

MACHINE FOR STAMPING CLAY DOOR KNOBS, ETC.—George Lawton, Treuton, N. J.—The object of this invention is to construct a machine whereby door knobs and other articles of clay may be formed or stamped in the most simple and efficient manner, completing the door knob or other articles as far as the working in clay is concerned. The invention consists in such an arrangement of the machine that the stamping process may be perfect; the upper die falling down three times with variable force so as to completely finish the article. The machine is also so arranged as to prepare the holes in the knobs or other articles for the reception of the shanks of said knobs or other articles.

WAGON-BRAKE LOCK.—Thomas Urle, Springfield, Iowa.—This invention relates to an improvement in the construction of locks for operating the brake on a wagon wheel.

CORSET.—James P. Love, New York City.—This invention consists in laying each steel of a corset between two flaps which are left on the corset, and in then hooking the outer flap to the body of the corset so that the steel is firmly held in place. By simply unhooking the said flap the steel can be at once released from the corset.

BUTTER WORKER.—S. H. Wade, Montgomery Center, Vt.—This invention has for its object to furnish an improved machine for working butter, cheap, simple in construction, durable, and not liable to get out of order, and which will do its work quickly and thoroughly.

TANNING APPARATUS.—Abraham Steers, New York City.—This invention relates to an apparatus in which the hides or skins are distended upon a cloth within a wired frame of suitable metallic substance, whereon they are subjected to the action of reciprocating platens or faces of rammers, in such a manner that they are repeatedly compressed, the spent tanning liquor squeezed out, and fresh tanning liquor of the requisite strength admitted to their tissues, the process of tanning being thereby most materially accelerated with a great saving of time and labor.

HOISTING APPARATUS.—Joseph A. Dayton, New London, Conn.—This invention has for its object to furnish an improved machine for use in store houses and in other places for hoisting heavy weights with a comparatively small exertion of power, and which shall be simple in construction, strong, and not liable to get out of order.

ROTARY ENGINE.—Thomas Banta, Hoboken, N. J.—This invention has for its object to furnish an improved rotary engine so constructed and arranged as to utilize the expansion of the steam and avoid the difficulties arising from the back pressure caused by the condensation of the steam upon the interior surface of the cylinder, and its subsequent expansion into steam.

GATE.—Gideon S. Granger and William Northrop, Wayland, N. Y.—This invention has for its object to furnish an improved gate so constructed and arranged as to require no hinges, and which may be raised up so as to allow small stock, such as sheep and hogs to pass through, while it prevents the passage of cattle, horses, etc., and so as to prevent its being clogged by snow.

WINDOW SASH FASTENER AND LOCK.—Ezra Johnson, Joliet, Ill.—This invention has for its object to furnish an improved window sash fastener and lock so constructed and arranged that it will hold the sash at any desired elevation; and which when the sash is closed will hold it securely locked.

DRAFT EQUALIZER FOR HORSE POWER.—Arcibald Stewart, Troy, Wis.—This invention has for its object to prevent breakages in the machinery of threshing and other machines driven by horse power, from the strain caused by the sudden starting or jerking of the horses.

CLUTCH.—Albert Beth and Gayton Hall, Adam Center, N. Y.—This invention relates to a device, which is to be used for suspending hay forks from rafters, but which may also be used advantageously for other similar purposes. The invention consists in the use of a metal frame, from which a swivel hook is suspended, to which the fork or other article may be hung. Two pointed rods are secured to the top of the frame, one being attached to a sliding brace, that is operated by a screw; these points can be brought against the opposite sides of any rafter or beam, and thus the clutch is held on the rafter and supports the fork by the swivel hook.

SECURING THE TINES OF HAY FORKS OR RAKES.—J. P. W. Riley.—Montrose, Pa.—This invention relates to a new manner of securing the tines or prongs of hay or manure forks, rakes, potato hooks and other similar articles, to the handle. This consists in making the tines or prongs out of two pieces, and scarfing the same together, within a mortise or slot in the handle, and driving keys or wedges behind them, so that they will be securely fastened to the handle. Should one of the tines break it can be easily renewed without throwing all away.

