



The Lightning Rod Question.

MESSE. EDITORS:—In No. 11, current volume, SCIENTIFIC AMERICAN, is an article entitled "Insulation of Lightning Rods." I am surprised that you allowed such an article to appear in your paper, as it is a subject that should not be laid blindly before your readers, for it may cause a great deal of mischief. S. D. C. says lightning rods must not be insulated. But where are his proofs? I say a rod that is not insulated is worse than useless; my proof is that several houses that have been struck in this city, although armed with rods, showed, on examination, that the insulation of the rod was imperfect; and, on the other hand, where the rod that was put up to protect the building was well insulated, when struck by lightning it proved a complete protection. The Burnett House here, for instance, has a rod that was struck, and the platinum points with which it was armed were completely melted, but the house was safe, the rod was well insulated. Also Mr. Diehls' establishment for manufacturing fireworks, situated on Mount Adams, received a heavy charge; the rod was insulated and saved the building. No rod should be put up without being insulated, and Franklin says so, S. D. C. to the contrary notwithstanding.

S. D. C. says rods should be in connection with gutter spouts. That is a very good arrangement when the rain is falling and the water running through the spout, for then the water will carry off the electricity that would otherwise go into the house, as likely as anywhere else; but as rods often receive a charge before any rain falls, it is best to trust to the rod alone, for if the rod is in connection with anything else which is a good conductor, that does not lead to the ground, the lightning will be compelled to take some other course to get to the ground, and then there is no telling where it will go, or what damage it will do before it is spent. In proof of this, I will give an instance. The cross which surmounts the steeple of the Cathedral in this city, was put together with an iron rod that passed through it. The conductor was well insulated all the way down, but one of the fastenings that held it to the cross came in contact with the iron rod that held the cross together. This rod was struck, the lightning ran into the cross, on the iron rod running through it, but it could go no further. The consequence was that the cross was split into fragments, and as the steeple is one of the highest in the city it was no easy thing to replace it.

The whole trouble is that people will get the cheapest rods that can be had. It is better to pay for a rod that is large enough to conduct any amount of electricity that it is likely to get, and have it well put up by some one that knows his business. S. D. C. talks of safety valves. The comparison is not at all analogous. F. F. S. Cincinnati, Ohio.

[Our correspondent's strictures on the publication of contributions, are not entirely just. We are in no way responsible for the opinions of correspondents, and on this subject of insulation, men equally well experienced hold opinions diametrically opposed. Our object is to allow both sides to present their differing views, and thus by a courteous discussion eliminate the truth.—EDS.]

Mechanics Needed.

MESSE. EDITORS:—Owing to natural and accidental causes, mechanics are many times compelled to move their base of operations to some more eligible point, where they can get supplies at more reduced prices and in greater abundance. To such, I would say that this point offers extraordinary inducements, and invite their attention to the following facts: We are situated about midway between St. Louis and Cairo, on the east bank of the Mississippi, with an immense extent of the finest farming land in the United States back of us. We have large beds of coal within fourteen miles of us, from twenty to one hundred feet below the surface, and from three to seven feet vein. The St. Louis and Iron Mountain

Railroad strikes the mine some 40 miles above here, and the ore could be brought by barges to this point very cheaply. We have an abundance of the finest kind of timber—such as oak, black walnut, ash and all kinds of hard wood. Land is cheap, the climate is healthy, and all kinds of fruits abundant. For a manufactory of agricultural implements, or a machine shop and foundry, this place offers superior inducements.

Any further information in regard to the subject will be willingly given. We need mechanics and we are willing to do all we can for them.

C. B. COLE.

Chester, Ill., Sept. 4, 1866.

Effects of Sunshine on Fire.

