Predatory Chickens.

One Max Adeler describes a novel method he adopted for ridding his garden of a neighbor's chickens. We copy the article from the London *Garden*, but we suspect it emanated from this side of the water, and we would not wonder if the *Danbury News* man was its author. It certainly reads like him; but no matter where it originated, the invention is made, and in Adeler's case it proved useful.

He says: "We had a good deal of trouble last summer with Pitman's chickens; as fast as we planted anything in our little garden, those chickens of Pitman's would creep through the fence, scratch out the seed, fill up, and go home. When the radish bed had been ravished in this manner for the fifth time, we complained to Pitman. He was not disposed to interfere. 'Adeler,' he said, 'I tell you it does 'em good; and it does them beds good to be raked over by chickens. If I had radishes, give me chickens to scratch around them and eat up the worms. Radishes that haven't been scratched ain't worth a cent.' Then we climbed over the fence with the determination to take the law in our own hands. We procured half a peck of corn and two dozen small fish hooks. Fastening the hooks each to a grain of corn, we tied wire to each hook. Then we scattered the whole of the corn on the radish bed, and fixed the ends of the wires to the biggest sky rocket we could get. The rocket stood in a frame about 10 yards away from the hooks. That very morning Pitman's chickens came over, and instantly began to devour the corn. We were ready; and as soon as it was evident that the hooks were all swallowed, we applied a match to the rocket. It is regarded as probable that no barnyard fowls that have existed since the days of Noah ever proceeded toward the azure vault of heaven with such rapidity as those did. A fizz, a few ejaculatory cackles, a puff of smoke, and Pitman's roosters and chickens were swishing around the celestial constellations without their feathers, and in some doubt respecting the stability of earthly things. Pitman never knew what became of his fowls; but when we read in the paper next day that twenty-four underdone chickens, with fish hooks in their craws, had been rained down by a hurricane in New Jersey, we felt certain that that sky rocket had done its duty."

Gas Light.—Average Prices.

The following information, showing the average net price of gas throughout the United States, has been procured by the Washington, D. C., Gas Light Company:

1. Maine	$3.87	20. Mississippi	$5.25
2. New Hampshire	3.96	21. Michigan	3.43
3. Vermont	4.80	22. Wisconsin	3.87
4. Massachusetts	3.86	23. Ohio	3.32
5. Rhode Island	3.35	24. Indiana	3.54
6. Connecticut	4.03	25. Illinois	3.87
7. New York	3.88	26. Kentucky	3.92
8. New Jersey	3.80	27. Tennessee	4.06
9. Pennsylvania	3.46	28. Minnesota	4.31
10. Delaware	3.95	29. Iowa	4.52
11. Maryland	3.59	30. Missouri	3.95
12. Dist. of Columbia	3.16	31. Arkansas	5.00
13. Virginia	3.89	32. Louisiana	4.50
14. West Virginia	3.11	33. Texas	5.75
15. North Carolina	6.67	34. Kansas	4.55
16. South Carolina	3.80	35. Colorado	5.00
17. Georgia	5.07	36. Utah	4.00
18. Florida	8.00	37. California	6.11
19. Alabama	4 83		

Total average net price of gas in the United States..$4.32½.

Proposed Statue to Daniel Webster.

Gordon W. Burnham, a wealthy resident of this city, proposes to erect in the Central Park, at his own expense, a bronze statue of Massachusetts' late statesman, Daniel Webster. Mr. Burnham has a special taste for bronzes, and his residence on Fifth Avenue contains probably the choicest collection in the country. The Central Park has already a handsome group (Eagles and Chamois) presented to it a number of years ago by Mr. Burnham.

The Park Commissioners have, we understand, requested that a model of the statue be submitted to them before they will consent to set apart for it the conspicuous and appropriate site on the Mall, suggested by the donor. The form of a renowned and representative American statesman, whose fame belongs to this country, deserves, we think, at least as prominent a position as that of Sir Walter Scott. It is to be hoped that Mr. Burnham's generous offer will not be withdrawn through any difference of opinion as to where in our everywhere beautiful Park his gift is to be displayed. The people will appreciate it, and heartily thank him for it, no matter whether it be located (as it should be) on the Mall, or half hidden in the shrubbery in some by-path of the Ramble.

ROPE CORDAGE.—Recently a very interesting experiment was made at Kirkaldy's Testing Works, Southwark street, London, as to the relative strength of handspun yarn rope, machine yarn rope, and Russian yarn rope. Mr. Plimsoll, M. P., Captain Bedford Pim, M. P., and others attended the test, which lasted over three hours. There were nine pieces of rope, each 10 feet long, being three of each of the above classes. The ultimate stress or breaking strain of the Russian rope was 11,099 lbs. or 1,934 lbs. strength per fathom; machine rope, 11,527 lbs. or 2,155 lbs. per fathom; handspun rope, 18,279 lbs. or 3,026 lbs. per fathom. The ropes were all of 5 inches circumference, and every piece broke clear of the fastenings. The prices paid per cwt. were: Russian rope, $11·75; machine yarn rope, $11·75; handspun yarn rope, $11·00 all described as best cordage and London manufacture. It will thus be seen that the handmade was cheaper by 75 cents per cwt., and broke at the testing strength of 7,180 lbs. over Russian, and 6,752 lbs. over machine made rope.

