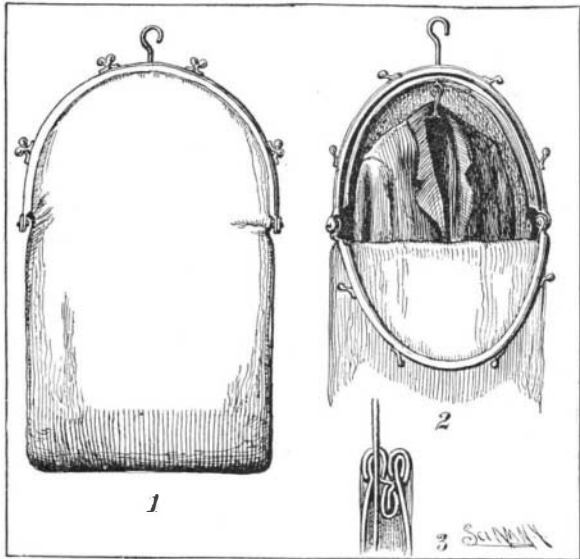




#### SELF-SEALING MOTH BAG

The odor of moth balls and other substances designed to keep moths from woolen garments when stored away for the summer, is quite as offensive to some people as it is to the moths themselves. Consequently, when in the fall these garments are taken out of storage they must be thoroughly aired for a considerable period before they will be sufficiently deodorized to be worn. All this disagreeable odor and the work it involves may be avoided by the use of a moth bag such

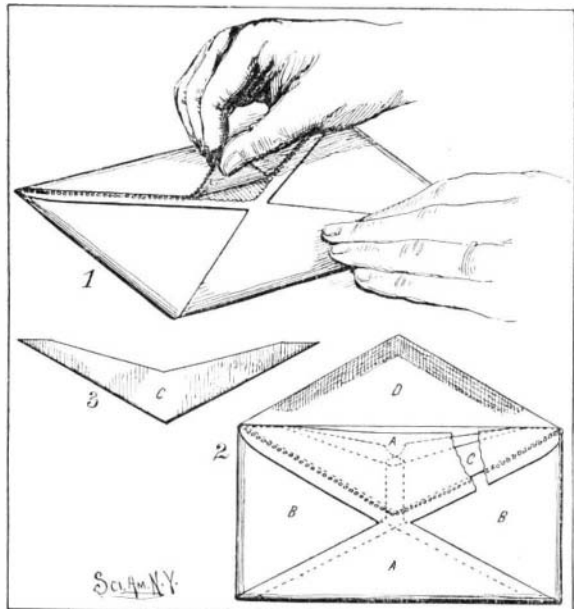


SELF-SEALING MOTH BAG.

as that invented by Sophia L. McMillan, of Winnipeg, Manitoba, Canada. Our illustrations show the form of this bag. It is made of rubber or oilcloth, so as to be water-proof and dust-proof, as well as moth-proof. The mouth of the bag is provided with jaws consisting of metal strips folded upon and engaging the material of the bag as shown in the sectional view 3. Suitable fastening devices are provided for locking the jaws together. A guard strip embraces the edge of the material depending from one of the jaw members, so that when the jaws are closed this strip will press against the jaw member on the opposite side and effectually prevent the entrance of moths, dust or the like. Suspended within the bag is a hanger upon which clothing may be hung. The hanger is attached to a rod passing through one of the jaw members and terminating in a hook for engaging a nail or other device when it is desired to suspend the bag, thus placing it out of the reach of mice or rats.

