into the chamber, C. In this manner fire is then extinguished, the copper covered pended on it, and B is a bell to announce the the escaping waste water is made subservient N. J., on whose road so many lives were lateto relieve the wheel of downward pressure on its step, O. In the wheel, at Tallassee, the entire upward pressure of the hydrostatic chamhours, (supposing that hard soap has been meter, and M the weights on the scale. G, at ber, with the value in the discharge pipe closed, used,) if otherwise, it remains in a gelatinous the top, is a wheel lever on a shaft, to open and is 25,000 lbs; the weight of the shafting, &c., shrill sounds, audible to a considerable disclose the gate of the wheel by the pinions and amounts to 22,000 lbs. To balance this, about ance.

three twenty-fifths of the water flowing into chamber C, is allowed to escape by pipe P, and thus twenty-two twenty-fifths of the waste water is saved, by this useful method of applying it.

This hydrostatic chamber, C, is made of iron, but it might be formed in a rocky foundation, excavated in a proper situation for the purpose. Various devices may be employed for the escape of water from the hydrostatic chamber. A wheel put up for the Cartright Manufacturing Co., at Cartright, Ga., has inch holes bored through its disk (the number of such corresponding to the quantity of water,) for the escape of water from the hydrostatic chamber.

In experiments made with this wheel, to test its power, by a Prony brake, we are informed by the inventor that the increased useful effect of the Hydrostatic Chamber amounted to ten per cent. The same principle is alike applicable to the double as the single wheel, and to all water wheels running on vertical shafts, or carrying round a weight of water as they revolve. The invention can be applied by a small elevated tube of water to relieve the friction and pressure on any revolving vertical shaft of an engine or machine, which carries a great weight of machinery. The same principle can be applied to wheels that discharge below instead of above, but that method is not shown in the figure; the inventor, however, will explain the plan of doing this to those who apply to him.

It is evident that the Hydrostatic Chamber is a very useful improvement, that it nearly annihilates all the friction incident to the weight of the wheel, and its shafting on step O. Devices heretofore applied to relieve the friction on heavy vertical shafts, have rather aimed at disseminating than reducing the friction, so as to reduce or equalize the wear of the rubbing surfaces. The improvement is an exceedingly simple one,-its qualities and merits are apparent at a glance. This Hydrostatic Chamber, on Reuben Rich's wheels, is employed by the Cartright Manufacturing Co., Ga., and Tallassee Manufacturing Co., Ala. Daniel Keith, Esq., is Superintendent of the former, and Z. Philips, Esq., of the latter-who can be referred to for opinions respecting its value.

The inventor of the Hydrostatic Chamber is J. S. Winter, Esq., who has applied for a patent, and from whom more information respecting its use and application may be obtained by letter addressed to him at his residence, Montgomery, Ala.

## American Ship-Building.

During last winter and spring the docks of New York were crowded with ships for which no cargoes could be obtained, and, as a consequence, ship-building was almost suspended in all our dock yards. Things have taken an entire change within the past two months. Freights are now very high-a sure sign of abundant employment to our shipping-and in surplus raised in our country. We are therefore able to supply the foreign demand, and this calls into activity the immense amount of capistated to be larger now than that of any other country.

The Camden and Amboy Railroad Company, ly lost by accident, have attached to some of their engines small whistles connected with exhaust pipes, through which the waste steam issues, making a continual succession of short

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[Reported Officially for the Scientific American.] LIST OF PATENT CLAIMS Issued from the United States Patent Office

FOR THE WEEK ENDING OCT. 9, 1855.

SEWING MACHINES -C. J. Cowperthwaite, of Phila-delphia, Pa. : I do not claim the application of a weight, simply to give pressure to the cloth holder, either fixed or adjustable. But I claim, first, the weight trip lever, K, applied sub-stantially as described, to the bar, J, or, its equivalent, which holds the cloth so as to serve notonly to apply pres-sure to the cloth, but to hold up the said bar, or equiva-lent, from the cloth, when desired; and also to allow the said bar, or equivalent, when its hold is to your equiva-lent, while it is held up, to descend and to hold it down again, until it is lifted by the operator, substantially as de-scribed.

scribed. Second, I claim arranging the shuttle race obliquely to the direction in which the cloth is moved, to produce the seam or line of sewing, substantially as described, for the purpose of causing the visible parts of the stitches on the frontor upper side of the cloth to be straight, or all in the same line.

[The foregoing invention consists, first, in an improved fed motion. Second, in the employment of a weighted trip lever, instead of spring pressure in feeding the cloth. Th'rd, in an oblique arrangement of the shuttle race r. lating to the line of the feeding movement, or of the sew-ing, whereby the stitches formed by the needle and shuttle are all caused to be produced in line with each other, instead of zig-zag, as in other machines. Fourth, in a new way of regulating the tersion of the spool thread. Fifth, in a novel device for regulating, positively, the length of n bedle thread which is given off to form each stitch.-Sixth, in a novel device for the purpose of holding the thread, and keeping it extended in a straight line from the cloth to some distance above the needle during the descent of the needle, until the eye thereof passes through the cloth, for the purpose of preventing the kinking of the thread around the needle as it enters the cloth.-Seventh, in an improvement in the shuttle whereby a cop is therein successfully used.

We should need several diagrams in order to illustrate clearly the various improvements outlined as above. They are all intended to render the common shuttle sew ing machine more convenient of management, and more perfect in its operation than it has heretofore been. So far as we can judge, Mr. Cowperthwaite's efforts have been crowned with much success. Nothing can exceed the exactness and uniformtty of the work which he prodnces, or the ease and certainty with which his imprived machines are managed. We regard un a have one of value and importance.]

