



Reported Officially for the Scientific American

### LIST OF PATENT CLAIMS

Issued from the United States Patent Office

FOR THE WEEK ENDING JANUARY 18, 1853.

**TREADLES OF LOOMS**—By Robert W. Andrews, of Stafford, Conn.: I claim operating each treadle, by means of a mover, having two outwardly acting cam surfaces of unequal lengths, combined in one piece, and producing the movements and retentions, substantially set forth.

I also claim such a form and arrangement, respectively, of the treadles, as can be reversed in their positions upon their fulcrums, and thereby cause a reversal of the movement and retentions of the said treadles, as set forth.

**BEDSTEAD FASTENINGS**—By Chas. L. Bander, of Cleveland, Ohio: I claim the fastening of bedsteads by the use of a metal bar, having upon its extremities, arms, with inner faces, formed of sections of screws, which arms work against the faces of castings secured in the bed posts, and to the ends of the rails, thus drawing the ends of the rails against the posts; the facings of these castings, against which the arms of the bar work, being likewise constructed of sections of screws, the joint being kept close, and the bedstead firm, by the pressure of the slat frame, caused by the weight of the bed, and its occupants, upon arms attached to the metal bar, thus forming a self-tightening fastening, the whole being constructed and arranged as set forth.

**MACHINERY FOR REDUCING METAL BARS**—By D. H. Chamberlain (assignor to C. G. Howard), of Boston, Mass.: I claim the combination of the bolster, with the three rollers, as arranged and made to operate together, substantially as specified, the object of the said bolster being to prevent the over-riding or squeezing out of the metal, so as to form a fin between the rollers.

**SADDLE TREES**—By Jos. Contner, of Milroy, Pa.: I claim connecting the bridge spring seat to the pommel of the saddle, by hooking or fastening the hook or curvature, on the front end of the longitudinal centre spring of the bridge spring seat, to the semi-circular or semi-circular steel or iron-plate or strap, fastened down, underneath the pommel, by screws or otherwise, through its legs to the legs of the pommel, to give additional spring or play, by its motion on its pivots, to the seat, and to allow the bridge spring seat to be disconnected from the frame of the saddle, when necessary, and to strengthen the pommel by rendering the hole through it, near the horn (which weakens it), for connecting with the seat, unnecessary.

**DRIVING CIRCULAR SAWS, &c.**—By George & David Cook, of New Haven, Conn.: We claim the curved or hooked tooth pinion acting in the manner set forth.

**HARNESSES FOR JACQUARD LOOMS**—By Edward Everett, of Lawrence, Mass., and S. T. Thomas of Lowell, Mass.: We claim the sectional harness board, in combination with the movable supporting bars, placed on each side of the frame, for the purpose of adjusting and retaining said harness boards, in the position required; the whole constructed, combined and arranged as specified.

**WOOL CONDENSERS**—By James S. Hogeland, of Lafayette, Ind.: I claim the method described, of detaching the ropings from the rub roller, and guiding them on their passage to the spool, in such manner as to prevent them from being unequally deflected, and thereby unequally stretched, by means of a relief and guide roller, arranged, and operating as set forth.

**SREW CUTTING DIES**—By John Griffiths, of Philadelphia, Pa.: I claim the circular die with an offset, which makes a cutting edge, which is held in position by a bolt and screw, and the threads which are cut in its periphery (being parallel, instead of having a running pitch, as described).

**COMPOUNDS FOR STEREOTYPE PLATES**—By J. L. Kingsley, of New York city: I do not claim the mixture of the gums, gutta percha, india rubber, etc., with other non-elastic gums, resins, etc., or shellac, sulphur, etc., nor do I claim vulcanizing, nor do I use vulcanized compounds, nor do I claim mixing the elastic gums with the alkaline earths or earth proper, nor with the carbonates, nor the sulphates of these bases, as pulverized marble, plaster of Paris, epsom salts, etc., all of these things having been done before by Nelson Goodyear and others, for hardening and otherwise modifying the elastic gums, but I claim the making of stereotype moulds and plates of the raw or uncured gum, combined with the pulverized oxide of iron and antimony, or their equivalents, as set forth.

**CORN SHELLERS**—By J. P. Smith, of Hummelstown, Pa.: I claim the bevelled spring blocks or shelling bars, in separate pieces, in the manner and for the purpose set forth; but I do not claim to be the inventor of spring blocks or shelling bars.

**VALVES OF ROTARY STEAM ENGINES**—By J. W. Webb (assignor to Benj. Gould), of Aurora, N. Y.: I claim making two exhaust openings, such as described, separate and distinct from each other, through each steam and cut-off valve, said valves having seats on the upper as well as lower side of the steam chamber, each of said exhaust openings communicating with the exhaust chamber through apertures in the upper side of the steam chamber, which are opened and closed at pleasure, by slides, used in connection with the valves, for governing or reversing the engine.

**SEED PLANTERS**—By Samuel & Wm. H. Witherow (assignor to Samuel Witherow), of Gettysburg, Pa.: We claim arranging the spring and roller within a tube, forming one end of the hopper, in such manner as to prevent any more seed from leaving the hopper than is required for planting, the whole arranged as set forth.