DECISIONS OF THE COURTS.

United States Circuit Court---District of New Jersey.

PATENT SHAWL STRAP.—GEORGE CROUCH *vs.* HENRY SPEER, REINHOLD SPEER, AND EGBERT MATTNER.

[In equity.—Before Nixon, Judge.—Decided April 27, 1874.]

NIXON, *Judge:*

This suit is brought for an alleged infringement of a patent for "improvement in shawl straps," originally granted to the complainant, and surrendered and reissued March 7, 1871.

The patentee states in his schedule that before his invention straps had been used to confine a shawl or other similar article in a bundle, and a leather cross piece, with loops at the ends, had extended from one strap to the other: and above, and attached to this cross piece, was a handle: that the cross piece or connecting strap was liable to bend, and allow the straps to be drawn toward each other by the handle in sustaining the weight; that hence the bundle was not kept in the proper shape, and the handle was inconvenient to grasp; and that his invention consisted in a rigid cross bar beneath the handle, combined with suspending straps that are to be passed around the shawl or bundle, such straps passing through loops at the ends of the handle.

The defendants' first allegation is that there is nothing new or useful in the complainant's patent. If they mean by this that it is not the subject matter of a patent, the objection must be examined and answered in the light of the provisions of the 24th section of the patent act of 1870 (16 Stat., 201). That section authorizes a patent to be granted for "any new and useful art, machine, manufacture, or composition of matter, or any new or useful improvement thereof." It will be seen that utility and novelty are the requisite conditions. The invention or the improvement claimed must have both, or the letters patent secure nothing for the patentee. Whether it is useful in the sense of the law is not whether it is not mischievous or hurtful or frivolous or insignificant, but whether it is capable of use for a purpose from which some advantage can be derived. If it be useful in this sense, the degree or extent of its usefulness is altogether unimportant. It is not necessary, in other words, that it should be the best means of producing a desirable result, but a means, although inferior to others, of producing it. (Curt. Pat., sec. 449.)

Testing the complainant's patent by this principle, it is undoubtedly useful. The rigid cross bar and the loops holding the straps, securing them in their place, and made of the leather of the handle, if new, add neatness and finish and value to the manufacture; and this is shown by the fact that these defendants, active business men and alive to the public demands, gave these methods of manufacturing a preference over others in finishing and furnishing shawl straps for the markets.

The defendants' second allegation is the want of novelty in the complainant's patent.

In considering the case, it should be remembered that the patent is *prima facie* evidence that the patentee was the original and first inventor. Any one who controverts this assumes the burden of proof and undertakes to show affirmatively that there was a prior knowledge and use of the alleged invention under such circumstances as to give to the public the right of its continued use against the patentee.

This the defendants have failed to do. The evidence introduced by them is frequently contradicted, and is inconsistent with itself and many well established facts.

There is ground for reasonable doubt in regard to its correctness. Where such doubt exists the complainant's *prima facie* case, even if uncorroborated, must prevail.

But it does not stand without corroboration. The complainant called William H. Cleveland, William Roemer, Peter Martens, Jacob Lagowitz, Joseph R. Davis, and Philip P. Lynch to testify as to the state of the art. They seem to be intelligent and disinterested witnesses; have been for years, more or less, connected with the manufacture and sale of shawl straps, and they all trace the origin of the rigid cross bar to the invention of the complainant, or deny its existence or use prior to 1868.

Upon the whole case, I am of the opinion that there should be a decree sustaining the validity of the complainant's patent, and giving him profits and damages for its infringement since March 7, 1871, the date of the reissue, and also an injunction, restraining the defendants from further infringement.

[*Jonathan Marshall*, solicitor and counsel for complainant.
James M. Scovel, solicitor and counsel for defendants.]

United States Circuit Court---Southern District of New York.

COMBINED RUBBER AND METAL SPRING.—THE NATIONAL SPRING COMPANY *vs.* THE UNION CAR SPRING MANUFACTURING COMPANY.

Blatchford, Judge.

This suit is brought on reissued letters patent granted to the plaintiffs Dec. 18, 1870, as assignees of Erastus T. Bussell, for an "improvement in combined india rubber and steel springs," the original patent having been granted to Russell, as inventor, November 29, 1853, and extended for seven years from November 29, 1867.

A patent for a spring for cars and other vehicles composed of a column of india rubber and a spiral metal spring, which encloses it and cooperates with it, and also prevents it from spreading, is valid, notwithstanding a previous patent for a spring composed of a hollow column of india rubber enclosing a spiral metal spring, and prevented from spreading by metal rings around it.

A reissued patent held valid which claimed a spring constructed of an india rubber column enclosed in a spiral metal spring, although it was conceded in the original application that such a spring was described in a previous patent, it appearing that it was not so described.

Although the original patent everywhere represented the india rubber column as deeply fluted, yet a reissued patent was sustained which claimed an india rubber column in unqualified terms, without alluding to the fluting.

The reissued patent was held valid, although it claimed the rubber column whether solid or hollow, and the original patent made no mention of a hollow column.

It was held to be no objection to the reissued patent because it suggested that any material which was the equivalent of india rubber might be used instead of it, such as animal or vegetable fiber, gutta percha, etc., although those materials were not mentioned in the original.