WASHING MACHINES\_J. A. Bills, of Troy, N. Y.: All I claim is the movable partitions, i i.

PREPARING VEGETABLE FIRE-Jean Blanc, of New Orleans, La.: I do not claim burying the plants in either wet sand or mud, as described in the "India" process, found in the Agricultural Reports of the Patent Office for 1856, pase 174. Nor do I claim, simply rotting the plants on end, with the butts down, as described in the Southern Cultivator Butl claim the stacking of the plants, butts down, in a pit dug for said purpose, and surrounding them with dry leaves, or straw, with earth thrown around the same, thoreby eaclosing them entirely on all sides, leaving the top open and uncovered, as fully set forth.

ECONOMISING STRIAM-GEO. M. LORGARCE, of New Or leans, La., I claim the employment of two sets of boilers in the manner and for the purposes described, having steam of different pressure and temperature therein, and pussing the steam from the boiler of the highest pressure through the pipes of the evaporators, &C, to the other boiler, from whence it is used to move the machinery of the mill.

 $C_{\rm LLURNS.}$ —John G. Dungan, of Steubenville, O.: I claim giving the outer leaves of an alterinately opposite retaining agistator, a rocking motion to and from the sides of the chura, substantially as set forth.

The chark, substantially as set form. AppaRatus yon Heating Buildings By Steam— Chas Davenport, of Watertown, Mass.: I do not claim a boiler, radiator, and sapply cistern so connected by pipes that the steam from the joiler may be made to circulate through the radiator, and from thence passin a condensed state back to the boiler. But 1 claim the arrangement of the vessel, M, and its connecting pipes, Q, N P, and valve, O, the supply cis-terns, L, the boiler. A the radiator, L and the leading steam and return pipes, K and R, of the said boiler and radiator, the whole being made to operate together, substantially in the manner and for the purpose specified. CORES SUPLACES.—Stenhan Elliott of Wavne Co. Ind.:

CORN SHELTLERS.—Stephen Elliott, of Wayne Co., Ind.: I claim the combination of the screws, B, with the clamp-ing laws, D, arranged and operating in the mauner set forth.

Iorth.
MANUFACTURE OF BORAX FROM NATIVE BORATE OF LINE—Thomas Hell and Henry Scholefield, of South "hields, Firg. Patented in England July 25, 1534; We do not claim makurg borax by combining the botaxic acid . commerce with a solution of carbonate of soda, and boiling and evaporating the same. But we claim our mode of manufacturing borate of so-da from borate of lines. the same coussing in boiling that borate of lines now ee, and an acid, separating the line nucl other foreixn m...ers, adding a saturated solution of soda to the liquid, boiling the compound, separating the impurities or foreign matters therefrom, and subsequently evaport ing the clear liquor and crystalizing out the bora at heredronh as specified.

CORN SIGLLERS-Charles Bishop, of Norwalk, Ohio: I do not claim, separately, the toothed or corrugated wheel, G for that has been previously used. But I claim, in coubination with a shelling dick or wheel, such as described, the series of ext boxes gailally arranged around it; said boxes being compose backs and unyielding partitions, as described.

[The above is an improvement on the oldest of all the orn shellers-that in which a bevel toothed shelling wheel is employed, having a yielding movement on it, hearings or a spring to accommodate different sized cobs. In these shellers there is generally only one opening for the reception of the corn. When a small ear is put in followed immediately by a larger one, the latter is apt to force back the wheel or spring, and cause the first ear to

drop down without being perfectly shelled Mr. Bichop obviates this difficulty, and also increases the capacity of the sheller, by a slight alteration which any one can make lle provides several openings to the sheller, each opening furnished with a spring back, which presses its ear up against the shelling wheel. This enables him to present, simultaneously, against the surface of the wheel, as many ears as there are openings, and all of the ears will be stripped of their grain with the utniost certainty. It is a good invention ]

GAUGING AND MEASURING STAVES-L. T. Atkins, of Sage County, Va.: I claim the combination of treddles, clamps, and vibratory arms or levers, operating in the manner and for the purpose set forth.

ACID SULPHITE OF LIME-P. L. Bernard and Jos. Al-brecht, of New **O**rleans, La.: We claim the apparatus for the manufacture of sulphite and bi- (or acid) sulphite of line. consisting of the oven, gr u x, the three superposed cylinders, No. 1, 2, and 3, and the ventilator, v, each of said parts constructed, furnished, and arranged substan-tially as described and for the purposes specified.

Corrow Givs.-H. H. Fully, of Lexington, Miss.: I claim giving the colton to be ginned within the teed box and directly over the saws. B, a spira or twisting motion, by means of the plates, c, or an equivalent device, so that the cotton will pass from one end of the feed box to the other, and have a fresh surface presented successively to the action of the saws as it passes over them, for the pur-pose as shown and described.

[We have in preparation an engraving illustrative of the above excellent invention, which will be shortly published.]

VINRATING PUMPS.—Ellwood Garrette, of Wilmington. Del.: I claim, in vibratory double-acting pumps, the ar-rangement of the side passage, a, with its openings. I c, in-to chambers, e a, respectively, in combination with the vibrating pistons, fg, having their valves, h i, opening up-wards, or in the direction of the oullet of the water, in the manner and for the purposes set forth.

manner and for the purposes set forth. GRAIN SEFARATORS.—Peter Geizer, of Smithsburg, Md. I am aware a selfacting blast regulator for fan blowers is not new, th's I donot claim. But I claim the vanes within the fan case, against which the blast acts, for the purpose of closing or opening the register automatically, to regulate the blast, as set forth. I also claim tho manner of separating the grain from the straw and other im purfiles, by means of a proins, vents, and grouved rolls, without the use of a riddle, whether one, two, or more sets of such separating apparatus be used, substantially as described. I also claim, in comination with the separating appara-tus, the self-regulating dividing shelf, upon which the param drops, for the purpose of carrying the heavy grain back, and the lighter forward, for a second or more com-pleue separation, as set forth. I also claim the hinging of the upper to the lower por-tion of the straw carrier frame, and providing it with ad-justable sides or conveyors, ior dividing and conveying the straw winto any desired localities, as set forth.

