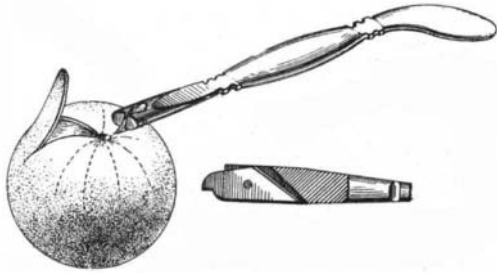


SIMPLE AND INTERESTING INVENTIONS.

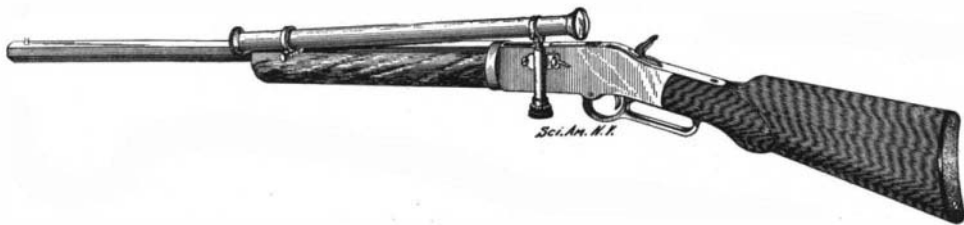
ORANGE PEELER.—A simple device for scoring and peeling oranges is shown in the accompanying illustration. The invention is that of J. E. Crandall, of Brooklyn, N. Y., and consists of a handle-portion having a scoring-knife at one end and a peeling-blade at the other. At the scoring end the handle is brought into a cylindrical form which is slotted longitudinally. In this slot the scoring-knife is pivoted, its cutting edge inclining from a point within the slot, downward and forward, to a point slightly beyond the end of the handle.

When desired the blade can be turned on its pivot and housed, as shown in the sectional view, and will be safe from injury and cannot cut the hand. In both the open and closed positions, the unsharpened end of



ORANGE PEELER.

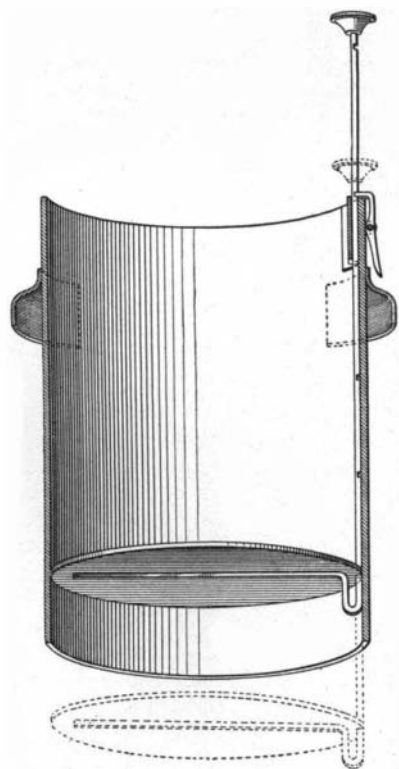
the knife projects from the handle and serves as a means for turning the blade on its axis. When the knife is open this unsharpened end rests against the top of the end wall of the slot and acts as a stop to prevent the knife from swinging forward too far. The knife is pointed at its forward end, so that it may be readily forced into the orange skin, and projects just far enough to cut the orange skin without injuring the pulp. The fruit may be peeled by slipping the peeling-blade, at the other end of the instrument, between the skin and the pulp. This flat blade curves downward so that it can readily follow the contour of the orange. By means of this instrument the orange may be scored



TELESCOPIC GUNSIGHT.

neatly, as shown in dotted lines, and the skin turned back to give the fruit a very tasteful and appetizing appearance.

MEASURING VESSEL.—An inventor who lives in Indianapolis has devised a vessel, the capacity of which can be varied and the contents discharged, not at the top, but from the bottom. An adjusting-rod is mounted in the receptacle and carries a bottom plate, the free side of which is inclined upwardly. By means of a catch, which is designed to enter any one of a series of notches formed in the rod, it is possible to hold the rod in any desired position. The notches are so arranged that the plate can be adjusted so that the vessel will contain one peck, a half a peck, etc. As soon as the material is placed in the receptacle, the plate yields slightly, the lower end of the rod being thrown against the wall of the vessel, thus forming a brace for the plate. By releasing the rod the weight of



A VESSEL THAT MEASURES LIQUIDS.

the material will move the plate down through the bottom.