Also, the arrangement of the drag bar under the plow beam, and passing through the adjustable hanger, and a slot in the neck of the mould board, for the purpose of giving additional lateral support to it, and protecting it from the earth, which runs up on the mould-board, in turning the furrows, the whole being arranged and combined as described.

#### Coal Smoke.

The bituminous Coal Smoke seems to be particularly annoying to the Pittsburgers at

the present time, the damp atmosphere having condensed the immense clouds of smoke constantly thrown out by the numerous factories of the city, and caused it to descend in showers of sooty flakes, rendering the city more than usually uncomfortable. The Gazette is agitating the institution of a commission by the City Council to inquire into the subject of remedying the trouble by causing the consumption of the coal smoke. We think the sooner the people of Pittsburg set about this, the better. The smoke is fine coal, suspended in the atmosphere—the volatile products of bituminous combustion. This smoke can be consumed in properly constructed furnaces and fire-places, and thus a saving of fuel will be effected, together with that greater blessing, a purer atmosphere.

#### Patent Office Report.—The Typhoductor, or Storm Pointer.

Colonel Lloyd, one of the special commissioners of the Exhibition, exhibited a very remarkable instrument, called a typhoductor, or storm pointer—an instrument for obtaining by inspection the bearing and relative position of a revolving storm or hurricane. It is now a well ascertained fact, that great storms have a rotary motion, like a whirlwind. The theory commonly called the law of storms, as made known in several publications by persons of eminence, has been established from thousands of well authenticated observations in different parts of the world, and extending over a period of several years. It proves that during a gale of wind, particularly near to the tropics, the wind blows with the greatest fury round a common centre; at this centre there is little or no wind, even a perfect calm; but there is generally a terrific and confused sea. The most violent and dangerous parts of these revolving gales are near this central calm, the wind there blowing the most fiercely, acquiring, it is stated, a velocity of even a hundred miles an hour. These storms sweep both land and sea in certain parts of the globe; their track and direction are pretty well known, and they travel bodily from their place of origin to their destination at variable speeds—sometimes at not more than four to six miles per hour; sometimes, but seldom, at that of 20 to 30 miles per hour, although the wind within their range is blowing round with the fury just mentioned.

If a ship unhappily becomes entangled within the range of these terrible gales, she is in great peril. Many have foundered, and others have pursued their fearful course round and round until they have been reduced to helpless wrecks, dismasted and water-logged. In the northern hemisphere, these winds blow round the compass from east by north, to west, or the contrary way to the hands of a watch; whereas in a southern hemisphere it is just the reverse, blowing round as the hands of a watch would go.

This principle must always be borne in mind as the very foundation of all the information to be sought hereafter. On these most valuable data, instructions have been drawn up by Colonel Reid, and others, how to ascertain the relative position of a gale, so as to know whether it is approaching to or going from a ship, travelling by its side, or crossing its path.

The object of Colonel Lloyd's ingenious instrument is, by graphic illustration, to show that when the wind blows from a particular point of the compass, you can only be in one relative position in regard to the centre of the whirl storm, so that either the storm is approaching the ship or the ship approaching the storm, and first, of course, encountering the outer edge. As a consequence of the law of rotation, the wind, supposing the whirl to be circular, must blow at a tangent or right angles to the point of the compass where the ship or observer may be, but under diametrically opposite conditions, as far as regards the two hemispheres. Thus in a northern hemisphere, if the wind blows east, the centre of the storm must be due south of the observer; blowing north, the vortex east; coming from the west, the centre of the gale is north; and, lastly, with the wind south, the gale is due west. Of course, in the intermediate points of the compass, the bearings are likewise different.

In a southern latitude the whirl-storm blows round just the contrary way. With an east wind the storm centre bears north; with a north wind, west; with a west wind, south; and with a south wind, east. Bearing in mind these facts, and with sea-room, it is easy not only to avoid hurricanes, but to make them subservient, in many cases, to the ship's ultimate course.

#### American Fire Arms.

From the United States three different kinds of articles in gunnery only were exhibited. These were the common army rifle, Colt's revolvers, and Maynard's primer.—The first of these, manufactured by Robbins & Lawrence, of Windsor, Vt., received much approbation for the excellent quality of their material, and the thoroughness and completeness of their workmanship. The second article mentioned, Colt's revolver, probably gained a further hold in the estimation of the best judges of fire-arms than any piece of gunnery which has been invented the last fifty years. Though it had been long in use with us, both for army and sporting purposes, it seems not to have been known in England. Meeting with doubts upon its first presentation at the Exhibition, it gradually gained its way into favor, until, before the close of the Crystal Palace, it was universally acknowledged to have achieved a success unequalled by a single invention from any part of the world.

Hardly second to the revolver in the impression made upon the public mind was Maynard's primer. This most ingenious and effective piece of mechanism, the very simplicity of which is its greatest wonder, when applied to fire-arms of any model, increases their efficiency to a degree which, to be fully realized, must be personally witnessed. Too late in its arrival at the Exhibition to be passed upon by the jury of awards, it received, nevertheless, from scientific men, army officers, and professed sportsmen, a meed of approbation that far exceeded any renown it could have acquired from the medal or mention of excellence.

