

atus intended to be placed in an obscure corner, or those parts of machines which are not seen, require no outward adornment: but in other cases, where perhaps hundreds of persons daily use the apparatus, and the whole world, so to speak, criticises and comments upon its appearance, a tasteful and appropriate exterior adds, not only to the beauty of the machine, but to its value; and is at once a mark of enterprise and an evidence of the maker's cultivation.

COST OF MODERN NAVIES.

The French naval architect, M. Xavier Raymond, in his book on "Les Marines de la France et de l'Angleterre," describes the enormous cost of modern navies, as compared with those of other times, when sailing vessels alone were employed. In the days of Nelson, it was calculated that the number of guns carried was a criterion of the cost of a vessel, and that the cost of each gun was £1,000 (about \$5,000.) For steam wooden frigates, the cost per gun is now rated at from £5,000 to £6,000, and for iron-plated frigates it exceeds £10,000. Again, the expense of maintaining a modern steam frigate is almost fabulous compared with the old sailing craft. The *Edinburgh Review* states that the *Warrior* frigate, ready for sea, represents £400,000 (\$2,000,000) of the public money; while the *Minotaur* now building, and to be covered with 5½-inch plates will represent \$2,500,000. As this thickness of plates has been shattered by guns already in existence, it is now proposed to build other vessels with 8 and 10 inch plating, in which case a single ship will cost about \$5,000,000! The *Review* says, "The Americans are confident that they can carry and work at sea 15-inch guns, throwing 450 lb shot, with charges of powder sufficient to pierce and destroy a ship's side composed of 36 inches solid oak and 1 inch of iron lining, protected with 5½ inch plates. They have destroyed such a target at 100 yards distance, and they have done this with cast-iron guns and cast-iron shot. It will not do to shut our eyes to such eventualities. In designing these additional iron-clads, which it is too evident England will be compelled to build, the increasing difficulties of the question must be fairly considered and the magnitude of the cost boldly confronted." In our opinion such huge iron-clad war ships, now proposed for the British navy, might be very efficient at sea against inferior vessels; but in most cases they would be useless in America, for attacks on harbor fortifications or batteries, owing to their great draft of water—ranging from 28 to 30 feet. They would not be able to come within a range of ten miles from New York city.

REVELATIONS OF THE MICROSCOPE.

Brush a little of the fuzz from the wing of a dead butterfly, and let it fall upon a piece of glass. It will be seen on the glass as a fine golden dust. Slide the glass under the microscope, and each particle of the dust will reveal itself as a perfect symmetrical feather.

Give your arm a slight prick, so as to draw a small drop of blood; mix the blood with a drop of vinegar and water, and place it upon the glass slide under the microscope. You will discover that the red matter of the blood is formed of innumerable globules or disks, which, though so small as to be separately invisible to the naked eye, appear under the microscope each larger than a letter, o, of this print.

Take a drop of water from a stagnant pool, or ditch, or sluggish brook; dipping it from among the green vegetable matter on the surface. On holding the water to the light it will look a little milky; but on placing the smallest drop under the microscope, you will find it swarming with hundreds of strange animals that are swimming about in it with the greatest vivacity. These animalcules exist in such multitudes that any effort to conceive of their numbers bewilders the imagination.

This invisible universe of created beings is the most wonderful of all the revelations of the microscope. During the whole of man's existence on the earth, while he has been fighting, taming and studying the lower animals which were visible to his sight, he has been surrounded by these other multitudes of the earth's inhabitants without any suspicion of their existence! In endless variety of form and structure, they are bustling through their active lives—pursuing their prey—defending their persons—waging their

wars—prosecuting their amours—multiplying their species—and ending their careers: countless hosts at each tick of the clock passing out of existence, and making way for new hosts that are following in endless succession. What other fields of creation may yet, by some inconceivable methods, be revealed to our knowledge?

THE SUN'S PATH AMONG THE STARS.

The sky, including the sun, moon and stars, rolls around us every day, from east to west. But the sun moves each day among the stars about one degree in the opposite direction; completing the circle of 360 degrees in 365 days. As the sun illuminates that half of the heavens in which it is situated at the time, it carries the day with it; slipping the illuminated half of the heavens slowly round from west to east. Hence the several stars rise about four minutes earlier each day than they did the day before; and, in the course of the year, they are each in turn brought up to our view during the night; excepting those that are so near the south pole of the heavens that they never rise.

