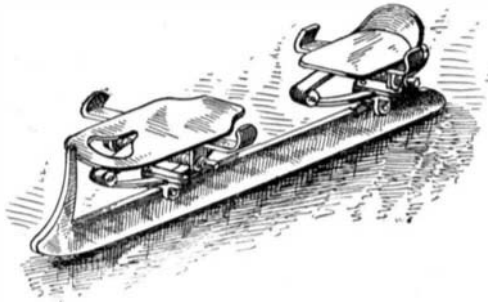


may be adjusted by turning the eccentric pin 20. The inventor of this novel steam trap is Mr. John Langridge, 108 High Street, Ramsgate, England.

ODDITIES IN INVENTION.

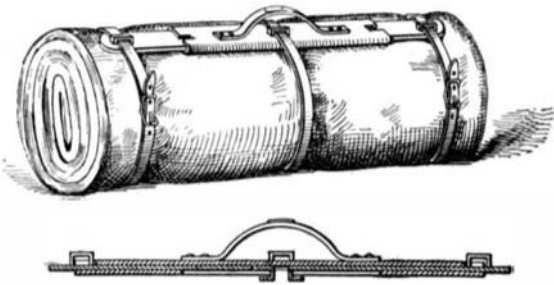
SPRING SKATE.—A novel improvement in skates has recently been invented by a resident of Troy, N. Y. In place of rigidly securing the skate blade to the foot-plate, the plates which support the heel and ball of the foot are separately mounted on springs. The forward spring is rigidly secured to the skate, but the rear spring is adjustable to several positions, in order to accommodate it to different sizes of shoes. Ordinarily



SPRING SKATE.

springs are used to cushion shocks and jars, but no such reason is argued for equipping skates with springs. Instead the springs serve to provide a certain flexibility that is impossible with the present rigid form. With such skates the skater can glide through various figures with much greater ease and freedom, and he will find the recreation less tiring, because he can move his foot at will, shifting his weight from the heel to the ball of the foot.

EXTENSIBLE SHAWL STRAP BAR.—One of the objections to a shawl strap as heretofore made is the fact that it is not adaptable to all sizes of bundles; the shawl strap bar being of fixed length serves as a limit to the length of the bundle upon which it may be used. To overcome this objection an Australian inventor has recently devised an extensible shawl strap bar which may be adjusted to any desired length. The



AN EXTENSIBLE SHAWL STRAP BAR.

method of accomplishing this result is clearly illustrated in the accompanying engraving, and will be understood at a glance.

SOME NOVEL TYPES OF MATCHES.—Pictured in the accompanying engraving are several novel types of matches. A flexible type of these is represented in Fig. 1, which shows a strip wound up into a roll. The strip is lapped, and provided with igniting means at regular intervals. When it is desired to utilize a match the roll is grasped, the strip is pressed just above a lap, and the projecting end of the strip is pulled. A separate edge view is given of this lap or fold, which consists of a lapped-over portion adhering to the main part. The fold under its right end is supplied with a rubbing surface. The left end of the adjacent surface is provided with an igniting compound, which when brought into contact with the rubbing surface is ignited by friction. This does not claim to be a safety match. Fig. 2 shows an excellent device in the form of a match box. On inverting it one of the combustible pellets in the box readily passes into the neck and enters the cap. The latter is cut away so as to expose the top side of the pellet to contact with a rough surface for purposes of ignition. The pellet enters on moving a slide valve inward against spring tension. This valve on its return to normal position supports the pellet within the cap. The pellet can be ignited by drawing it across any roughened coating, and the highly-inflammable center of the combustible compound will burn for some time. The draft perforators in the cap assist the combustion.

In Fig. 3 we have a match strip folded in zigzag or accordion pleat before being finally compacted, as shown. It is fastened with a rubber band, which keeps the match sticks in compact position. A de-

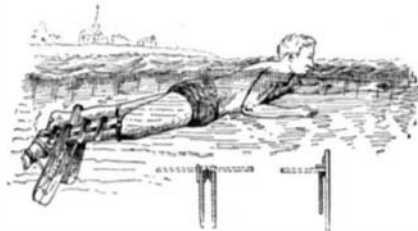
tonating substance on one stick comes over a plain surface of the next, and just below on the adjacent stick the igniting material is placed, as shown in the smaller sketch. On pulling the match stick, the detonating compound passes over and rubs against the igniting substance of the adjacent stick. Ignition occurs under the frictional contact produced by the band, and when the match stick is rapidly pulled from the pack it is ready for use. The detonator and igniter are never in contact when within the accordion folds.

