



[Reported Officially for the Scientific American.]

LIST OF PATENT CLAIMS

Issued from the United States Patent Office FOR THE WEEK ENDING DECEMBER 6, 1853.

INDICATING ELECTRO-MAGNETIC TELEGRAPHS—By John Davis, of New Bedford, Mass.: The improvements that I claim consist in operating the electro-magnetic telegraph by means of the index or escapement, slider and impeller, as set forth, and thereby spelling intelligence by pointing out the letters composing the words of the communication on a similar contrivance at the distant office to which the intelligence is sent by telegraph, disclaiming any right to other methods of telegraphing.

ARRANGEMENT OF SCREW CUTTING DIES IN THE DIE STOCK—By Simon Goodfellow, of New Orleans, La.: I claim the arrangement of the circular dies, having threaded scores or recesses in their peripheries of various depths, or sizes in the die stock, as described.

PEN HOLDERS—By E. W. Hanson, of Spring Garden, Pa.: I claim the peculiar mode in which I construct and apply thumb and finger rests to pen holders, viz.: I claim the projecting part of the thumb and finger rests of an oblong or parallelogramic form, so that they shall cross the thumb and finger respectively when held for use, whether the rest be fixed or made adjustable.

SPARK BURNER AND WATER HEATER FOR LOCOMOTIVES—By David Matthew, of Philadelphia, Pa.: I claim the arrangement and application of the two concentric pipes, the curved plate rings, the pipes, I I I, the furnace grate, the cover, and pipes, K K K K, forming a combined apparatus in the smoke box for burning the sparks and heating the feed water, as described.

SOAP INGREDIENTS—By Ira F. Payson, of New York City: I claim the use of sal ammoniac as an ingredient of my soap, in combination with the other ingredients, the effect of which is to retain a sufficient amount of moisture to prevent drying up, and at the same time not enough to cause it to become damp by exposure to damp air.

VALVE ARRANGEMENT FOR STEAM HAMMERS—By James Watt, of South Boston, Mass.: I claim, first, the revolving valve rod, the barrel, and the adjustable screw stop constructed, arranged, and operating, as described, by which I am enabled at any instant to admit the steam beneath the piston during any portion of the fall of the hammer, without altering its effective force and length of the stroke.

Second, I claim, in connection with the above the arrangement for throttling the steam on its way from beneath the piston, by which means I am enabled to regulate the intensity of the blow of the hammer to any degree of nicety, to hold the same suspended above the anvil, as set forth.

CLEANING MACHINE CARDS—By George Wellman, of Lowell, Mass.: I claim, in combination with a series of top cards in a carding engine, not only a mechanism for raising one or more of said cards, and holding the same upwards, and afterwards depressing the same back into place, but a mechanism for setting on, and cleansing such top card or cards, when or while so elevated, not meaning to claim either the mechanism for moving the top card or cards, or that for cleansing it or them, in their separate combination with the series of top cards, but to lay claim to both in their joint combination, and with the series of top cards, as described.

And in combination with the series of top cards and mechanism for raising and cleaning a top card and restoring it to its seat, I claim the mechanism for moving the raising and cleaning mechanism in succession from one top card to the other, and whether from one card to the next one throughout the series, or from one to another of them to the next but one, or in any other order, as specified.

I claim, also, the combination of the grooved block (or the grooves and circular arcs), the arm with its stud (or the equivalent of said arm and stud), and the notched wheel as applied to the shafts and made to operate together, as specified.

OVERSHOT WATER WHEELS—By J. E. Whitmore, of Joliet, Ill.: I claim the construction of the buckets with the covers, operating as specified.

I claim, the levers, springs, and bolt rods, as described, in combination with the cams or their equivalents, for closing and opening the buckets, as set forth.

RINGING FIXED BELLS—By Alfred Carson, of New York City, ante-dated June 6, 1853: I am aware that stationary bells have been rung from the inside, by vibrating the clapper; this I do not claim. But I claim the device described, as applied to the working of the clapper of a bell hung in the usual manner, as set forth.

