

NEW RIFLE ATTACHMENT FOR FOWLING PIECES.

We were recently shown, at the store of Messrs. Cooper, Harris & Hodgkins, No. 177 Broadway, in this city, a very ingenious device whereby an ordinary central fire, breech loading, double barreled fowling piece can be at once transformed into a rifle. The appliance, which may be combined with either one or both barrels, is simply an extra barrel, or tube, of steel, rifled within. Exteriously it is made to exactly fit the interior of the bore, a suitable enlargement at one extremity rendering it conformable to the cartridge chamber. It is pushed into the breech with no more trouble than an ordinary metallic cartridge, and completely lines the barrel, from the rear flush to the muzzle.

For sportsmen who desire to travel light, without the extra weight of both fowling piece and rifle, we should think this to be an excellent and convenient arrangement. Its small size enables it to be readily transported in the field, so that the hunter is provided with a piece, one barrel of which is adapted for shot and the other for ball; or if, while pursuing birds or small animals, he suddenly sights larger game, he can immediately alter his gun from a smooth bore to a single barreled rifle, or, if he has two extra tubes, to a double barreled rifle.

NEW MODE OF CHAIR CONSTRUCTION.

We have, in the past, called the attention of our readers to the defective construction of modern household chairs, which, however well seasoned the timber used in their manufacture may be, are rarely durable, or even able to withstand for a short time the ordinary wear and tear of moderate use. The inventor of the device which we illustrate herewith proposes a simple arrangement which, he claims, adds greatly to the strength of the piece of furniture through disposing the material so as to provide for opposing the strains in the most effective manner possible. The most destructive of these strains occurs when the chair is tilted back by a heavy occupant. The tendency is for the seat and back legs to close or form a more acute angle, and for the seat and fore legs to open or form a more obtuse angle, as also for the fore legs to withdraw from the seat.



These tendencies he directly opposes by introducing a brace, counterbrace, and tie; and in order that one shall assist the others, these various parts are embodied in light and handsome metallic trussings, which, at the angles, are let into and attached to the rails and legs of the chair by means of bolts or heavy screws, as shown in our illustration.

Very light castings, thus applied, securely hold the articles together, and give permanent stiffness and strength to the lightest chairs. These castings, of malleable iron, may be made plain or ornamental, japanned, silvered, or gilded, and are applicable to the cheapest as well as to the most costly chairs. Patented March 18, 1873. For further particulars address G. F. Ells, Deposit, Delaware county, N. Y.

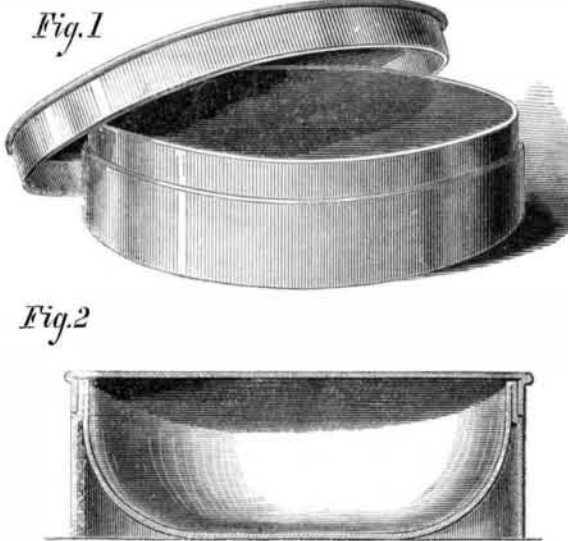
Miller's Combination Sprinkler.

Messrs. Underhill & Miller, of No. 183 Water street, this city, manufacture an improved form of combination sprinkler, which is excellently adapted for farm uses. The implement consists of a large syringe provided with a one-sided spout full of small holes on the upper side, through which a liquid, destructive to noxious insects, can be thrown in spray on the under side of the leaves of plants. The sprinkling spout can be easily detached and straight pipes of various sizes substituted in order to fit the device for use as a syringe for cattle or ordinary medical purposes. All the appliances are packed in a neat case, and are accompanied by packages of Miller's compounds for trees and plants and also for veterinary uses. We have used the apparatus and can recommend it to those of our readers who may have gardens to cultivate and cattle to care for.