MESSE. EDITORS:—In reading your article on the "Effects of Sunshine on Fire," in your issue of Sept. 8th, I notice in the summary of Prof. Horsford the following:—

"Sixth, That the very diminished draft of chimneys in very hot weather, when the general atmosphere is at rest, and the sunshine intense, is due to upward currents on the outside of the house, arising from the heated surfaces of the roof and walls; which currents, by friction, draw outward through cracks and open doors and windows, the air from the interior of the house, and so lessen the pressure within and overcome the draft of the chimney." In describing the circumstances, he mentions that "the roof of the house was of dark slate" and exposed to the heat from 11 A. M. till 3 P. M.

Could not this occurrence be accounted for as follows? The draft of a flue or chimney being caused by the difference in weight of hot and cold air, did not the heated air rising from the roof surround the chimney? And was there not so little difference in temperature between the air from the range rising within the chimney, and the air from the roofing without the chimney that a sluggish draft was the consequence; until, later in the day when the roof became cool and a better draft would result?

J. WENDELL COLE.

New York, Sept. 17, 1866.

Concrete for Building Purposes.

MESSE. EDITORS:—In the SCIENTIFIC AMERICAN of Sept. 1st, C. W. C., of Mo., under the head of "Notes and Queries," is wrongly informed as to the relative strength of stone, brick and concrete for building purposes. You will see in "Gillmore's Report on Hydraulic Cements and Mortars," at page 225, article 447, the following, which I think would be the correct reply to your correspondent:—

"Concrete is admirably adapted to a variety of most important purposes, and is daily growing into more extensive use and application. For foundations in damp and yielding soils, and for subterranean and submarine masonry, under almost every combination of circumstances likely to occur in practice, it is superior to brick work in strength, durability and economy, and in some exceptional cases, is considered a reliable substitute for the best stone, while it is almost always preferable to the poorer varieties."

The work of Mahan, which you quote in your reply to C. W. C., is strangely incorrect on the subject. R. K. D.

New York, Sept. 18, 1866.

[In the case alluded to, C. W. C. inquired as to the relative strength of stone, brick, and concrete for a church, 40 by 80 feet and 25 feet high to the eaves. It will be seen by the quotation from "Gillmore's Report" that he does not recommend it for open air structures, but for "foundations in damp and yielding soils, and for subterranean and submarine masonry." For these purposes the value of concrete, made of stone and cement, is indisputable.—EDS.]

THE Italian gold mines are producing gold to an extent that has justified the introduction of new and improved machinery. In July last the product of three mines amounted to 1,511 ounces, valued at about \$20 per ounce, all of which was transmitted to London.

THE Geographical Society, of St. Petersburg, is making preparations for a scientific expedition, for tracing the course of the river Yenisei up to its mouth in the icy sea.

NEW INVENTIONS.

The following are some of the most prominent of the patents issued this week, with the names of the patentees:—

CULTIVATOR.—ANDREW STARK, Topeka, Kansas.—This invention relates to a new and improved cultivator for cultivating those crops which are grown in hills or drills, and it consists in a novel arrangement of a seat frame with the plow beams of the device, whereby the plows are placed under the complete control of the driver. The invention also consists in a novel manner of constructing and arranging the frame of the device and the draught pole, whereby a very simple, strong and durable device is obtained.

TRUNK.—A. V. RYDER, New York City.—This invention relates to a new and improved trunk, of that class which are provided with drawers, and it consists in constructing the trunk in such a manner that the drawer is rendered very accessible and, when the trunk is open, the drawer will not interfere with the other portion of the trunk. This invention, it is believed, is superior to other trunks provided with drawers, in consequence of all the portions of the trunk being accessible when the trunk is open, all the drawers being exposed, so that they may be drawn out, and the lid of the other portion raised without the necessity of removing or detaching any parts.

CAR COUPLING.—HOMER ADKINS, Plymouth, Ill.—This invention relates to a new and improved car coupling, of that class which are commonly termed self-acting or self-coupling, and it consists in a novel means for holding up the coupling pin in one drawhead, whereby the other drawhead, which contains the link, may, when the two drawheads come in contact, release the coupling pin, so that it may drop through the link, provision being also made for holding the link so that a coupling of the two drawheads may be effected or not, as desired.

