March 10, 1925. 1,529,424

W. H. EDWARDS

WEATHER EXCLUDER FOR DOORS

Filed Oct. 24, 1922 2 Sheets-Sheet 1

FIG. 1

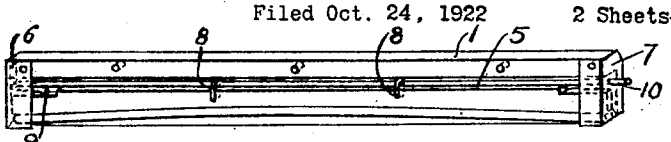



FIG. 2

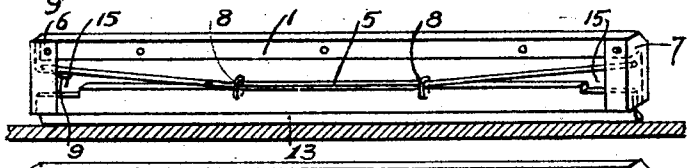



FIG. 3

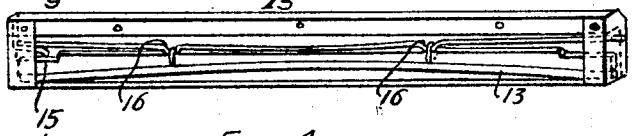



FIG 4
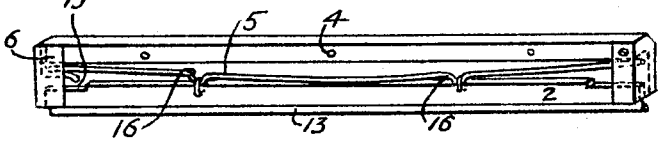



FIG. 5

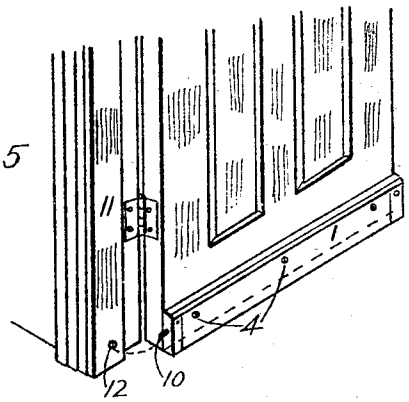



FIG. 6

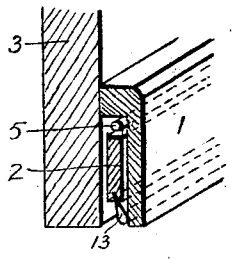



FIG. 7

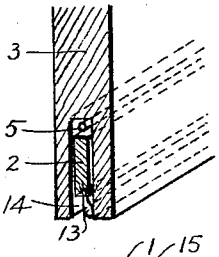
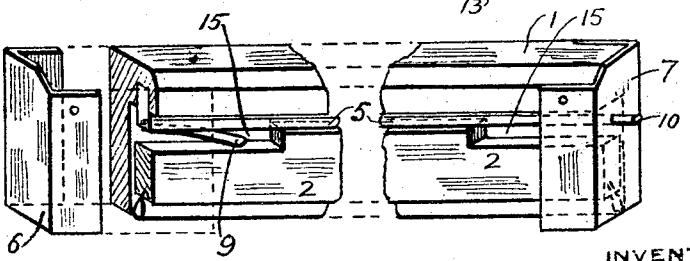



FIG. 8




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March 10, 1925.

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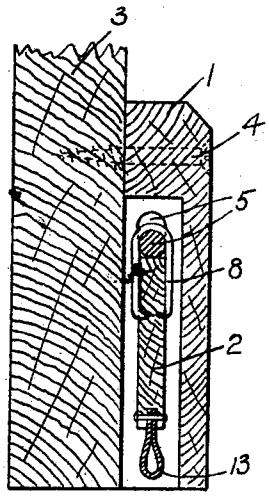



