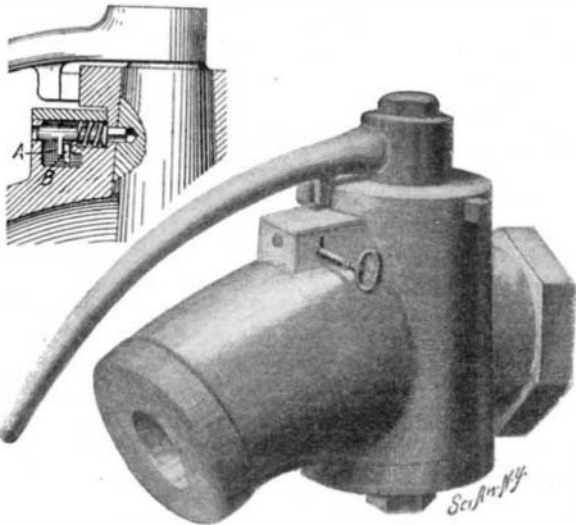


metal, it will not offer as much friction as would the knee cushion, which is provided with a leather covering. In using the invention, the teeth are set in the carpet at a requisite distance from its edge, and then with the plate at the opposite end resting on the floor, the operator forces the device forward either by a steady pressure or by a succession of blows, until the carpet is stretched to the required degree. A most powerful pressure can thus be secured. It has been found in practice that with this stretcher the operator can move a weight of over 300 pounds when placed on a loose strip of carpet, and also that the tacks may be pulled up on the opposite side of the room if the operator uses too much force. One of the important advantages of this stretcher is that it may be held with the knee, permitting the operator to use both hands to drive tacks.

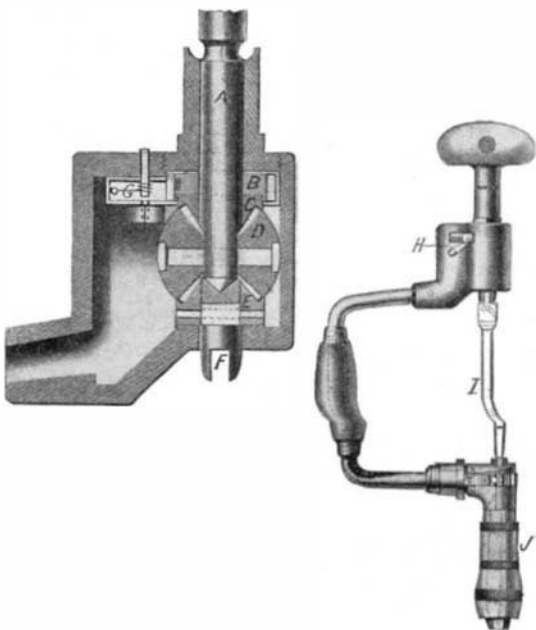
SAFETY COCK.

A patent has recently been secured by Mr. James C. Stratiff, 1322 Pennsylvania Avenue, Tyrone, Pa., on a



SAFETY COCK.

cock provided with means for locking the plug, so that it cannot be tampered with by an unauthorized person. The invention is particularly adapted for use on angle cocks, such as are commonly employed with an air-brake system. The details of the locking mechanism are clearly shown in the accompanying engraving. A chamber is formed on the body of the cock to one side of the plug. Mounted in this chamber is a locking bar or bolt, which is adapted to pass through an opening in the wall of the chamber and into a recess in the plug. In this position the bolt is held by a coiled spring. Depending from the bolt is a projection, which is adapted to be engaged by a key. The key is passed through a keyhole in one side of the chamber, and its inner end is supported in a recess in the opposite side of the casing. By turning this key the bolt may be withdrawn from engagement with the plug, and the latter may then be turned by operating the handle with which it is provided. This handle is formed with a projection which is adapted to engage a pair of stops, and thus limit the movement of the plug. When the plug is turned to close the cock, it is stopped by the stop-piece in such position that the recess therein is brought into alignment with the bolt, and the latter is thereupon forced in by the spring, engaging the plug and holding it against rotation. When in this position, it is evident that the plug cannot be turned except by a person provided with the proper key. While this invention is particularly adapted for an air-brake cock, it will be obvious that it may be applied to any cock of the plug type.



