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INVIDIOUS COMPARISONS.

A great many good and loyal journals, who have the welfare of the country at heart, seem to think they can best serve it by wholesale abuse of the Navy Department. From the monitors down to the wooden gunboats there is scarcely a craft that has not come in for some disparagement. We deprecate such a state of things in any event, but especially when unthinking journalists throw reason aside and make invidious comparisons for the sake of gratifying a pique.

The Boston *Commercial Bulletin*, in an article on blockade runners, says:—"The British have now afloat a superior class of swift steamers to run the blockade, while we have only the same old-fashioned vessels, many of them worn out, which we had at the commencement of the war. The vessels produced by the Navy Department have proved entirely worthless to overhaul the swift steamers sent from England. To show how blind was the Department at the beginning of the war, it is only necessary to refer to the light-draught gunboats which it built, not one of which is capable of being propelled more than eight knots, while the general run of the blockade-breakers go rarely less than twelve, and some of them as swift as sixteen knots. But for the steamers purchased from the merchant service, our blockade would have been a mere farce. It is little better at present, so far as Wilmington, N. C., is concerned. The swift British steamers pass in and out at the rate of two a day the year round, although we have nearly twenty sail of our best vessels to blockade it."

This statement is incorrect in many respects. The British vessels are for the most part built exclusively for river service, and are unfit for blockade duty, and in every case their speed has been grossly exaggerated. The fastest of them are daily caught by our ocean steamers; vessels that can lay off and on and run to sea when storms arise. The light-draught swift English boats are incapable of such endurance, and though they carry immense cargoes last no time at all, nor are they expected to. They make such profits that the owners can afford to use up a ship a month if they please. Some vessels do escape and run the blockade in the darkness; but many more are daily caught, and numbers of the blockade fleet now off Wilmington were once blockade-breakers. Surely if the English vessels are swifter than our own they ought to catch their comrades! The light-draught gunboats, built at the beginning of the war, go faster than eight knots by the pitch of their screws at a moderate number of revolutions, and we have sailed eleven knots per hour in one of them, if the patent logs tell the truth.

The double-enders are as fast as any merchant ships of their class, and have done good service, as Mobile Bay, Albemarle Sound, and engagements at other points amply show. There is nothing to be gained by indulging in philippics against the Administration at a time when the country requires all the good words from loyal men that it can get. The Navy is a most powerful arm of it, and needs encouragement far more than the reverse. We have no disposition to apologize for any short-comings or failures of the Department, but in the matter of the blockade we believe it is doing all in its power.

A BATTERY OF 15-INCH GUNS.

On a recent visit to Fort Hamilton we found that the New Water Battery is nearly completed, and 6 of the guns are already mounted. They are all of cast-iron, of 15 inches caliber, and are mounted on wrought iron carriages. Beds are being constructed for 24 or 25 more, so that the whole battery will have 30 or 31 15-inch guns. We presume that each one of these cannon would be more efficient in preventing the passage of an iron-clad fleet through the Narrows than all of the guns of the old fort. In other words, the New Water Battery is probably a greater addition to the defenses of this harbor than would be the construction of thirty new forts like Fort Hamilton, provided they were to be armed with the old style of ordnance.

Now we should like to see two 20-inch guns placed at Fort Lafayette, as near the level of the water as possible, each mounted in a revolving turret, the walls of the turrets 2 feet in thickness and built up of as thick plates as can be conveniently made, say 4, 5, and 6 inches. Then with rafts of timber, to keep hostile fleets attempting to pass for awhile under the fire of these heavy guns, we think the southern approach to our harbor would be pretty secure.

THE MOISTURE ON A LAMP CHIMNEY.

Probably most of our readers who use petroleum lamps have observed that when the lamp is first lighted the luster of the chimney is dimmed, and the flame is obscurely seen with the outlines not sharply defined. In a minute or two the dimness disappears, and the glass presents its usual clear and transparent appearance.

