

G. W. LAKE.
WEATHER STRIP.

Patented Apr. 23, 1895.



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By his Attorneys,

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UNITED STATES PATENT OFFICE.

GEORGE W. LAKE, OF MONTICELLO, IOWA, ASSIGNOR OF FIVE-EIGHTHS TO
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WEATHER-STRIP.

SPECIFICATION forming part of Letters Patent No. 537,834, dated April 23, 1895.

Application filed March 31, 1894. Serial No. 505,933. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. LAKE, a citizen of the United States, residing at Monticello, in the county of Jones and State of Iowa, have invented a new and useful Weather-Strip, of which the following is a specification.

The invention relates to improvements in weather strips.

The object of the present invention is to improve the construction of weather strips, and to provide a simple, inexpensive and efficient one capable of effectually excluding air and water, adapted to be readily applied to a door, windows, and the like, and capable of closing tightly down on a sill when the door is closed, and of automatically rising to clear the floor when the door is opened.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings: Figure 1 is a longitudinal sectional view of a door provided with a weather strip constructed in accordance with this invention. Fig. 2 is a transverse sectional view of the same. Fig. 3 is a detail perspective view of the weather strip detached. Fig. 4 is a transverse sectional view of the same. Fig. 5 is a detail perspective view of the pintle-rod. Fig. 6 is a similar view of the corner cap of the door.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

1 designates a door, provided at its bottom with a longitudinal groove 2, in which is arranged a hinged weather strip 3, composed of a metal backing 4 and a strip 5 of rubber or other elastic or flexible material. The metal backing consists of a strip of sheet metal folded longitudinally on a pintle-rod 6, and securing the elastic strip between the sides formed by bending or folding it longitudinally; and it is provided at intervals with slots 7, arranged at the bend and receiving eyes or staples 8 of the door, for the reception of the pintle-rod, whereby the weather strip is hingedly attached to the door.

The pintle-rod 6 is provided, intermediate of its ends, with a crimped or kinked portion

9, adapted to positively engage the weather strip or rather its backing-strip 4, causing the strip to turn with the rod, and such crimped portion is placed intermediate the ends of the rod in order to force the latter tightly against the sill at the center thereof, which is subjected to the most wear. The smooth portions of the pintle-rod, at opposite sides of the crimped or kinked portion 9, are adapted to twist or turn slightly in the adjacent portion of the sheet metal backing of the weather strip to prevent the latter from being forced against the sill to the same degree that the central portion is caused to contact with the same. By this arrangement the weather strip is caused to hug the sill closely and to conform with and fit tightly against the upper face of the same, and to prevent any cracks or spaces being formed by the inequalities of the sill caused by wear. The outer end of the pintle-rod, or that end which is adjacent to the free edge of the door which carries the lock, is provided with a depending cam-eye 10, formed by coiling the metal of the pintle-rod. The depending cam-eye is adapted, when the door is closed, to come in contact with the sill and be forced upward into an extension 11, of the groove of the door to swing the weather strip downward against the sill. This end of the pintle-rod is provided with an integral outwardly and upwardly extending looped arm 12, into which is engaged a hook 13, of a straight spring 14, secured to the door and extending longitudinally of the groove thereof; but other forms of springs may be employed and be connected with the looped arm for raising the hinged weather strip when the door is opened.

The lower corner of the door, at the free edge thereof, is protected by a metal cap 15, composed of sides 16 and 17, arranged at right angles to each other and secured to the adjacent faces of the door. The side 15 of the corner cap is provided at its bottom or lower edge with a horizontal flange 17^a, which is secured to the lower edge of the door at the inner side of the longitudinal groove thereof; and the said side is provided adjacent to the angle of the plate, with an opening 18, to receive the eye or cam 10, and to permit the same to move upward; and the

eye or cam is prevented from dropping too far by an extension 19, of the side 16 of the corner cap, which extension passes through the cam-eye and is secured to the lower face of the door by the flange 17^a. The sill of the door is provided with a wear plate 20 to be engaged by the cam-eye to prevent the sill from becoming worn.

It will be seen that the weather strip is simple and comparatively inexpensive in construction, that it is positive and reliable in its operation, and that it is capable of effectually excluding air and water, and of conforming to any inequalities of the sill. It will also be apparent that the weather strip may be applied to all the edges of the door, or to windows and the like.

Changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

What I claim is—

1. The combination with a door provided at its bottom with eyes, a pintle-rod arranged in the eyes of the door and having one end coiled and forming a depending cam-eye to engage the sill of the door, a weather strip secured to the pintle-rod, and a spring for holding the weather strip elevated when the door is open, substantially as described.

2. The combination with a door, of a pintle-rod having one end coiled and forming a depending cam-eye and extended to form a looped arm, eyes receiving the pintle-rod and mounted on the door, a weather strip secured to the pintle-rod, and a spring mounted on the door and hooked into the looped arm, substantially as and for the purpose described.

3. The combination with a door, of a weather strip comprising a flexible strip, and a sheet metal backing folded longitudinally and receiving between the sides formed by such fold-

ing the flexible strip, a pintle rod hinged to the door and arranged in the sheet metal backing of the weather strip and provided with a crimped or kinked portion, and means for forcing the weather strip against the sill of the door when the latter is closed and for raising the same when the door is opened, substantially as described.

4. The combination with a door, of a weather strip comprising a flexible strip, and a sheet metal backing folded longitudinally and provided at the bend with slots, a pintle-rod arranged in the sheet metal backing and having a central crimped portion and coiled at one end to form a depending eye, and extended therefrom to form an arm, eyes mounted on the door and arranged in said slots and receiving the pintle-rod whereby the weather strip is hinged to the door, and a spring attached to the door and connected to said arm for raising the weather strip, substantially as described.

5. The combination with a door, a weather strip hinged to the bottom thereof and provided at one end with a depending cam-eye arranged to engage the sill of the door, a corner cap secured to the door and composed of two sides arranged at an angle and having a horizontal flange located on the lower edge of the door, one of the sides having an opening receiving the cam-eye and the other side being provided with an extension passing through the cam-eye and limiting the downward movement thereof, and a spring for raising the weather strip, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

GEORGE W. LAKE.

Witnesses:

C. H. RASTEDE,
FR. GRYSMEYER.