FIG. 9

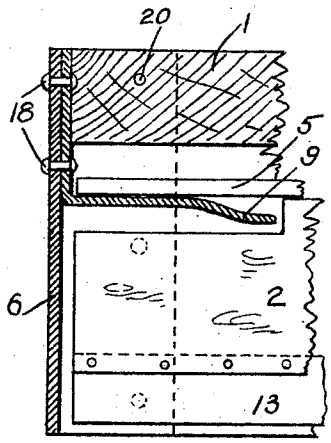



FIG. 10

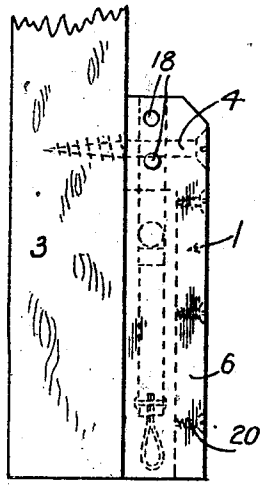



FIG. 11

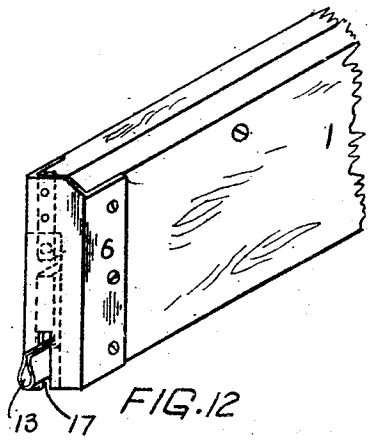



FIG. 12

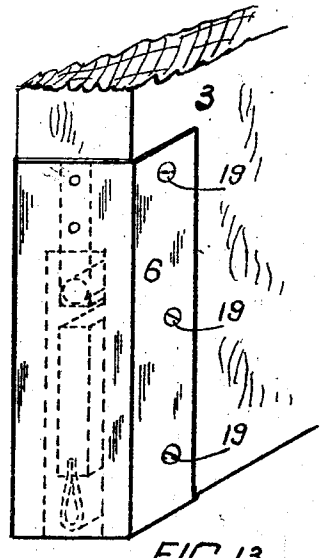



FIG. 13

WILLIAM HENRY EDWARDS
Inventor
by Otis Clark Attorney

Patented Mar. 10, 1925. 1,529,424

# UNITED STATES PATENT OFFICE.

WILLIAM HENRY EDWARDS, OF ATTUNGA, NEW SOUTH WALES, AUSTRALIA.

## WEATHER EXCLUDER FOR DOORS.

Application filed October 24, 1922. Serial No. 596,640.

*To all whom it may concern:*

Be it known that I, WILLIAM HENRY EDWARDS, a subject of the King of Great Britain and Ireland, residing at Attunga Copper Mine, Attunga, New South Wales, Commonwealth of Australia, have invented certain new and useful Improvements in Weather Excluders for Doors, of which the following is a specification.

This invention relates to means for preventing draught, dust and water passing under doors when they are in closed position. The object of the invention is to provide a draught, dust and weather excluder for doors which may be cheaply constructed, is readily fixed to a door, and is effective in operation.

The excluder is adapted to be fixed to the bottom of the front of a door or to be set within a groove cut in the bottom of the door. It comprises a lath (preferably of wood) which has fitted to it a rod spring adapted, when the door is being closed, to have one of its ends brought into contact with a striker situated on the hinge-post of the door to depress the lath into contact with the floor to prevent passage of air-draughts, dust, or water under the bottom of the door. The foot of the lath is provided with a strip of rubber, felt, or other resilient material capable of making close contact with the floor when the lath upon which it is mounted is depressed. End plates are provided, and at one end the excluder is fitted with a tongue which is adapted to support one end of the rod spring. The latter may be constructed in such manner that it cannot be extracted from the lath unless the fastening means therefor have previously been removed.

Referring to the accompanying drawing, Fig. 1 is a perspective view of one form of the excluder in open position; Fig. 2 a similar view to Fig. 1 but showing the excluder in closed position; Figs. 3 and 4 views similar to Figs. 1 and 2 respectively but showing the rod spring with two depressions therein; Fig. 5 a broken perspective view of a door with the excluder attached to the exterior thereof; Fig. 6 a sectional view of the excluder shown in Fig. 5; Fig. 7 a sectional view of the excluder secured to a groove in the door; Fig. 8 an enlarged broken perspective view illustrating the excluder shown in Fig. 1; Fig. 9 a cross section of the excluder on line A—B Fig. 3 illustrating the attachment of the rod spring to the lath; Fig. 10 a broken detail view illustrating the attachment of the tongue to one of the end plates; Fig. 11 a detail end view illustrating the attachment of the carrier for the lath to the bottom of a door and the attachment of the end plates to the carrier; Fig. 12 a broken detail view illustrating one of the end plates with an opening to allow the end of the pad to project therethrough; and Fig. 13 a broken detail view illustrating the attachment of one of the end plates at the end of a door about a recess in the latter in which the excluder is carried.