This phenomenon is doubtless produced by the deposit of water upon the inner surface of the chimney. Petroleum is composed of hydrogen and carbon, and both of the elements in burning combine with the oxygen of the atmosphere—the carbon combining with oxygen to form carbonic acid, and the hydrogen combining with oxygen to form water. Both on their first production are in the gaseous form, and the carbonic acid being incondensable except under very great pressure, passes off as an invisible gas; but the water, though at first in the form of steam, requires to be cooled only down to 212° to be condensed into the liquid form. As it comes in contact with the cold walls of the chimney, it is cooled to this point, when it deposits itself as a fine dew over the inner surface of the glass.

This water, being very pure, transmits light more freely than the glass, but being deposited in hemispherical drops, the curved surfaces so refract the rays of light from their straight tracks as to prevent the formation of a clearly-defined image in the eye. The thin film of dew, though translucent, is not transparent.

So soon as the heat of the flame raises the temperature of the chimney to 212°, the water is re-evaporated, and passes off as invisible steam, leaving the glass transparent as before.

A NEW LIGHT FOR MANUFACTORIES.

Professor Seely, of this city, has obtained a patent for an electric light on a principle which very strangely does not seem to have been thought of before as the best and by far the most economical mode of producing light by electricity. He employs the current generated by an ordinary frictional electrical machine, and obtains the light by interrupting the current. It has long been known that a very brilliant and steady light might be procured in this way, but the objection to its use is the uncertainty in the action of the frictional machine. Dry air is a very

poor conductor of electricity, and when a machine is excited in such an atmosphere the electricity will remain in tension for a considerable time. But moisture in the air conducts the electricity away, and when the moisture reaches a certain point the fluid is removed so rapidly that the machine will not work. Professor Seely's invention consists in devices for making the action continuous in all weathers. This is effected by surrounding the machine with a glass case, and keeping the air within the case dry by means of chloride of calcium or other hygroscopic substance.

It has been observed that when the conductor of an electric current is interrupted in a way to draw a spark across the break, the brilliancy of the spark varies with the material by which the conductor is terminated at the break. Professor Seely is now engaged in experiments to ascertain what material will produce the most intense light.

If the apparatus works according to anticipation a cotton mill may be lighted without any current expense, except the small power required to turn the electrical machines. As in mills driven by water there is always a surplus of power during the winter months, the only time when lights are required, there would be no expense for this light except the first cost of the apparatus, which would be quite moderate.

COOPER UNION—FREE NIGHT SCHOOL OF SCIENCE AND ART.

If the mechanics of this city are not an educated class the fault is their own, for no matter what advantages have been denied them, the privilege is now afforded of becoming proficient in the highest branches of art and science. The halls of the Cooper Union are to open shortly, and there instruction can be obtained by those whose time is employed during the day. Perhaps, however, a better idea of the scope of this institute can be formed by the world at large by publishing its printed circular:—

"The term commences on the first of October and ends on the first of April. The hours of recitation are from 7½ P. M. to 9 P. M., and no pupil is, under any circumstances, to be admitted after the former hour, except by special permission of the clerk. Each applicant for admission is required to be 16 years of age, and to present a letter of recommendation from his employer. No expenses whatever are incurred by the pupils, except those for the purchase of Text Books and drawing materials. All applications for admission must be presented during the month of September. Each applicant is permitted to pursue the study of any subject or subjects taught in the school, provided he is sufficiently well advanced in the preparatory studies. The following is the course of study:—Algebra, Geometry, Logarithms and Plane and Spherical Trigonometry, Analytical and Descriptive Geometry, Differential and Integral Calculus, Mechanics, Natural Philosophy, Elementary Chemistry and Chemistry applied to the Arts, Analytical and Organic Chemistry, Architectural Drawing, Mechanical Drawing, Drawing from Copy, Drawing from Cast, Drawing from Life, Perspective. The full course of study, embracing all of the above-named subjects, requires five terms for its completion, and to those who have successfully passed through it the Medal of the Cooper Union is awarded. Pupils who have successfully completed the study of any particular subject will receive Diplomas certifying to the fact. For a Mathematical course five terms are required, but only three evenings of each week are occupied. For a course in Chemistry and Natural Philosophy three terms are necessary, and but two evenings per week. For a course in Architectural or Mechanical Drawing three terms are required, and but two evenings per week; and for a course in Perspective and Drawing from Copy, Cast, and Life, three or four terms are required, according to the pupil's ability, and but three evenings in each week. At the end of each term an examination of each class is held, and to those pupils who have been regular in attendance and pass through it creditably, a certificate is awarded, either of the first, second, or third grade, according to their knowledge and ability."