HARROW.—D. S. Fisher, Cedar Spring, Ind.—This invention relates to a harrow of that class which relate and are commonly termed revolving harrows. The invention consists in a novel construction and arrangement of the parts composing the same whereby the harrows are allowed to rise and fall, to conform to the inequalities of surface over which they may pass, and also rendered capable when required, of being secured in a higher or lower fixed position, so that the teeth may penetrate more or less deeply into the earth.

SPINDLE.—Joseph Smith, Loth, Belgium.—The object of this invention is to regulate the tension of the thread as the same winds on the bobbins, spools or tubes in machines for spinning, doubling and spooling wool, cotton and other fibrous materials whereby a softer thread is obtained than on the spinning machines constructed in England under the name of cap frames.

APPARATUS FOR TEMPERING STEEL SPRINGS.—Ira N. Bevans, Litchfield, Conn.—This invention relates to an apparatus which steel springs are tempered by drawing them through a vessel containing melted lead. In ordinary apparatus of this kind, the spring on leaving this vessel, is wound on a drum which receives a positive revolving motion by gear wheels or belts, and as the spring winds on the drum, it is drawn through the melted lead. By this operation the operation of tempering the springs is not uniform, because the diameter of the drum increases and the spring is drawn through the lead quicker and quicker so that it becomes too soft at the beginning and remains too hard at the end of the operation.

STUMP EXTRACTOR.—Isaac Pardee, Vineland, N. J., and R. C. Parvin, Forest Grove, N. J.—This invention relates to a machine for extracting stumps, elevating stone, and lifting or raising other heavy bodies. It consists of two ack bars fitted in a socket provided with pawls, and placed loosely upon a suitable framing, the rack bars having a lever attached to their lower ends, and all so arranged that a very simple, economical, and efficient device for the purpose specified is obtained.

FAUCET.—Alexander Brinckmann, New York City.—This invention consists in applying a spring to the spigot of a faucet, and also in applying stops thereto, whereby the faucet, when opened to draw liquid from a cask or vessel, will be immediately closed to stop the flow when the hand is withdrawn from the handle of the spigot, and the faucet be allowed to close entirely to stop any flow of liquid, or, when the faucet is applied to water pipes, be allowed to remain a trifle open to admit of a small stream of water flowing to prevent the freezing thereof during the winter season.

CUTTING BOLTS AND RIVETS.—Walter Britton, Abingdon, Ill.—This invention relates to a device for cutting bolts and rivets, and consists in a peculiar construction of parts, whereby a very simple, portable, and efficient device is obtained for the purpose.

MACHINE FOR SPLITTING WOOD.—Leonard Tilton, Brooklyn, N. Y.—This invention relates to a machine for splitting wood for fire-kindling purposes, and it consists of two reciprocating V-shaped knives or cutters, and a swinging holder, arranged in certain relation with a hopper and operator, whereby wood may be split into small or thin square pieces very expeditiously, and with but a moderate expenditure of power.

SURFACING OR LEVELING RAILROAD TRACKS.—S. L. Porter, Rochelle, Ill.—This invention relates to a new and improved device for the purpose of surfacing or leveling the tracks of railroads.

RAILROAD CAR SEAT.—Jesse S. Wheat, South Wheeling, West Va.—This invention relates to an improvement in railroad car seats, and consists in certain devices for reversing and holding the back of a seat in different positions of elevation or inclination to adapt it for the support and comfort of the person occupying the seat, instead of being confined to one position, as reversible seats are of ordinary construction.

LOCOMOTIVE PILOT.—B. F. Partridge, Jr., Columbus, Ky.—This invention relates to an improvement in the construction of a pilot for a locomotive engine, and consists of a series of inclined rollers on the sides of a wedge-shaped frame, similar in its general form to the pilot usually attached to the front of locomotives for the purpose of clearing the way of obstructions on the railroad track.

WHEAT DRILL.—D. S. Fisher, Cedar Spring, Ind.—This invention relates to a drill for drilling in wheat and other grain. It consists in the use of a rotary shaft, provided with pins, in connection with a seed-distributing slide, all arranged to effect the desired end.

MANUFACTURE OF CHEESE.—Sylvester Greene, Rome, N. Y.—This improvement relates to the means employed for expressing the whey from the curd, whereby the rich or buttery portion of the curd is retained. It consists in placing in the box or vessel, in which the curd is produced as usual by the application of rennet, a perforated plate and a strainer, if necessary, the plate, and also the strainer, if one be used, resting upon the curd, and by their own gravity alone, or with additional weight if necessary, be made to exert a very gradual pressure on the curd, so that the whey will pass up through the perforated plate.