The sun's path among the stars is not round the celestial equator or equinoctial, half way between the poles, but it crosses the equinoctial at an angle of 23° 28'; so that in midsummer the sun is among those stars which are 23° 28' north of the equinoctial, and in midwinter he is among those stars which are 23° 28' south of the equinoctial. An inspection of the simple apparatus described on page 402, Vol. VIII (new series) of the *SCIENTIFIC AMERICAN* will show how this change in the altitude of the sun varies the length of the days.

This motion of the sun was observed and the ecliptic was named long before the true cause of the phenomenon was suspected. It is now known to be produced by the annual revolution of the earth, in its orbit around the sun. The place of the ecliptic among the stars is always the same, while the places of the equinoctial and the poles are constantly but slowly changing.

POWER TO DRIVE CIRCULAR SAWS.

Differences of opinion prevail among millwrights respecting the amount of power employed to drive circular saws. Undoubtedly the power employed will just be in proportion to the work—the speed of the saw and the character of the lumber cut. The higher the speed and the harder the timber, the greater will be the amount of power required; but how much this is for saws of different sizes, according to their speed and the timber to be cut, is not very well known. Practice, and minute information furnished on these points, by those engaged in saw-mills, would be very interesting to a large number of the readers of the *SCIENTIFIC AMERICAN*. On page 128, Vol. 14 (old series) of the *SCIENTIFIC AMERICAN*, it is stated that 12-horse power is required for a circular saw 52 inches in diameter, cutting yellow Southern pine, and running at the rate of 4,600 feet per minute, at the periphery.

A correspondent writing to us from Tioga, Pa., lately, states that 40-horse power is employed in that lumber region, for a 4-foot circular saw, and that this amount of power is for common, not extra work. We had entertained the idea, derived from persons engaged in sawing timber, that about 14-horse power was usually required to drive a 4-foot circular saw, in cutting such timber as white pine, spruce and soft maple; but this amount of power it seems would only be about one-third of that used in Tioga county, Pa.

A GOOD MACHINE OIL.

The difficulty of obtaining a good machine oil—apart from sperm which is too costly for general use—has been felt by manufacturers, and the evil deplored. Aside from the enormous friction entailed by bad lubricants, the absorption of power is a question of immediate loss, and one that soon makes itself apparent in the yearly bills for repairs. Mr. F. S. Pease, of Buffalo, N. Y., has experimented a long time on the production of a desirable machine oil, which could be afforded at a comparatively low rate; and has so far succeeded that, at the recent Exhibition of the World's Fair, held in London, he was awarded two medals upon its merits. The most eminent English engineers—one of them Mr. D. K.

Clarke, professionally well known in this country—have testified to its excellent qualities; and Muspratt, the English chemist, thus states his opinion of it:—

"A qualitative examination of your engine and signal oil proves it to be of a compound nature. In my experiments it burned freely and gave a good light without clogging the wick. It is free from acidity and does not resinify when exposed in a thin stratum to the air. The preceding qualities indicate that the 'Engine and Signal Oil' is well suited to the use for which you have intended it."

Other certificates have been shown us—among them the endorsement of the United States Commissioner at the Industrial Exhibition: but we deem the above sufficient to establish the estimation in which the article is held abroad. Mr. Pease informs us that he has filled large orders for some English railways, and is now supplying the principal lines in this country. We have no hesitation in recommending the oil to manufacturers as a most desirable article.

RECENT AMERICAN PATENTS.

The following are some of the most important improvements for which Letters Patent were issued from the United States Patent Office last week. The claims may be found in the official list:—

Envelope Machine.—This invention relates to a movable slide placed under the lifters, in such a manner that a fresh supply of blanks can be introduced under the lifters at any moment whenever they begin to rise, without stopping the machine; also to a peculiar arrangement of the lifter and table which supports the gum box and under which the blanks are conveyed to the creasing box, in such a manner that the table itself pulls off the blanks from the lifters and retains them in a correct position for the plunger to act upon; and further, to certain improvements in the mechanism employed to impart the desired motion to the gum box in relation to the lifters, to counterbalance the conveyor, to crease, fold, and press the envelopes, and to discharge them from the machine when finished. George H. Reay, of New York city, is the inventor of this machine. The patent has been assigned in full to L. Negbau, No. 5 Spruce street, New York.