All trades and professions even are equally welcome, and persons desirous of attaining higher proficiency in any course are admitted. Lectures will be given by able professors during the course, at

certain periods, on Natural Philosophy and Chemistry; the subjects for discussion will be announced in future.

RECENT AMERICAN PATENTS.

The following are some of the most important improvements for which Letters Patent were issued from the United States Patent Office last week; the claims may be found in the official list:—

Improved Governor.—This invention consists in making the rod which opens and closes the governor or throttle valve, or which bears a similar relation to the source of power and parts to transmit said power to the working machines, with a spring and with a fly-wheel, to which an intermediate rotary motion is imparted, in such a manner that when the intervals characterizing the intermittent motion are long and consequently the motion of the fly-wheel slow, the spring has power enough to overcome the momentum of the fly-wheel and to carry the valve rod back to its original position after each stroke or motion of the fly-wheel; but if the intervals characterizing the intermittent motion of the fly-wheel shorten, and in consequence thereof the circumferential velocity of the fly-wheel increases, the momentum of the fly-wheel overcomes the power of the spring, and the valve rod moves back so as to close the valve and regulate the speed of the engine or other machine with the greatest nicety and entirely independent of the position of the governor, rendering the same of peculiar value for the purpose of regulating the speed of marine engines. Peter Louis, of 220 Center street New York, is the inventor.

Machine for coating and flocking cloth.—The object of this invention is to coat cloth or textile fabrics in pieces a thousand yards, more or less, long, by machinery which applies the requisite coat of water-proof or other composition or varnish, and the flocks if desired, and at the same time conveys the cloth to a drying room and hangs it in folds upon stak or slats automatically. The long pieces of cloth are made up of shorter ones cemented or secured together as for calendaring. The process of coating is effected while the cloth is being conveyed to the drying room, and the machine at the same time delivers a series of newly-arranged lattice frames which are supplied to it at suitable intervals and upon the slats or rounds of these frames the cloth is deposited in folds, four or more yards upon each slat, according to the height of the room. Edwin M. Chaffee, of Providence, R. I., is the inventor.

Knitting Machine.—The object of this invention is to afford facility for what is termed narrowing and widening the work in circular knitting machines, bringing the parts nearer to or further from the center of the machine, and by reducing and increasing the number of loops in the circular courses. The invention consists, principally, in the employment in a circular knitting machine of separately-adjustable sinkers so applied in combination with the needles as to provide for their being set nearer to or further from the center of the machine and for the removal of any number of them at pleasure. It also consists in making the needle operating-cam adjustable for bringing the needles nearer to or further from the center of the machine, and in a device for adjusting the sinkers in a larger or smaller circle. It further consists in so combining the needle operating-cam, the device for adjusting the sinkers nearer to or further from the center of the machine, the yarn conductor, and the rotary-pressing burr, that they are all adjustable together toward and from the center of the machine. Charles W. Blakeslee, of Northfield, Conn., is the inventor.

Simple and Cheap Plan for Preserving Fruits.

