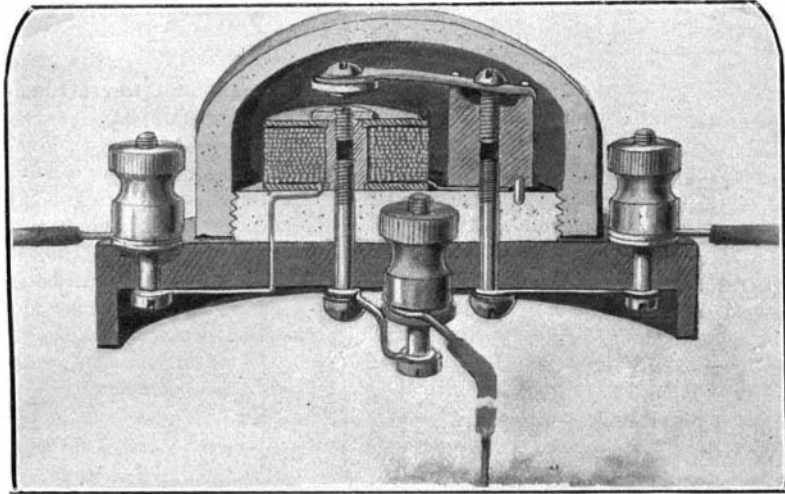




**A LIGHTNING ARRESTER OF NEW FORM.**

We illustrate herewith a sectional view of a form of lightning arrester recently patented by Mr. Julio E. Cordovez, of Panama, Colombia. It belongs to that



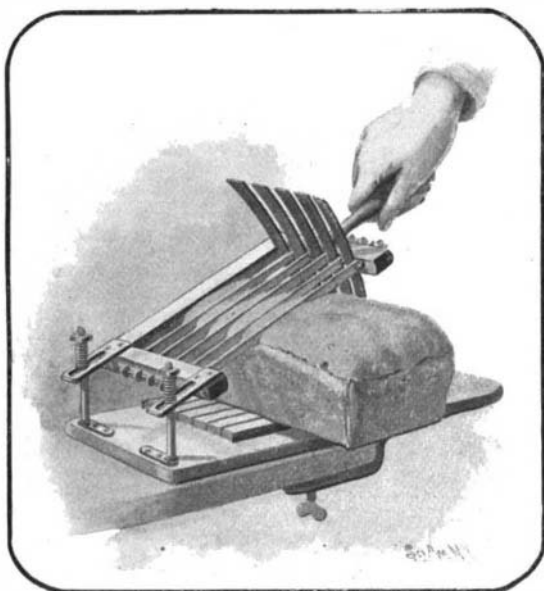
**IMPROVED LIGHTNING ARRESTER.**

type in which a magnet, when energized by an abnormal flow of current, will attract an armature and produce a ground connection, whereby the flow of lightning or of any undesirable charge of electricity is directed to the earth.

The construction of the device is as follows: Mounted upon a base of hard rubber, or ebonite, is a plate preferably of porcelain. A dome of porcelain covers the device and is screwed down over this base plate. The lightning arrester is introduced into the line by connection to the binding screws at each side. One of these binding screws is connected to the actuating magnet, and from the magnet a wire leads to a metallic post. The line circuit is completed through the screw which holds this post to the base plate and a wire connecting this screw with the binding screw on the right as illustrated. Secured to the top of the metal post is one end of a spring, which supports at its opposite end the armature of the magnet. Side play of this spring is prevented by beads on the post, and the top of the post is also provided with a channel or groove, so that by turning the securing screw the spring is pressed slightly into the channel, thus raising the armature. In this manner the spring can be so adjusted as to hold the armature up against the attraction of the magnet under a normal flow of current. If now a lightning charge strikes either of the line wires, or any atmospheric electrical disturbance causes an increase of potential in the line, the magnet will be sufficiently energized to draw down the armature into engagement with a headless screw in the magnet core. This makes connection through a third binding post to the ground. Further adjustment of the device may be had by turning the headless screw, and securing the same by means of a locking disk as shown.

**A NEW SLICER.**

A device of simple construction has recently been invented by Mr. G. L. Leachman, of New Cumberland, W. Va., whereby a number of slices of bread or cake may be cut at one operation. This will be found particularly useful in large restaurants, permitting



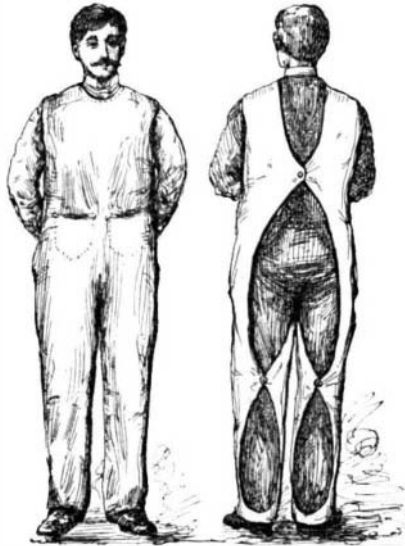
**BREAD CUTTER.**

large quantities of bread to be quickly and easily cut into slices of a uniform size. The device is provided with a clip on its base by means of which it may be readily clamped to a table-top or the like. The slicing blades are held in the frame mounted to swing vertically over the base. The blades at one end pass through slots in the lower crosspiece of the frame, being held there by a rod passing through their projecting ends. At their opposite ends the blades are fastened to threaded stems, which pass through the upper crosspiece of the frame and are adjusted and firmly secured by thumb nuts. On the rear of the frame are two slotted arms through which two posts extending from the base project. On these posts, and bearing down on the arms, are spiral springs which may be regulated to the proper tension by turning the adjusting nuts. Near the forward end of the base are upwardly extending guide fingers between which the cutting blades pass, and on the base in alignment with the guide fingers are strips which are spaced apart and on which the loaf to be sliced is supported. To hold the bread from movement while slicing, pins are employed which extend upward from certain of the strips and enter the loaf. In operation, after raising the frame with the blades, a loaf is placed in the machine against a stop plate and then the frame is moved downward to cut the slices.