Ring Spinning Frame.—In most if not all ring spinning frames heretofore constructed, the rings have been fitted snugly into openings provided for them in the ring rail, without any provision for adjusting them in the said rail. This rail is held in place by lifting rods which work up and down in stationary guides provided for them in the frame, and as these rods and guides wear, the rings become eccentric to the spindles, and cause great irregularity in the draft of the yarns in every revolution of the travelers and spindles, and make imperfect work. The object of this invention is to provide for the adjustment of the several rings in the rail separately, to set them concentric with their respective spindles; and to this end it consists in making the openings provided in the ring rail for the reception of the rings larger than the exteriors of the portions of the rings which are received within them, and in the employment of adjusting screws screwing into the rail from the inner and outer sides thereof, and into the said holes to adjust and hold the said rings therein. Welcome Jenckes, of Manchester, N. H., is the inventor of this improvement.

Leather-splitting Machine.—This invention consists, first, in the employment for adjusting the gage roller at the proper distance from the plane of the edge of the splitting knife according to the thickness to which the skin is to be reduced, of a pair of eccentrics or cams attached to the same shaft, and arranged to act one upon each of the journal boxes of the said roller, whereby the uniform adjustment of both ends of the said roller is insured, and the difficulty of adjusting the said roller correctly by separate adjustments, such as the screws commonly employed, at each end, is overcome. It also consists in making the standards or housings which contain the journal boxes of the gage roller adjustable, to bring the said roller more or less on the edge of the splitting knife, whereby the knife is enabled to be better secured against springing or accidental displacement, by obviating the necessity of adjusting it. Horace Wing,

of Buffalo, N. Y., is the inventor of this improvement.

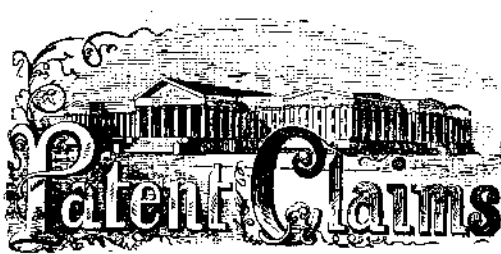
Bone-black Oven.—This invention consists in the arrangement within a rotating circular retort, of a continuous flange running spirally around its inner surface from end to end, or along any portion of its length, whereby a gradual and regular movement of the bone-black from one end to the other is obtained, by the rotary motion of the retort about its axis without giving it any inclination from a horizontal position. It also consists in the arrangement of a drying retort or cylinder in the same oven or casing with, and in such relation to and connection with the revivifying retort, that it may be heated by the waste heat from the same fire by which the latter retort is heated, for the purpose of drying the washed bone-black preparatory to re-burning, and that the dried bone-black may be delivered continuously from it to the re-burning or revivifying retort. It further consists in a novel mode of connecting the revolving, revivifying retort with the coolers or other receptacles into which the revived bone-black is discharged. Gustavus Finken, of New York city, is the inventor of this apparatus.

Horse Pitchfork.—This invention relates to a new and improved horse pitchfork, such as is used for elevating by means of a horse or other draught animal, hay and grain into mows. The invention consists in the employment of two pairs of hooks provided with arms, those of each pair crossing each other and fitted on a rod, the ends of the arms of each pair of hooks being connected by a crossbar, and the latter having a rope attached to or connected with them, in such a manner that when the loaded fork is raised by means of the rope aforesaid, the hooks will be made to grasp and firmly hold its load, and the hooks, by a simple contrivance readily released at any time, to discharge the load. Silas L. Gates, of Verona, N. Y., is the inventor of this improved pitchfork.

Tailor's Shears.—This invention consists in having the lower blade of tailors' shears formed with a recess or shoulder, in such a manner that the cutting edge of said blade can be brought down in line, or nearly so, with the pivot connecting the two blades, without unduly weakening said blade, and that by this construction of the shears draw cut is produced, enabling the operator to work the shears with the greatest ease, and to have the full benefit of the cutting edge from heel to point. Herman Wendt, of New York city, is the inventor of this improvement. For further information address Henry Seymour, 32 B'ekman street, New York.