PROFESSOR CRYNI, of Brussels, and others, have found favorable results from the administration of large doses of iodide of potassium in the second stages of Bright's disease.

BLACKING BOX.

Our illustrations represent an improved form of blacking box, affording both perspective (Fig. 1) and sectional (Fig. 2) views. It will be noticed that the receptacle for the blacking is made saucer-shaped, the rounded bottom allowing all of the composition to be used. The sides are vertical, extending down from the upper edge to form a support for the box and also to receive the cover which fits over the upper flanged portion, as shown.



The advantages claimed are economy in the use of blacking, none being wasted by caking in sharp corners, ready removal or affixing of the cover, and the absence of rough or sharp edges which cut the brush. Patented July 11, 1871. For further particulars address the inventor, Mr. Dennis O'Leary, Hubbard, Trumbull county, Ohio.

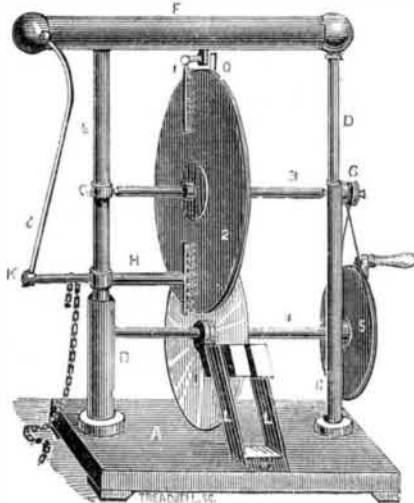
CARRE'S ELECTRICAL MACHINE.

This machine consists of an arrangement by which a current of electricity is derived from a combination similar to the electrophorus.

A is the base of wood or metal, 1 1/4 inches thick and 16 inches square. B and C are two round pillars of wood (or ebonite), B being 10 inches and C 17 inches long; they are both 2 inches in diameter. These pillars pass through the base, and have nuts below to fix them securely. E is a round ebonite (or glass) rod, 1 1/4 inches in diameter and 16 inches long + the piece of it screwed into B. The rod, D, is of glass or ebonite, 8 inches long, and the same diameter as the other, with a piece 1 inch long at the lower end fitted with cement into C, and a piece 2 1/4 inches long at the upper end going up into the prime conductor, F. The conductor is a cylinder of tin plate lacquered black, with two brass spherical ends fitted into it, one of which has a pipe soldered into it, up which the end of the glass rod, D, goes and fits tight. The rod, E, has a hole, tapped with a screw thread in the upper end, and a screw is put down from inside the conductor into this, and secures the conductor to the rod.

1 and 2 are disks of ebonite—1 being 12 inches and 2 being 18 inches in diameter. They are fixed to the axes 4 and 3 respectively. 4 is turned by the pulley wheel and handle 5, and this pulley wheel drives 2 at a rate six times as fast as 4 goes round. The rate of the upper disk may be more than this, but should not be less. The lower disk is 1/4 inch thick, the upper one a full 1/8. The axes are of wood, with brass fittings at the ends.

The band in the figure is represented as crossed, but it is no matter which way 2 turns. At G is a collar of brass, with a pinching screw to hold it on the rod, E, and this collar carries the pin at the end of the axle 3, on which it turns. H is a brass pipe carried by a similar collar, and carrying the comb for collecting the electricity as near as possible to the surface of 2; at the other end is a bell, K, capable of rota-