BUG TRAP.—The ants or bugs that climb up the legs of a chair or bed fitted with a trap invented by Patrick J. McAtee, of Gilberton, Pa., will never travel far. They will encounter a turpentine-filled drum supported

on the castor. In order to walk up the leg of the chair or bedstead the ant or bug must pass up through a circular opening in the bottom of the drum, until stopped by the upper interior surface of the drum. This surface is roughened so that the bug will adhere to it with no danger of falling back through the opening in the bottom. The rest of the upper wall is smooth so that the bug will lose its foothold and fall into the turpentine. The bottom of the drum is also smooth, and is conical in shape, in order to prevent the bug from crawling along its under surface, if perchance it should happen to drop onto the edges of the circular opening.

SPRING ICE SKATE.—An improved skate, which should appeal to all skaters, has been recently invented by Robert Bustin, of St. Johns, New Brunswick, Canada. The invention is of particular advantage in connection with racing skates. The foot piece, which consists of a plate of thin spring metal, is rigidly secured at the instep to the runner. Its two ends, however, are connected to the runner by a yielding support. The runner is formed with two vertical spindles, one at each end, which are adapted to enter openings in the foot-plate. Coil springs on these spindles bear against the under-surface of the foot-plate and are sustained by shoulders on the spindles. The foot piece is retained by cotter-pins which pass through holes in the upper ends of the spindles. The advantages of this arrangement are evident to the fancy skater. It is sometimes necessary, in performing difficult evolutions, that the motion of the front part of the foot-plate should not be transferred to the rear of the plate, and vice versa. The rigid support near the center of the skate insures a distinct independent motion to each part of the foot-plate. The construction of the skate is such that different styles of runners may be easily attached to the foot-plate.

TELESCOPIC GUNSIGHT.—The range of the human eye has not developed with that of the firearm, for which reason it has been a difficult matter to obtain accuracy of aim at great distances. In order to assist our defective eyes, an inventor has hit upon the idea of mounting a telescope upon the gun. The result is that not only is the object brought apparently much nearer, but the marksman can fire with considerable accuracy at twilight or dawn, at a time when the ordinary sights fail him. The telescope is mounted by a front support transversely adjustable, and on a rear support capable of horizontal and vertical adjustment.

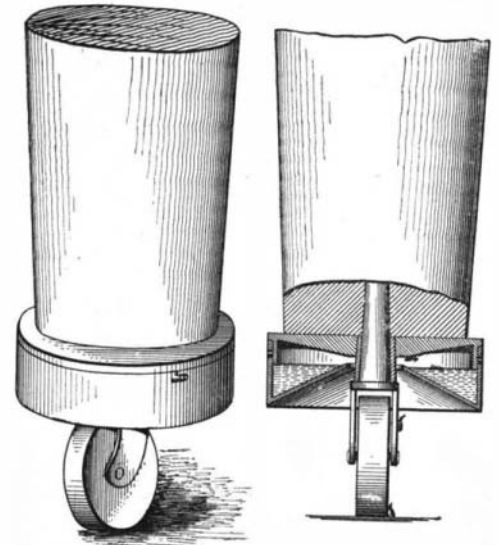
Inventor of the Lucifer Match.

There have been many claimants to the honor of being the maker of the first lucifer match. But a recent discovery of some old account books at Stockton-on-Tees, England, affords documentary evidence which proves beyond question that one John Walker, a Durham chemist, was the original inventor and maker of the match. According to a diary, in which Walker carefully noted all his business transactions, the first box of matches was sold for thirty-five cents in April, 1827. It appears that they at once became popular, and people traveled from the adjacent towns to purchase them. Walker employed the poor of Stockton to split the wood, but dipped them in the phosphorus mixture himself to insure their perfection. The inventor was pressed by his friends to patent the process; he refused, however, affirming that he had ample means to satisfy his simple wants.