The validity of a patent is not impaired because the invention is embraced in a prior English patent, if, previous to the date of the latter, the American patentee had reduced the invention to practice.

Where the assignees of the inventor filed and completed their application for a reissue before July 20, 1870, it was held that their oath to it was sufficient without that of the inventor.

Under the act of March 3, 1871, the oath of the assignees is sufficient upon an application for the reissue of a patent originally issued before July 20, 1870; the oath of the inventor is required only when the original patent issued after that date.

[*J. F. Fitch* and *George Gifford*, for plaintiffs.
H. C. Woodruff, for defendants.]

Recent American and Foreign Patents.

Improved Waste Valve and Overflow.

James Foley, Brooklyn, N. Y.—The end of the pipe leading to the basin is coupled with a casting or T, in the lower part of which is formed a conical valve seat, and with its lower arm is coupled a pipe leading to the sewer. The upper part of the T coupling is connected with the end of a larger pipe, which is secured to a stand. Within the large pipe is placed a smaller pipe, around the lower end of which is formed a ring flange, upon which is placed a rubberring to form the valve. By this construction, when the valve is closed and water admitted into the basin, it will rise in the large pipe until it reaches the level of the upper end of the small pipe, when it will flow off through the same. When the pipe is raised, opening the valve, the water will flow off through the sewer pipes, having a wholly unobstructed passage, in which there is nothing for hairs or other rubbish to lodge against and thus obstruct the outflow.

Improved Mechanism for Operating Punches, Shears, etc.

Charles H. Reynolds, Williamsburg, N. Y., assignor to himself and Henry C. Richardson, of same place.—In this machine, when the free end of a lever is moved to the rearward, the arm of the lower jaw will be moved downward and the arm of the upper jaw will be moved upward, bringing the jaws together with immense power. An illustrated description of the apparatus will be found on page 102 of our current volume.

Improved Signal Light.

James C. McMullin, Chicago, Ill.—The object of this invention is to furnish a signal lamp for railroad trains and other purposes, which indicates by the successive appearance of the light thrown through lenses of different colors or sizes from one burner, the distance of the light to be determined by the gradual appearance and relative position of the lights. The invention consists of a signal lamp which is provided with one or more tubular arms, with reflectors and lenses of different colors at their ends, spread at suitable distance, and lighted by one common burner. A signal lamp is provided with one or more tubular arms. At the distance of one, two, or more feet, are a reflector and lens. The reflector is preferably placed under an angle of forty-five degrees to the axis of the arms, so that the whole body of light is thrown forward through the lens as the rays are reflected under the angle of incidence of the light. Lenses of different colors or sizes may be employed, and thereby the distance of the train determined by the successive appearance and position of the lenses. It has been found by practical tests that in a signal lamp having red and white eight inch lenses placed at a distance of thirty-four inches from each other, nothing but the red light is shown at a distance of one and one fourth miles. At a distance of one mile, red is shown with a rim or fringe of white at that side where the white lens is situated. At three quarters of a mile, red and white are both shown distinctly and separately; and at a distance of half a mile a considerable space appears between them. Any number of lenses can be illuminated at the same burner if placed at the ends of the connecting arms.

Improved Children's Carriage.

Julius Sues, Louisville, Ky.—A child's carriage is supported on front wheels by curved sills or bars and strong lateral springs, firmly bolted to the body and also to the rear end of the bars, the front end carrying the axle of the front wheels. By placing the front part of the body on springs, not only an up and down motion, but also a rocking motion, of the carriage is obtained, and the elasticity of the same increased. The hind part of the body is supported by two additional curved springs, of swan-necked shape, which are interposed between the usual elliptic supporting springs and the body. The front end of the spring is firmly attached directly to the body of the carriage, or to an intermediate bracket-shaped casting. The rear part of the spring is attached to the back of the body, near the upper part thereof. The support of the body by the springs is thereby strengthened, and the constant upward jarring of the springs arrested.

Improved Sleigh.

John A. Seigfrid and Chester B. Borden, Seneca Falls, N. Y.—The knees and the hub are cast in a single piece, and the hub fits on the beam as an ordinary wagon wheel fits on an axle. Traces are attached permanently to the knees and to the under side of the beam, so that they may be readily detached from the beams. The hubs are made about the length of ordinary wagon hubs, so that the wheels will fit on the beams in place of the runners. The beams then become axles. The change from runners to wheels and from wheels to runners is very readily made.

Improved Stop Valve.

Richard S. Gillespie, New York city.—This invention is an improvement upon double seated valves, some of which are provided with a headed pin or spreader and two disks by the introduction of rollers that may act on the principle of a toggle joint. When a valve is forced down, a pin strikes the bottom of the case and forces another pin up against the lower end of the valve stem. As the valve stem moves further down, both pins are forced inward against the outer rollers, which force the middle rollers outward, forcing the faces of the valve against the valve seats. The rollers thus operate as a double toggle joint, pressing outward in lines at right angles with the valve stem. In raising or opening the valve, the first movement of the valve stem removes the pressure of the pins from the rollers, the pressure of the rollers from the parts of the valve, and the pressure of the valve faces from the valve seats, so that the valve can be raised without any friction between its faces and seats.

