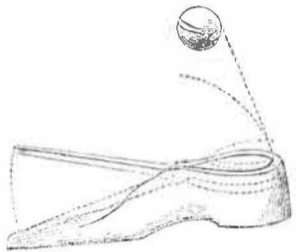


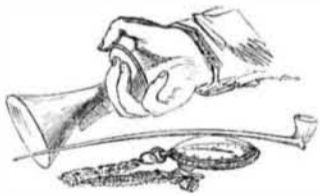


A common way of playing trap and ball is to have a shoe of wood, and a spoon in the heel, with a long end hinged to the shoe by a bit of wire. The ball is placed on the spoon end, and the long end smartly struck, when the ball is thrown out in the direction shown by the dotted line, and it can again be conveniently struck by the bat. The dotted lines in the illustration show the alteration of position which takes place when the ball is discharged from the shoe. "But," it may be said, "the spoon which moves the ball moves in a segment of a circle, and, of course, the ball will continue in the same path; how, then, can it be made to fly up?" It must be noticed that the spoon can only ascend a cer-



tain distance, because its passage is arrested by the long end meeting the shoe, and the ball, having motion imparted to it, flies off in a right line from the moment in which its motor stopped. The same is, perhaps, better illustrated in the sling. A bit of leather and two strings, having a stone held in the leather, is whirled rapidly round by the hand, and one string being suddenly let go, the stone flies off in a straight line, or in other words, at a tangent with the circle it has been describing. Playing ball is good healthy sport for this cold weather, and helps to make ruddy cheeks and warm hands.

The dry frosty days are just the time of year when it is most easy to be successful with electrical experiments; and a very simple one we give our readers to perform, as illustrative of electrical attraction. Lay a



watch down on the table, and on the glass balance a tobacco pipe very carefully. Next take a wine glass, rub it quickly with a silk handkerchief, and hold it for half a minute before the fire, then apply it to the rear end of the pipe, and the latter, attracted by the electricity excited by the friction and warmth of the handkerchief and glass, will immediately follow it; and by carrying the wine glass around, always in front of the pipe, the latter will continue its rotary motion, the watch glass being the center on which it rotates.

New Self-Lighting Lantern.

The trouble and annoyance that is often experienced by persons trying to light a lantern in the open air, say on some windy night, is by this invention entirely obviated. Oftentimes it is desirable to obtain a light quickly, just as a person would want to fire a pistol immediately, and not have to wait to load and cap it at the moment its aid was needed; so with an ordinary lantern, it must either be carried lighted or lighted when wanted, which is a process that in the house occupies some time, and much longer out of doors.

The lantern which is the subject of our illustration can be prepared at any time, and by merely touching a trigger with the thumb the lantern is lighted. It is applicable for

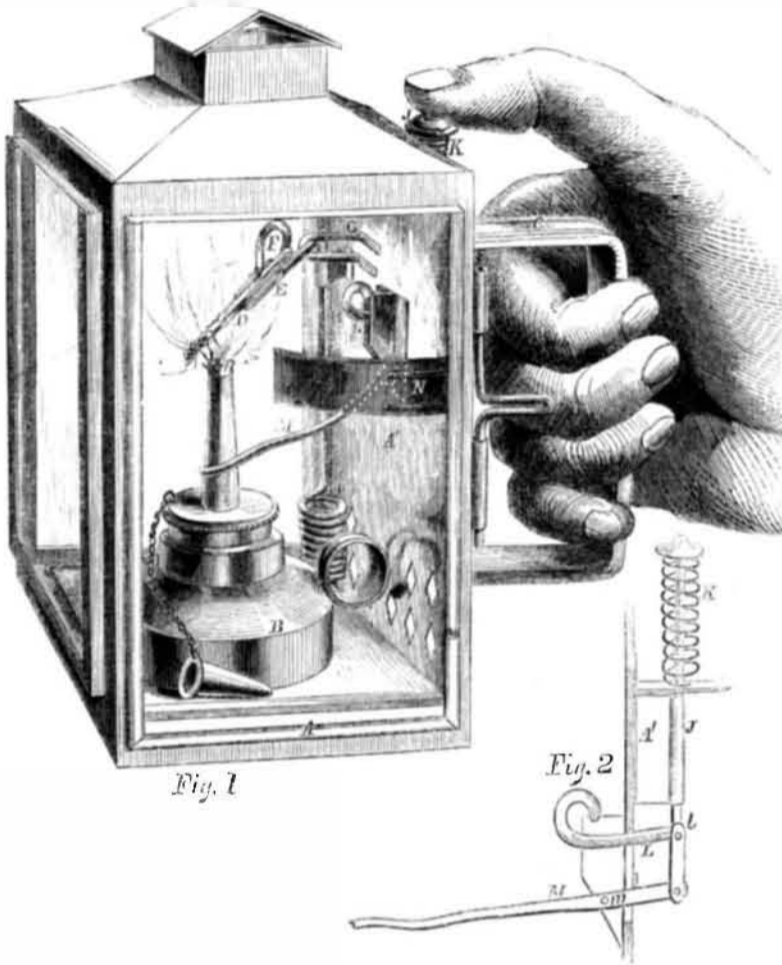
the open air or the sick chamber, and its construction we will now describe.