CUT-OFF VALVES FOR ØSCILLATING ENGINES.—Henry E. Canfield, of New York City: I claim the arrangement in oscillating engines of separate loose valves moving in-dependent of each other, when the motion is given them by the oscillation of the cylinder for the purpose of cutting of the steam at such part of the stroke as may be desired, substantially as shown and described.

Advancements as shown and described. AMALGIMATOR—Samuel Gardiner, Jr., of New York City: I claum, first, the hollow perforated rollers, A. A. receiving water at their journals, and discharging it in small strength all over their peripheries, and revolving in opposite directions, in a trough or troughs of quicksilver, so that their upper parts are censtantly approaching each other, and having the auriferous and other menailierous matter fed above or between them, all substantially as de-scribed. Second, The arrangement of the amalgementing collec-

scribed. Second, The arrangement of the amalgamating rollers and the distributing rollers and trough, substantially as shown and described, whereby the matter is fed equally on both amagamating roller, and on the descending por-tion thereof.

[This amalgamator consists of one or more pairs of metallic rollers geared together and revolving in a trough in contact with mercury. The journals of the rollers are hollow, and so are the rollers themselves; the latter are perforated with fine holes, so that, by the introduction of water through the journals, there will be an unceasing outward discharge of water on the surfaces of the rollers, keeping them continually moist.

The quartz previously pulverized and mixed with wa-ter into a thin paste, is introduced from above upon the rollers and by them spread over their entire surfaces, the rollers coat themselves, as they revolve, with mercury, and the latter absorbs the gold dust from the paste. The issuing water from the rollers loosens the quartz as fast as it forms upon their surfaces, an dthe go il, being heaviest, falls to the bottom of the trough. A running stream of water constantly flowing into the trough carries away the quartz dust, and the rollers come round with a fresh coating of mercury at every turn. This is a simple and apparently effective and economical amalgamator.]

MORTISING MACHINE.— Mozekiah B. Smith, of Lowell. Mass.: I claim moving the chisel carriage, B, to and from the wood to be mortised, by power, ossentially in the mannet and for the purposes set forth. Second, I claim, in combination, the bent lever, O2, clutchas, K2, a b c and d, pulley stops, P2 and Q2, or their mechanical equivalent, by which the said clutel carriage, B, will stop its own notion, at or near any desared point, substantially in the manner, and for the purposes set forth. forth

SEEDING MACHINES.—H. R. Smith. of Massena, N. Y. 1 I claim the combination of wheels, if I, with the hopper, F, when arranged substantially as shown, for the purpose specified.

specified. DACUERRENT VER PLATE HOLDER.—David Shive, of Philadelphia, Pa., 1 do not claim a two part datuerceo-type plate holder, nor do 1 claim actuating the two parts by means of springs and the force of the hands. But i claim a dariver cotype plate house a so constructed that when its under side is compressed by the hand of the operator, as doscribed, its upper side shall excland so as to admit of the plate being placed between the hooks, bb, and b' b', theroon, and so that when the pressure of the hand is relaxed, the said upper side shall contract, caus-ing the hooks, b b, and b' b', to catch uppen the outer edges of the plate and hold it firmly upon the face of the holder, substantially as described and set forth. Preprise the Surgers Revenue Wenue Wenue

BOIDER, SUSSAINTARY as described and set form. FEEDERG THE SHIRGLE BOLT TO KNIVES.-Wm. J. SCOL, of Carthage, N. Y.: I claun the application and construction of the two handled caus, v. Also the ad-justability of the arms, M. M. by means of the bars, L. L. as described. Second, I claun the combination of the rocking lever, i, clutch or hand, g. lever. f. and spring, l. with the knife frame, for the purpose of feeding internitingly the block to the knives, in the manner described.

to the knives, in the manner described. Potr Ast. B ORN & EventNes - Thos, Goodrum, of Prov-idence, R. L. I claim, first, conducting the steam to the engine throuch a pipe, which is fitted to slide within another pipe, subtantially m the manner described. Whereby the weight of the engine may be supported by 1, 12, 13, 14, of different sizes, and within the other, in combination with subtantially as de-scribed, for the purpose of securing all but such one of the sand pipes, while champs, I, substantially as do the weight of the engine. The sand pipes, while champs, I, substantially as about equal to the weight of the engine. The sand pipes, while end, and will in the other, in a subtantially as de-scribed, for the purpose of securing all but such one of the sand pipes, while end, and such engine. The sand pipes, while engine. The sand pipes of the substantial the pipe the mode for the substantial pipes the mode for the substantia about equal to the weight of the engine.