A writer in the *Country Gentleman* says:—“Recently I have seen fruits put up upon a plan so cheap, so simple and so easily performed by any member of the family, that I am pleased to furnish it. The fruit is prepared and scalded in the ordinary way, and the jars closed while the contents are hot. The method of sealing is, by simply pasting over the mouth of the jar two thicknesses of stout manilla paper previously pasted together. Fruit thus put up for several years has kept perfectly sweet and sound as when put up in the best ‘self-sealing’ cans or jars.

To render the preservation doubly sure to inexperienced persons, I would suggest several improvements upon the plan. First, I would close the jar with a cork before pasting; this would prevent any moisture coming in contact with the paper, in case the jar should be turned on one side. Second, To be sure to guard against any opening through which the air could enter, owing to any improper pasting, I would put the two pieces of paper in separately, making the outside half an inch larger, so as to extend a little below the first around the neck of the jar, thus covering any defect that may have been left in the first, firmly pasting both together; and last, I would cover the whole with a thin coat of shellac or gumarabic. The whole process is very simple, more easily prepared than any that I have seen practiced.”



ISSUED FROM THE UNITED STATES PATENT-OFFICE FOR THE WEEK ENDING SEPTEMBER 20, 1864.

Reported Officially for the Scientific American.

37 Pamphlets containing the Patent Laws and full particulars of the mode of applying for Letters Patent, specifying size of model required and much other information useful to inventors, may be had gratis by addressing MUNN & CO., Publishers of the SCIENTIFIC AMERICAN, New York.

44,273.—Corn Planter.—J. Armstrong, Jr., Elmira, Ill.: I claim, first, The friction rollers, d, d, placed in the loops, E, in combination with the treadle frame, E, as and for the purpose specified.

Second, The stirrers, P, when arranged or hung so as to be operated from the slide, K, substantially as herein set forth. [This invention relates to a new and useful machine for planting corn, both in hills and drills, and it consists in a novel arrangement of the framing, whereby the part on which the seed dropping mechanism is placed, and the part in which the wheels are fitted may have a certain action or movement independent of each other, and the framing allowed to conform to the inequalities of the surface of the ground over which it passes.]

44,274.—Cattle Pump.—John B. Atwater, Chicago, Ill.: I claim, first, The apparatus consisting of the cylinders, A and B, connected by the pipe, C, and provided with the discharge pipe, H, operating in combination with the piston, D, and tilting platform in position by means of the spring catch, e, or its equivalent.

Second, In combination with the foregoing I claim regulating and adapting the apparatus to be operated by animals of various weights, by means of weights applied to the box, b, substantially as specified.

Third, I claim securing and holding the piston, D, and tilting platform in position by means of the spring catch, e, or its equivalent.

44,275.—Stitch for Soles and Vamps.—Lyman R. Blake, Quincy, Mass.: I claim the employment of the new stitch for uniting soles and vamps of boots and shoes, and for a similar use in other manufactures, in the manner substantially as described.

44,276.—Windlass.—Marcus Bockman, Brooklyn, N. Y.: I claim the shafts, C D E, cog wheels, F F H, levers, K, and spools, Y, in their specified combination on the bench, B, constructed and arranged substantially as specified.

44,277.—Harvesting Machine.—Jeremy Bradley, Cedar Falls, Iowa: I claim, first, The combination of an endless chain-raking apparatus having horizontal riving shafts, with the jointed shafting, d, m, sliding piston, k, side gear, J, and lever, L, arranged and operating substantially as described.

Second, The toothed segments applied to guide, H, in combination with rakes which are pivoted to, and operated by, endless chains, and otherwise constructed and adapted for being brought into raking position by said segments, substantially as described.

Third, The combination of open slatted platform, e, endless chain of rakes and toothed segments, for turning the rakes at the commencement of the raking stroke.

Fourth, The combination of the two levers, L L', pistons, K K', inclined shafts, m m', driving wheel, N, cutting apparatus, and endless chain of rakes, all arranged and operating substantially as described.