Improved Reading and Copying Stand.

Charles E. Wells, West Pawlet, Vt.—The book to be exposed on the rack is securely fastened thereto, after being placed on the projecting lugs at the lower end by carrying a top slide piece with top lugs down. The slide piece moves in a central slot of the rack, and is also provided with pivoted arms having a lateral piece at their end with sliding book fasteners. Similar arms with upward extending fasteners are applied along the lower part of the rack. These rods are swung forward as required by the thickness of the book, and the fasteners then applied to hold the leaves till they are turned over. As the fasteners rest only lightly thereon, the turning and placing in position of the leaves will occasion no difficulty.

Improved Carriage Wrench.

Henry Cutler, Ashland, Mass.—The adjusting handle consists of two parts, one chambered out to receive an eccentric, which is thus turned. The eccentric is governed in position, as it is revolved, by a pivot, where it enters a hole in the stock head. The jaws are levers, and the eccentric operates on their upper ends, the fulcrums being the pins. A spring between the jaws keeps them spread apart; but when the eccentric is turned, the outer ends of the jaws are forced toward each other to gripe and hold the nut. With this wrench a nut may be removed and replaced without touching it with the fingers.

Improved Method of Retouching Photographic Negatives.

Claude L. Lambert, Paris, France.—A large negative, after having been properly exposed, developed, fixed, and finished, is covered on both sides with a sheet of thin paper or other semi-transparent material capable of retaining the coloring matter to be afterward employed. Wherever necessary, either on the collodion side or on the reverse side, an impalpable galvanoplastic powder, or other finely pulverized substance answering the same purpose, is applied with a stump. The effects of light and shade may thus be modified, toned, or hightened, and such a high degree of finish imparted as will render any subsequent retouching of the positive paper print unnecessary, the sharpness of the lines being restored by the aid of a lead pencil. The negative, after thus being treated, is placed in the pressure frame with a sheet of ordinary sensitized paper, prepared either with salts of silver or of chromium, to obtain a perfect positive. Should the lines of the negative be too sharp or well defined, they maybe softened in the positive proof by first partially printing it in contact with the large negative, and then completing the impression after having interposed a sheet of very thin glass between the negative and the paper.

Improved Seed Dropper.

Hermann Koeller, Camp Point, Ill.—To two cross bars are attached runners and seed hoppers, to the middle parts of which is secured a tongue. A slide receives a reciprocating movement to drop the seed from the revolutions of gear wheels, and may be adjusted to a longer or shorter stroke. To one small gear wheel is attached a wheel consisting of arms, the outer ends of which are notched to receive a chain, and to the lower side of which is attached a ring to support the same. In using the machine, in coming to the end of the field, the driver slips a spring ring upon the link that dropped last to the ground, after dropping the last hill before turning, for a mark. He then counts the links that lie crosswise, and puts another spring ring in the link he wishes to begin to drop from, for a mark in starting. After turning around, the flanged chain wheel should be set so that the machine will begin to drop at the marked link. This will bring the hills in accurate check row.

Improved Combined Throttle and Governor Valve.

Allan Talbott, Richmond, Va.—This invention relates to novel means to be used in connection with a governor for starting, stopping, or instantly changing the speed of a steam engine without the employment of shifting belts or other mechanism.

Improved Bath Tub.

Aso C. Brownell, Brooklyn, N. Y.—This tub frame is so constructed that the sheet metal lining cannot buckle by influence of shrinkage or swelling of the body of the tub.

Improved Combined Check and Martingale.

Louis Barron, Woodstock, Vt.—The object of this invention is to provide a combined check and martingale, or in other words a check rein which, by an easy adjustment, is adapted to serve the purpose of a martingale. It consists of a strap split into two other smaller straps, the single strap fastening by means of a ring to the checkor water hook, and the two smaller straps passing through keepers on the crown piece of the bridle, connected by a sliding loop on the face of the horse, and fastened to opposite sides of the bridle bit by means of detachable fastenings.

Improved Wheel.

Lewis H. Rogers, South Avon, N. Y.—The object of this invention is to provide a wheel for vehicles of such an elastic construction as shall facilitate the easy movement of vehicles, and which shall at once be strong, light, and durable. It consists of a metallic hub having two sets of screw-threaded stems projecting radially from the same, to which are fastened small plates held to said stems by a nut and washer, there being between the said washer and plate an elastic pad. Said plates are attached on each side of the stems to metallic spring spokes, and said spokes securely fastened to clips that are riveted to a metallic felly. Said felly is preferably made with a concave periphery, and between the felly and the tyre is placed a rim of rubber or other elastic substance.

Improved Portable Fence.

William C. Kay, Como, Miss.—This invention relates to that class of wooden fences which are portable. It consists of but two essentially different parts, the rails and the improved connection for the same, which latter consists of two symmetrically formed sections, made of inclined stakes, to which are attached strips of stuff varying in length from about three feet at the bottom to one foot at the top. Said stakes cross each other at about eighteen inches from the top, and are braced by a rail resting in the fork formed thereby. Said strips are securely fastened at one end to the stake; and as they incline toward the earth the strips of one stake cross those of the other, forming locks thereby into which the rails are placed.

Improved Spring Chair.