MACHINE FOR CUTTING THE CORNERS OF PAPER FOR THE MANUFACTURE OF PAPER BOXES.—DANIEL WHITLOCK, Newark, N. J.—This invention relates to a new and improved machine for cutting out the corners of rectangular pieces of paper for the manufacture of rectangular paper boxes. The invention consists in a novel construction of the knife or cutter, whereby the same is made to work in proper position at all times, being prevented from getting out of place under the resistance offered to it by the paper. The invention also consists in the employment or use of an adjustable bed and in graduating the bed so that by means of adjustable gages, used in connection with the bed, the openings at the corners of the pieces of paper may be cut larger or smaller, as occasion may require.

PUMP FOR DEEP WELLS.—J. W. SUMMERS, Tarr Farm, Pa.—This invention consists, among other things, in suspending or attaching the piston of a pump to its rod by means of a ball and socket joint, or its equivalent, in contradistinction from a rigid or fixed joint, whereby the piston is allowed lateral play in the pump cylinders so that it can easily yield in any direction when the pump tube or the cylinder is deflected from a right line.

STITCHING CLAMP FOR HARNESS MAKERS.—W. M. MCCOY, Bloomingdale, Ind.—This invention is designed for the use of harness makers for holding rolled work while stitching the same; and it consists in a device provided with a grooved bed for the work to lie in, and at either end with a band, or its equivalent operated by a set screw for holding the work firmly while being stitched.

BLOW PIPE.—JOSIAH McFARLAND, Clinton, Ill.—This invention consists in applying an air chamber to a force pump, and to a flexible pipe with a fine-pointed mouth piece, in such a way that by means of the pump the chamber is filled with compressed air or gas of any character, when, by closing suitable cocks, the same can be confined and retained therein and the air chamber taken off and carried to the place where the blow pipe is to be used and by the action of the air or gas a powerful blast obtained without the labor or agency of the operator.

SKATE.—M. FLEISHER, Philadelphia, Pa.—This invention relates to that class of skates in which the skates are secured to the boots by means of clamps brought to bear against the edges or sides the sole and heel, and it consists in a novel arrangement of the said clamps.

MACHINE FOR BORING OR CUTTING KEY SEATS.—JOHN K. DIENER, Honesdale, Pa.—This invention consists in a novel manner of arranging the cutting tool of the machine, whereby the tool can be so adjusted or set in position and so regulated as to cut a key seat with an inward or outward incline or in a parallel line with the central axis of the car wheel, crank, or other device in connection with which it is being used.

HOISTING APPARATUS.—GEORGE L. HOWLAND, Topsham, Me.—This invention relates to an improved hoisting apparatus, by means of which weights may be raised or lowered to or from any desired elevation; which will occupy but little space, and be easily transferable from one place to another.

SAFETY POCKET.—JAMES T. CHAMBERS, Utica, N. Y.—This invention consists in so constructing a pocket, that a watch or any other article placed in it cannot be abstracted, or removed without the knowledge of the possessor or wearer.

SHIRT BOSOM.—C. F. PIDGIN, Boston, Mass.—The objects of this invention are to increase the flexibility of the bosom so as to allow it to yield or give to the backward or forward motion of the wearer; to diminish its cost; and to make it lighter.

WELL.—D. P. CHESBROUGH, Lansingburgh, N. Y.—This invention consists in so attaching to a well-tube, below its waste-water pipe, a reservoir or receptacle for the waste water escaping or flowing from the pipe, that such water can be reconveyed or conducted back into the well-tube.

SAW MILL.—GEORGE W. CODDINGTON, Middletown, Ohio.—This invention has for its object to furnish an apparatus for supporting the middle part of the log while being sawed, so that it may be prevented from bouncing and jumping, enabling the saw to be run at full speed from one end of the log to the other without its being necessary to check the speed of the saw, or alter or take off the feed when approaching the middle of the log or carriage, as is now the case.