MACHINERY FOR CUTTING WOOD MOLDINGS.—George S. Hudson, Ellsburg, N. Y.—This invention relates to improvements in machinery for cutting waded and serpentine wood moldings.

PLOW.—D. S. Fisher, Cedar Spring, Ind.—This invention relates to a new and improved plow of that kind designed to be attached or applied to a frame mounted on wheels, and to consist of one or more plows. The invention consists in a novel construction and arrangement of parts whereby the plow is placed under the complete control of the operator or driver.

CUTTING SHEET LEAD.—S. E. Chubbuck, Roxbury, Mass.—This invention relates to a new means for cutting sheet lead transversely during the rolling or milling process, whereby said work may be done with the greatest facility.

SLEEPING-CAR BED FOR RAILROADS.—J. Wyatt Reid, New York City.—This invention relates to a novel method of constructing and arranging the beds in a railroad sleeping car, and consists in forming the beds of canvas or other suitable material, attached to rods or chains in such a manner that they may be conveniently suspended for sleeping in, and taken down and packed away as may be necessary.

ADJUSTABLE SHOE SOLE AND LIFT.—Charles B. Loveland, Elizabethport, N. J.—This invention relates to improvements in the manufacture of shoes, boots, etc., and consists in attaching an extra sole to a single sole by means of a metal plate fastened with screws, and also inserting a metal plate lift and tap secured to it in such a manner that the metal plate lift and tap on the heel of the shoe on the one foot may be shifted and adjusted to the shoe on the other foot in order to equalize the wear on the soles.

HORSE HAY RAKE.—Israel L. Bullock, Mercy, Ind.—This invention relates to a revolving horse hay rake, and it consists in a novel arrangement and application of the rake whereby it may be actuated or controlled by the feet of the driver, and with the greatest facility.

DEVICE FOR TRANSMITTING MOTION.—Leonard Tilton, Brooklyn, N. Y.—This invention relates to a mechanical device for transmitting a reciprocating motion from a rotary shaft, and it consists in the employment or use of a belt slipper in connection with a cam, on idle and working pulleys, and gearing.

MACHINE FOR CUTTING SLATE.—J. W. Durgin, Bangor, Maine.—This invention relates to a machine for cutting slate for roofing purposes, and it consists of a knife attached to a suitable bed-piece, and of such a shape as to cut the slate in the form required, the knife being attached to the bed-piece by pivots, and operated through the medium of a lever or treadle.

CLOTHES-WASHING MACHINE.—Robert Rooke, Empire City, Oregon.—This invention consists in a series of pounders arranged in connection with a rotating perforated tub which is placed within a fixed or stationary tub, the pounders and rotating tub being operated from one and the same driving shaft, and all so arranged that the clothes may be cleansed very expeditiously and in a perfect manner.

CORN PLANTER.—D. S. Fisher, Cedar Spring, Ind.—This invention relates to a machine for planting corn and other seed in hills or drills, and it consists of a novel seed-distributing device and a covering mechanism to accomplish the desired end.

DEVICE FOR HOLDING CLAPBOARDS.—William H. Cummings and Isaiah Babcock, Boonsboro, Iowa.—The nature of this invention consists in a new and useful clamping device for gaging and holding weather-boards or siding when put on a building for the purpose of securing them on each other evenly and expeditiously.

BALE TIE.—Henry Lampson, London, England.—This invention consists in so arranging two metal loops or rings, which are similar in form to the "sliding loops" of leather used with leather straps, that by means of these loops or rings the ends of the metal bands are firmly held and clamped.

METHOD OF CHILLING OIL.—John E. Richardson, New York City.—This invention relates to a new manner of chilling all kinds of oils so that they may be kept in a fluid state after having undergone this process. It is adapted more particularly to the production of paraffine from petroleum or other hydro-carbon liquids, but may also be used with the same effect in the treatment of lard from animal oils.

VEHICLE.—John S. Campbell, Newton, N. Y.—This invention consists in making the body of a carriage or sleigh, and also the carriage wheels or sleigh runners of hard rubber in such a manner as to produce a durable and elegant carriage or sleigh with comparatively little trouble or expense.