44,278.—Mode of connecting Cars to Trucks.—Alfred Bridges, Newton, Mass.: I claim, first, In railroad cars the spring, H, on the truck frame, so combined and arranged with the suspension rod, G, or its equivalent, that it controls both vertical and side motions, substantially as herein set forth.

Second, I claim the combination of the two springs, H and N, with the truck frame, D, d, substantially in the manner and for the purposes herein specified.

Third, I claim the thimble, h, when used with the spring, H, truck frame, D, d, suspension rod, G, and pedestal, F, substantially in the manner and for the purposes herein specified.

44,279.—Bed Bottom.—James Bromiley, Pawtucket, R. I.: I claim a bed bottom composed of slats, B, connected at their ends to elastic straps, C, by means of clamps, F, constructed and applied as shown, and the straps, C, secured to the head and foot rails of the bedstead by means of the hooks, D, fitted in the straps, substantially as described.

[This invention relates to a new and improved bed bottom of that class which are composed of a series of parallel slats, connected at their ends by elastic straps to the head and foot rails of the bedstead. The invention consists in a novel manner of attaching the elastic straps to the slats, and also in attaching said straps to the head and foot rails of the bedstead, whereby all rails, screws, and bolts are avoided, the slats and bands readily connected and disconnected, and also readily applied to the bedstead, and a greater or less number of slats used, as circumstances may require.]

44,280.—Fruit Basket.—Henry Carpenter, New York City: I claim a peach or fruit basket, provided with a vertical central

partition and lids or covers, substantially as herein shown and described.

[This invention consists in having the basket made of double the capacity of these now used for holding peaches and other fruit, and providing the same with a central partition and two lids, as herein after fully shown and described, whereby the expense of transportation is reduced one-half, and the baskets rendered capable of being stowed one on the top of the other without having their contents injured.]

44,281.—Apparatus for coating and flocking Cloth.—Edwin M. Chaffee, Providence, R. I.:

I claim, first, The rollers, A C F G I J K L, and doctor, E, or their equivalents, arranged in relation to each other and to the cloth, substantially in the manner herein described, so that long pieces of cloth can be coated and conveyed to the drying room without bringing the face or varnished side of the cloth in contact with the rollers or anything else except the edge of the doctor.

Second, The employment or use of two toothed wheels, j, arranged substantially as herein specified, to check the fall of the cloth at the desired intervals.

Third, The jointed arms, k, l, in combination with the toothed wheels, j, to act substantially as and for the purpose set forth.

Fourth, The combination of the rock-shaft, m, adjustable arms, k, l, and wheels, j, substantially as herein specified, to insure the simultaneous catching of both edges of the cloth.

Fifth, The employment of the lattice frames, N, substantially in the manner set forth for the purpose of supporting the cloth while in the drying room.

44,282.—Pump.—John K. Cobick and Jacob Fesher, Mountville, Pa.:

We claim the action of the pump, P, by means of the oscillating beam, c, and jointed connecting rods and piston, f, d, in connection with the crank, XI, and triple gearing when operated by a weight and pulley, in combination with a fly-wheel, X, and lever arm, L, click, n, and ratchet, m, and side support, t, all constructed and operating substantially in the manner and for the purpose specified.

44,283.—Spinning Machine.—E. C. Cleveland, Worcester, Mass.:

I claim, first, Enclosing the lifter, C, and the clock and their appurtenance within the arch and one of the posts of the frame, substantially as described.

Second, The locking slide, e, constructed and operated substantially as shown, for locking the lifter, C.

Third, The lifter, C, for operating the clock, constructed and operated substantially as shown.

Fourth, Adjusting the relative positions of the hand wheel shaft and the tin cylinder shaft, in the manner substantially as described.

Fifth, The combination of the bearing of the hand wheel shaft with the means employed for adjusting the inner end of the shaft, substantially as described.