Rocket.—This invention is more especially designed for signal rockets for military and other operations. It consists, first, in the application to or within a rocket, of a roman candle, for the purpose of discharging stars of the same or different colors, one after the other, and thereby enabling a greater variety of and more distinct signals to be produced. It consists, secondly, in making the stars of the roman candle with cavities in their upper ends, containing charges of gunpowder or other suitable explosive substance, for the purpose of driving out the balls from the case and igniting them at the same time. It consists, thirdly, in so combining a balloon with a rocket as to make it keep suspended for a time, or retard the descent of a roman candle or other firework discharged from the rocket, for the purpose of making a signal, whereby such firework is rendered visible for a longer period, and the signal enabled to be better understood than if it descended quickly. It consists, fourthly, in the novel construction and arrangement of a series of divergent spiral passages in the bottom of a rocket, for the purpose of obtaining its rotary motion by the escape of the gases eliminated in the combustion of the charge, and thereby dispensing with the stick heretofore commonly used to guide and steady the flight of the rocket. George H. Felt, of New York city, is the inventor of this improvement.

THE Woonsocket, R. I. *Patriot* says that no town in Rhode Island is improving more rapidly than Burrillville. This is especially true of its manufactures, and these stimulate and advance its agricultural industry. Nearly all its mills are for the product of woolen-fabrics; and the success of this branch, for a few years past, has overshadowed almost every other business in New England.



ISSUED FROM THE UNITED STATES PATENT-OFFICE

FOR THE WEEK ENDING AUGUST 25, 1863.

Reported Officially for the Scientific American.

*** Pamphlets containing the Patent Laws and full particulars of the mode of applying for Letters Patent, specifying size of model required, and much other information useful to inventors, may be had gratis by addressing MUNN & CO., Publishers of the SCIENTIFIC AMERICAN, New York.

39,620.—Mode of Combining Cider Mill, Corn Sheller, and Fodder Cutter.—James P. Adams, Chester, Ill. Ante-dated Feb. 9, 1863:

I claim the wheel, F, provided at one side with a beveled surface, having radial and tangential rows of teeth, b b', and at the opposite side with knives or cutters, H H, in combination with the reversible hopper, G, lever blade or cutter, I, and feed rollers, J J, operated from the shaft, B, as shown, all arranged as and for the purposes herein set forth.

[This invention consists in combining a wheel, provided with cutters and a beveled toothed side, with a reversible hopper and feed rollers; all arranged in such a manner that corn may be shelled from the ear, apples cut or ground, for manufacturing cider, and straw, stalks, hay, &c., cut for fodder.]

39,621.—Drain Tile Mold.—John J. Alvord, Tecumseh, Mich.:

I claim the sewer and file head for the purposes set forth and described.

39,622.—Beehive.—J. H. Andrews, Almont, Mich.:

I claim, first, A hive provided with a suspension, D, having holes, d, made in it, in combination with the boxes, E E, provided with holes, e, in their bottoms and openings, j, in their sides, in line with openings, i, in the sides of the hive, all arranged as and for the purposes herein set forth.

Second, The manner of securing the back part of the lid or cover, K, and bottom board, B, to the hive, A, as shown and described, to wit: by having said parts provided, respectively, with cleats, o d, having pins, b p, driven in them which fit into the back of the hive.

[The object of this invention is to obtain a bee-hive of simple construction, which will admit, by a simple manipulation, of colonies of bees being increased without permitting them to swarm; the hive at the same time admitting of two different colonies working in it in separate compartments, and also affording facilities for the removal of old comb when necessary.]

39,623.—Wringing Machine.—Francis Arnold, Haddam, Conn. Ante-dated Nov. 18, 1862:

I claim the vibratory roller frame, m, with proper fastenings for holding it in place, substantially in the manner as and for the purpose described.

39,624.—Tidal Valve for Draining Land.—E. T. Bainbridge, Louisville, Ky.:

I claim the combination of the flume with the valve, constructed, arranged and operating, substantially in the manner described for the purpose set forth.

39,625.—Retort for Refining Zinc.—William Blake, Boston, Mass.:

I claim an improved retort, consisting of an ordinary retort, A, and a trap or cesspool as specified, or its equivalent, applied either to the entrance or exit passage of the retort, or to each of them, and so as to operate substantially as and for the purpose hereinbefore specified.

39,626.—Sawing Machine.—Isaac W. Bowers, Ovid Center, Mich.:

I claim, first, The vertical and horizontal saws, D F, when used in combination with a reciprocating frame, L, having upright frames, N N', attached to it in which a log, R, is suspended, and the frame, L, operated through the medium of the racks, M M, pinions m m, belts, g g', and lever, J, all arranged as and for the purpose herein set forth.