William T. Doremus, New York city.—To the front and rear parts of a chair seat are attached two iron bars which are made with a bend to pass through slots in the end of a plate framed upon the head of a screw. Bolts pass through holes in the bars and plate, through rubber blocks placed above and below said bars and plate, through small rubber blocks interposed between the bars and the plate, and through washers placed above and below the blocks, and have hand nuts screwed upon their lower ends, so that, by turning said hand nuts in the one or the other direction. the rubber blocks may be compressed, more or less, to give any desired elasticity to the chair. The small blocks operate as a yielding but positive stop to the forward movement of the chair seat, while the larger blocks allow it to have a greater and more elastic rearward movement. The screw screws into a long socket which has a flange upon its upper end and a screw thread cut upon the outer surface of its lower end, to receive a nut. The pedestal is made in sectors, meeting in its center around the socket. The parts of the pedestal are firmly held together, and the screw socket is so firmly supported that it cannot work loose.

Improved Combined Sulky Plow and Cultivator.

Newton J. Skaggs and Lorenzo W. True, Talladega, Ala.—The main framework of this machine has a space through which rows of plants or grain can pass, so that the machine can be drawn over said rows without injuring said plants or grain. Three plow beams are placed in each frame. The ends of the beams are connected by bolts which pass through them and through blocks interposed between them, and between them and the side bars of the frames, so as to keep the said beams in their proper relative positions. The forward ends of the beams are pivoted to the frames, so that the rear end of the beams rise and fall as the unevenness of the ground may require, and enable the plows to be raised from the ground when necessary. The beams may be adjusted at a greater or less distance apart, according as larger or smaller plows are to be used. The plow standards fit into semi-cylindrical recesses formed in the lower sides of the beams. By raising inner standards and leaving the outer standards in working position, the machine will be adjusted for marking off the land.

Improved Range Chimney Bottom Plate.

Hamilton C. Garwood, Jersey City, N. J.—A rod extends directly through the front wall of the chimney, for working a valve at the opening of the top of the chimney bottom plate for effecting the ventilation. The rod is connected to the valve by a slotted arm and a stud pin.

Improved Shirt Bosom.

William Hay, New York city.—This is a shirt bosom reënforced or lined and strengthened with a coarse material in such a way as to make the bosom more durable. The side plaits are made of fine linen folded so as to be of three thicknesses. The central plait is formed of one thickness of fine linen in its middle part, but has its edges folded so as to be of three thicknesses. The middle plait is made in one piece with one of the side plaits, and has a strip of coarser material inserted in it, the edges of which enter the edge folds of the said plait.

Improved Seal Lock.

Solomon Wright, Pownal, Vt.—A metallic flanged box contains a bolt having a stem upon which there is a spiral spring. This spring bears against a partition plate. Another plate has an arm which extends to or past the bolt. There is a pin in the bolt with which the arm engages when the lever plate is turned upon its hinge. This action of the plate throws back the bolt and releases the cap. The cap is a flanged box having an aperture, and is rigidly attached to the hasp. The cap is placed over the box, thus confining the seal, leaving so much of it exposed to view as is seen through the aperture. When the cap is placed on the box, the edge of the recess in the cap strikes and forces back the bolt; but when the cap reaches the bed flange of the box the spiral spring reacts, and the end of the bolt enters the recess and securely fastens the cap and confines the seal card. To prevent the card seal from being replaced after it has been cut and the lock opened, on the outside of the lever, ribs run longitudinally on the face of the plate, which force the card outward when it is cut or torn. When it is desired to open the car, the seal is broken with the end of the finger, which allows access to the end of the lever plate. The seal card may be cut or torn, so that the plate can be pulled out, thereby drawing back the bolt and releasing the cap.

Improved Horse Detacher.

Amos Barker, Nebraska City, Neb.—On the ends of the whiffletrees are two lugs to receive the tug eyes, and they have a hole formed through them to receive bolts, which also pass through the tug eyes, and thus connect the horses. The bolts are pivoted to a lever, which is pivoted to the center of the whiffletrees, and to it is attached a cord which passes back to the dashboard of the vehicle, so that, by pulling upon the cords or straps, all four of the tugs may be instantly disconnected from the whiffletrees. Similar arrangements are attached to the neck yoke for securing the breast straps to it. By this arrangement the tongues are disconnected from the whiffletrees, and the breast strap from the neck yoke, at the same time. The ring of the bridle bit is secured in place by a hook formed upon the end of a lever pivoted to a block. By suitable construction, as the neck yoke drops, the strain will operate the lever to release the bit ring, and at the same time the strap will slip from the said lever, thus detaching the cross reins and freeing the horses from each other at the same time they are freed from the whiffletrees and neck yoke.

Improved Trunk.

William J. Large, South Brooklyn, N. Y.—This improved trunk is so constructed that the operation of raising the lid will also raise the tray to give free access to the interior of the body of the trunk, and will enable the lid to be locked in place when only raised sufficiently to give access to the tray.

Improved Ice House for Preserving Meats, etc.