SADDLE.—JACQUES MEYER, Williamsburgh, N. Y.—This invention relates to the construction of saddles, and consists in combining new materials in the manufacture of the article for securing greater strength and durability, and hanging the stirrups and straps in a convenient manner for shifting lengths and detaching them readily from the saddle.

SHOVEL PLOW.—WILLIAM H. LUCE, Hampton, Ill.—This invention consists in providing a shovel plow for the purpose of eradicating weeds and loosening up and pulverizing the ground around corn, potatoes, and other crops, which are sowed or planted in drills or rows.

WATER-PROOF COMPOSITION.—SAMUEL B. B. NOWLAN, New York City.—This invention relates to a new and improved water-proof varnish, which is to be applied to all kinds of textile fabric, paper and other substances. The said varnish is said to have no injurious effect on the fabric to which it may be applied, and not to be liable to spontaneous combustion. The claim was published in our last week's issue.

MACHINE FOR CLEANING WHEAT AND OTHER GRAIN.—BENJAMIN BARNEY, Time, Ill.—This invention relates to a new and useful machine for cleaning wheat and other grain, and it consists in the employment or use of a rotary fan, vibrating shoe containing a riddle, cockle screen, and a chute, and a suction blast spout, provided with a valve, and arranged with the fan and shoe in such a manner that wheat and other grain may be cleaned very expeditiously and in a perfect manner.

ALARM MOVEMENT.—J. E. BUECK, Boston, Mass.—This invention consists in an alarm movement, from the escapement of which extends a stop lever, which bears against a segmental disk mounted on a shaft, to the upper part of which is secured a serrated segment in such a manner that by turning the serrated segment either by hand or by the action of a watch or other mechanism, until the flat part of the segmental disk faces the stop lever, the escape wheel is released, and the alarm begins to sound.

FEED-WATER HEATER.—GEORGE HASEOOSTER and JACOB STEPHENS, Richmond, Ind.—This invention has for its object to furnish a means by which the water to feed steam boilers may be heated, and the lime which may be in it be deposited before it is introduced into the boiler.

DRILLING MACHINE.—ROBERT NUTTY, New York City.—In the machine embraced in this invention the drill or drills are so hung and arranged that whether to operate or work against the face of the quarry or rock in a vertical, horizontal, or in any plane between the two, it can be readily adjusted and brought to the proper position therefor, and, when in any of such positions, be operated in the desired manner.

CULTIVATOR.—SAMUEL P. ETLER, Scotland, Pa.—This invention consists in so constructing a cultivator that by means of compound levers the plows may be shifted from side to side between the wheels, and by means of other levers the plows may be elevated out of the ground so that the cultivator may be conveyed from place to place without the teeth or plows coming in contact with the ground.

PLOW.—F. M. MOMERLIN, Morrison's Mills, Florida.—This invention relates to a new and improved plow, and it consists in a novel construction of the same, whereby a very strong and durable plow is obtained—one which may be manufactured at a reasonable cost, and be capable of having different molds attached, as circumstances may require.

CULTIVATOR.—D. J. NOBLE, New Boston, Ill.—This invention relates to a new and improved cultivator of that class designed for cultivating crops grown in hills or drills, and it consists in a novel arrangement of the two inner or laterally moving plows, and it also in a novel adjusting device for the plow frame, whereby it is believed that the laterally moving plows may be operated with greater facility than hitherto, and all the plows made to penetrate the earth at a greater or less distance as may be required, and retained or held down in the ground the required distance, and at the same time be capable of being adjusted with the greatest facility.

ARCHED IRON BRIDGE.—JOHN H. GILBERT, Roxbury, Mass.—This invention has for its object the production of a much stronger bridge out of a much less amount of material, and, consequently, at a much less cost than has heretofore been done.

CHURN.—WILLIAM BURSON and D. C. BURSON, Allianceville, Ohio.—This invention consists in the peculiar construction of the dasher, and in the combination of a perforated gathering board with the box and dasher of the churn.