#### SAFETY ENVELOPE.

It has occurred to Mr. M. L. Hinchman, of 175 Grove Street, Rutland, Vt., that the best way to detect the unauthorized opening of letters is to provide a line of perforations just along the edge of the sealed flap,



SAFETY ENVELOPE.

so that any attempt to pry open the flap will result in a mutilation of the envelope, and any attempt to steam open the flap will be detected by the spreading of grease along these perforations from a waxed or paraffined strip of cardboard concealed in the envelope. The envelope blank is similar to the ordinary envelope with the exception that the bottom flap is provided with an additional section containing the perforations above

referred to. This flap is marked A in Fig. 2 of our illustrations. In forming the envelope the side flaps B are first folded over and the waxed piece C placed in the position shown, then the flap A is folded over and sealed along its edges to hold the parts in place. Thus are formed the finished envelopes. When used, after the letter has been inserted and the flap D folded down and sealed, it is evident that no edge except that of flap A is available for steaming or prying open, and this, as we have shown, is impossible without detection. These safeguards, however, offer no hindrance to opening of the envelope by an authorized person. Since the lower edge of the stiff strip C follows the line of perforation, it is simply necessary to bend the envelope backward, when the point of the strip will break through the perforations, and, by grasping this point between the thumb and forefinger, the envelope can be readily torn open as illustrated in Fig. 1. If it be not practicable to bend the envelope backward, the envelope may be readily opened by passing the thumb nail along the edge of strip C, thus breaking through the perforations.

#### STUDENT'S CHAIR.

The habit, particularly prevalent among students, of stooping over a desk may be largely cured by the use of a chair such as is shown in the accompanying illustrations. This chair, it will be observed, is so arranged that the occupant may sit erect while studying from his textbook, for the latter is placed conveniently before him on an adjustable bookrest. With such a chair there is no excuse for the bent-up and cramped position, which is due largely to improper regulation of the height of one's desk. Mr. Adolph M. Smitz, of West De Pere, Wis., is the inventor of this improved student's chair.

A proper comprehension of the advantages offered by this invention may be had by an examination of its principal details. The bookrest is supported on a rod connecting two posts mounted on blocks, which slide in channels formed in the chair arms. Each post consists of two sections, the lower section being threaded into a sleeve mounted to turn on the upper section. By turning the sleeve the desired vertical adjustment of the bookrest may be obtained; at the same time it may be moved along the chair arm toward or away from the reader, as required. The bookrest may be tilted to any angle, and secured by a thumbnut conveniently located thereon. When it is not desired to use the bookrest, it can be stowed away behind the upper panel of the chair back. This panel, which is hinged at its lower edge, may be swung down to permit passage of the bookrest, when it can be again swung into position, hiding the bookrest from view. One of our illustrations shows a rear view of the chair, with the bookrest in this nested position. Aside from the advantages offered by the adjustable bookrest, the chair embodies additional features which will be found useful to all students. At one side is a bookcase, the cover of which, when raised, lies flush with the right arm of the chair and makes a wide shelf on which books or writing materials may be placed. On the left side of the chair, but not shown in our illustration, is a matchbox and an ash receiver, which may be swung under the chair arm when not in use. Altogether, the chair will recommend itself as a very useful essential to the comfort of all students and book lovers.

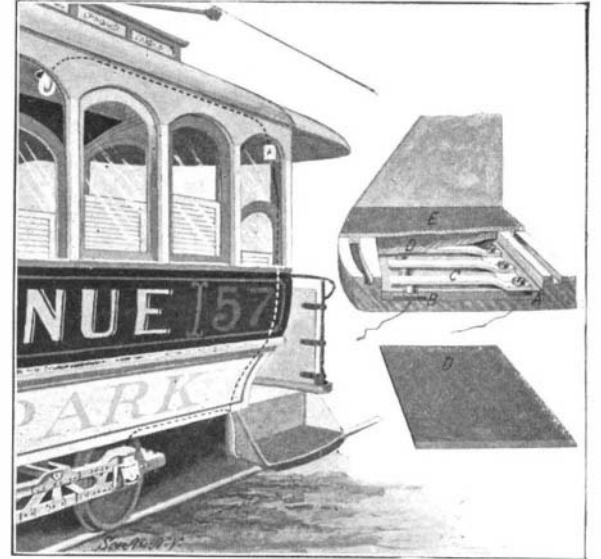
A valuable invention, for use in the manufacture of gloves, hosiery, etc., has just been entered at the German Patent Office. The novelty consists in using metal in place of wooden forms. The metal forms are hollow, and, when connected with a steam-heating or electrical apparatus, can be used for giving the proper shape. The old cumbersome stoves and furnaces hitherto used for pressing and shaping in German factories will be superseded. Time, fuel and labor will be saved. By means of the new method the articles receive a better finish, more firmness of shape, which is of great value in cotton and silk textures. The heating can be kept at a more even temperature, so that the product is more uniform.