Daniel T. Conklin, Brooklyn, N. Y.—The roof is pyramidal in form. The sides of the ice box are provided with doors sliding in grooves in the corner posts of said box, so that all or part of them can be raised, more or less, according as a greater or less cooling effect is required to be produced. The articles to be preserved are hung in the space between the walls of the house and the ice box. The roof of the ice box is also made pyramidal in form, and its peak extends up to the peak of the house. The peaks of both roofs have holes formed through them for the escape of impure air, etc. With this construction the space in the upper part of the ice house and ice box to be cooled uselessly is very greatly diminished, so that the same quantity of ice will produce much better effects than in ice houses constructed in the usual manner. The corned beef vat is placed between the forward end of the ice box and the front side of the house.

Improved Sawing Machine.

John M. Linnell, Monticello, Iowa.—A treadle pivoted to an ordinary saw horse is extended to one side to project beyond the horse standard, and provided with an inclined lever arm which is connected with the bifurcated end of the saw frame. The rear part of an extension of the lever is connected to a crank wheel shaft and balance wheel at the opposite side of the saw horse. The balance wheel is weighted at one side for the purpose of carrying the crank wheel into position to be readily moved by the treadle and arm, avoiding the position of the same on one of the dead points for starting. A reciprocating motion is imparted to the saw frame by the arm and extension. Said frame is made of curved shape with a saw blade cutting in both directions, clamped adjustably and detachably therein. The machine is operated by rocking the treadle platform with the feet, pressing with one hand the upper part of the saw frame, and feeding with the other hand the sticks to the saw.

Improved Rotary Pump.

Hiram L. Houghton, Charlestown, N. H.—This invention consists of a hollow cylinder with closed ends, containing a rotary disk in the middle portion. The disk carries blades in longitudinal and radial slots, both in itself and in the shaft. These blades are shifted forward and backward by cams on each end of the cylinder to cause them to press the cut-off and rims over the suction pipe, and carry the water up to and deliver it at the discharge pipe. The suction pipe is divided, and a branch enters into that chamber in which the blades are thrown to pass the cut-off in the principal pumping chamber; and a passage is formed through the cut-off to a branch of the discharge pipe, whereby whatever effect may be obtained by the blades in that chamber is utilized.

Improved Heating Stove.

Silas Cook, Magnolia, Iowa.—In this invention the products of combustion are caused to take a circuitous route to the escape flue, in order to secure more perfect utilization of heat, that is to say, they are returned through the stove to be reheated, after passing through an exterior vertical flue, and their course at starting directed upward from the grate, or downward through the same.

Improved Bolting Reel.

Moses French, Harrodsburgh, Ind.—The cloth has strips arranged along the seams to attach it to rods which are suspended from the ribs by other rods. The cloth strips are connected to the rods by hooks, and the rods are arranged to turn and roll the cloth on them for stretching it transversely. By this arrangement the cloth can be stretched tight at any time after it has stretched so as to bag without unfastening and readjusting it. The inside is relieved of the ribs of wood which carry up the meal and throw it down, so as to force through the brown and dark matters which discolor the flour; and the bolting cloth, being entirely untouched by the ribs, will not cut or be injured by insects which gather in the cracks, as in the common reel.

Improved Vehicle Seat.

Darwin V. Miller, Weedsport, N. Y.—This invention consists in an improved spring seat formed of two sets of spring slats slotted at their ends and drawn together at their centers over a frame interposed between them. An upper set of spring slats are attached by cross bars to the middle set, and have bars at their ends to keep the persons sitting upon the seat from slipping off.

Improved Automatic Gas Lighter and Extinguisher.

George S. Dunbar, Pittsfield, Mass.—A metal case screws on the lamp post, and has a passage for the gas to pass along one side of the chamber to the burner, in which passage is a stop valve to shut off the gas and extinguish the light, when it is let fall, by a cam which is turned for the purpose by the clockwork contained in the chamber. The cam is connected to the shaft of the clock gear by its hollow journal which extends from the gas passage into the chamber. The valve has a pressure spring above it for pressing it firmly on its seat when the cam lets it fall. Strong clock springs turn the train. A wheel turns the cam back to set at the same time that it winds up the springs. The extent to which it is turned back determines the time the clock will run before extinguishing the light, and the extent to which it is turned back is governed by an adjustable collar. The cam may be set for dropping the valve at any predetermined time by shifting the collar to the mark on a scale corresponding to the time wanted. A bar is provided with match-holding fingers to carry a match at the same time that it is used to wind up the clock, and strike it against a striking plate, and then present the burner to ignite the gas jet; thus allowing the winding and setting of the clock and the lighting of the gas all to be accomplished by one operation.

Improved Washing Machine.

Charles Bagnall, Amity, Iowa.—Levers are oscillated by working a frame. To the inner end of each of the levers is pivoted a bow. To the ends of each bow are attached the ends of a bar to which are pivoted three tubes. The shanks of presses are fitted into the lower ends of the tubes, and are held in place by coiled wire springs placed in the upper part of the tubes. By this construction the presses can yield to accommodate themselves to the different thicknesses of the mass of clothes that may be in the boiler.

Improved Car Coupling.

Charles F. Wilkinson, Reuben Mochamer, Jacob B. Ziegler, and Charles Snyder, of Latimer, Pa.—This consists of a draw hook with inclined front part, fitted rigidly to the car frame, and set into a recessed bumper frame. A link-shaped clevis is pivoted to the hook, and a curved latch piece closes over the end of the same. The link slides, on the approach of the cars, over the hook, and drops into the recess back of the hook, forming thereby the intimate coupling. For uncoupling, the link is swung up, and taken out of the hook, and the drop latch is then placed in an inclined position on the outer side of the latter, ready for the detaching of the cars without any chance of recoupling.