THE MANUFACTURE OF SULPHURIC AND OTHER ACIDS.—John Hughes, Brooklyn, N. Y.—This invention relates to an apparatus for concentrating sulphuric acid to any desired degree; and which may also be used for any other kind of acid.

Answers to Correspondents.

CORRESPONDENTS who expect to receive answers to their letters must, in all cases, sign their names. We have a right to know those who seek information from us; besides, as sometimes happens, we may prefer to address the correspondent by mail.

SPECIAL NOTE.—This column is designed for the general interest and instruction of our readers, not for gratuitous replies to questions of a purely business or personal nature. We will publish such inquiries, however, when paid for as advertisements at 50 cents a line, under the head of "Business and Personal."

E. R., of Wis.—The earth has the form of an oblate spheroid, of which the equatorial diameter is about twenty six miles longer than the polar. The bulging outward toward the equator is generally conceded to be due to the centrifugal force of the earth's revolution. The water in the equatorial ocean is about thirteen miles higher than in the polar ocean. The ocean current moving from the north pole southwardly is running up hill (up hill being defined away from the center of the earth) and if the current travels to the equator, it has run up thirteen miles. A river running south in the northern hemisphere has a tendency to wear on its western bank.

J. W. L., of N. Y.—The force given out by condensed air on expansion is precisely equal to the force which was used in the compression, provided that none of the heat of compression has been lost. The form of vessels used or the rate or manner of compression or expansion, do not affect the question one way or the other.

H. H. B., of Iowa.—Your proposed chimney 48 feet high by 30 inches diameter will surely give you draft enough to burn saw dust.

J. Mc. C., of Wis., is much annoyed by leakage of valves of his engine. The valves are brass and these seats iron. The leakage is caused by the unequal expansion of iron and brass. The valves should be replaced by iron valves. Brass valves are now generally discarded.

G. B. N., of Texas, asks how he can consume the smoke from his boiler furnace made by burning pine shavings. Construct behind your fire box a combustion chamber through which the smoke must pass and feed it with atmospheric air through apertures the sizes of which may be controlled by dampers.

H. H., of Wis.—We are not responsible for the published opinions of our correspondents, and in the case you quote we differ with the writer if he means what he says in the portion of the sentence you quote; that "a boiler will make steam faster when the pressure is high than when it is low, with the same fire." Probably his meaning is to be seen, in the remainder of the sentence; "so it is economical to carry a high pressure—even if it is not necessary to do the work—and to work the steam expansively." It has been pretty well established that it is economy to use high pressure steam, but we do not think the same fire will generate more under a pressure of 100 lbs. than under one of 50 lbs.

L. J. O., of Minn., is troubled by the overflow or the creeping over of the oil in his lamps, and wants a remedy. The smearing of the upper part of the lamp with a substance which is repulsive to oil might be effectual. Try the white of an egg or gum arabic.

C. F. R., of Conn., sends us a sample of printing paper made from sedge or marine grass grown in Norwalk harbor. When cured the hay is sold for \$3 per ton. The paper is manufactured by Henry Betts, Norwalk, Ct.

R. V. M., of Conn.—You cannot make the best quality of sealing wax, if you omit the shellac. Sealing wax without shellac is brittle.

D. L. M., of N. J.—Spirit varnishes have often been used as substitutes for ordinary blacking for shoes, and answer admirably for one or two applications. The objection to the continual use of the varnish is that its resinous matter fills up the pores of the leather rendering it stiff and rough.

R. S., of N. Y.—There is no standard recipe for making what is called Babbitt metal. The name simply indicates an alloy of certain properties or uses without reference to its exact composition. Antimony generally enters into the composition, but is not essential. Zinc is nearer in properties to the Babbitt metal than any other simple metal.

S. V. L., of Vt.—There are many exceptions to the law that alloys melt at a temperature below the mean melting points of its constituents. . . . wrought iron may be melted, and cast into molds, but the operation is not practicable on account of the intense heat required. If we could easily produce the heat to melt wrought iron, what could we melt it in or keep it in?

R. G. G., of N. Y.—Telegraph wires are now every where made of iron. A perfect coating of the iron with copper would no doubt be useful, but more for the purpose of protecting the iron from rust than for increasing the conducting power.

