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OUR ROLL OF HONOR.

Almost down to the present century the writers of literature have depended for support upon the patronage of kings and nobles, and their productions have consequently been filled with sycophantic praise of their patrons, with arguments in defense of royal and aristocratic forms of government, and with denunciations of opposing systems. Hence the repetition from century to century of the saying: "Republics are ungrateful"—a saying contradicted in different lands and times by the most conspicuous events of history. The maxim has been uttered with great bitterness by many disappointed politicians, who have sought to use their position in republics for the gratification of their personal ambition; but all, in every age, who have served any community with disinterested public spirit, have awakened in the people emotions of gratitude such as, in the constitution of human nature, it is impossible for kings or nobles to feel. With what filial affection did the people of Athens obey, through long years of unexampled trial, the paternal advice of Pericles! In the long roll of those who have filled the kingly office, what man has shown such gratitude as that which was manifested by the whole people of Syracuse to the devoted and noble Timoleon? What subject ever received from his sovereign such evidences of grateful love and remembrance as those which surrounded the heroic life and followed the bloody death of the first William of Orange? Among the inhabitants of Europe, the people of strongest emotions are they whose homes are nestled in the mountain dells of Switzerland; and the warmest feeling of their hearts is gratitude for the service of Tell. The homage of the people of this country to the memory of Washington, the gifts of fortunes and houses to Farragut, Grant, Sherman and other officers, and the enormous subscriptions to the Sanitary and Christian Commissions for the benefit of our soldiers, are not proofs of peculiar generosity on the part of Americans, they are manifestations of the gratitude which has always characterized democratic communities toward those who have served their country faithfully and well—a quality diametrically opposed to the lying maxim that has been so often and so thoughtlessly repeated.

We are reminded anew of the falsehood of this maxim by the receipt of a pamphlet from the War Department, entitled: "Roll of Honor. Names of Soldiers who Died in Defense of the American Union, Interred in the National Cemeteries at Washington, D. C., from August 3, 1861, to June 30, 1865."

No longer ago than the time of Frederick the Great there were no medical departments in the organization of armies. Sometimes, when a soldier

was wounded, his commanding officer would cut off his leg and sear the stump with a red-hot iron to stop the bleeding; but, generally, if a man was permanently disabled, it was considered best to let him die, in order that the kingdom might not be cumbered with his support. The care which our private soldiers have received has not been, indeed, all that they deserved, but it was the tenderness of maternal love compared with that which has ever been bestowed upon the common soldiers of any other army. This care ceases not even with the termination of life, but smooths the pillow of their last repose, and transmits to their relatives all that affection would know in regard to their final resting place.

"On fame's eternal camping ground  
Their silent tents are spread,  
And glory guards, with solemn round  
The bivouac of the dead."

PURE ALCOHOL FOR BRANDY PEACHES.

Mr. Moore, who owns a distillery situated at the corner of Thirty-ninth street and Tenth avenue, in this city, says that he has drunk imported French brandy, direct from the bonded warehouse, which was proved to his satisfaction to have been distilled at his establishment. The corn whisky was bought of him at 55 cents per gallon, sent to France and doctored by the addition of sundry drugs and by other manipulations, and then returned to this country and sold as genuine French brandy at \$6 per gallon.

The essential ingredient of all ardent spirits is alcohol. In addition, they all contain a large proportion of water, and a very small proportion of essential oils, which give them their peculiar flavor. If the spirit is leached through animal charcoal, these oils are absorbed by the charcoal, and the spirit comes out white and nearly tasteless. There is, however, a foreign substance that is not absorbed by the charcoal, this is fusel oil or amylic alcohol. It is a colorless liquid, of a peculiar, nauseous, suffocating and most persistent odor, and of an acrid taste. As the boiling point of fusel oil is 270°, while that of alcohol is only 168½°, it is easy to separate the two by distillation.