Improved Car Brake.

Edmund I. Hockaday, Pleasant Hill, Mo.—A sliding bar is applied to the under side of the car, provided at both ends with buffer heads. Its whole length is somewhat less than the distance from drawhead to drawhead, in order to allow for the compression of the drawhead springs. It connects with the brake mechanism by a chain with double end parts, so that the brake may be operated by pulling the sliding bar in either direction. The tender is provided under the rear drawhead with a short sliding buffer rod, which is operated, by means of a pulley and chain, from a brake shaft and wheel at the forward end of the tender. The buffer rod is guided under suitable inclination back of the rear truck of the tender, and projects, when in regular position, beyond the drawhead far enough to take up nearly the entire slack space between the tender and first car. On the discovery of sudden danger, the engine is reversed, or its motion is retarded, so that the momentum of each car carries it forward the full length of its slack, and produces the action of the buffer rod of the tender on the sliding bar and brake of the first car, which carries back that of the second, and so on till the whole train is acted upon by the brakes in a perfectly automatic manner. In order to release the brakes and back the train, the engine is slightly moved forward, and a brake wheel connecting chain is released, so that the buffer rod drops out of position and discontinues its action on the sliding bar.

Improved Boot Blacking Machine.

Bartly Palmer, Armonk, N. Y.—This invention consists of a horizontal shaft, which is rotated by a hand wheel or treadle, and provided with two wheel-shaped brushes, of which one takes up the blacking from a box placed adjustably on a pivoted bracket, transferring it to the boot, while the other wheel, of rounded V shape or concaved cross section, polishes the boot when brought in contact therewith.

Improved Cotton Seed Huller.

Paul J. Martin, Paris, France.—This invention relates to a construction and arrangement of screws and wedges for securing the knives of the concave in place, and for adapting them to be adjusted toward the cylinder. The effect of the operation of the machine on the cotton seed, which passes from a hopper down between the stationary concave and revolving cylinder, is to remove its fibrous outer covering or envelope by the grinding or rubbing action of the knives or sharp-angled bars fixed on said concave and cylinder.

Improved Roller for Winding Paper.

Brantley G. Read, Lyons, Iowa.—This invention consists of a rod for fastening the end of a paper sheet to a roller on which the sheet is to be wound. The rod is connected to the roller by a swinging arm at each end, which are pivoted eccentrically to the roller, and so as to let the rod drop into a little groove in the side. The paper sheet is attached by raising the rod, folding the paper sheet over it, and letting it fall back into the groove. The tension of the paper holds the rod in place as it passes under when the roller is set in motion to wind on the paper, and the arms by which the rod is connected keep it from shifting around.

Improved Washing Machine.

Daniel C. Mitchell, San Marcos, Tex.—The suds box has a false bottom. Four perforated upright boards are hinged together to form a clothes box, which rests upon the false bottom. In using the machine, the clothes to be washed are placed in the clothes box and a crank is operated, the effect of which is to work the boards upon their hinges, alternately compressing the clothes in opposite directions, and allowing them to become again saturated, washing them clean in a very short time.

Improved Chimney Cap.

David Boyd, New York city.—The flue has an enlarged portion attached thereto by making a series of small V-shaped openings in its lower end, and then compressing the end to the flue. A collar surrounds this connection, forming a sort of cup to catch the condensed gases which run down upon the flue, and discolor and stain whatever they touch. The liquid which adheres to the inside surface of the enlarged portion runs down and passes through the opening into cups and is carried off.

Improved Hot Air Furnace.

Charles Clark, Minneapolis, Minn.—A horizontal conical distributing radiator, with top extension cones, extends at the top of the fire box along its full length, and is connected, by cylindrical or conically enlarged top flues, with the same. Vertical tubes extend sidewise from the top radiator to horizontal drums, which are placed longitudinally sidewise of the fire box. The front ends of the base drums are provided with doors for cleaning. The rear ends carry a lateral radiator of pyramidal shape. The rear drum has a series of air flues passing through the same in the longitudinal direction, and is also connected near its top part by a direct flue with the top radiator, and by a curved top flue through the shell to the chimney.

Improved Churn.

James C. Babb, Knowlton, Wis.—Arrangements are provided so that a complete circulation of air is established through the milk being churned. By suitable construction, when the crank is turned, shafts and their attachments will be revolved in opposite directions, the milk will be thrown into violent agitation, and a current of air will be forced through it, bringing the butter in a very short time, and developing all the butter there may be in the milk.

Improved Toy Pistol.

Charles Nelson, East New York, N. Y.—This is a toy revolver with a solid rotating cylinder, having a number of annular side recesses, into which paper caps are securely placed and discharged in regular order by the action of a hook-shaped hammer striking thereon through a recessed slot of the top part of the revolver.

Improved Axle Skein.

Jeremiah J. Hutchins, Red Oak, Iowa.—This invention consists of a hollow cast metal thimble skein, having the hollow portion screw-threaded to screw on the axle for attaching the skein thereto. The threads are made right and left for different sides of the wagon, in order to have the pitch so that the skeins will not work loose by friction of the wheels revolving on them when the wagon moves forward.