Prof. Weston Melville Fuller, the United States weather observer at Knoxville, Tenn., is the inventor of a fluviograph, by which the stage of the water is automatically registered at intervals, instead of having to go out and make the observation personally, as he has been compelled to do heretofore. A long cable extends over a drum, and at one end of the cable is a float and at the other end a counterbalancing weight. As the water rises and falls, the position of the float is changed, and the movement of the drum operates a circuit breaker, by which means a record is made of the water level at the observation station, which is some distance away from the water's edge.

The Professor says that he will not patent his device, but will allow it to be made free use of where desired.

#### SAFETY CAR STEP.

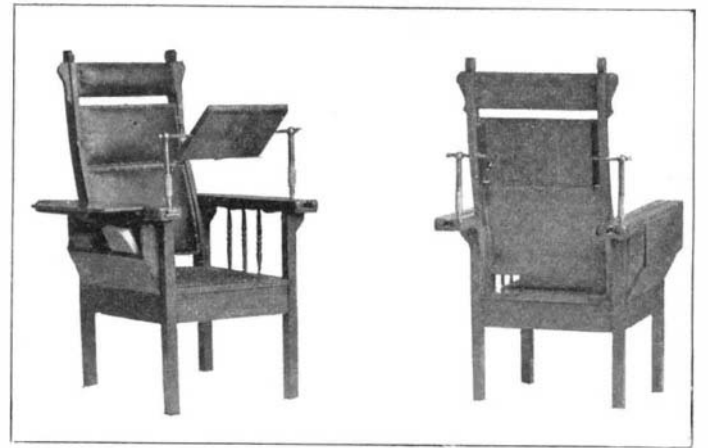
Many street car accidents—and it is surprising that there are not more—are due to the fact that the conductor when collecting fares in the center of a crowded car is unable to see the car step, and is liable to prematurely give the starting signal while a passenger is alighting from or mounting the step. Heretofore



SAFETY CAR STEP.

the conductor has had to depend upon guesswork or the signals of some thoughtful passenger at the rear of the car, but now an efficient method of preventing such accidents is furnished by the invention of Mr. D. N. Jordan, care of J. P. Beagan, 49 Westminster Street, Providence, R. I. The idea of the invention is to provide an incandescent lamp in the center of the car ceiling, which will be illuminated as long as any one is standing on the lowermost car step. This lamp, which is covered by a red globe, would serve as a signal to the conductor, warning him not to pull the bell rope while the globe is illuminated.

The details of the invention are shown in the accompanying illustration. The signal lamp is connected by a circuit of its own, shunted off from the main circuit, and is independent of the lamps which are provided for illuminating the car. The signal circuit, which connects with the ground, is normally broken at the lowermost step of the car. The step is provided with two brass strips A and B, the strip A being electrically connected to the lamp, and the strip B having connection with the journal boxes of the car wheels. These strips, it will be observed, are insulated from each other by a wooden board, the strip A being imbedded in the upper surface of the board at one end, and the strip B in the lower surface at the opposite end. A number of metallic spring arms C are secured at one



CHAIR FOR THE USE OF STUDENTS.

end to the strip A, and at the other end are provided with contact blocks, which are adapted to project through openings in the board and make contact with the strip B when depressed by the weight of a passenger on the step. A sheet of rubber D covers the spring arms, and over this is a mat or tread E of yielding material, which constitutes the upper surface of the car step. This tread is provided with ribs along its edges, which are adapted to fit into grooves in the body of the car step, thus protecting the interior operative parts of the device from rain, snow, and moisture. Now, when a person is leaving or entering the car, the conductor will know immediately when he has safely mounted or alighted, because the signal lamp will glow when its circuit to the ground is completed by the weight of the passenger on the lowest step, and the red light will continue to shine until the passenger has safely cleared this step.