When the peculiar flavor of brandy is required, it must be taken before the rectification with charcoal, but in brandy peaches the flavor is given by the fruit, and for this purpose the purer the alcohol the better. At the Boston Distillery, 122 Elm street, in this city, and probably at other distilleries, a very pure article is sold under the name of spring water spirits. It is alcohol subjected to a second distillation after the rectification by charcoal, in order to eliminate the fusel oil. This spirit is purchased by grocers, diluted by adding its own volume of water, and sold under the name of white brandy, expressly for making brandy peaches. It is most suitable for the purpose, and we should suppose would be most suitable in any case where alcohol in any form is to be taken into the stomach. We believe it is generally prescribed by the homeopathic physicians, and there seems to be no reason why it should not be adopted by the profession generally whenever alcohol stimulus is indicated.

Except under the advice of a physician, it is doubtless best to avoid the use of alcohol in all its forms; but, damaging as it is to the system, it is probably less so than the poisonous drugs with which it is mingled to convert it into "French brandy."

BOILERS OF THE IRON-CLADS.

There are a mile and a half of iron-clads now laid up in the Delaware River, at League Island—a mile and a half of war ships whose ports are closed, whose guns are silent, from whose escape pipes no steam curls upward to the air. These vessels, which have done the country so much service, are practically dismantled, and left to rest in peace until they are again needed.

To the dreamer, the sight is suggestive, but the mind of the practical man instantly reverts to the mechanical details, and to the preservation of them intact. As to the engines of these iron-clads there is no cause for anxiety, but, in regard to their boilers, there is apprehension. Engineers know very well that when a ship is laid up idle the boilers are ruined in a short time, unless great care is taken and

constant supervision given. With all the precaution, it not unfrequently happens that tubes have to be cut out of vertical flue boilers and renewed. The condensed moist air, or "sweat" which collects on the tubes is the cause of this injury, and a remedy for it would save a great many dollars to ship-owners and the country.

It is customary, in some cases, to kindle a fire in the furnaces with the hope of dispelling the moisture by drying it off. This may be a temporary, or an apparent, remedy, but it is of no value, and even if the flues are not removed by reason of corrosion, their endurance is greatly impaired, and the life of them, so to speak, shortened. Where scale deposits at the bases of the tubes then the danger of destroying them is greatly augmented, for the hygroscopic nature of those salts of lime that constitute scale causes them to absorb moisture, which furrows the external surface of the tubes like cutters.

What course has been taken with the boilers of the iron-clads we do not know, but it is probable that they will receive such attention as the nature of the case demands. Cylinder boilers that are blown out are easy to preserve by a coating of oil, but in vertical or horizontal tubular boilers, where the spaces are so small that one can hardly get a finger in, it is a difficult thing.

THE FLOW OF SOLIDS UNDER PRESSURE.

The most common mode of making lead pipe, is to melt the lead and run it into a massive cylinder, which has a hole in the bottom corresponding in size to the external diameter of the pipe; to the cylinder is fitted a solid plunger piston, which has a steel spindle, equal in diameter to the interior bore of the pipe, projecting from its lower end downward through the center of the die in the bottom. So soon as the lead has cooled sufficiently to become solid, but while yet very warm, the piston is forced downward by a powerful hydraulic press, squeezing the lead through the annular opening, and forming the pipe. A better form of the apparatus is to have a hole through the piston and let the spindle or core rise up through this hole from the bottom of the cylinder; on applying the pressure, the lead rises upward through the annular opening and flows over in an endless pipe. With this form of cylinder, pipe may be made from perfectly cold lead, and even from the still harder metal, block tin. Tin, indeed, can be worked only in the cold state, as it crumbles to pieces like sand if manipulated while hot.

It is manifest that the particles of the metals, when pressed through these openings, must slide upon each other in precisely the same way as the particles of water, or any other liquid, while flowing through similar openings. The resistance to motion in relation to each other of the particles of a liquid and those of a solid, seems to be merely one of degree. When the form of a bar of iron is changed, by either hammering or rolling, the particles must slip one over another, though they are not separated sufficiently to destroy their cohesion for each other.

This is an instance of the fading into each other of all divisions in nature. Nothing could seem more sharply defined than the distinction between solids and fluids; but if we change the conditions, if we subject the solid to sufficient pressure, it is found to flow through narrow openings, like the most mobile liquid.