With reference to Figs. 1 and 2 and Figs. 5, 6 and 8 which show the excluder when it is adapted to be secured to the bottom of the front of a door, a separate carrier 1 is provided for the lath 2 which preferably consists of wood. Such carrier 1 may be of wood or metal; it is attached to the front of the door 3 by means of screws 4 or the like. The lath 2 is supported in said carrier 1 by a steel rod spring 5 which may be of any desired cross section; the opposite ends of the carrier 1 are closed by metal plates 6 and 7 but its bottom is open, and the rod spring 5 extends from end to end of the lath 2. Staples 8 are attached to the lath 2 through which the spring 5 projects; said staples serve to hold the lath 2 on the spring 5.

One of the metal plates 6 at the end of the carrier 1 serves as an abutment for one end of the spring 5; such abutment plate is also preferably provided with a projecting metal tongue 9 to act as a support for one end of the spring 5. The tongue 9 may be secured to the plate 6 by rivets 18 and the plates 6 and 7 may be attached to the carrier 1 by means of screws 20. In Fig. 8 the tongue 9 is shown attached to one end of the carrier 1. It will be understood, however, that the tongue 9 may be formed integral with the plate 6 or it may be attached to such plate by rivets, solder, or by crimping one of its ends thereto, or by other suitable means. Both the plates 6 and 7 are nailed or otherwise secured to the carrier 1. The metal plate 7 at the opposite end of the carrier 1 is provided with a hole to enable the other end 10 of the spring 5 to pass therethrough.

Located on the hinge-post 11 of the door frame is an adjustable screw 12 or other de-

vice which is adapted to act as a striker against which the projecting end 10 of the spring 5 may contact upon the closing of the door. When the door is being closed the projecting end 10 of the spring 5 contacts with the striker 12 and the spring is bent downwardly, causing it to force the lath 2 downwardly and to bring the rubber or other resilient pad 13 thereon in close contact with the floor. Upon the door 3 being opened and pressure on the spring 5 released by relieving its projecting end 10 from contact with the striker 12, the spring 5 returns to normal position and the lath 2 is moved upwardly with said spring and its contact with the floor is thereby broken. It is preferred to construct the pad 13 of a strip of rubber which is folded in such manner that its two loose longitudinal ends can be conveniently secured by tacks or other devices in an inclined groove (see Fig. 6) in the bottom of the carrier 1.

At opposite ends the lath 2 is reduced at 15 to permit the projecting tongue 9 to lie above the head of the lath but disposed to support one end of the spring 5. The lath 2 may be curved inwardly at its foot (see Figs. 1 and 2). Such curve extends from one end of the lath to the other end thereof, so that the lath at its central portion will not have the same depth as it has at the ends thereof. The object of curving the foot of the lath is to ensure that complete contact of the pad 13 will be made with the floor line. By curving the foot of the lath in a manner that its central portion is of less depth than the depth of its opposite ends the said central portion is made more flexible and the spring 5 in its operation is thus enabled to exert sufficient pressure on the lath 2 to bring the lower face of the pad 13 into complete contact with the floor. If the foot of the lath 2 is not curved there is likelihood when the spring 5 is operated that both ends of the lath 2 will turn upwardly and the pad 13 will not in consequence contact evenly with the floor.

Referring to Figs. 3 and 4, the construction of the excluder shown therein is identical with that shown in Figs. 1 and 2 and Figs. 5, 6 and 8 with the exception that the steel rod spring 5 is furnished with two depressions 16 and the part of the said spring between said depressions is bent slightly to lie nearer the lath 2 than the other parts of said spring when the excluder is in open position. Upon the end 10 of the spring 5 contacting with the striker 12 the lower walls of the depressions 16 are brought into contact with the head of the lath 2 simultaneously with the contact of the portion of the spring 5 between the said depressions with the head of the said lath and the latter is then forced downwardly to contact with the floor. By providing the depressions 16 in the spring 5 and securing the latter by means of the staples 8 to said depressions in the lath 2, the said spring cannot be withdrawn from the excluder by pulling on the loose end 10 of the spring 5 unless the staples 8 have previously been withdrawn from the lath 2.