[The apparatus which forms the subject of this inven. tion consists of a portable steam engine, carrying one or more auger stocks, either attached or geared with its main shaft. The cylinder of the endine receives steam from a boiler through a flexible pipe, which allows it 10 be carried about in the hands, and operated in different places at pleasure. The engine is also provided with a curious arrangment of sliding pipes, whereby nearly the whole weight of the concern is supported by the pressure of the steum. In boring, therefore, the operator only requires to g ide the auger by handles attached to the frame of the envine. If desirable, steam may be introduced, to cause the necessary pressure upon the tool. This is a singular improvement, applicable, we are told, with much useful effect in ship building, and wherever large amounts of boring are to be done. Experience proves that steam may be conveyed with perfect facility in flexible pipes, for short distances around a stationary boiler.] WIND REQULATOR FOR ORGAN PIPES.—Danl. George, of Nazareth, Pa. I claim constructing the lower part of each or any of the pipes of an organ with a transverse seat, fitted with a plug, b, like that of a faueet, having a suitable passage or passagues, the area of which is regulated by turning the plug, for the purpose of regulating the tono of the tube, and tuning the instrument, substantially as described.

[In church, and other organs, the throats or lower parts of the music pipes, rest on a box called an air chest, into which the air from the bellows first flows. Holes are made through the air chest, and into them the pipes are placed to receive wind. The tone of each pipe is set or tuned by altering the size of its throat. If the sound is too low, the throat is jammed together a'little, with a hammer : if too shrill, it is enlarged with a mandrel. Mr. George's invention consists in simply placing a common stop-cock in the throat of each tube—an improvement which permits the tuning of the pipes with the utmost convenience and perfection. We wonder that it was never thought of before.]

before.] FARM GATE-S. A. Skinner, of Derby, Vt.: I do not claim elevating a gate by means of a windlass and draft and connecting chains: nor making the gate to close into a recess below its silt. nor balancing a gate by means of counterhalance weights, cords, and pulleys. I claim the gnanner of making the gate, viz., of a series of bars or chains, D D, and upright chains, connected and arranged as specified, and so as to fold into, and unfold out of a recess below the sill, as explained. I also claim the cords, g, the same being construct-ed and applied to the windlass, and made to operate sub-stantially as specified. Describer B Dorary F FARTWING John Smylie of

REGISTER BOTTLE FASTERINGS, John Smylje, of Philadelphia, Pa., I claim the spindle, F, with its sliding ball, B, in combination with the arm, if, projection, I, lever, J, spring catch, K, and dial, G, or their equivalents, arranged and constructed substantially in the manner, and for the purposes specified.

for the purposes specified. Appl.ving Fire Extinuoushing CARTRINGES.—Wm., Mt. Storm, of New York City : Having described my im-proved method of extinguishing fires, I claim simply the plan of projecting into the flames with precision and pene-trating force, by means of an apparatus or gun, purposely dapted, and by means of an apparatus or gun, purposely dapted, and by means of a non-centrated and properly adapted, form, substantially as described and in moderate, distinct, and rapidly intermittent masses as explained, whereby the gas is generated apart from the machime, and within the source of the fire, by all of which I attain the many points of increased efficiency and convenience of operation set forth.

SEWING MACHINES.—Isaac M. Singer, of New York City: I claim, First, the employment of a supporting tongue substantially as described, placed between and in combination with the two needles, to support the cloth or other substance, and prevent its being puckered during the operation of sewing, and drawing the two rows of stitches tight, substantially as described. Second, the employment of the zuide plates, substan-tially as described, to guide cloth that has Leen folded in making flat, lapped, or other analogous seams as described, so that the row or rows of stitches shall be made at a regu-lar and determined distance from the folded edge, as set forth.

lar and determined distance from the rouged eage, as set forth. Third, in combination with one or more eye pointed needles and shuttles, or the equivalent therefore, for sew-ing one or more seams, the employment of a vibrating thread carrier, for carrying a thread or threads alternate-ly in opposite directions across the seam er seams, and aying it on the face of the cloth subschnithily as described, so that it shall be secured to the face of the cloth by the needle thread or threads a described.

needle thread or threads as described. SEWING MACHINES.—Isaac M. Singer, of New York (City: I claim, in combination with the shutle and at-tached there to, the employment of a spring pressure guide, substantially as specified, to control the shutle thread, as the needle enters the cloth or other substantially as specified. And I claim the continuous feed motion for spacing the stickes, substantially as specified, in combination with the vintary motion of the needle, imparted in one di-rection by the teed motion, and in the opposite by a spring or any equivalent therefor, substantially as and for the purpose specified.

[Mr. Singer is the inventor and patentee of many high-

ly ingenious and successful improvements in cloth-sewing machinery. But the inventions above patented, strike us as forming a crowning triumph. They consist in a new plan of stitching, and in a novel method of embroidery, whereby ornamental designs, of every description, can be wroughtout on the cloth in the most splendid manner, with great precision and rapidity. We have seen some el-egant specimens. Thread, silk, worsted, gold lace, and other species of embroidering stuffs, varied in colors to suit the taste, may be laid on with singular ease and facility. The work performed is, moreover, very firm and durable. The field of employment for inventions of this kind is a very large one. But the extensive resources and well known energy of Messrs. Singer & Co, leave no room to doubt that it will soon be well supplied.]

MUSIC BY STEAM OR COMPRESSED AIR-J. C. Stod. dard, of Worcester. Mass. : First, I claim the musicalin-strument described, consisting of a number of what are commonly known as stam whistles, of such tones as to produce a nusical scale, arranted in a convenium man-ner, upon a steam class, chamber pipe, or generator. and furnished with walves and a rotating studded barrel, finger furnished with vilves and a rotating studad correi, high keys, or other suitable mech-nical means of opening the sald valves, to allow the escape of steam or air, to the whistles, substantially as set forth. Second, as a part of the said musical instrument, I claim the described valve, with his two puppets and sears of un-equal size, and with one end of its stem exposed to the aunosphere.