Second, Suspending the log, R, between the upright frames, N N', by means of the center points or pins, P', attached to the slides, Q Q, which are moved or adjusted through the medium of the racks, b', pinions, c', arms, h', and plates, e', substantially as shown and described to admit of the lateral adjustment of the log, R.

Third, Placing the slides, Q Q, on vertically adjustable bars, O, in the frames, N N', the bars, O, being raised and lowered by means of the racks, s, and pinions, t, as described, when the parts above named are used in combination with the saws, D F, and the frames, N N', are attached to a reciprocating frame, L, all arranged to operate as and for the purpose herein set forth.

Fourth, The pawls, S S, attached to the ends of the frame, L, when used in connection with the saws, D F, and bed pieces, I I, as and for the purpose herein specified.

39,627.—Washing Machine.—Isaac W. Bowers, Ovid Center, Mich.:

I claim the sub-box, A provided with rounded ends, and with rollers, C, as described in combination with the rubber, D, provided with rollers, i, fitted between side strips, d d, having rounded ends and also provided with a perforated top board, f, all arranged as and for the purpose set forth.

39,628.—Cracker-Cutting Machine.—E. O. Brinkerhoff, New York City:

I claim, first, The cross-head, H, with cutters, G, attached in connection with the cross-head, I, the springs, J, and fixed or permanent cross-bar, E, all arranged to operate as and for the purpose specified.

Second, The connecting of the rod, P, to the arm, N, through the medium of the tube, O, and nuts, h h, fitted on a screw or rod, P, substantially as and for the purpose set forth.

[This invention relates to an improvement in the cutting apparatus of cracker machines, whereby the same is made to cut in a more uniform manner than heretofore, without subjecting any of the working parts of the machine to undue strain, and at the same time compensating for any unevenness in the sheet of dough and ensuring a perfect clean cut at all times.]

39,629.—Machine for upsetting Tires.—Ira D. Card, Danville, Cal.:

I claim, first, The adjustable fulcrum head, G, with the self-acting wedge, F, constructed and operating as described.

Second, I claim constructing the jaws, H H, of the walls of the groove in the manner and for the purpose of operating substantially as described.

39,630.—Grain Dryer.—Louis S. Chichester, New York City:

I claim first, A series of centrifugal drying tables in combination with the stationary intervening funnels for receiving the grain as scattered from one table and returning it to the next table below, substantially as specified.

Second, I claim the central hot-air tube, g, and its openings, i, in combination with the said centrifugal tables and funnels, for the purposes and as specified.

Third, I claim the escape apertures, l, for regulating the escape of the heated air and vapors, in combination with said centrifugal tables and funnels as specified.

39,631.—Truss-Pads.—Henry J. Childs, New York City:

I claim forming the truss pad or pads of brushes for the purposes and as set forth.

39,632.—Painter's Panel.—Albert G. Collins, Washington, D. C.:

I claim the application of canvas to pasteboard as herein above described for the purpose set forth.

39,633.—Harvester Cutter-Bar Connection.—Geo. W. D. Culp, Allensville, Ind., and W. J., Keeney, Florence, Ind.:

I claim, first, Connecting a pitman, B, to a cutter-bar, A, by means of a single conical or conoidal journal, b, passing through a corresponding socket, a, in the heel of the cutter-bar, and confined by an adjustable plate, C, as herein shown and described, so as to employ the entire strength of the projection on the heel of the bar, and admit of tightening up the cone or journal for the whole extent of its length.

Second, Constructing the said point, cone or conoidal journal with a shoulder or collar, h', to constitute a bearing for the confining plate, I, substantially as herein described.

Third, Connecting the pitman to the crank or fly wheel, by means of a rocking box, substantially as set forth.

[The principal object of this invention is to compensate for the wear of the crank pin and rod, by the use of an adjustable conical journal, which may be set up in its socket so as to keep the parts constantly tight until worn out.]

39,634.—Washing Machine.—Samuel Davis, Providence, R. I.:

I claim the combination of the inner suds reservoir holders, R R, and centralizers, T T, with the lever standards, p j, applied to the outer suds reservoir, the whole being substantially as and for the purpose or objects hereinbefore specified.

I also claim the improved arrangement of the connection, V W, of the operative levers, g F, with respect to them and their fulcra, o I.

39,635.—Distilling Apparatus.—Henry G. Dayton, Maysville, Ky.:

I claim, first, The combination of the boiler, B, and double still, K, both constructed, arranged and operating in the manner and for the purpose specified.