A Simple Current Transformer.

Since current transformers are used in connection with armatures, their function being to transform a current of large volume flowing under the influence of a high voltage down into one suitable for proportionate measurement by the ammeter, it is of the greatest importance that the apparatus should possess great precision of regulation. The nicest accuracy of transformers operating at low loads, such as the ammeter provides, is attained in transformers having a magnetic circuit of minimum length, or, in other words, a core without any unnecessary air gaps and of such shape that it has the least possible length. In such a magnetic circuit there will be less leakage, less core loss, and therefore better regulation. Furthermore, less material will be required in the construction of the core. It has been customary to construct current transformers with a core adapted to be slipped over the ordinary switchboard bus-bar, which, as every electrician knows, consists generally of a wide, flat copper strip and which might carry, for example, 1,000 amperes or more. In such cases the bus-bar constitutes what is known in practice as a "single-turn primary." The General Electric Company has acquired from Augustine R. Everest an invention in

which the core consists of an assemblage of symmetrical sheet-metal punchings or laminæ, which are preferably in the form of rings; and this core provides the shortest possible magnetic circuit. In order to provide a uniform air-gap between the core and the primary, the latter is preferably constructed to have an exterior outline similar to the interior configuration of the core. The inventor states that a transformer provided with a primary having its cross-section of any symmetrical figure will possess some of the advantages of his invention; but the factors of regula-

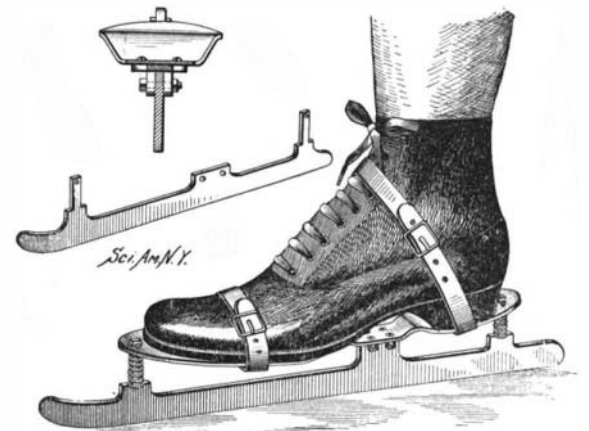


BUG TRAP.

tion and economy will increase in proportion to the number of sides of such symmetrical figures, so that the factors are attained in the highest degree by an annular core and a cylindrical primary surrounded thereby. Inasmuch as the length of the primary within the core is very short compared with the bar to which the primary is secured, the current density of the primary can be considerably higher than in the bar, so that by reducing the size of the primary to a minimum, the length of the magnetic circuit and the amount of core material can be reduced to a minimum, while the highest degree of accuracy is attained. Furthermore, since the primary is of short length with respect to the bus-bar, it is not absolutely essential that the primary be made solid, for in some instances a hollow primary will operate satisfactorily, owing to the so-called "skin effect" of the alternating current with which the transformer is used. To the ends of the primary above described are secured metallic pieces or flanges which can be mounted upon the ordinary oblong bus-bar, so that there is thus provided a complete independent apparatus capable of being applied in any desired place.

The New Australian Patent Law.

The Commonwealth of Australia was inaugurated on January 1, 1901; and the customs, postal, and defense departments were taken over from "the States" to Federal control, this being provided for in the Federal Enabling Act. But patents, however, cannot be taken over for lack of a suitable patent act. In May last an official convention of the Patent Commissioners of South Australia, Victoria, New South Wales, Queensland and Tasmania, was held, as the



SPRING ICE SKATE.

result of which a Federal patent bill was prepared and handed to the Attorney-General. No one knows the nature of this bill. Patent agents of Australia have urged the importance and early introduction of a Federal patent act; and the ministry as a result have authoritatively stated that a law will be sooner or later passed. In the meantime, therefore, the patent laws of the six States remain in force until 1903, and possibly later. The new law, whenever it will be passed, will sanction the granting of one patent for the entire Commonwealth; six patents are now necessary.