REPLACING CARS UPON RAILROAD TRACKS—By L. B. Flinders, of Dunkirk, N. Y.: I claim replacing rail cars and locomotives upon the track, or replacing the car wheels upon the rails, as described, viz.: by means of flanges, having inclined bottoms, and secured or attached to the rails, when designed to be used by the lips or projections on the sides of the flanges, said lips or projections clasping or fitting over the rails. The flange being provided with a movable guide, which directs or guides the wheels upon the rails, and which guide, by being movable, will act upon the wheels, the flange being adjustable to either side of the rails.

[This very useful device is described on page 152, Vol. 8, Sci. Am.]

ILLUMINATING CLOCKS—By James Glenn, of New York City: I claim the construction of two circular dial plates having the figures of time cut through them in such a manner that, being made to revolve by means of clock-work and by means of a light and two magnifying lenses, the time is represented on a plate of ground glass in front in white light, which may be perceived to a greater distance and more distinctly than by any other method at present in use, whether used with or without a magnifying lens.

SHOWER SYRINGES—By Ira Warren, of Boston, Mass.: I claim as a new and useful surgical instrument for the treatment of diseases of the air passages of the throat and nose, a syringe constructed of the form and materials described, as set forth.

CUTTERS FOR PLANING MOULDINGS—By R. M. Evans, of Gifford, N. H. (assignor to himself and Asa Weeks, of South Boston, Mass.): I do not claim making the cutters of shapes suited to the different parts of the particle to be turned either straight or curved, and securing them to a cutter wheel.

But I claim making the cutting irons of moulding planes or turning tools of thin sections in the manner described, which, after being set to a pattern and confined in a clamp, may be brought to an exact edge by filing or grinding, as set forth.

CONDENSERS FOR STILLS—By Carl E. Werner, of New Castle, Ill.: I claim the construction of the condenser, consisting of an outer upright cylinder, with its upper chime projecting above the head, so as to form a circular trough, and an inner refrigerating cylinder, traversed by vertical tubes, which connect the vaporspaces above and below, the whole being situated above and discharging the condensed fluid back into the rectifier.

The ladies of Manchester, N. H., it is said, have contributed a stone to the Washington Monument, with the inscription, "From the Home of Stark."

Reaping and Mowing Machines.

MESSENGERS, EDITORS—I have read your article in No. 9 of the present volume with much interest, and must come to a different conclusion from yourselves; I draw my conclusions from experience, as I have tried and helped try nearly all of the cutting parts now used in the reapers of the present day. In the first place you say the sickles require a reel; and that they will not cut green straw without choking. Now I can assure you that I have cut as green straw as ever grew, with a sickle, without clogging or choking, and also have cut with a sickle without a reel; and if grain is cut when it is green it will not shell unless the reel revolves too rapidly. I have cut perfectly ripe grain without having it shell. You say also that sickles will not cut the Eastern grasses, but may cut the coarse grass of our prairies; your idea of our prairie grass is not correct if you suppose that it cuts easier than timothy or clover,—the kind of grass which we cut for hay throughout the West, or nearly all of the West, is much harder to cut than either clover or timothy—(a sample I enclose for your examination); in some localities coarse grass may be cut, which grows in the ravines or low bottoms, but this is unfit for hay, and is not generally cut.

You say that Ketchum has prevented his mowing machines from choking by punching elongated apertures through the blades of his knives. Now, I will state that he has not successfully prevented his machines from choking by this device. We have some of Ketchum's improved machines here, and find that our upland prairie grass will choke them as often, if not oftener, than some other machines which cut with a sickle. We have had several of Ketchum's improved sickles at our shop this summer to mend, having been broken by the knives choking with our fine grass; the grass clogs in between each section on the sickle bar as well as between the fingers, often clogging so tight as to tear off a sickle bar one inch by three-eighths of an inch. I find also that a plain finger or guard tooth is just as good as any other, if the sickle or cutting part is made as it should be.