S. B., of Ill.—A blow pipe produces a greater intensity of heat by reason of its furnishing the air for more combustion within a given space and time. Whether a given amount of air should issue into a furnace from two or more tweers, would depend mainly upon the size of the furnace and the work to be done. Where the object is to bring the whole body of fuel into equal and vigorous combustion the greater the division of blasts of air the better. Most blast furnaces may be improved by multiplying the number of tweers.

A. Y., of Vt.—We are not acquainted with a late work on "Natural Philosophy by Prof. Comstock" and therefore cannot give an opinion on the centrifugal pump to which you allude.

P. P. C. C., of Eng.—The specimen of dry lubricant which we have received appears to be a very useful article.

G. S. W., of Pa.—Sends a diagram representing a train of gearing. The first member of the train is a worm or screw acting on a wheel of a hundred teeth. One hundred turns of the worm revolves the wheel once. The axis of this wheel is a worm acting on a second wheel also of a hundred teeth. The axis of the second wheel is likewise a worm acting on a third wheel of a hundred teeth. Suppose the worm No. 1 revolves 100 times in a minute what is the rate of revolution of wheel No. 3?

W. W. & Co., of Texas.—If you think it would pay to manufacture ice in Texas at an expense of say 3 cents a pound for materials, the requisite information may probably be obtained by writing to M. Fosell, manufacturer of *Glacier Roullante*, at the Great Exhibition, Paris.

W. B., of Ill., disputes with a friend concerning the philosophy of the siphon, and we are appointed umpire. "Does the siphon work on the same principle as the common suction pump?" Yes. In the pump the lifting of the piston or sucker produces or tends to produce a vacuum, and the pressure of the atmosphere forces the water up the barrel to prevent or fill the vacuum. In the siphon it is the greater weight of water in the long leg, which tends to produce the vacuum, and the pressure of the air which forces the water up the short leg to fill it. The force which raises the water in both cases is the same—the weight or pressure of the air. As the pressure of the air per square inch is only equal to the pressure of a column of air 34 feet high and 1 square inch in section, neither the pump nor the siphon can raise water higher than 34 feet.

F. R., of N. Y.—You ought to have no difficulty in using tinsmith's solder in soldering the connections of the zinc plates of your battery. Use with it the common soldering fluid, a solution of chloride of zinc.

G. W. V., of Miss.—To restore the softness and pliancy of leather which has become hard by having been wet, apply neat's foot oil and rub it in. The luster of morocco is restored by a varnishing with the white of an egg.

E. D. H., of ——inquires whether the top of a wagon wheel moves faster than the bottom while attached to an axle tree and running on a road. Certainly it does. On page 251, current volume, April 20, this question was answered in a reply to T. M. S. Jr., of Ga. You can prove it by placing a straight-edge upright at the side of a wheel across the center, and mark on the rim, where the straight edge touches top and bottom, and then draw the wagon forward far enough to turn the wheel slightly. You will find the mark at the top of the wheel has traveled much further from the straight edge, than that at the bottom.

D. A. McK., of Pa.—We think you can break up your casting by drilling a few holes of three-quarters or one inch diameter from six to ten inches deep, filling them nearly to the top with water and then inserting carefully fitted steel plugs to rest on the top of the water. A blow from a heavy drop will probably do the business. In your case the mass of iron is three feet square; perhaps inch holes, drilled ten inches deep, and filled to within two inches of the top would be effective. The steel plug should be about four inches long and fit as nearly water tight as possible.

Business and Personal.

The charge for insertion under this head is 50 cents a line.

Manufacturers of clock work to run light machinery send address to A. S. Griswold, Pittsburgh, Pa.

Makers of Brass Lamp Tops address A. Packham, Prestonsville, Carroll county, Ky.

Wanted—Manufacturers of Agricultural Implements of all kinds. See advertisement and address A. P. Smith, Sterling, Ill.

Wanted—The address of Mr. Snow, patentee of Match Safe, dated April 19, 1834. Address J. McClaren, Scranton, Pa.

Manufacturers or dealers in machinery for the manufacture of tubs, buckets and firkins, please send their address to D. S. McDaniel, Kachusa, Lee county, Ill.

Small Emery Balls Wanted.—Address Box 258, Troy, N. Y. Jos. Lees, 417 East 10th street, New York City, alleges that he has valuable improvements in manufacturing gas from coal, and he wishes to engage with some company where his services may be appreciated.