[Music by steam is no longer a myth; it is, at last, a pa tented reality. A daring inventor has seized the steam whistle by the throat, opened its mouth, and thrust down vocal organs wholly new. Its horrid screech is turned into a voice of melody, powerful, but pleasing. Slumber. ing villagers will no longer complain of broken rest. The midnight locomotive, rushing with lightning wing, will henceforth bear along sweet sounds instead of discord.

are opened for the steam or air to escape to the whistles, by finger keys or by the revolution of a studded barrel or by any other suitable mechanical means. The important feature of this instrument is the peculiar kind of valve employed for the escape of the steam ]

FISH HOOK-Joh Johnson, of Brooklyn, N. Y. I do not claim forming a spider of hook in themselves, as the same have been used for meat and a variety of other

same have been used for meat and a variety of other purposes. But I claim the method described and shown, of catch-ing fish by means of a cluster or spider of hocks, beneath and around suitable bait, so that said hook can be sudden-ly raised up and catch the fish, while nibbiling at the bait, in the manner and for the purposes specified. I also claim the method set forth of altsching and hang-ing the hocks, e, from the ends of the spider arms, c. by means of the spring throat, q, whereby said hocks can be raised or replenished in the manner and for the purposes specified. Learner Charge FOR CATURE\_IS Welton, of Wat.

LEADING CLASP FOR CATTLE-Jos, Welton, of Waterbury, Conn.: I do not thim the method of weating cat. the i but to a im the combination of the spring and slide with the clast, as set forth.

INTERLOCKING GRATE BARS—Samuel Vansyckel, of Jersey City, N. J., 1 claim so casting grate bars with pro-jections and recesses on their sides and ends, as that when laid together they shall interlock, one over, under, or be-hind the other, in such munner as to prevent them mov-ing vertically, horizontally, or from warping, whilst they may be readily removed or replaced, as set forth.

ATTACHMENT FOR SAWING MACHINES –G. W. Wor-den, of Fayetteville, N. Y.: I claim the vibrating gauge formed of the lever, G, with arms, d, a tached to is ends, the lever working on a pivot, c, attached to one o. the arms,  $l^*$ , of the sliding gauge, E, and the arms of the lever, G, working horizontally through the gauge, E, sub-stantially as shown, for the purpose specified.

[The above gauging contrivance is intended for connection with circular saws, its object being to facilitate the cutting of exact bevels and angles. A gauging apparatus of nearly the ordinary construction is secured to the sawing table in the common manner. The improvement consists in combining therewith an additional gauge bar, shaped somewhat like the following [. 'This bar is pivoted, and its arms pass through slots in the other gauge apparatus. If one of the arms of the improved bar is pressed in, by the stuff to be sawn the other arm will be consequently thrown forward and the two will form the desired bevelgauge. This is a very simple, cheap, and useful invention.]

CARD PRINTING PRESS.D. K. Winder, of Cincinna-ti, Ohio, I claim the double inclined bed, B, traversing form, F, and inking surface, g, in combination with the lever, C, spring roller supports, and operating lever, L, constructed, arranged, and operating substantially as and for the purpose specified.

for the purpose specified. MANING ENVELOPES, &c.-E. W. Goodale, of Clinton MASNI I claim, first, the employment, in a machine for making envelopes or bags, to support the blanks d jing either or all of the operations of pasting, stampiog, and applying the gluten of a self-adjusting table, C, supported by a cam, whose position is so controlled by a spring, or its equivalent, applied to its shaft, that, as the blanks are removed, one by one, the table is caused to rise, to bring the next one to the proper hight or position, to be pasted, stamped, or have the gluten applied, substantially as set Descent during the mathematical state is a set back of the set of the s

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Twelfth, the general arrangement and combination of the several working parts of the machine, substantially as set forth.

[The foregoing claims explain, as clearly as it can be done without engravings, the nature and operation of the invention to which they relate. Its purpose is to take the blank envelopes or lozenges, as they are technically called, fold and stick them, stamp their flaps with an or namental seal, and put on the self-sealing gum. An envelope is a simple looking affair when finished

but its manufacture, by mechanism, involves a number of operations, and the rapid movement of many different parts. Even when made by  $h_n nd$ , it requires a great deal of fingering. The estimated annual consumption of en-velopes in this country is at present between forty and fifty millions; their manufacture is an important branch of business. Girls are generally employed to do the folding, who are paid according to the number of envelopes produced. The rapidity and expertness which they acquire in the operation is really surprising. A smart girl, we have been told, can fold between four and five thousand per diem.

Several attempts have been made within the past few years to perform all the labor of envelope making by ma-chinery. There are some successful machines in use, but their advantage over hand labor is not very striking, as they require considerable superintendence, and only turn out between fifteen and twenty thousand envelopes a day. Mr. Goodale claims to have realized some important im. ogether outstrip, in speed and quality of work, any of the

tially the same. TRINGRAPHS—Washington A. Peaslee, of Indianapolis, Ind. : I claim the mode described of dividing a long line of telegraph into two sections, and transmitting sirnals from either section to the other. viz. : by means of two receiving electro magnets at an intermediate station, the helices of which are interposed in the line of man wire, one after the other, said magnets acting in conjunction upon an arm-nture lever, or its equivalent. Which, by the motion pro-duced by the attraction of the magnets, makes: contact of a ground wire or wires, with the main line between the two helices, and the said receiving electro magnets and armatare lever being com lined with a spring, or other equivalent force, adjusted so as to draw lack the arma-tirre lever with a force greater than the sum of their at-tractions, or any combination of apparatus operating in substantially the same manner.