During this movement the slots in the arms of the frame permit a slight longitudinal movement of the blades through the bread, and the springs on the rear posts have a tendency to force the rear ends of the blades downward. The spaces between the strips on the base permit the blades to pass effectually through the loaf.

**A NEW PATTERN FOR OVERALLS.**

A patent has just been granted to Mr. Eugene A. Holston, of Duluth, Minn., for a new form of overalls which can be quickly applied, allow perfect ease of movement



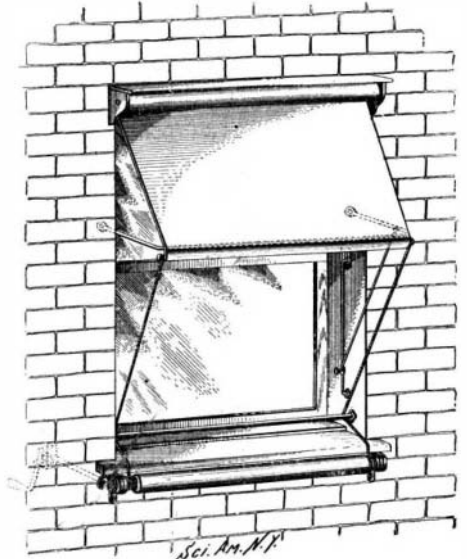
**A NEW DESIGN IN OVERALLS.**

to the wearer, and prevent crumpling of trousers over which this improved garment is worn. The garment, as illustrated, covers completely the front of the body and legs. It is held in place by portions passing over the shoulders and by flaps attached which extend around the back of the trunk and legs of the wearer. The garment is snug fitting over the trunk, but fits loosely over the legs. Owing to the fact that the rear portions of the knees and hips are not covered, perfect freedom of movement is allowed at these points, and since the garment fits loosely over the lower portions it allows the trousers beneath to hang properly and does not crumple or gather them in bunches. The readiness with which this improved overall can be slipped on over the ordinary trousers and buttoned in place is a feature which should appeal to all workmen.

**ODDITIES IN INVENTIONS**

**CONVERTIBLE WINDOW-SHADE AND AWNING.**—A recent patent describes an improved arrangement of window-shades whereby the shade may be easily converted into an awning or be made to serve as a substitute for shutters to the windows. The shade, which is made of any translucent flexible material capable of withstanding the elements, is secured to a spring-roller of ordinary type, journaled under a cover to the upper outside of the window-frame. Operating cords are secured to the lower end of the shade and pass over a projecting awning-frame, thence under a rod at the bottom of the window to the lower winding roll. This

roll may be operated, through the medium of a pair of miter gears and crank, from the interior of the building. By this means the shade may be drawn down as illustrated to serve as an awning. The operating crank, it will be observed, is hinged so that it



**CONVERTIBLE WINDOW-SHADE AND AWNING.**

may be folded back to engage a catch and thus hold the curtain in position against the tension of the spring roller. By drawing the shade down to its limit the room will be shaded and sheltered from outside observation. At the same time an ample sufficiency of light will pass through the translucent material, and a generous supply of air will be admitted through the openings at each side of the curtain. This arrangement also serves to prevent frost from accumulating on the window-glass at night. It will be observed that the awning-frame may be adjusted to various positions, or may be folded flat against the window-frame.

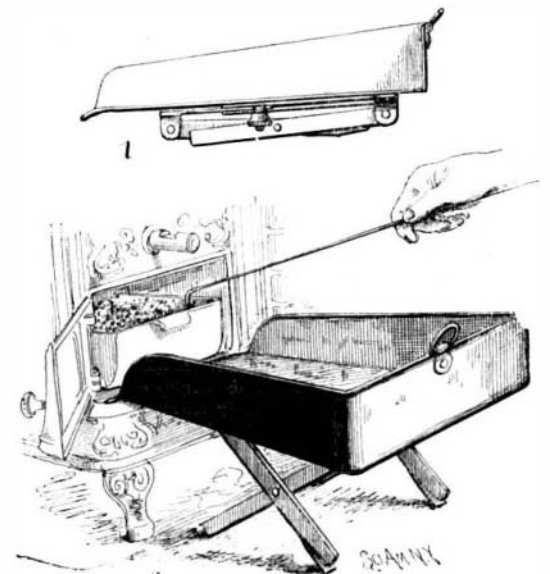
**DEVICE FOR WARMING BRIDLE BITS.**

In cold weather the bits of bridles hung up in a stable often become so cold as to torture and seriously injure the horses when these cold bits are placed in their mouths. We show here a very simple device for warming the bits. It consists of a cap piece adapted to fit over the top of an ordinary barn lantern. This cap is provided with two curved guards, which serve to engage the bits and prevent them from slipping off. Our illustration shows a bridle hung by its bit to the cap piece and being warmed by the heat of a lantern. Grooves are provided in the top of the cap piece for receiving the bits, and two bridle bits may be warmed at the same time without interfering with each other.



**DEVICE FOR WARMING BRIDLE BITS.**

**SAFETY ASH-PAN.**—One of the most irksome duties connected with a range is the removal of ashes. There is always the danger of spilling some of the ashes while endeavoring to lift the inaccessible pan out of the stove, and raising a cloud of dust; nor should we ignore the danger of dropping live coals or sparks on



**SAFETY ASH-PAN.**