Improved Electrical Machine.

The apparatus represented in the engraving is a novel device for generating frictional or static electricity. It is of simple and cheap construction, and is far more powerful than the ordinary machine. It is without doubt the most important addition to the apparatus for generating and illustrating static electricity which has been made since Franklin's time.

In appearance it resembles the ordinary plate machine. In fact the most prominent part is a glass disk which is mounted and revolved in the usual manner. But the plate is thinner—the thinner the better—and as it is desirable to revolve it very rapidly, a multiplying wheel is connected with the plate so that one turn of the crank shall give four or more revolutions of the plate.

The machine has no rubbers; it produces torrents of frictional electricity, but the electricity is not generated by friction; there is no friction about the machine except at the axle bearings. The plate revolves in free air, and nothing should touch it. In the place of rubbers are what are called inductors, which are strips of paper three or four inches long and about one inch wide. They are supported and insulated on pieces of glass which (in the figure) are of spear-head form. The inductor is made complete by pasting on to the paper pointed pieces of card board which project beyond the glass spear heads an inch or two. The spear heads are attached to the framework of the machine so that they shall be parallel and as near as possible to the plate on its crank side. In the figure, four inductors are represented, each having two card points all turned in the same direction.

Opposite the inductors, at the front of the plate, are the comb points which serve to collect the electricity and convey it to the conductors for use. Each inductor is furnished with its set of points. The combs are attached to brass rods terminated at their other ends by brass balls. The rods are fastened to the framework of the machine and are insulated from it. The balls at the ends of the rods may be connected to each other in any desired order by means of bent wires.

The machine is put in action by slightly electrifying any one of the inductors by means of an excited rod of hard rubber, glass tube, or otherwise, and turning the crank. Its power progressively increases for about a minute, and until it reaches the maximum, when it furnishes a steady supply of electricity as long as the disk is revolved. The amount of electricity which a disk of only two feet in diameter will yield is almost incredible to one who has not witnessed it. It rushes between the terminal balls or poles when arranged as in the figure, as a perfect but steady torrent of purplish blue fire, or by a slightly different adjustment, in balls of dazzling lightning, each discharge being accompanied by a report like a torpedo.

Now for the explanation of the action of the machine. There are three elements which are chiefly to be considered—the inductor, the plate, and the comb points. What are their relations towards each other? If a pointed wire be brought opposite an electrified body, as, for example, a prime conductor, we say that the electricity is discharged on the point, or that the electricity is attracted by the point. Or we may say the + electricity of the prime conductor attracts the — of the wire and repels its +, and a stream of — flows out of the wire at its point, while the + flows to the opposite direction. Now suppose a sheet of glass be interposed between the point and the conductor. The attraction of the + of the conductor for the — of the wire, is by no means lessened; the — is accumulated towards the point, and by reason of its higher tension flows out on to the glass. But the glass is impervious to the electricity, and it remains on its surface; the glass becomes electrified.

Now, in the Holtz machine we have the electrified body in the inductor, the wire point opposite, and the glass plate interpose. Suppose inductor No. 1 electrified +, this + attracts — out of the comb points on to the interposed plate. The plate moving on, the part electrified — comes opposite card points of inductor No. 2. Here — of the plate draws out of the card points + on to the glass, and inductor No. 2 becomes charged —, while the glass is — on the further side and + on the near side. Inductor No. 2 being charged — draws + out of comb points No. 2, and neutralizes the — drawn from comb points No. 1. Card points No. 3 discharge — on the plate, and inductor No. 3 becomes +, and like No. 1 draws — out of its corresponding comb point.

It will be seen that the alternate inductors are oppositely electrified, and that their corresponding comb points, give out or receive accordingly. By varying the manner of connecting the balls at the extremities of the comb points a considerable variety of changes in the relation of the quantity and intensity may be obtained. These variations are somewhat similar to those which are secured by varying the order of connecting the elements of the galvanic battery. The adjustment in the figure is that for greatest intensity. By connecting one of the poles with the ground the other may be used as a prime conductor for charging Leyden jars, etc. It is found advisable, in order to secure more perfect insulation, to varnish the plate and the inductors with shellac varnish.