SALES OF PATENTS.

More money is being paid, at the present time, for valuable patents, than ever before. In our reports of the Fair of the American Institute, on another page, will be found a mention of the French self-fastening button; we are told by the capitalists who bought the patent of this little invention, that the sum paid for it in cash was \$125,000.

An ingenious inventor in Ohio has recently made an improvement in machinery for cutting nails. It is stated very directly from the inventor that he sold one-half interest in the patent for \$10,000 in cash, and the purchaser says that he has been offered \$80,000 for it.

A clergyman of our acquaintance has been offered \$50,000 for the United States patent in an invention we lately secured for him in this country and Europe. Another of our customers has been offered \$30,000

for a patent in a machine for making hats, recently issued; and almost every day cases are brought to our knowledge of patents being sold for large amounts.

**The Naval Trial—Report of the Experts.**

NEW YORK, Sept. 26, 1865.

SIR—In obedience to your orders of the 26th of July, for the competitive trials of the machinery of the steamers *Winooski* and *Algonquin*, to test the relative economy of fuel and power, we would state that the trial commenced on Friday, the 22d instant, and we respectfully make the following report:—

Though not required by your letter of instructions to report upon the trial until the completion of the same, we believe it will be of interest to the department to know at this time the result of the first trial, which commenced for the purpose of ascertaining the relative economy of fuel.

The trial commenced according to the programme of the Board of Civilian Experts. The fires were started at 10:15 A. M. of the 22d instant, were hauled at 4 P. M., and again started for the regular trial of ninety-six hours, and continued until brought to an abrupt termination by the bursting of the *Algonquin's* pipe, which necessitated the drawing of the fire from the boilers. When the accident occurred the experiment had lasted fifty-four hours and eight minutes. The whole duration was to have been ninety-six hours. Owing to this accident we cannot give the results ascertained exactly in the manner recommended by the Board of Experts, but we can give the results as ascertained in the manner directed by your original order, and which we believe to be accurate. In that order we were directed to run the engine several hours, to bring the fires into steady action, and the machinery into proper working condition. We were then to commence the trial, noting the state of the fires. At the end of the trial, we were to leave the fires, steam pressure, water level, etc., the same as at the commencement.

At the time of the bursting of the *Algonquin's* pipe the fires under the boilers of both vessels were in good condition, and the steam pressure and water level about the same as at the commencement. We consider that at 8 P. M. of the 22d instant, the engines of both vessels having been run about three hours from the commencement of the trial; the fires were in steady action, and the machinery in proper working condition.

From this time to 11 P. M. of the 24th instant, a few minutes previous to the breaking down of the *Algonquin's* engine, is fifty-one hours, the mean results of which are as follows, namely:—

	<i>Winooski</i>	<i>Algonquin</i>
Total time of trial in hours.....	51	51
Total number of revolutions of wheels.....	45,149	44,918
Total number of pounds of anthracite.....	80,400	79,239
Average number of revolutions per minute.....	14,754.6	14,679.1
Average number of pounds of coal per hour.....	1,576.5	1,553.7
Average pressure of steam in boilers.....	16.8	70.79
Average point of cutting off.....	0.475	0.111

According to the above figures obtained from the log, which was accurately kept on both vessels, the economical performance of the machinery of each was equal.

At the time of the failing of the machinery of the *Algonquin* the water in her boilers had reached a density which required "blowing off," and for the remainder of the trial she would have been subjected to a considerable loss of fuel on this account.

The *Winooski* easily runs the whole ninety-six hours without a necessity of this character. The machinery of the *Winooski* worked throughout in the most satisfactory manner, showing it to be durable and reliable. Its arrangement is the simplest and most convenient possible, and its economy of fuel equal to that given by the very complex design of the machinery of the *Algonquin*.

We are, very respectfully, your obedient servants.  
 Chief Engineer ROBERT DANBY,  
 Chief Engineer EDWIN FITHIAN,  
 Chief Engineer MORTIMER KELLOGG,

HON. GIDEON WELLES, Secretary of the Navy, Washington, D. C.