The possibility of lighting a match or fusee with one hand while the other is engaged is made easy by the simple mechanism illustrated in Fig. 4. The small section view shows a match in its inside position. The inner surface of one end of the open tube is coated with a surface of sand, glue, or other rubbing compound to ignite the match. The head end and most of the match is inclosed in the casing. Pressing or pushing the protruding end through the tube causes the head to come in contact with the frictional surface of the other end of the tube, where it is ignited and on passing out burns, as shown in the larger engraving. The invention is usable in rainy, windy, or stormy weather, and may be safely carried loosely in a pocket, pouch, or like receptacle.

Another safety match is presented in Fig. 5. It is practically the same as the preceding type. The end occupied by the head of the splint or stick is closed, and the flat extension affords a means for holding the sleeve or casing in the fingers. By closing the outer end fire is retained if the splint is not properly withdrawn. By pulling the splint suddenly from the sleeve an igniting compound of the former is brought into contact with the rubbing compound of the latter, and ignition takes place immediately. Two hands are required in the use of this invention.

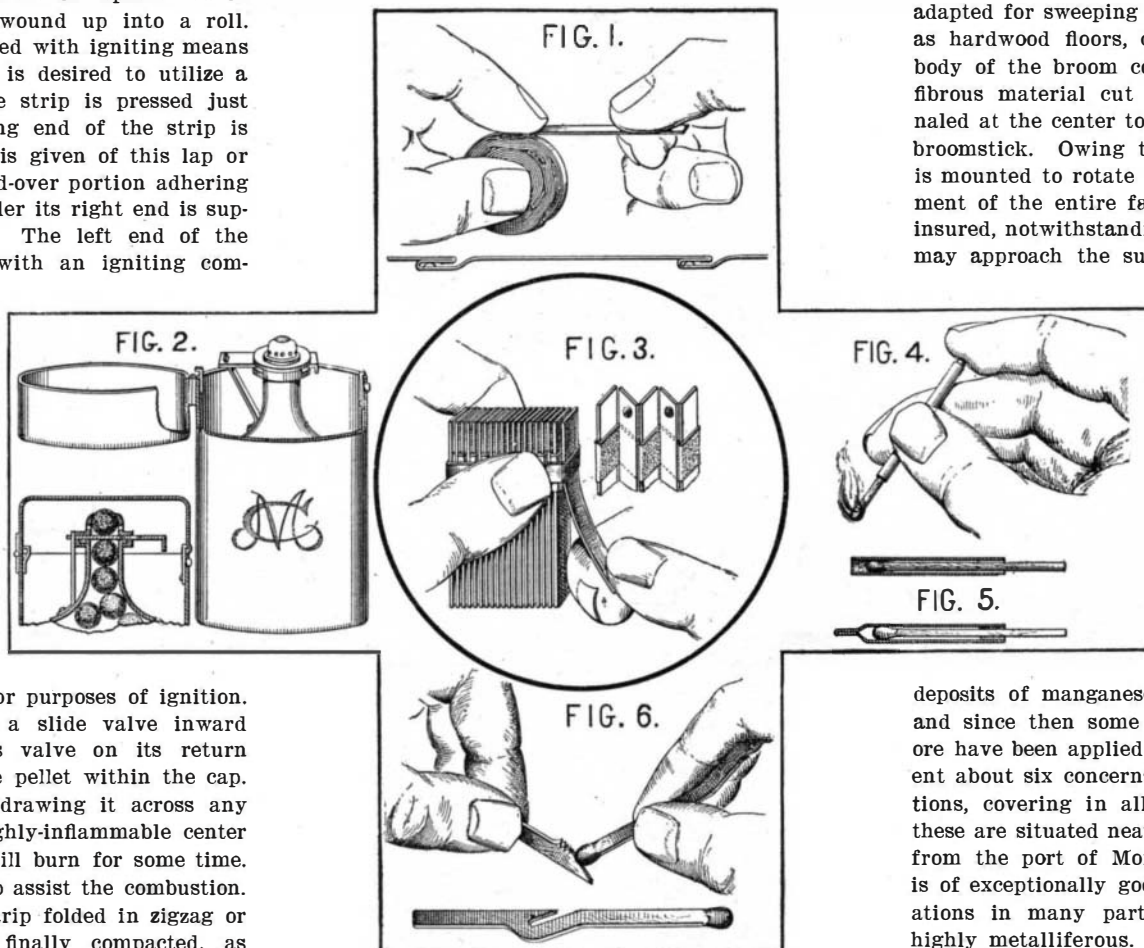
A safety match has been invented having an incision nearly at its middle part. The stick will break on a line extending from the inner end of this incision across the match. The surface of the notch is covered with an igniting compound, and is shown in the bottom illustration of Fig. 6. The upper illustration of this figure presents the scratching of the match head on the igniting surface. In this improvement there is neither danger of accidental lighting nor chance of wear to the compound.