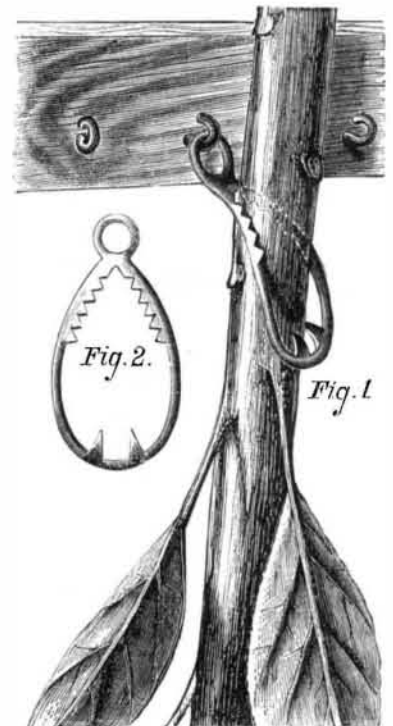
ting stiffly on its axis, carrying the brass wire, J, with a ball at the top, which can be thus made to touch the conductor or be fixed at any distance from it. At I is a comb attached to the conductor; and on the other side at O a piece of ebonite, about 2 1/4 inches long and 1 inch wide, is attached to the conductor parallel with the disk 2, and having on the side next the disk a piece of varnished paper cemented to it with four or five points cut on the edge of the paper, which is somewhat wider on one side than the ebonite plate, so that

these points are projecting in the direction in which the disk 2 is turning. A correspondent says that he put this apparatus to his instrument as a matter of faith: it seems to work as well without it, and he does not in the least understand what its office is. Lastly, at L L is the rubber, consisting of two cushions, which clasp the disk 1 closely, and are supported by two thin wooden springs, L L, fastened to a block of wood at the bottom, which slides on and off on a dovetail fixed to the base A. The cushions are covered with thin leather, stuffed with horsehair; and the amalgam is bisulphuret of tin, called *aurum musivum*, rubbed on the cushions. The disks overlap by 4 inches, and run as close together as possible. The disks should be carefully selected, without winding or buckles in them. When the machine is in action, the comb at H is connected with the ground by a chain, and the ball at the top of J is brought away from the conductor till the striking distance is attained. This machine gives from 3 to 5 inch sparks easily and in torrents, with a condenser showing a square foot of surface. One or two of the sparks are enough for most people. There is a necessity for occasionally washing the disks, first with fluid magnesia and then with paraffin, as the ozone appears to turn the sulphur of the ebonite into a coating of sulphuric acid, which attracts moisture. This would be avoided by glass discs, but they produce much more friction. A piece of Bristol board well dried, and when well dry well coated with shellac, might be tried for the disk 2. If glass rods are used for E and D, they should be coated with shellac, as the machine is much inclined to blow and leak everywhere.

The above, from the *English Mechanic*, will inform those of our correspondents, who have asked for descriptions of the construction of an electrical machine, how they may make a good instrument.

TOBACCO HANGER.

Green tobacco is suspended in the drying house by lashing the stalks to horizontal poles with twine, an operation requiring some skill, necessitating waste of cord, and often causing injury to the leaves. Dr. Frank C. Johnson, of Brooklyn, N. Y., in order to improve upon this system, has recently patented a simple and ingenious invention, illustrated herewith, which will doubtless find ready appreciation



among all cultivators of the nicotian weed. The butt end of each stalk is passed through an oval metal ring, Fig. 1, on the inner side of which are formed a number of notches and two spurs. By the means shown in Fig. 2, the plant is then suspended to a hook or nail, its own weight crowding it against the sharp projections, which firmly hold it. To remove the stalk when the tobacco is dry, it is only necessary to lift it and crowd it to the side of the ring opposite the two spurs, when it will readily pass out of the holder. Patented August 27, 1872.

How Deltas are Formed.

It appears from the observations of Mr. David Robertson, F. G. S., that in fresh water particles of clay were held suspended for a long time before wholly subsiding, while salt water, or a mixture of salt and fresh, became comparatively clear in the course of a few hours. The results showed that water only slightly brackish had a great power in precipitating the clay, and from this he concluded that the great bulk of the clay carried down in solution by rivers must be deposited before it could reach any great distance from the seashore. This may throw some light on the formation of deltas, and on the silting up of river courses within the influence of the tides. It may also assist in determining how far the glacial mud, for example, could be carried into the seas by tides and currents.

NEW MODE OF PREPARING ANIMAL MANURES.—Coignet purposes to treat animal refuse of all kinds with superheated steam to effect its conversion into manure without nuisance. He is convinced that this will be the best method of treating the offal of the slaughtered oxen or the *Ida* Plata.