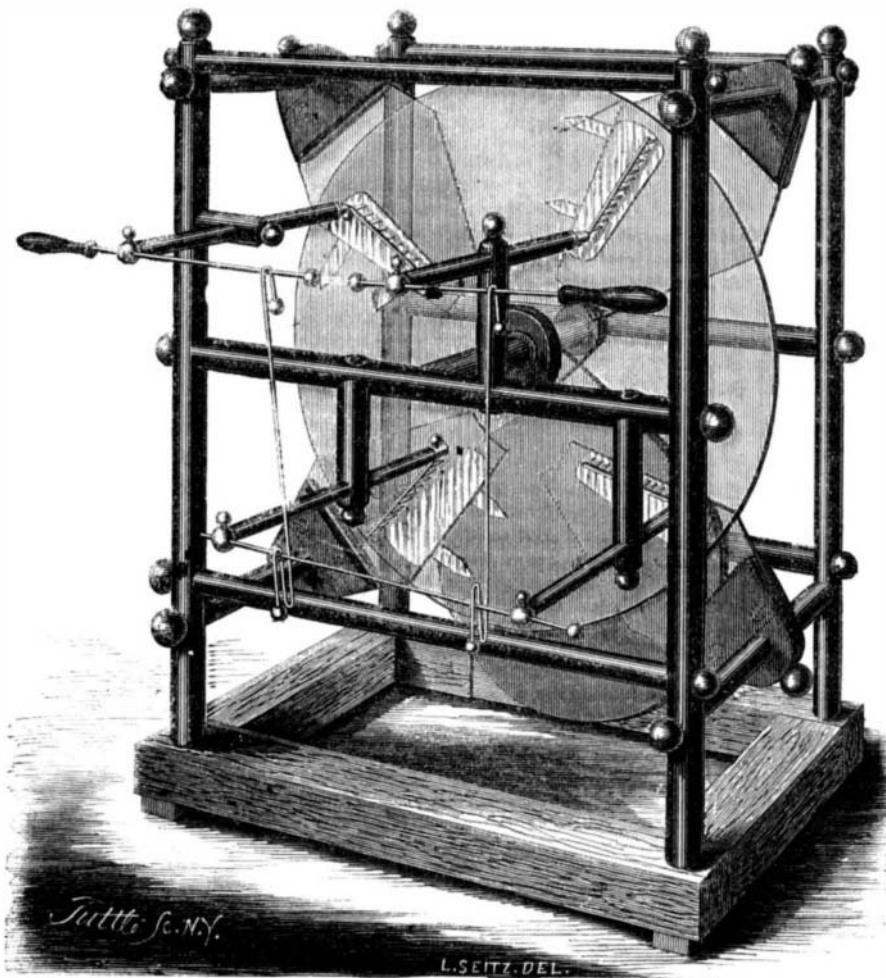
In the original Holtz machine the inductors were arranged on a disk of glass in which holes or windows were cut to per-

mit of the action of the card points. The new machine was invented in 1865, and it was briefly noticed in German publications in the fall of that year. The first complete description was published in Poggendorf's *Annalen*, in March, 1866. The inventor, W. Holtz, is a distinguished physicist, and resides in Berlin, Prussia.

The machine from which our drawing was made is an elegant specimen of workmanship and was constructed by Messrs. C. T. & J. N. Chester, of New York City. The base is wood and the framework hard rubber.

What is the Matter.

Notwithstanding the great number of patents issued weekly the back work of the office is not being brought up as it

**THE HOLTZ ELECTRICAL MACHINE.**

should be. The Commissioner has authority to appoint a sufficient number of Examiners to do the work of the office, why does he not do it? Inventors who applied for patents several months ago ask the question. Who can answer it?

IMPROVED STITCHING CLAMP.

The object of this invention is to obviate the objections made to the ordinary sewing clamp, that the jaws are obstructed by springs and straps, so that articles requiring depth of space, as dash boards, boot legs, etc., cannot be conveniently held; that the strap is liable to be broken in endeavoring to close the jaws, and that it is injurious to the



foot and leg of the operator. By the improvement represented in the engraving, articles one foot or more in depth can be inserted in the clamp; no spring is used, the tension of which must be overcome every time the jaws are closed; it has no ratchet teeth to tear the clothing, and it is self-retaining in all positions.