You have no hesitation in saying that Ketchum's is the best machine for cutting grass. I also have no hesitation in saying that there are other machines better for cutting grass than Ketchum's, and that they will cut the different kinds of grass better than Ketchum's:—Rugg's of Ottawa, and Danforth's, and one or two more. The best kind of knife that we have yet found is one invented by Bronson Murray, I believe, of Ottawa, Ill.; it will cut all kinds of grain and grass without clogging or choking, and has been thoroughly tried during the past season, and has cut in fields with Ketchum's, and has been much preferred. The sickle referred to, has a sickle edge behind and before, and is a different angle from either of the others; it is made in sections about fourteen inches long, and is riveted on a bar about a quarter of an inch thick and three-fourths wide; this form of sickle not only prevents clogging but prevents fine grass from getting in between the sections when they are made like Ketchum's or Hussey's, or McCormick's. I agree with you that machines for farmers' use should be made as simple as possible, because in the harvest field farmers generally have from six to ten hands, and one hour lost in mending a machine is almost or quite one day's work lost for one man.

JAMES M. THOMAS.

Wyoming, Ill., 29th Nov., 1853.

Since the publication of our article on reapers, we have received many communications from the East and from the West in relation to the matter. Some have disagreed with us and others have emphatically endorsed our statements. All our correspondents, however, have fallen into the error of supposing that we speak from theoretical considerations only, but we beg leave to assure them that they are entirely mistaken. We have "tried and helped try nearly all" the prominent machines before the public, and probably not one of our correspondents has had more, if as much practical experience in the matter as ourselves, and we still unhesitatingly assert that in the East sickles will not cut grass without choking. We have no interest in endorsing Ketchum's machine except as we believe

it to be the best for the purpose that has ever been in use here; but, as we said in our article, it is not what a machine should be, because it will not cut both grass and grain, and we hope yet to be the medium of presenting to the public one that will do this successfully. Our correspondent expressly states that the Western grasses are harder to cut than those of the East, and this is the very point. It is the soft grasses that choke these machines. A hard grass, in the composition of which silex largely enters, as it does in the specimen sent us, is brittle and is much more easily broken by the sickle or other means than those in which a less proportion of this substance is found. The Eastern grasses are tough, and are not readily snapped between the fingers, while even the leaves of the specimen sent us break readily.

As to the reel, unless it is used with the sickle, the grain will be pressed forward, and thus fall away from the apron instead of upon it, unless V-shaped sickles are used like those described by our correspondent. The reason is, the angle in a V-shaped knife or sickle is such as to press against the guard tooth, while in the other case it presses forward, and sickles having a large angle with the guard tooth will not saw as their principle requires.

Interesting Patent Case.

As briefly noticed by us last week, Judge Nelson, in this city, granted an injunction restraining Anson G. Phelps and others from manufacturing Car Springs of Vulcanized India Rubber, as being an infringement of Goodyear's patent. The following is an abstract of the charge of the Judge:—

This is a motion for an injunction against the defendants for an alleged infringement of Goodyear's patent, "for a new and useful improvement in india rubber fabrics." The plaintiffs, the New England Car Spring Company, are the assignees of Goodyear for the exclusive right to use the improvement or invention in the manufacture of india rubber springs for railroad cars, locomotives, and tenders. The first patent was issued to Goodyear, June 15, 1844, and was afterwards surrendered and re-issued December 25, 1849, on an amended specification. The bill sets forth a suit in the Circuit Court for the district of New Jersey, between Goodyear and Day, one of the defendants, and that after a hearing in that court, involving the validity of this re-issued patent, a decree was rendered in the September Term, 1852, in favor of the complainant, holding that Goodyear was the first and original inventor of the improvement claimed, and that the letters patent were valid in all other respects. The bill further charges that after the hearing of the case referred to in New Jersey, and while under the advisement of the Court, the defendants, Phelps, W. E. and D. S. Dodge, Pratt and Davis, combined with H. Day, with a knowledge of the facts respecting the suit in Jersey, and that it involved the validity of Goodyear's patent, to infringe the same, and commenced manufacturing car springs out of india rubber, mixed or compounded in some form with sulphur, and cured or vulcanized by a high degree of artificial heat in violation of the patent. In addition to the case of Goodyear against Day, decided in the Circuit Court of the United States, at the September term in New Jersey, already referred to, the opinion of that Court has been furnished on a suit of these plaintiffs against the Central Railroad of New Jersey, in which an injunction was granted, and in which the principal objections were presented and over-ruled, that are now relied on before me.—They were:—First—That the complainants are not the proper parties to the suit. Second—That the rubber used in the defendants car springs was made by a process in which steam is the chief agent, and is, therefore, no infringement of complainants patent; and Third—That Goodyear's patent is for a process of curing rubber, and not for the product or manufacture, and consequently the product is no infringement. These several questions were very fully considered by the learned Judges of the Circuit Court in New Jersey, and the grounds of their decision stated at large, and I need only say, in disposing of this case, at this stage of it, that, in my judgment, they are such