Substantially the same manner. RADIATORA OF STEAM HEATING APPARATUS.—A. S. Petton. of Clinton, Conn.: I claim the arrangement, sub-stantially assrecified, in a claimber exterior to the es-cape value of a porous racking, w. for preventing noise during the escape of steam from the heater, as set forth. Also the employment of the float value, m, in connec-ion with the heater and pipes leading to the builer, as pecified, to prevent the accumulation of condensed team.

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# Scientific American.

[This improvement consists in a novel means of regulating the depth of the furrow. The plow point is hinged, and there is a rod extending down to it from the plow By raising or depressing this rod the plow point will, in like manner, be moved up or down, and the plow will accordingly cut a shallow or a deep furrow, as may be desired. The rod is operated by means of a lever which runs along the beam to the rear part of the plow, within convenient reach of the plowman. In the tilling of rough and rocky soils, where it is requisite to have some means of instantly altering the depth of the furrow, this improvement will be found valuable. The expense of its attachment is trifling.]

SASH FASTENER—Wm. Patton, of Towanda, Pa. 1 claim the arrangement of the self-acting catch or holder, with its staples on the outside of the window frame and sash, so that it may be more easily placed upon any win-dow, without taking it out of the frame, or be readily re-paired, and to prevent the cutting away or mortising of the frame or sash, as represented.

the frame or sash, as represented. MUTUAL ARRANGEMENT OF VINEGAR ROOMS AND WHITE LEAD CONTODING CHANNELS.-Robert Row-land, of St. Louis, Mo. 1 claimarrangingthe room where-in the metallic lead is placed, immediately above the room, wherein the manufacturing of vinegar is going on, and perforating the floor between the two rooms, so that the acetic acid, which is generated in the manufacturing of vinegar, may pass from the lower room, through soid perforations, into the upper rooms, and there, in conti-nation with carbonic acid produced in the upper room, by the itermentation of word, or other similar substances, for introduced into the upper room by pipes, act upon the metallic lead, for the purpose of converting the me-tallic lead into the carbonate of lead.

DOURLE SEAMING CANS\_ELLIG Savage and Noah C. Smith, of East Berlin, Conn.: We claim the arrangement of the periphery of the bearing roller, L. that of the roll-er, I, the cylinatrical portion, shoulder, and conical partof the roller, K, substantially as specified, and so as to oper-ate together, in manner and effect advantages as stated. We also claim the arrangement and application of two solt of conical rollers, so as to receive and work against the rim of a pan or vessel, and support it as explained.

OPERATING FARM GATES-J. K. Weber, of Seneca Fails, N. Y.: I claim the arrangement of the levers, a a', b b', cords, a2 a3, b2 b3, in combination with the spring bolt, for opening and closing a gate, which operisandshuts both ways, the whole operated and operating, substantial-ly in the mainer set forth.

ARGAND LANDS-J. G. Webb, of New York City: I claim the arrangement of the hutton, 5, and deflector or button, 5, as described and shown, when used in combina-tion with the draft spaces, i and II, on each side of the burner or flame, having the relative proportions setforth, for the purposes and as specified.

WASHING AND BLEACHING FIRBOUS AND TEXTILE SUBTANCES-Julius A. Jillson. of Poughkeepsie, N. Y., and lienry Whinfield, of New York City: We claim acatloniz, with the washing, extracting, or receiving characteristic series of the series of the series of the fetting at bleaching vessel, operating substantially as and for the purposes set forth.

for the purposes set forth. WIRE DISH COVERS\_WM. Lincoln, of Oakham, Mass. . Claim the combination of rotary forming and holding dies, A and B, with tedding mechanism applied, to oper-te therevith substantially as described. I also claim the xuide spindle, C, in combination with the cup & A, and follower. B, substantially as described. I also claim the carriage, D, the guide, 11, the gearing, a o and shaft, K, as combined with the dies and the bead-ing mechanism. I also claim combined with the dies and the bead-gauge top, 1, the same being in the manner and for the purpose as specified.

LARD LANDS-J. S. Brown, of Washington, D. C., as-signor to Jos. Kent. of Haltimore County, Md. i Claim the continuation and arrangement of the open bowl. A, with its Jullio wstgppart. B, the inverted cup, C, with its sir space-H, and enlarged mouth. h, and the piston, I. con-structed and operating substantially in the manner and for the purposes set forth.

DESIGNS

METALLIC COVERS FOR JUGS-Orrin Newton, of Pitts-burgh, Pa. ORN AMENTING DAGUERROTYPE AND OTHER MATS-Hiram W. Hayden, of Waterbury, Conn.

BURIAL CASES -- Martin H. Crane, assignor to Crane, Breed, & Co., of Cincinnati, Ohio.

[For the Scientific American.] Machine for Peeling Willows

have been in the habit of looking to your col- or bruised when gathering should be rejected. to be preserved: this fruit room is inclosed by umns for any new and useful invention, as I Improved fruit ladders, and baskets two feet two walls, leaving between them an open space see you take much interest in any new thing long, eighteen inches wide, not more than about ten inches wide. This stratum of air crue from them. Men may perform bold and that promises to be of value to the world. But twelve deep, with carpet inside, will be found interposed between the two walls is the surest praiseworthy acts to rescue the unfortunate; there is a new thing which I believe has not useful, so that the fruit may not receive the yet appeared in your columns, viz., a machine slightest bruise till placed in the Preservatory, for peeling basket willows.

them.

Herewas a fair field for "Yankee ingenuity," and in this instance said ingenuity has accom- barrels. plished its object in a most perfect manner.

the same time.

send to Europe for them as we now do.

Jonesville, Vt. A. L. JONES. [For the Scientific American.]