MECHANISM FOR SEPARATING GRAIN AND OTHER SUBSTANCES.—JOHN S. BODGE, La Porte, Ind.—This invention is designed as an improvement on that kind of separators the screens or sieves of which are provided with covers constructed and arranged in such a manner and in such relation with the screens or sieves as to prevent the longer or broader grains, seeds, or other particles or substances to be screened or sieved, from assuming an oblique or perpendicular position while passing over the screens or sieves, and thereby compelling said longer or broader grains, seeds or other particles to pass over the screens or sieves flatwise while the shorter, smaller and narrower grains, seeds, and other particles are permitted to pass through the screen or sieves when the latter are in motion.

MACHINE FOR POUNDING HATS.—EMILE NEBARET, Newark, N. J.—This invention relates to a machine by which the operation of pounding the brim and also the body and crown of a hat can be performed with the greatest ease and facility and with very little hand labor. The brim of the hat is secured between two conical pressing rollers which carry the same through between two spring jaws, the faces of which are covered with emery or sand-paper, or other suitable material, and the hat is guided in its motion by an angular guide-piece, in such a manner that by imparting to the conical pressing rollers a rapid revolving motion, the brim of the hat is carried through between the spring jaws, and the operation of pounding the same is effected without exertion, and in a short time.

FASTENING FOR GATES.—POMPEIUS PHELIPPI, Beardstown, Ill.—This invention consists in having the upper bar of the gate extend a suit-able distance beyond the batten or upright at its free or unhinged end, or, having a bar extend from the batten or upright,

to catch into or over a hook attached to the gate-post, and using in connection therewith a lever or levers and a rod, arranged in such a manner that, by adjusting or operating the levers, the unhinged end of the gate may be raised and lowered with the greatest facility, and the projecting bar made to catch into the hook, or be raised out of it in order to fasten or unfasten the gate, as may be required.

MOLDER'S FLASK.—E. C. LITTLE.—This improvement consists in a cast-iron frame for molder's flasks, constructed with hinges and pins peculiarly fitted for connecting the cope and drage so that they are adapted to a match-plate, without producing any lateral movement to disturb the pattern.

CORN HARVESTER.—S. SEORIST.—This invention is designed as a labor-saving implement for cutting and gathering indian corn and sugar-cane, and leaving the stalks standing in shocks as the machine travels over the field, making clean and expeditious work.

STRAW CUTTER.—S. PETTIBONE, Corruna, Mich.—This invention consists in the combination of a fly-wheel with the lever to which the knife of a straw cutter is attached, and by which it is operated; also, in the adjustable bearing in which the shaft of the fly-wheel runs, which is constructed in such a manner that it may be moved up or down, as may be desired.

COMPOSITION ROOFING.—JAMES G. HOLLIDAY, Wheeling, W. Va.—This invention consists of a composition roofing, formed by combining coal tar, still bottom of petroleum, acid tar, finely-ground brick clay, and refuse lime from gas house, with each other.

STEAM GENERATOR.—E. P. CHASE, Rockland, Me.—This invention relates to a steam boiler, in which a water-heater and a series of steam superheating pipes are combined with the generator. The water is drawn from the heating tank and injected into the generator by means of a pump of any desirable construction, and a self-acting regulator governs the supply of water drawn by the pump, according to the pressure of steam existing in the generator. After having been drawn from the tank the water is injected in the form of a fine spray into an annular generator which is exposed to the direct action of a fire, and by these means the water instantly flashes into steam, which passes through a serpentine pipe, or through a series of pipes, in the space or flue surrounded by the annular generator, where the same is superheated, and whence it passes off to the engine or to the spot where it is to be used.

BURIAL CASE AND COFFIN.—JULIAN A. FOGG, Salem, Mass. Patented Sept. 4, 1866.—This invention consists in an improved manner of constructing coffins, whereby the same are made very durable and are prevented from falling to pieces before the wood is decayed, and the invention consists further in a new manner of securing a glass plate to the cover of the coffin, whereby the face of the corpse is displayed, and also in an improved manner of arranging the plates. In the claims of this case, which were published in our last week's issue, the inventor's address is given at Cheshire, England, but it should be Salem, Mass.

