

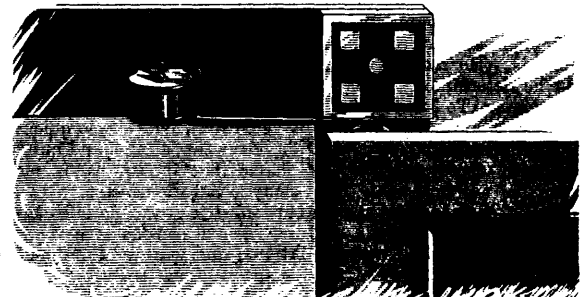
FIG. 3.

VENTILATION.—(SEE PAGE 31.)

Fig. 1.



Fig. 2.



### IMPROVED LEVER DOOR SPRING.

A simple and effective door spring which possesses the rare quality of exerting the greatest pressure on the door when closed, and the least when it is open, has been much sought after, but never, we believe, attained in any degree of perfection until the invention of the one we here illustrate. Indeed we have seen none, until our attention has been called to this, which could be considered a spring at all, that lay claim to the quality above described. In the engravings with which we illustrate this article, Fig. 1 represents the position of the spring when the door is closed, and Fig. 2 its position when the door is open. The device consists of a cylindrical barrel, containing a flat spring, the said barrel being provided with a flange whereby it is screwed to the casing-strip above the door inside. The spring is coiled in the barrel and the inner end is attached to a center spindle which projects down through the bottom of the barrel and bears a perforated disk. The spindle projects through the disk and carries on its extremity a lever, the said lever turning loosely thereon. This lever has a teat or projection on its upper side which engages with one of the perforations of the plate before mentioned. On the end of the lever—which is made of malleable iron—is mounted a roller of hard wood, boiled in oil to prevent cracking. This roller impinges against the inside of the door near the top, but is not attached thereto.

The spring-barrel is screwed to the casing of the door, as shown in the figures, at point in relation to the hinging axis of the same, in such a manner that when the door is open the roller will press upon it near the hinged edge, and thus act with very

little force; while as the door is being closed, it will travel further out, increasing the pressure all the time, until the maximum is reached when the door is shut.

The method of adjusting the tension of the spring is very simple, and admits also of the pressure being entirely released when desired, without unwinding the spring or detaching any part. In Fig. 2 is seen the head of a pin, which projects through the top of the barrel just back of the central pivot, and is held up by a small spiral spring. This pin passes down through the barrel, and when pressed down its lower end will enter the holes in the disk below. If greater force is required to close the door, the lever is turned back, and this pin pressed down into one of the holes in the disk. This holds the disk, and keeps the spring from unwinding, while the lever is disengaged and flung back to its first position, where its projection again engages the disk. To entirely relieve the pressure on the door and permit it to swing freely, the pin is engaged with the disk, and the lever disengaged.

This spring is self-contained, has no attachments to the door, is easily applied and adjusted, and closes the door as perfectly if only opened a few inches as if opened wide. It has been in practical use for the past two years, being repeatedly subjected to the severest tests, and has proved thoroughly strong, reliable and efficient. It is being extensively adopted by several railroads for use on car doors, as it is so readily thrown out of gear without disconnecting any part.

This spring is manufactured under several patents by the Sabin Manufacturing Company, of Montpelier, Vermont. Those wishing any further information should address them for circular and prices.