On Preserving Fruit.

prepared by Mr. Parker, the patentee of the in powdered charcoal; this, if it cannot pre-Fruit Preservatory, illustrated on page 3:56, vent, will in no degree contribute to decay, in-Vol. 10, SCIENTIFIC AMERICAN. The informa- ternally or externally. In this substance the tion contained in it is collated and condensed Newtown Pippins sent to England are frequentfrom the Penny, Rural, and London's Cyclope- ly packed; were it not for the bruises they redias; from Downing, Barry, Prof. Dubrill, of ceive before they are put aboard, they would Paris, Liebig's Organic Chemistry, &c. All arrive in better condition. Sixteenth, in dried the sources of information on the subject up fern leaves packed in baskets. To keep preto the present date have been examined, and to served fruits, glass jars, or salt glazed earthenthese the author, who is an extensive truit deal. ware are considered better than tin cans. The er of many years standing, adds his own ex- acids of the fruit act on the solder, producing perience and practical knowledge.-[Ed.

gathered before they are quite ripe. Slight cans so that they may be kept from atmospherter pears and apples in collecting all they can tially in expelling the airfrom the jars by placthe trees and fruit are perfectly dry (this rule lars to be attended to, not only the right time holds good for all kinds) The best time, as a when, but the proper manner. If these are general rule, is when the fruit stalk separates neglected or improperly done, the fruit will be easily from the spur. Apples and pears for worthless-experience is indispensible. preserving should have their stalks separated from the tree, but never from themselves. This ' somewhat elevated, facing the north, and comshould be done carefully by the hand, catching pletely shaded from the sun by high planta-I have taken much pleasure in the perusal of the stalk so that the bloom will not be disyour valuable paper from time to time, and turbed. Such fruit as are the least defective or packed in good oak barrels so that they shall The cultivation of willows is a subject which not shake inside while being conveyed. In the has excited a good deal of attention in this Preservatory they should not be laid more than country for a number of years, and many far- four tiers deep; this should be done before the mers have tried it on a small scale, and found fruit is the least moist; a few hours with the terranean cave or grotto in a rock, if perfectly it very profitable; but owing to the great slightest change of temperature will cause this. amount of labor required at one time to peel Some are of the opinion that fruit should be them, while the bark is loose, it was found that | placed in heaps and covered with straw orflan- ples at a temperature from 32 to 42 degs. for a reversed by the Great Architect. Then why there could be but very few raised in this coun- | nel till they perspire thoroughly, say for three whole year; their flavor was good, and they persist in impossibilities ? try, where labor is so scarce and high, without weeks, then opened when the air is dry, so that were in perfect order for eating. He does not In connection with this gratifying announcethere could be a power machine for peeling the evaporation may be removed. Any that say how so low a temperature was attained. ment of Dr. Kane's return we will make a dash remains on the fruit is wiped off with flannel M. Paquet, of Paris, received from the Royal at that superlative humbug of the 19th century before they are put away in the fruit room or in Society of Horticulture a medal when he pre- called "Spiritualism." On page 363, Vol. 10,

Mr. Geo. J. Colby, a young man in this village, only spoils the flavor, but the wiping removes by him consisted of an inner and outer house; is the inventor. He commenced the cultivation the bloom-that which nature supplies for pro- this depository of the fruit was kept at a tem- present near Sir John Franklin. He will soon of willows some three years ago, and last win- tection from damp should not be foolishly taken perature of 50 degs. Fah., —as low as 39 degs. meet him, and return with him to New York ter he got up this machine for peeling them by off. If we would study nature, and patronize would not be injurious; but 66 to 73 degrees a triumph and pride to every truly American horse power, and it works beautifully. I had and read good periodicals, we would know and proved destructive. He employed eight parts heart," and so on. The facts connected with Dr. often heard of the machine, but had my doubts practice better methods. "Prove all things." of sawdust-not pine-and one of charcoal Kane's Expedition and return, and the prognosof its being very valuable, for I imagined that Apples and pears have been deposited for win- : highly dried in an oven, interspersed with the tications embodied in our correspondent's leta machine that would adapt itself to the dif- ter use in the following methods: First, in sin- fruit, and kept in drawers several layers in ter are strikingly at variance; and go to show ferent sized willows and effectually remove the gle layers on the bare shelves of a fruit room, depth. He says fruit should be gathered with the fallacy and deception that will work upon bark from the large and small ones, and not second, in the same manner, but covered with the greatest care, and not in the least bruised, human understanding. Our readers will be injure the rod, must be a complicated affair. light canvas, which must be dried occasionally, the fairest and finest specimens selected, and amused by referring again to the article from But I have lately witnessed a trial of it and as it absorbs the moisture. Third, in drawers, on no account to be wiped previous to being which the above extract is made. have become satisfied that it is a valuable in- one layer or several layers in depth. Fourth, deposited in the fruit room. vention. Its operation is very simple, the wil- in oak casks without any interposing material; ows being passed through between two or a few weeks after they are put in, they require next week.]