The horse, A, is of the usual style, having one firmly fixed jaw, B, and one movable one, C, hinged to B, just under the

seat. The lower end of C, is hinged to the treadle or lever, D, both ends of which project beyond the sides of the frame of the horse. To the under side of D, about in the center of the frame, the auxiliary lever, E, is hinged, and it is secured to the rocking bar, F, which turns on pivots in two of the legs, or it may be hinged to a permanent bar or brace. This arrangement of the treadles forms a powerful toggle joint.

It will be seen that a slight pressure of either foot on the projecting portion of E, or the projecting end of D, on the opposite side of the horse, will open the jaws, while pressure on the other end of D will close them. The lever, E, may be made adjustable, to fit thicknesses of work which vary greatly, by having it slide through the mortise in the bar, F, and securing it by a pin passing through the bar and lever. By a slight alteration in the position of the levers they may be attached to a foot block, supporting upright clamps for closing shoes, used by women and children sitting on a stool or chair. This machine is so simple that it may be made by any one capable of handling wood tools, as there is no iron work about it but three or four common butt hinges. For stitching buckle straps and other articles requiring frequent removal, this clamp is well adapted, as the jaws can be worked very rapidly.

Patented through the Scientific American Patent Agency Oct. 23, 1866, by William W. Taylor, whom address for rights, etc., 274 Broad street, Newark, N. J.

The Cholera.

From a recent report by Dr. Harris of the New York Board of Health we learn that about four weeks ago cholera reappeared in London and in Paris, but it is reported not to have spread to any extent. In the town of Elberfeld, near the Rhine, and about eighty miles southeastward from Rotterdam, the epidemic appeared and has spread to some extent. That town is in a region that sends many emigrants to New York by way of Rotterdam and Liverpool.

These facts can be understood by our people without awakening anxiety or fear, for "to be forewarned is to be forearmed," and although there may be numerous cases of cholera imported from the South and elsewhere, and though there may be repeated outbreaks in the lower regions of the Mississippi, the means of sanitary protection are definite, ample, and easily applied. But wherever, in places that are ready for the kindling of the epidemic, the true means of sanitary protection are not applied, the pestilence may yet make deadly ravages. The

watchword of the Metropolitan Board of Health, "timely, active and preventive measures," should be adopted by every city and town to which the epidemic can come.

Scientific chemists and experimenters, and all well-informed sanitary officers now agree that saturated solutions of copperas and carbolic acid are at once the best and cheapest disinfectants that can be used against cholera.

Preparing Oxygen.

We may call the attention of our readers to a process for preparing oxygen which is very simple and inexpensive. It was proposed some time ago, by Mr. Mallet, to take advantage of the well-known fact that subchloride of copper, when exposed to the air, absorbs a large quantity of oxygen, producing an oxychloride of the metal. The latter when gently heated, readily parts with the oxygen which it has absorbed, and returns to its original condition. Thus, by alternate exposure to the air and heating, it can be made to play the part of an effective separator of oxygen from the atmosphere. We will now give a few details of the new process.

PREPARATION OF SUBCHLORIDE OF COPPER.—This salt is prepared with moderate facility by digesting four parts of finely-divided metallic copper and five of the common black oxide of the metal in hydrochloric acid. Prolonged digestion is required in order to effect this object, together with the presence of a sufficient excess of acid. The whole is evaporated to dryness as quickly as possible, and the dry residue preserved for use.

PREPARATION OF OXYGEN.—The subchloride of copper, prepared as above, is very finely powdered and intimately mixed with half its weight or rather more, of fine white sand. A little water is then added, and the mixture well agitated in a large vessel. After a few hours it will have absorbed all the oxygen from the air which it is capable of doing; and, when required for use, the mixture should be placed in a suitable gas-generating vessel, and gentle heat applied. Oxygen is then steadily given off in considerable quantity, and may be collected in the usual way.

The residue in the retort, when moistened with water and exposed to the air as before, absorbs a fresh quantity of the gas, which may be obtained again by heating, and this succession continued for a considerable time.—*British Journal of Photography.*

A TOBACCO POUCH WANTED.—A correspondent from Maryland, evidently an admirer of the "filthy weed," wants inventors to conjure up a better tobacco pouch than is to be found in the market. He says it should be neat and handy, having a mouth of metal, and should be so constructed as to fill a pipe without spilling the tobacco.