PETROLEUM TANKS.—Much attention has been directed to contriving vessels for the storage and transportation of petroleum, and a score of patents have been issued for compositions for rendering barrels impermeable to the liquid, while other inventors have devoted themselves to contriving metallic tanks, which are easily rendered impervious, but are subject to casualties from the expansion and contraction of their contents. When tanks or large vessels are used, it becomes necessary to provide against the "swallowing" of the liquid therein, and about a dozen patents have been issued in which inventors have endeavored to reconcile two apparently opposite conditions: a full tank in which the liquid would not "swash," and one which would not be injuriously affected by expansion and contraction of the liquor. In the patent of Church & Knight, Sept. 11, 1866, an auxiliary chamber is provided, into and from which the liquid of the main chamber flows under alternate expansion and contraction. The means of communication between the two chambers is a bent tube whose open ends are beneath the surface of the liquid in the respective chambers, so that the liquid may flow from the full chamber to the smaller one as it expands and return when it contracts, without the admission of any air to the main chamber. A single plate and a pipe as long as twice the diameter or depth of the tank is all the addition required to provide tanks with this safety arrangement. Address Jas. L. Ewin, Lock Box 39, Washington, D. C.

COMPASS SCALE.—JOHN REID, Knoxville, Md. Patented Sept. 11, 1866.—A scale is furnished with a compass, which will indicate, by the needle, the position of the ruling edge of the scale. The compass is capable of rotation in a horizontal plane, and has an index and vernier to permit its adjustment to correspond to the variation.



A. L. W., of N. Y.—Vulcanized india-rubber cloth will bear a temperature of 160 deg. for a time. The kerosene stoves with an chimney at one end, operate very well. We have tried one thoroughly. They are for sale on Broadway.

—, of Mass.—For keeping the valves of a fire engine from freezing in winter, we know of nothing so efficient and unobjectionable as that which you suggest—glycerin. From some experiments made, we believe it will serve your purpose. Try it next winter.

G. A. H., of Ind.—Your small steel rollers can be polished as well as "tried" after hardening, by the use of "blue stone," or "Scotch gray" stone, secured in a support which will not allow it to follow the depressions of the roll. Holding a piece of the stone firmly on a rest will suffice. Any fine grained stone that does not scratch will do to bring the rolls to a surface. The lathe should not run fast enough for polishing. The whole secret is patience. This is what makes these fine rolls cost.

W. R. and A. E. H., of C. W.—To give you a diagram for setting your slide valve, would necessitate the preparation of engravings, which would entail too much expense. Full directions in regard to this subject can be found on pages 51 and 70 of Vol. XIII, SCIENTIFIC AMERICAN, current series. We think, however, you are striving after a mechanical impossibility, if we understand your query.

F. M. R., of Pa.—The Atlantic cable of 1858 is known to be imperfect. We are not informed whether the Company intend to raise it. It is not expected that it would prove to be in a serviceable condition for an ocean cable.

W. H. S., of Pa.—Coke is generally supposed to be capable of producing a hotter fire than anthracite. The intensity of heat is proportioned to the amount of combustion in a given space. The fuel which burns the quickest should give the hottest fire.

E., of Md.—If an empty bottle be corked and then sunk in deep water, the pressure will force the water into the bottle so as to fill it. But the water will enter through the neck, the cork will be condensed and generally will be inside of the bottle when it is drawn up. Glass is impervious to water. . . . The water at the bottom of the ocean is as quiet as the grave.

A. P. L., of N. Y.—Emery for coating a polishing wheel needs no preparation. Select the grades you need, spread the emery on a board, or table, coat the periphery of the wheel with hot glue, and, by means of a stick through the center, roll it back and forth over the emery. You can, however, purchase a vulcanite emery wheel, which will be superior to any you can make.