as well warranted the granting of the preliminary injunction. The originality of the invention was then most thoroughly examined by the respective parties, as is shown by the seven large volumes of proofs then taken, and to which I have referred. A point has been made that the defendants are not liable for the infringement charged, as the only participation alleged in the same is as stockholders of an incorporated company, which company is engaged in manufacturing and selling the patented article. However that may be, it appears that the defendants are either Directors of the Company, who have the management and superintendence of the business, and under whose direction the articles are manufactured and sold, or are the agents of the same, concerned in conducting the business. On this ground, I am of opinion they are responsible and properly made defendants. Injunction ordered. E. N. Dickerson and James T. Brady, for complainants. George Gifford and Francis B. Cutting for defendants.

Recent Foreign Inventions.

MANUFACTURE OF STARCH—Edward Tucker of Belfast, Ireland, patentee.—This invention relates to the application and use of certain salts (both alone and in combination with mineral acids), for the more speedy and effective separation of pure starch from the glutinous and other foreign matters with which the starch itself is originally combined, as well as to the neutralizing or counteracting of the injurious effects of the vegetable acids generated in the process of starch-making, and the increase in the amount of good starch from a given quantity of wheat or other grain. By the same means, any pure water is rendered suitable for starch-making, although such water may be ill adapted for this purpose in its natural state. In carrying this invention into effect, the patentee submits the wheaten meal, or reduced grain, to the usual process of fermentation, and washes it, so as to separate the bran from the rest of the materials forming the substance to be treated. The starching liquor is then run into a vat and allowed to remain for about 36 hours, for precipitation. The supernatant liquor is next run off, or removed, and the precipitate is broken up. A solution of sulphate of soda, or Glauber's salt, in boiling water, is prepared, in the proportion of about 13 lbs. of the salt to one ton of the wheat, or other grain under treatment; and after cooling down this solution, it is poured into the precipitated starch; and the vat being filled up with water, the entire contents are thoroughly mixed, and intimately incorporated by stirring. The mass is then allowed to stand for 24 or 30 hours perfectly quiescent. In the subsequent process, technically known as the "fine shift," when the water and slimes are removed, another solution of the same salt is employed, but in much smaller proportions; about 3 lbs. weight only being applied to one ton of wheat. At this stage, in combination with the sulphate of soda, a portion of sulphuric acid is used, in the proportion of about one quart of the acid to the produce of 4 tons of wheat. The acid, in a diluted state, is poured gradually into the vat, which is then nearly filled up with fresh water; and the whole contents are thoroughly mixed by agitation. When the starch has been precipitated, it is finished, and prepared for sale, and used in the ordinary manner. The patentee remarks, that he has found sulphate of magnesia, muriate of soda, and other salts and acids, available for a similar purpose. This general process renders all pure water suitable for manufacturing starch, however hard and unsuitable it may have been originally. The pure starch is also better separated from the glutinous constituent of the grain; whilst the manufactured starch is superior in purity, sweetness, strength, fineness of texture, and whiteness, as compared with all starch made in the usual way; and the yield is greatly increased.

This is an interesting invention for our starch manufacturers.—[Lonon Journal.]

We see it stated in a number of our exchanges that large deposits of cannel coal have been discovered in Western, Pa. When are we to have cheap gas in this city. We hope the time is not far distant when it will be so cheap as to be used in every family.