In the event of the excluder being fitted in a recess 14 provided therefor in the bottom of the door (see Fig. 7) the door itself acts as the carrier for the lath 2. The said recess 14 is closed at its ends with metal plates 6 and 7 as above described and the spring 5 is secured and operates in the same manner as when a separate carrier 1 is provided for the lath 2. Said plates 6 and 7 may be secured to the ends of the door 3 by screws 19.

In Figs. 1 to 5 and Fig. 8 of the drawings the opposite ends of the pad 13 are shown closed respectively by the end plates 6 and 7. If the carrier 1 or lath 2 should be made of a length not sufficient to extend completely across a door opening of a width somewhat greater than the length of the carrier 1 or lath 2 the bottom portions of the end plates 6 and 7 may be slotted and the opposite ends of the pad 13 may be made to project therethrough for the additional length required to enable the pad 13 to completely fill the door opening. The pad 13 is shown projecting at one end through an opening 17 in the end plate 6 in Fig. 12.

The lath 2 moves upwardly and downwardly quite freely in the separate carrier 1 or in the recess 14 in the door in which it is fitted, and whilst in the upward position no part of the resilient pad mounted thereon is in contact with the floor.

I am aware that draught and dust excluders are already known in which a rod spring is used in conjunction with a lath whereby the latter is caused to move downwardly when pressure is exerted on one end of the said spring and is also caused to rise when the pressure on said spring is relaxed. I wish it to be understood, however, that I do not lay any claim to any such excluders.

What I claim as my invention and desire to secure by Letters Patent is:—

1. In a device for the purpose specified, a longitudinal lath of greater flexibility intermediate its ends than at its ends, a cushioning member carried by one of the longer sides of the lath, and resilient means pressing against the opposite longer side of the lath and adapted, to force the cushioning means with substantially uniform pressure against an object.

2. In a device for the purpose specified, a longitudinal lath having one of its longer sides concave whereby the lath will be of greater flexibility intermediate its ends than at its ends, a pad carried by the concave side of the lath, and a spring pressing

against the opposite side of the lath and adapted, when said spring is tensioned, to force the pad with substantially uniform pressure against an object.

3. A draught, dust and weather excluder, comprising a lath and supporting means therefor consisting of a resilient rod provided with a downwardly curved central portion and kinks provided in said rod at opposite ends of said curved portion, the rod being adapted to contact with and yieldably bear down upon said lath at the center thereof and at said kinks.

4. A draught, dust and weather excluder comprising a supporting element having a groove in its under side, a lath in said groove having its under side longitudinally concave and provided with a conformably shaped resilient pad along said under side, metallic end plates one of which is provided with a hole and the other of which is provided with a spring tongue projecting into said groove, means for securing said end plates to said supporting element, a metallic resilient rod along the upper side of said lath one end of which is firmly supported by said tongue and abuts against the corresponding end plate and the other end of which projects beyond the end of said supporting element through the hole in the other end plate, means for supporting the center portion of said lath upon the center portion of said rod, said rod being adapted to yieldably bear down upon the center portion of said lath when said projecting end is forced inward.

5. A draught, dust and weather excluder comprising a supporting element having a groove in its under side, a lath in said groove, metallic end plates one of which is provided with a hole and the other of which is provided with a spring tongue projecting into said groove, means for securing said end plates to said supporting element, a metallic resilient rod along the upper side of said lath one end of which is firmly supported by said tongue and abuts against the corresponding end plate and the other end of which projects beyond the end of said supporting element through the hole in the other end plate, means for supporting the center portion of said lath upon the center portion of said rod, said rod having a downwardly curved central portion and two downwardly disposed kinks on opposite sides of said curved portion and being adapted to contact with and yieldably bear down upon said lath at the center thereof and at said kinks simultaneously when said projecting end is forced inward.

6. A draught, dust and weather excluder, as claimed in claim 5, in which said means for supporting the center portion of said lath comprises staples engaging with said kinks and preventing longitudinal movement of said rod relative to said lath.

In testimony whereof I affix my signature.

WILLIAM HENRY EDWARDS.