Second, The single still, L, constructed substantially as described, and heated by a central steam pipe and surrounding jacket, as specified.

Third, The described combination of the single still, L, with the boiler, B, of the double still, K, whereby the steam after heating the double still may be employed for heating the single still, as explained.

Fourth, The combination of the wash boiler, H, with the furnace, C, and boiler, B, constructed and arranged substantially as and for the purpose specified.

[In this apparatus beer in process of distillation is preserved from contact with any metallic surface exposed to direct fire heat. The results are entire freedom from scorching, absence of injurious metallic oxidation, great uniformity of action and saving of fuel.]

39,636.—Signal Rocket.—George H. Felt, New York City. Ante-dated July 29, 1863:

I claim, first, The combination of the Roman candle with the rocket, substantially as and for the purpose herein specified.

Second, The construction of the stars of the Roman candle with cup-like concavities for the reception of the charges, e, of gunpowder, by which they are to be discharged from the case of the candle, substantially as and for the purpose herein specified.

Third, The combination of a balloon with a rocket substantially as and for the purpose herein specified.

Fourth, I claim the plug, u, with the central passage, t, and spiral tubes or passages, u u, combined as and for the purpose herein specified.

39,637.—Apparatus for Revivifying Bone Black.—Gustavus Finken, New York City:

I claim, first, The arrangement of a flange, b, on the interior surface of a revolving retort in spiral or screw-like form, substantially as and for the purpose herein specified.

Second, The arrangement of the drying retort or cylinder, B, in the same oven with the revivifying retort, A, in such manner as to be heated by the waste heat from the fire by which the latter retort is heated.

Third, Combining the revolving retort, A, with the coolers, K K, or other receptacles by means of a stationary head, L, and one or more pipes, J J, and sliding connecting sleeves or couplings, f f, substantially as hereina described.

39,638.—Revivifying Bone Black.—Joseph Forest, New York City:

I claim drying bone black by forcing heated air through it substantially as described.

And in combination with the heated air forced through the bone black, I claim applying heat to the vessel containing it (the bone black) at the same time.

I also claim the apparatus described for the purpose specified.

39,639.—Plow.—William Frank, St. Louis, Mo.:

I claim the standards, C, brace, D, lower and top bars, E G, and guide, H, all combined and applied to the beam, A, as shown for the purpose specified.

I further claim the securing of the mold-board, I, to the standards, C, and bar, E, by means of the hook, d, and screw bolt, e, and the swivel screw brace, J, substantially as and for the purpose specified.

[The object of this invention is to obtain a plow which may be readily adjusted for plowing deep or shallow, as may be required, and also readily adjusted so as to take more or less land, that is to say, to turn a furrow slice of greater or less width, and at the same time be capable of having different shares and mold-boards attached to it to suit different kinds of work.]

39,640.—Boiler Furnace.—Alexander Friedmann and F. Emile d'Eranger, Paris, France. Patented in France, June 10, 1862:

We claim the application, substantially as herein set forth and shown in the drawing, to the fire boxes of steam boiler furnaces of an inner mantle in metal, so arranged as to form an inclined diaphragm or reverberating chamber in and by which are effected the heating of the air required for the combustion of the smoke and the distribution of this air over the ignited surface of the fuel on the grate.

39,641.—Horse Hay Fork. Silas L. Gates, Verona, N. Y.:

I claim the two pair of hooks, A A A', fitted on the rod, B, as shown, in combination with the fixed roller, D, horse or detachable roller, F, rope, E, hook H, and lever, I, all arranged and combined to form a new and improved horse pitch fork substantially as set forth.

39,642.—Revolving Fire-Arm.—M. F. Geraghty, Jersey City, N. Y.:

I claim the employment of the locking ring, D, constructed, arranged, combined and operating in conjunction with the rear portion of the cylinder, C, and the cartridge case, E, as herein shown and described.

[This invention relates to revolving fire arms for the use of metallic cartridges, inserted in the chambers from in front of the cylinder. Its object is to provide for securing such cartridges in the chambers in such manner that they can neither drop out in front nor move forward therein, and thereby interfere with the revolution of the cylinder, and to this end it consists in the construction of the cylinder of two or more pieces, one of which is movable about the axis, independent of the main body of the cylinder, and constructed to enter grooves provided in the cartridge for its reception.]

39,643.—Closing Fruit Cans.—N. S. Gilbert, Lockport, N. Y.:

I claim the ring of india-rubber, or elastic material, secured by ce-