HON. N. O. MITCHELL's gang of four men sawed 17,800 feet of square-edged lumber in his mill at Gardener, in five hours, one day lately. The world is invited to beat it.



ISSUED FROM THE UNITED STATES PATENT-OFFICE FOR THE WEEK ENDING SEPTEMBER 26, 1865.

Reported Officially for the Scientific American.

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.

50,087.—Keeping Oil Cool in Lamps.—John Allen, M. D., Washington, D. C.:

I claim the placing of water on the top or around the reservoir, A, as herein described, and for the purpose set forth.

50,088.—Brick Press.—J. J. Alvord, Tecumseh, Mich.:

First, In combination with a rotary mold cylinder, M, a screw or angle, L, having the face side of its spiral flange, I, of concave form, substantially as and for the purpose specified.

Second, The placing of the screw or auger, L, directly under the cylinder, D, which forms the case or box of the mud wheel, so that the tempered clay will be forced direct from the mud mill into the box, C, which contains the screw or auger, as described.

Third, The joints, T, in combination with the mold cylinder, M, and the spring, U, or its equivalent, substantially as and for the purpose set forth.

50,089.—Cotton Bed Planter.—Frank M. Bacon, Ripon, Wis.:

First, I claim a horizontal hopper, with a central discharge opening, in combination with the stainers or agitators, actuated substantially as specified.

Second, I claim the adjustable regulator, o, or the shaft, i, in combination with the hopper, m, and agitators, for the purpose and substantially as specified.

50,090.—Pipe Joint.—Phineas Ball, Worcester, Mass.:

First, I claim the combination with the end of the pipe, R R, of the hinged guide clamps, A A.

Second, The combination with the clamps, A A, of the flanges, f f, and pins, d d, substantially as and for the purposes set forth.

Third, The combination with the bottom of the clamps, A A, of the supporting pins, e e, for sustaining the lower half of the sleeve while being filled, as described.

Fourth, The combination with the overlapping parts, P and S, of the ears, g g, and screws, x x, for the purposes set forth.

50,091.—Step Ladder.—Joseph Barnett, Dayton, Ohio:

I claim the employment of the strips, a a and e e, in connection with the side piece, A A, and arranged with the slotted bar, d, and eyes, C C, the several parts being used as and for the purpose herein specified.

50,092.—Hydrometric Apparatus.—Louis Brawer, Memphis, Tenn. Antedated Sept. 18, 1865:

First, I claim registering the quantity of high wine as it flows from the cooler of a distilling apparatus, by means of an apparatus which is so constructed that the registering mechanism thereof will be automatically controlled by the strength of the flowing liquor, so as to be stopped when the liquor is below proof, and started again by liquor above, substantially as described.

Second, Providing the case, A A, with an inlet pipe, a a, leading to the cooler of a still, a pipe, G, for recirculating the buoy, J, and a discharge pipe, H, for conducting the liquor from the apparatus substantially as described.

Third, Providing the wheel, B, with one or more projections, p, in combination with a buoy or float, J, operating g, substantially as described.

Fourth, The combination of an alarm wheel, b, or its equivalent, with the wheel, B, which actuates a mechanism for registering gallons and barrels, substantially as described.

Fifth, Automatically controlling the testing mechanism or device by the strength of the flowing liquor, substantially as set forth.

50,093.—Cultivator.—William J. Burton, Turtle, Wis.:

I claim the bows, C C—this I claim broadly—the whole arranged as and for the purpose described and set forth.

50,094.—Hand Spinning Machine.—Jesse Byrkit, Fairfield, Iowa:

First, In hand spinning machines placing the main driving wheel outside the frame, and the intermediate wheel, B, beneath the bed of the frame, so that neither wheel shall interfere with the run of the carriage up to the driving end, substantially as shown, thereby enabling me to shorten the bench, and to run the carriage to the driving end.

Second, I also claim in hand spinning machines so placing the crank, a, in a separate chamber which communicates with the driving wheel and the treadle for running the carriage in and out that the spinner can sit behind the end of the machine while at work, substantially as described.

Third, I also claim in hand spinning machines providing a box at the outer end of the bench to receive the carriage, substantially as described.