The detonating principle of Maynard's primer is in the form of little lozenges, each about one sixth of an inch wide, and one thirtieth of an inch thick. These lozenges are enclosed between two narrow strips of strong paper, cemented together and rendered waterproof and incombustible. The single strip thus made is a little less than one-fourth of an inch wide, and contains four of these lozenges (each of which is a charge,) in every inch of its length; the charges forming projections of their own shape on one side, leaving considerable and equal spaces between them; the other side of the strip being one flat surface.

One of these strips, containing fifty (or more or less) charges, is coiled up and placed in a magazine in the lock, where, by opening a lid, it can be inspected readily, and from whence it is fed out by the action of the lock, one charge being moved forward each time the hammer is raised. When the hammer descends it cuts off and fires the charge fed out upon the nut (or nipple, if one be used) of the gun, thus igniting the powder of the cartridge in the barrel.

These primers are made by a very simple machine, (also invented by Dr. Maynard,) capable of making a million a day, at about one-tenth the cost of the percussion caps heretofore used in the United States army and navy.

The above is from the Report of E. Riddle the American Commissioner at the World's Fair. We will be able to select from time to time some other interesting extracts from it.

#### Winds and Currents of the Sea.

Lieut. Maury, U. S. N., of the National Observatory at Washington, delivered a lecture at the Tabernacle, this city, on the 12th inst., being one of the "Peoples' Course of Lectures." The above caption was the title of the lecture. The audience was large, for the fame of the lecturer is world-wide, his researches into the winds and currents of the sea have gained for him a great scientific reputation. Lieut. Maury was dressed in the naval uniform. He is about the medium size, firm, square, and compactly built, and like many men who have been greatly distinguished—he is lame—has a halt in his walk. He is of a fair and ruddy countenance and not

over 45 years of age, we should conjecture. He has a broad open forehead, brown hair, fine manly face, and has a modesty of demeanor, no fustian rant nor cant about him. His voice is clear, but he is not an orator, although much of his language is poetry, lofty and sublime.

His lecture was divided into two distinct heads. He could not in one brief hour but touch on the salient angles of his subject.—The one idea was, the sea being salt was the cause of currents, which, if it were fresh would not have an existence. The other was that marine animals and plants were the causes of currents in the sea.

By the great evaporation in the equatorial regions only fresh water is lifted up, which leaves the salt water of the ocean denser than it was before, and the heavier particles rushing in to supply the place of the lighter is the cause of motion in the sea. The waters carried in clouds from the evaporating regions are condensed in other regions, especially the polar, and flow down in the rivers, to the northern ocean, and then the fresh water being lighter, flows on to the equator on the surface, while the denser salt water floats from the equator to the arctic ocean. Lieut. De Haven while on the Grinnell expedition, saw a huge iceberg floating away by an under current, while he was drifting in an opposite direction by a surface current. Owing to the sea being salt, we have those currents, which in the arrangement of Providence carry warm showers to fertilize regions, that otherwise would be inhospitable and barren.

The waters which are carried into the sea, bear down limous matters; these are taken up and secreted by coralline insects, which, as they build their marine palace walls, turn aside the billows from former courses, and direct the ways of the mighty waters. Lieut. Maury said that whenever he found in the Bible a foundation for any theory, he was sure to go on in eliminating scientific truth. He paid it the humble but noble tribute of a great mind, as being the most scientific of all books, because it was the product of the Author of all science.

#### Atlantic Steamships.

The passages across the Atlantic have been very stormy this winter. The new steamship Arabia (of the Cunard line) which arrived at this port on the 16th inst., put into Halifax for coal, having been fifteen days on her passage. She is a finesteamer, and having done so well on her trip between Glasgow (where she was built) and Liverpool, we understand that it was asserted she would make a very short passage. A great number of bets, we have been told, were made in our city between different parties, that she would make a shorter voyage than the Baltic, which sailed three days before her. The Baltic made a shorter passage by two days. The last ferry trip of the Pacific from Liverpool, took more than 16 days, and that of the Asia 18, the latter also put into Halifax for coal. We believe these are the first instances of the Cunard New York steamers putting into Halifax. It is somewhat to the credit of propellers that the Glasgow steam propeller beat the Asia on her last voyage more than one day, thus making a voyage nearly equal to that of the Pacific. When we consider that her engines are only 400 horse-power, not one-fourth the actual power of the Asia's or Pacific's, we confess that this ship deserves to carry a broom on her topmast.

#### Shipping Coal.

Many of the coal shippers of Richmond, Va., have been, and are, exporting coal to Havana, and other tropical climates, packed in large hogsheads, which, upon their arrival at the destined ports, are emptied, filled with sugar and molasses, and re-exported to the United States. This is a new idea, and causes a vast saving to both manufacturers and consumers, as formerly it was the custom to export the staves and hoops, and have the hogsheads put together on the plantations, where coopers' wages are much higher than here; saving in that and likewise in the transportation, which has generally been considered an important item in our commerce.

A Crystal Palace project is in agitation at Boston.