Improved Burglar-Proof Skylight.

Moses T. Williams, New York city.—The opening is protected by a burglar-proof grating, formed of bars of iron attached to the frame, which are fixed for covering one half of the opening. The other half is covered in a similar manner, but the bars are attached to a sliding frame, which, when closed, is secured by a hook. The windows on the sides of the skylight swing to a horizontal position and are self-closing. The cover of the sky light is mounted on rollers and traverses back and forth over the stationary part of the roof; and the hatch is operated by means of two cords. The window cords also extend down into the apartment below, so that one or more may be opened by night or day for purposes of ventilation. The opening in the roof may therefore be left open at all times and protected from burglars when the windows are open as well as when they are closed

Improved Hand Rest.

Rosea Willard, Vergennes, Vt., assignor to Frederick W. Coe, of same place.—This hand rest and memorandum book is composed of several tablets, made of any suitable material, which are hinged together so that they open and close similar to a book. The rest is adjustable, as to thickness by raising and throwing back one or more of the leaves.

Improved Medical Compound or Bitters.

Homer D. Torrit, of Waynesborough, Ga.—This remedy, for rheumatism neuralgia, dyspepsia, liver diseases, and similar complaints, consists of powdered podophyllin, nitrate of potash, gamboge, and powdered sugar mixed with rye whisky.

Improved Artificial Flower.

Philipp Knorpp, New York city.—The term brilliants is given to articles produced in a variety of different forms by a suitable alloy of lead and tin, into which, when in a molten state, the dies are dipped. The dies are cut of the cheaper kinds of precious stones of suitable size, which are faceted in any conceivable design, so as to impart to the surface of the alloy the appearance of brilliants. In the present invention, leaves are made with a brilliant surface, in any desired size, shape, and design, as described. A series of such leaves are then arranged together and fastened at the center, and rows of smaller leaves arranged at the inside, with a pistil in the center. To the under side of the flower is then soldered a pin, by which the brilliant flower may be readily attached to the costume.

Improved Whip.

Dexter Avery and Charles C. Pratt, Westfield, Mass.—This invention consists of a whip the body whereof is composed of fibers arranged or built upon a small center core of whalebone, and glued and compressed, the whalebone being in the upper part and projecting beyond the termination of the tapered body for forming the body of the lash.

Improved Neck Yoke.

Minor S. Trowbridge, Platteville, Wis.—This invention consists of sliding breaststrap connections to a neck yoke, for extending or shortening the connection of the horses to allow them a certain limit of lateral play. The object of this is to accommodate the animals, to some extent, to a choice of the roadway. The connections are coupled to an equalizing rocking plate at the middle of the yoke, so as to cause them to shift alike, and thus always balance, so that one horse will not have an undue advantage of the other in respect of the leverage of the yoke.

Improved Road Scraper.

Peter C. Post, Paterson, N. J.—This invention consists of two scraping blades arranged for scraping the earth together in a ridge. They are pivoted at the middle to draft bars, and connected at the front end by chains to said bars. At the rear they are connected by chains, and the draft bars are joined together by an adjustable bar, all so that the scrapers can be adjusted to certain different conditions adapted for different conditions of the road. This scraper is especially designed for scraping the earth from the gutters along the side up to the middle portion, for rounding up the road bed.

Improved Hub or Vehicles.

Moise L. Poirier and Delphis Guimont, Green Bay, Wis.—This is an improved attachment for hubs and axles, which prevents the oil from escaping from either end of the hub and running over its outer side, and also prevents sand and dust from getting in and causing the axle arm and box to wear. It consists in a band made with an inwardly projecting shoulder or flange upon the middle part of its inner surface to adapt it to be attached to the inner end of a hub. A rubber sleeve placed upon the axle arm fits into the flange of the band, so as to prevent the escape of oil. A cap made of rubber also fits into a band at the outer end of the hub.

Improved Subsoil Plow.

Andrew L. Manning, Booneville, Miss.—The slotted rear end of a bar rests against the rear side of the standard, opposite the rear end of the beam. The bar is then bent forward at right angles, and extends along the side of the beam, and is slotted so as to be secured to the side of the beam adjustably, in order that it may be conveniently moved forward and back, to adjust the pitch of the subsoiler, as may be required. The subsoiler can be readily raised and lowered to adjust it to work at any desired depth in the ground.

Improved Derrick.

Elias O. Long, Farmington, Cal.—This invention consists of a base-supporting part of suitable strength, to which is firmly secured a mast with a sliding extension piece, having pivoted top arms and brace ropes swiveled thereto, and suitable steadying brace ropes connecting its top with the ground. When the derrick is placed in position for hoisting, a rope, passing over pulley blocks of one arm and the base part, raises and lowers the load, as required, while the other is braced for relieving the side strain. For the purpose of transferring the derrick, the extension standard is lowered down alongside of the mainmast, which causes also the swinging down of the pivoted arms sidewise of the same. The top brace ropes are then released with their stakes and suitably wound up, and the derrick may then be drawn away to be placed into position at any other point, as desired. For storing the derrick entirely out of the way, the standard may be detached from the base part and bundled up thereon.