50,095.—Curling Iron.—Hibbard Christian, New York City:

I claim a hollow curling tube adapted to receive and retain a supply of hot water as a heating medium, substantially as set forth.

50,096.—Skate.—Selah H. Clark, Philadelphia, Pa.:

I claim the within-described skate, composed of the runner, A, and detachable foot-piece, B and B', the whole being constructed and arranged substantially as and for the purpose herein set forth.

50,097.—Machine for Making Drain Tiles.—Thomas A. Collins, Josiah D. Evans and Thomas J. Smedley, Smyrna, Del.:

First, We claim the use in a tile machine of two plungers, each operating in a separate chamber which communicates with the mixing box, said plunger being applied in combination with a double crank, substantially as and for the purpose set forth.

Second, Casting the arms of the mixer separate, each with its distinct hub, substantially as and for the purpose described.

50,098.—Sash Supporter.—William Conner, Wilmington, Del.:

I claim constructing or arranging a sash supporter composed of a friction wedge and spring set in a box of corresponding shape with the friction or wedge, parallel to and pressing against the edge side of the sash frame, rising upward therefrom in the manner herein set forth, so that by pressing the arm or thumb rest of the friction wedge the sash is raised with ease, and upon a removal of the pressure from said arm or thumb rest the sash is held at the height raised.

50,099.—Shutter Hinge.—Daniel G. Coppin, Cincinnati, Ohio:

I claim the arrangement of double ratchet plate, H, with the teeth, paws or talons, E and M, upon the fixed and movable members of the hinge respectively.

50,100.—Washing Machine.—Joseph Davenport, Neshankum, Wis.:

I claim the rubber suspended or hung from the shaft, C, by a single rod, D, which is pivoted in a shaft, F, at one end of the rubber, to admit of a lateral adjustment of the same, as well as a forward and backward movement, in connection with the concave of

rollers, i, all being arranged to operate substantially in the manner as and for the purpose set forth.

[This invention relates to a new and improved clothes-washing machine, of that class in which a swinging rubber is employed, and arranged to work over a stationary or fixed washboard. The invention consists in a novel way of hanging the rubber, whereby the same is rendered capable of being operated or manipulated with the greatest facility, and in such a manner as to conform to the clothes on the washboard, and subject all parts of the clothes to a requisite degree of rubbing and friction to insure a thorough cleansing of the same.]

50,101.—Amalgamator.—Austin G. Day, New York City: I claim the combination of a suitable fire chamber or furnace flue, A A A, or its equivalent, with the amalgamating cylinder, or its equivalent, substantially in the manner and for the purpose herein set forth.

I also claim the feeding and discharging apparatus of the cylinder, in combination with the feed of mineral and vapor of metal, as set forth.

I also claim the distributor, D, as set forth.

50,102.—Mode of Making Clasps for Hoop Skirts.—John H. Doolittle, Ansonia, Conn.:

I claim forming the clasps, or other similar articles, by means of a succession of sets of rotary dies where the strip of stock fed to the dies is divided into several parts, in the manner substantially as hereinbefore described.

I also claim forming blanks of sheet metal by one set of rotary dies, and closing them, substantially as described, so that in their subsequent separation and forming up no stock is wasted.

50,103.—Apparatus for Carbureting Air.—C. M. Drennan, Boston, Mass.:

First, I claim the uneven angular or curved edges of the partitions, F, as and for the purposes herein specified.

Second, In combination with the revolving bucket wheel, I, within the closed case, A, the air pipe, G, and receiver, E, substantially as and for the purposes set forth.

Third, In combination with the closed case, A, and revolving bucket wheel, I, the removable top, C, constructed as and for the purposes specified.

Fourth, The combination of the curved partitions, F, and heads, I, with the box, U, and escape pipe, R M, substantially as and for the purposes specified.

Fifth, The combination with the receiver, E, with the valve, b, and pipes, G H G, as and for the purposes specified.

50,104.—Plate for Pressing Gunpowder.—Lammot Du Pont, Wilmington, Del.:

I claim the use of plates, made of hard or indurated rubber, for pressing gunpowder, as and for the purpose substantially herein described.