J. C. E., of Ohio.—Coat your cast iron screws with plumbago, or blacklead, instead of molding sand, and you will probably find little difficulty in casting a nut upon them.

J. H. L., of Wis.—After years of experience as an editor, testing gum arabic and gum tragacanth, we think nothing is better for paper pasting than common starch. It should be macerated, or dissolved, in hot water, and will keep longer than anything else we know.

SPECIAL NOTICES.

Warren W. Dutcher, of Milford, Mass., and Sarah Dutcher, administratrix of the estate of Elihu Dutcher, of Waukesha, Wisconsin, having petitioned for the extension of a patent granted to the said Warren W. Dutcher and Elihu Dutcher, on the 28th day of Dec., 1852, for an improvement in temples for looms, it is ordered that said petition be heard on Monday, the 10th day of December next.

Jearum Atkins, of Mokena, Ill., having petitioned for the extension of a patent granted to him the 21st day of December, 1852, for an improvement in rakes for grain harvesters, it is ordered that said petition be heard on Monday, the 8d day of December next.

Interesting Decision—Combination Tools are Patentable.

BEFORE THE EXAMINER-IN-CHIEF ON APPEAL.
Footed for the Board.

Application for a Patent for a Combination Tool.

The Examiner, in denying the application in this case, states: "The tool, as described and shown, is an aggregation of four distinct tools answering to four different purposes, some widely dissimilar and others analogous; but in no particular does any one of these tools add any value to either of the others, or co-operate therewith to effect a common purpose, and hence no combinable relationship exists between them."
In Beach's application for a patent for combining a sharpener with a fork, we came to the conclusion that the principle above referred to answered to four different purposes, some widely dissimilar and others analogous; but in no particular does any one of these tools add any value to either of the others, or co-operate therewith to effect a common purpose, and hence no combinable relationship exists between them.

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The Examiner refers also to another ground of objection, as follows: "The same patent cannot be for a combination of different machines, and for distinct improvements in each."
The words quoted are from the decision of Judge Story, in *Moody vs. Fiske*, et al. (1 Mason, 119), and are in accordance with an opinion by the same learned Judge in the previous case of *Barret vs. Hall* (1 Mason, 447). These cases were under the act of 1793, and in both, the language quoted was rather a general remark than the decisions of the cases. The language was explained and qualified in the subsequent case of *Wyeth vs. Stone* (1 Story, 251), in which Judge Story says: "It is, perhaps, impossible to give a general language in cases of this sort, standing almost upon the metaphysics of the law, without some danger of its being found susceptible of an interpretation beyond that which was then in the mind of the court. The case intended to be put in each of these cases was of two different machines, each applicable to a distinct object and purpose, and not connected together for any common purpose."

And afterward in *Pitta vs. Whitman* (2 Story, 621), the same Judge decided directly:—"There is, in my judgment, no difficulty in maintaining the validity of a patent (as in the present case) for a machine combining several distinct improvements, each of which is the invention of the patentee, and also of including in the same patent a right to each of these several and distinct improvements. In other words, the patentee may, in such a case, take out a valid patent for the combination, and also include therein a right to each distinct improvement severally contained in the same machine."

The same principle was affirmed by Mr. Justice McLean in *Root vs. Ball* (4 McLean Rep., 180), "the same patent may include a patent for a combination and an invention of some of the parts of which the combination consists."

Since the decision of these two cases it has been a very common practice to include in the same patent claims for the combination and for the parts of which it is composed, and suits upon such patents have been carried through every stage of litigation, and been sustained by the highest courts without objection from that cause, and the law must now be regarded as entirely settled on that subject.

We apprehend, therefore, that the Examiner has not investigated this case with reference to the principles that properly govern it, and we overrule his decision with a view to its re-examination. We express no opinion in reference to any of the claims.

The decision of the Examiner is reversed.

RECEIPTS.—When money is paid at the office for subscriptions, a receipt for it will always be given; but when subscribers remit their money by mail, they may consider the arrival of the first paper a *bona-fide* acknowledgment of the reception of their funds.