A is the lantern containing the lamp, B. A' is the door to which the lighting mechanism is attached, and C is the handle. The match, D, is placed in a socket, E, provided with a spring, F, which holds it firmly in its place. This socket is attached to the bent rod, H, confined in the wire loop, G, and terminating in the spring, I, fastened to the door, A'. Fig. 2 shows the operating parts, which are con-

nected with the door. A bar, J, is held up by the spring, K, pressing against a cap on its upper end and on the handle, and this bar is hinged at l to a catch, L, projecting through the door, and hinged to a bar, M, that is also hinged to the door at m. N is a curved plate, either corrugated or carrying a piece of sand-paper.

The operation is as follows:—The match is placed in the socket, E, and pulled back over the catch, L, which keeps it flat against the

RICHARD'S SELF-LIGHTING LANTERN.



door until a light is wished, when the thumb is pressed on the cap on J, and L being depressed allows the spring to pull back E, and drag the match quickly against the plate, N, which ignites it, at the same time the hooked bar, M, ascends, and its hooked end throws off the extinguisher which ordinarily covers the wick. The match then burns over the wick and ignites it, and at the same time

consumes that portion of the match which would interfere with the light, so that it drops off and leaves the light free to burn.

It is a good lantern, and was patented Jan. 5, 1858, by the inventor, Albert C. Richards, of Newtown, Conn., who will furnish any further particulars. It was noticed on page 147 of the present volume of the SCIENTIFIC AMERICAN.

The Crampon.



In winter, when the streets are slippery in the extreme, and horses are continually endangering the lives of those whom they are drawing or carrying, by falling down on the slippery stones, it is a common practice in England to rough the horse's shoes, that is, to

raise a number of serrations on the bottom of the shoe by a chisel or file; this, of course, quickly wears them out. In this country, where the same accident is just as liable to occur from the falling of horses on the hard snow, their shoes are calked, that is, steel spikes are worked on them, which take hold in the snow, and prevent slipping. This does some slight injury to the horse's hoof. We now call attention to a combination of the calk with an elastic shoe, which has been invented by M. Anelli, of London, Eng., who calls it a "Crampon." The form and adjustment of it will be seen by the accompanying engraving.

It can easily be taken off or on, and goes over the ordinary shoe. It has been tried on ice with heavy loads, and the horses had a good, steady hold; the wear is very slight. The veterinary surgeons to the Queen of England, the Horse Guards, and the riding-master of the royal family, greatly approve of it, as does also the Veterinary College of Britain. Although there does not seem to be much necessity for such contrivances here, this winter, it is well to know of such things when they are required.

L'Inventore, published at Turin, in Piedmont, announces that the patent laws of that country are undergoing a liberal supervision by the government.

Transmission of Fevers.

In a work recently published by an English physician on the transmission of fevers, after referring to the value of thorough ventilation, light, and cleanliness, to disinfect clothes and apartments, he says:—"It is important to know, regarding infection, that when not destroyed or dispersed in the sick-room, it attaches itself and adheres with great tenacity to all articles of furniture, chairs, tables, drawers, &c., nestling in their innumerable pores; and unless these articles be scrubbed with a solution of chloride of lime, or exposed to a strong heat, or a free current of air for several hours, it may again become evolved, more virulently than at first, after a lapse of weeks. But it chiefly adheres to cotton and woolen materials. The patient's body-clothes and blankets become saturated with it, like a sponge with water; in airing these materials, a mere passing breeze is not always sufficient to carry it away."—Exchange.

[There is little doubt that infectious diseases are carried by things and in ways we little dream of; but whether infection adheres so closely to articles as the above paragraph would intimate, is a question. We would however, advise any of our readers who should unhappily have occasion to want the advice, to boil a little nitric acid in the sick room, (first removing therefrom all metallic articles,) as this is the most powerful and perfect disinfectant.—Eds.



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