50,105.—Molding Lamp Chimneys.—Edgar Eltinge, Kingston, N. Y.:

I claim, in molds for pressing glass chimneys for lamps, forming a depression on the side, in connection with an air hole for forming a tube in the sides of such chimneys, substantially as and for the purpose specified.

[This invention relates to an improvement in the construction of molds for pressing glass lamp chimneys, and it consists substantially in providing the mold with a depression in its side, for the purpose of forming a lateral tube in the side of the chimney, opening therein at such a height as to permit easy access to the wick of the lamp with a match or taper.]

50,106.—Combined Knife, Tweezer and Ear Spoon.—C. B. English, Springfield, Mass.:

I claim, as a new and improved article of manufacture, the device herein described.

50,107.—Steam Gage.—Hampton W. Evans, Philadelphia, Pa.:

I claim, first, Combining one or more spring rings, B', with the diaphragm spring plate, B, for increasing its strength and elasticity, substantially as here in set forth.

Second, The combination of the link, L, with elliptical foot piece, J, and toothed quadrant, M, substantially as and for the purpose above described.

Third, The combination of the spring, K, with the elliptical foot piece, J, substantially as described and for the purpose above set forth.

50,108.—Machine for Disintegrating Fibrous Plants.—Joseph Evans, Newark, N. J.:

I claim the use, for the object specified, of toothed or plain-edged screws, constructed and operated in the manner herein set forth; also the cooler, with the inside projections, when used in combination with a screw or screws.

50,109.—Steam Generator.—Edward Faron, New York City:

I claim, first, The construction of a steam boiler in which all the steam generators shall pass through the superheating tubes, as and for the purpose set forth.

Second, The construction of a steam boiler in which the generating and superheating tubes are arranged horizontally, or nearly so, and entirely within the furnace, substantially as described.

Third, The perforated plugs, J J, in the receiving ends of the superheating tubes, for the purpose of equalizing the flow of steam in all the superheating tubes alike.

Fourth, The perforated plate, K, in combination with the generating tubes and the superheating tubes, as and for the purposes set forth.

Fifth, The water guard, L, in combination with the superheating tubes, in the manner and for the purpose described.

Sixth, The arrangement of the generating tubes, B B, and the superheating tubes, C C, in such a manner as that the fire passes around the outside of both, as set forth and described.

50,110.—Composition for Cleansing the Teeth.—Eliza J. Field, Waltham, Mass., executrix of Francis Field, deceased:

I claim the within-described dentifrice, made of the materials specified, and mixed together in about the proportions set forth.

50,111.—Gas Pipe Coupling.—De Lancy Freeborn, New York City:

I claim the combination of the inner cylinder, a, and the slotted thimble, B, between which F is inserted and compressed, and the compressing thimbles, C, all substantially in the manner and for the purpose herein set forth.

50,112.—Kettle Scraper.—Ensign C. Fuller, Lowell, Mass.:

I claim the scraper described as a new article of manufacture, for the purpose specified.

50,113.—Fruit-drying Frame.—C. Gardner, Freedom, Ohio:

I claim the adjustable standard, A, hubs, D, wires, d, braces, I, and arms, C, when especially arranged and operating conjointly as and for the purpose set forth.

50,114.—Brace for Carriage Springs.—Christopher C. Gleason, Waconda, Ill.:

I claim the specific arrangement and adjustment as described, to wit: attaching the revolving levers to the bottom of the carriage box, and attaching the braces to said lever and the front and rear axles, substantially as set forth.

50,115.—Quartz Mill.—Nathaniel Goodwin, Jr., Newburyport, Mass.:

I claim, first, The arrangement in a single case or chamber, F, of the two grinding or crushing wheels, M M, revolving toward each other, substantially as set forth for the purposes described.

Second, In a grinding or crushing mill thus constructed, for the purposes specified, the central ridge or deflector, G, in combination with the wheels, M M, substantially as and for the purposes described.

50,116.—Bobbin for Spinning.—John Goulding, Worcester, Mass.:

I claim the combination of a metal spring or springs with the base of the bobbin, substantially as and for the purposes set forth.