AN IMPROVED BIT BRACE.

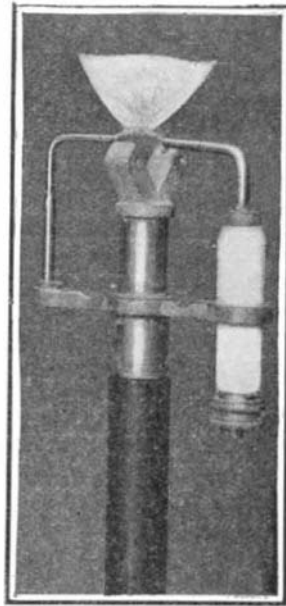
ELECTRIC GAS-LIGHTER FOR ACETYLENE AUTOMOBILE LAMPS.

A simple and ingenious little appliance for making it possible to light the gas lamps of an automobile by working a switch on the dashboard is illustrated herewith. This attachment consists of a horizontal arm which fits tightly upon the slightly tapered pipe of the burner and which supports, at each end, a right-angled wire sparking point as shown. The points face each other above the burner, one of them being supported in a porcelain insulator which is securely fastened and held from turning. Both points, however, can be turned to one side if at any time it is necessary to remove the lava tip, and they can also be adjusted slightly in height by turning them around. The insulated sparking point is connected by a wire to one side of a two-point switch on the dashboard, the other side being connected to one of the spark plugs and the movable arm of the switch being connected to a secondary terminal of the spark coil. When it is desired to light the gas, by changing the switch, the spark is diverted from the plug to the gas-lighter. This does not interfere with the running of the engine, as it is only done momentarily, and as soon as the gas is lighted, the switch is turned back. The high-tension current, after jumping the gap at the burner, returns to the ground terminal of the spark coil, since the other point of the gas-lighter is grounded. If it is desired to light two gas lamps at the front of the car, a three-point switch is used, and the second lighter is connected to one of the points of the switch in a similar manner to that just described. As the wires of the lighter are rather large and are not pointed at their ends, a series of arch-shaped sparks are obtained, which readily light the gas although the points are below the bottom of the flame and hence are not subjected to its intense heat.

The inventors of this new device are Messrs. Kapp and Alviset, of Portchester, N. Y.

AN IMPROVED BIT BRACE.

With the ordinary ratchet bit brace, when operating in a corner, or in a place where the sweep must be oscillated back and forth, instead of making a full turn, only the forward stroke is effective in driving the bit into the wood, the return stroke being used to move the pawl to a new hold on the ratchet. When beginning to bore the hole, the operator must hold the bit with one hand until it is sufficiently imbedded in the wood to overcome the friction of the pawl upon the ratchet during the return stroke. This is not necessary with the new bit brace which is here illustrated; for it operates to drive the bit continuously both on the forward and the return strokes. The construction of this bit brace is similar to that of the ordinary brace, except for a ratchet attachment at the upper end of the sweep. This improvement is shown clearly in the cross-sectional view. The head of the brace is secured to a shaft *A* on which is mounted a ratchet *B* and a bevel gear *C*. The latter are keyed to each other, but are adapted to move freely on the shaft. Engaging the bevel gear *C* are a pair of bevel gears *D* securely fastened to the shaft *A*, and these in turn mesh with a fourth bevel gear *E*, which is secured to a short shaft *F*. The latter projects through the casing in which the gears are contained, and is formed with a forked head. The ratchet *B* is engaged on opposite sides by pawls *G*, which may be thrown into or out of engagement by means of a swivel catch *H*. The casing which contains this gearing is secured to the upper end of the sweep. The lower end of the brace is of standard construction, except that the spindle is provided with a slotted upper end. In use when it is possible to give a full turn to the sweep, the brace operates the same as the standard ratchet brace; but when working in a corner, a connecting rod *I* is fitted between the forked shaft *F* and the slot in the spindle. This is shown in outline in our engraving, indicating that the rod is removable. Then one or other of the pawls *G* is thrown into engagement with the ratchet *B*, according as to whether the bit is to be turned to the right or the left. Now, on oscillating the sweep back and forth, the pawl of the lower ratchet will first act to turn the spindle in the usual manner, and then the pawl *G*, operating through the medium of the connecting rod *I*, will serve to continue



ELECTRIC GAS-LIGHTER FOR ACETYLENE AUTOMOBILE LAMPS.

this movement while the first pawl is reset. Thus the operation will continue with the upper and lower ratchets alternately driving the bit. A patent on this bit brace has been secured by Messrs. Karlson & Gran, 134 Oak Street, Chicago, Ill.