[This invention consists in certain improvements in the construction of jacks whereby I am enabled to place the clock, for indicating the amount of work done, and its mechanism within the frame of the jack; and also in the construction of the mechanism for causing the clock to indicate the work of the jack, and in the manner of operating said mechanism, and also in the manner of constructing and adjusting the bearings of the shaft which drives the shaft of the tin cylinders.]

44,284.—Washing Machine.—Luiman W. Cook, Dowagiac, Mich.:

I claim, first, The arrangement and combination of vibrating arms, B, longitudinal arms, C, raised boards, g, and levers, E, substantially as described.

Second, The application of the beaters, D, to longitudinal swinging arms, C, in combination with the divisions, a, g, g, and vibrating levers, E, substantially as described.

Third, The arrangement of the vibrating arms, B, longitudinal arms, C, and vibrating levers, E, within a wash-box, constructed substantially as described, in such manner as to admit of the ready removal and replacing of said parts, as herein described.

44,285.—Composition for preserving and Water-proofing Vegetable Cigars.—George A. Cowles, Jesse P. Chase, and Victor Viorow, New York City:

We claim, first, The use of a composition of alum and blue vitriol, mixed together, substantially in the manner and about in the proportion above set forth.

Second, The use of a composition of alum and vitriol, mixed with gelatine, or with soap, or with a mixture of gelatine and soap or oil, substantially in the manner and about in the proportion specified.

Third, The employment of acetate of lead, with or without gum arabic, in combination with the ingredients hereinbefore named and mixed together, substantially in the manner and about in the proportion set forth.

[This composition has been applied with great success to sails and other similar articles exposed to the influence of the atmosphere, also to clothes and other textile material.]

44,286.—Clasp for Shoe Lacings.—William E. Darrah, Middletown, N. Y.:

I claim, as an improved article of manufacture, a clasp for lacings, made in one piece, but with double string plates, a, b, disconnected at the outer corners, and central channel, c, all as herein shown and described.

[The object of this invention is a clasp, produced by folding over a piece of sheet metal in such a manner that the plates or jaws are formed with a suitable opening to let the strings of a shoe, or lacing of any other description, pass freely, and to return the ends of said strings or lacings, when the same are drawn midway between the two plates or jaws.]

44,287.—Skeleton Skirt.—Theodore D. Day, Brooklyn, N. Y.:

I claim, first, Forming the hoops of the skirt with joints at the back, so that the springs or hoops will fall more easily when the person is seated, as set forth.

Second, I claim uniting the ends of the springs or hoops of a skeleton skirt, by means of the tapes or strips receiving the said ends, in the manner specified.

44,288.—Potato Digger.—Daniel N. Denman, Millburn, N. J. Ante-dated Sept. 5, 1864:

I claim in a potato digger, of the construction specified, arranging the two driving wheels, P P', directly behind the landsides, C C', as herein described and for the purposes specified.

[This invention consists in the employment or use of an inclined curved screen, provided with a share and landside, and having a toothed shaft placed underneath the back and curved part of the screen; the teeth of the shaft working through the screen, and the shaft being rotated by a traction wheel placed behind one of the landsides, whereby a very simple and efficient potato digger is obtained, and one that may be advantageously used for cultivating or preparing the earth for the reception of seed, etc.]

44,289.—Cattle Pump.—Joseph A. Dickson, Sandwich, Ill.:

I claim the radius frame, D, provided with the trough, J, and connected with a pump, or any suitable water-elevator in such a manner that the animal in its effort to drink will rotate the frame, and thereby actuate the pump and supply the trough with water, substantially as set forth.

I further claim the way, B, in connection with the frame, D, provided with the water receptacle, I, and trough, J, or its equivalent communicating with each other by a trough or tube, I, all arranged to operate substantially as and for the purpose specified.

[This invention relates to a new and improved pump by which cattle themselves may pump up at will the water they require for drinking purposes. The invention consists in having an elevated annular way around and concentric with an ordinary section or force pump, and having one end of a frame fitted loosely on the pump and the other end extending out to the way, said frame having a trough at