SWIMMING APPLIANCE.—The accompanying engraving



AN ODD SWIMMING APPLIANCE.

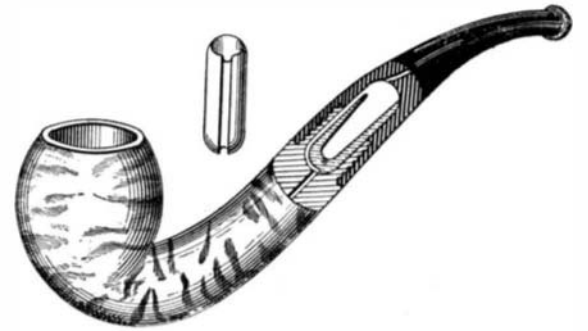
illustrates an attachment which may be secured to the legs of a swimmer to assist him in propelling himself through the water with greater speed than can be accomplished by the use of the natural members of the body. The attachment consists of a pair of wings



SOME NOVEL TYPES OF MATCHES.

or blades secured by means of straps to the ankles and feet. The blades are so hinged as to fold when the leg is moved forward, but will straighten out when kicked backward and thus offer a large area of resistance, causing the swimmer to move forward rapidly. Aside from these main blades a series of smaller hinged blades are provided which are attached to straps secured to the legs. These blades are also arranged to open when the legs are moved backward, but fold back when the legs are drawn forward.

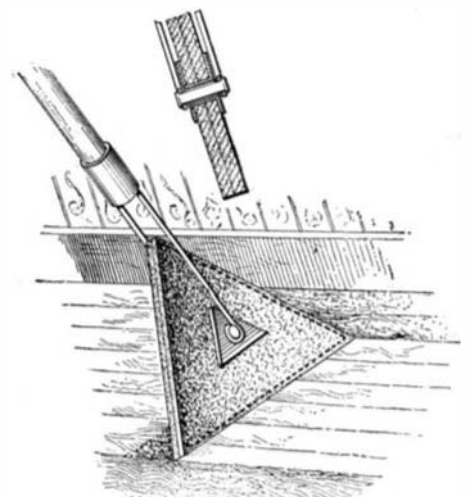
TOBACCO PIPE.—Many inventions have been made with a view to preventing saliva from flowing down the



AN IMPROVED TOBACCO PIPE.

stem of a tobacco pipe and reaching the pipe bowl, and also to prevent the passage of nicotine up the stem to the mouth of the smoker. One of the latest of these inventions is illustrated herewith. The pipe is formed with a detachable mouthpiece, and between the two members an opening is formed in which a receptacle is adapted to closely fit. This receptacle is formed with a groove at its upper side, along which the smoke from the bowl may pass to the mouthpiece. The upper end of the receptacle is open and serves as a trap for the nicotine and saliva. Whenever desired, the mouthpiece may be quickly unscrewed from the bowl section and the receptacle removed and cleaned.

BROOM FOR CLEANING SMOOTH SURFACES.—A novel broom has recently been invented which is particularly



BROOM FOR CLEANING SMOOTH SURFACES.

adapted for sweeping or cleaning smooth surfaces, such as hardwood floors, ceilings, walls or the like. The body of the broom consists of a number of layers of fibrous material cut to a triangular form, and journaled at the center to a yoke secured to the end of the broomstick. Owing to the fact that the broom body is mounted to rotate freely on its bearing, the engagement of the entire face of one side margin is always insured, notwithstanding the manner in which the body may approach the surface to be cleaned; for if upon bringing the broom against the surface one corner should strike first, the broom body would swing on its axis until the entire margin was brought squarely upon the surface. Owing to the fact that there are a number of sweeping faces to the body the life of the broom is greatly increased.

The British consul at Goa, Portugal, reports that deposits of manganese were discovered early in 1906, and since then some 250 concessions for mining this ore have been applied for to the government. At present about six concerns have commenced mining operations, covering in all about twenty mines. Some of these are situated near tidal water and not many miles from the port of Mormugao. The ore in some cases is of exceptionally good quality. The geological formations in many parts of the country appear to be highly metalliferous. The restrictions regarding mining and prospecting are not onerous, and the taxes on mines and their output are at present light.