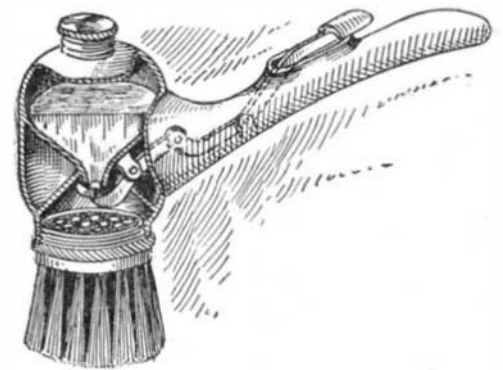
Brief Notes Concerning Inventions.

A new method of preserving milk in closed vessels for an indefinite period has been perfected by an inventor of London. The process consists in eliminating the air and replacing it by carbonic acid gas. Prof. Macfayden, the bacteriologist, has asserted that if all the micro-organisms could be excluded, milk would never go sour, and by aeration this claim has been substantiated. Carbonic-acid gas possesses decided antiseptic qualities, and is harmless when consumed with food. In this manner milk can be stored in bottles or other similarly sealed vessels for a prolonged period without souring, as experiments have demonstrated. Similarly, owing to the antiseptic properties of the gas, aeration completes sterilization carried out by the dairyman. In the case of those who do not like the flavor of aerated drinks, the milk can be easily stilled by pouring it into an open vessel such as a glass or jug and leaving it exposed to the air for a short time.

A new toy brought out for the holiday trade is a gas cannon. It is alleged to be entirely safe and is intended to amuse the small boy. The cannon is mounted on a box and the latter contains a small acetylene gas generator. It is supplied with a safety device rendering accidents and injury to the tiny operators quite impossible. The gas is led to the cannon through a tube and when it is loaded with a small ball of wood, the discharge is effected by an electric spark.

ODDITIES IN INVENTIONS.

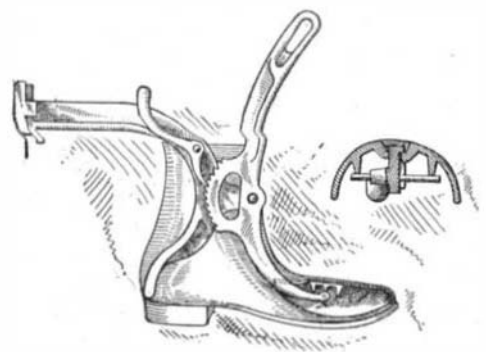
FOUNTAIN BLACKING BRUSH.—A novel blacking brush has recently been invented, which is provided with a reservoir for water and a means for conveying this water to the bristles of the brush at the will of the operator. The reservoir, which is shown in section in the accompanying engraving, is placed directly over the brush proper, and at its lower end is provided with an outlet normally closed by a valve. The valve is



FOUNTAIN BLACKING BRUSH.

connected to a thumb-piece situated in the handle of the brush, and is normally kept in closed position by a spring. In use, when the operator desires to admit some of the water to the brush, he depresses the thumb-piece, opening the valve, and permitting the water to flow into a chamber directly above the bristles. Extending through the bottom of this chamber are a series of small ducts, which distribute the water to the bristles.

SHOE HOLDER.—A resident of Chicago has invented a simple holder for shoes, which may be readily adjusted to different sizes of shoes, and which will automatically regulate itself to right and left shoes. The device will exert a uniform pressure upon the entire toe and instep of the shoe, supporting and stretching these parts while the shoe is being shined or polished. The construction of the holder is clearly indicated in the accompanying engraving. The toe piece is detachable, permitting the substitution of different sizes of toe pieces to fit men's, ladies', and children's shoes. In order that the toe piece may have free movement to conform to the shape of the front portion of the toe of every shoe, it is made capable of a partial rotary movement in a horizontal plane, that is on a vertical axis.



SHOE HOLDER.