Prows-Harrison Norton, of Farmington, Me.: I claim attaching the hare, E, to the mold board, C, and "land side." D, of the plow by a hinge or joint, and moving side hare by means of the bar, (C, and lever, H, or their equivalents, substantially as shown and described. bark off very effectually; the others mainly fitted, and the fruit on no account disturbed separating the willows from the loose bark. till unpacked for use. Fifth, in boxes, casks, The rollers being made of india rubber, there is large garden pots or jars, with pure and dry no possible chancefor the willows to be injured, sand interposed between the layers of fruit. and it will adapt itself to all sizes, so that from Sixth, in jars in which no sand or other subtwenty to thirty rods can be passing through at stance is allowed to come in contact with the fruit, the mouths of the jar being covered With one horse, and two men to attend it, it with a piece of slate, and the whole plunged will peel from one to two tuns per day, while 'iuto a quantity of dry sand, several inches from to do the same amount of work by hand it the free atmosphere. The sand being a slow would require 30 or 40 men and boys. In conductor of caloric, the sudden changes of short I think this is one of the greatest labor. temperature, and their powerful effects in caussaving machines of the age, and if farmers only ing the decay of fruits is avoided. Seventh, understood it they would soon plant willows in heaps in a dry airy loft, a slight covering of juring the fruit. Eighth, in close cellars exdirections for cultivating the European willow 'jurious. Ninth, in dark but airyvaults. Tenth, ' and preparing it for market, which he offers to 'on a small scale under a bell glass, cemented send free to any one wishing to engage in the down air tight, this must be done on wood free business, which, from his account of it, and from rcsin, else it will communicate its flavor from what I have learned from other sources, I to the fruit by the confined and accumulating think is the most profitable business that farm- exhalation. Eleventh, buried in a box placed ers can engage in when they have suitable land on four bricks, under another box inverted, in for this purpose. I remain, yours, very truly, an excavation so deep that the upper portion of the fruit may be 1 1-2 or 2 feet below the surface of the earth. Twelfth, in thrashed grain or straw, with or without a covering of The following article on the subject of pre- the same. Thirteenth, in chaff of wheat or serving apples, pears, grapes, &c., has been oats. Fourteenth, in flaxseed chaff. Fifteenth, sugar of lead. Much has been said and writ-GATHERING FRUIT-No precise time can be ten respecting how preserved fruit should be specified when it should be plucked; those cooked, what proportion of sugar used, the kinds that ripen or mature early, should be method of expelling the air, then sealing the frosts will assist many valuable kinds of win- ic influence. The best mode consists substanof grape sugar, which not only improves the ing them in hot water so long till the fixed air flavor, but is the most important element for is dislodged then hermetically sealing them. preservation. Fruit should be gathered when In all this there are so many minute particu-To construct a fruit room, choose a dry soil,

tions of evergreen trees. The dimensions of it must be determined by the quantity of fruit means af protecting the interior from the exterior temperature. In sunken fruit rooms some 'Expedition and the bitter experience of Dr. are so constructed that natural currents of dry. Kane's search for him, we hope to find no one air are made to pass through them; some use a sufficiently foolhardy to again undertake the stove, the air from which is intended to take navigation of this dangerous and unhospitable off the damp which may accumulate. A sub- Northern Ocean. dry, would make a good fruit room.

[The remainder of this article will be given

Return of the Kane Arctic Expeditions. On the 31st of May, 1853, Dr. Kane left this port, with seventeen bold companions, in the brig Advance, on his second Arctic Expedition in search of the unfortunate Sir John Franklin. For nearly two years no intelligence had been received from the party, and the fear became general that the vessel was destroyed, and that this Exploring band were perhaps cooped up in some Arctic wild, suffering for the means of escape. An expedition consisting of two vessels, named the Rescue and the Arctic-the latter a small propeller-was therefore fitted out to go in search of Dr. Kane, and left New York on the 4th of last June. No news having been heard of it for some time, enough, so that we should not be obliged to straw being given to prevent the frost from in- our citizens were electrified on the evening of the 11th inst. with the thrilling intelligence of Mr. Colby has published a circular giving cluded from the light which is in all cases in- the arrival here of Dr. Kane, and his party, and the whole Expedition that went in search of him. Their arrival produced a universal feeling of delight among all our citizens.

Dr. Kane has discovered a new northern land, which he named "Washington," and a new channel which he named "Kennedy," also an open polar sea, and some other interesting geographical discoveries. The Advance became frozen in a pack of ice, in September, 1853, and had, finally, to be abandoned. The party made many expeditions from it on the ice, and at last effected their escape to Greenland, with Francis' metallic lifeboats and sledges, from which place they took their passage to England in a Danish ship, but were so fortunate as to meet with the American Rescuing Expedition sent in search of them at Discoe Island. With grateful hearts, they immediately embarked, and sailed for home on the 10th of August last, and here they have arrived, having lost but three of their crew during the two years and four months cruise. amid dangers of a most appalling nature, and sufferings almost unparalleled. All had the scurvy at one time except Dr. Kane and Mr. Bonsall, the daguerreotypist. The cold was 50 degs. below zero for months-last winter being very severe. Dr. Kane states that Gail Borden's Meat Biscuit, with which the Expedition was well supplied, "was an excellent article, much used by them all."

We feel thankful and overjoyed at the safe and fortunate return of both Expeditions. The great discovery of Dr. Kane is an open Polar Sea, into which there is an open channel. He predicted the existence of such a sea before he started, and like Columbus, he has been fortunate in realizing one object of his expectations. We hope, however, that no more Arctic expeditions will be fitted out, forthis very open Polar Sea found by him, may be entirely closed next season.

The hazard of such undertakings overleap entirely all the practical advantages that acbut with the sad fate of Sir John Franklin's

For all the purposes of commerce, the Northwest passage is entirely sealed, and must al-Loudon, page 2308, affirms that he kept ap- ways remain so, until the nature of things is

sented, on 12th June, 100 apples and pears, we published the lugubrations of a Baltimore I object to this mode of sweating; it not fresh and of good flavor. The building used correspondent, in which he says: "Dr. Kane has lost about thirty of his men, and is at

> Dr. Kane was officially received by President Pierce on the 15th inst, The interview was very cordial.