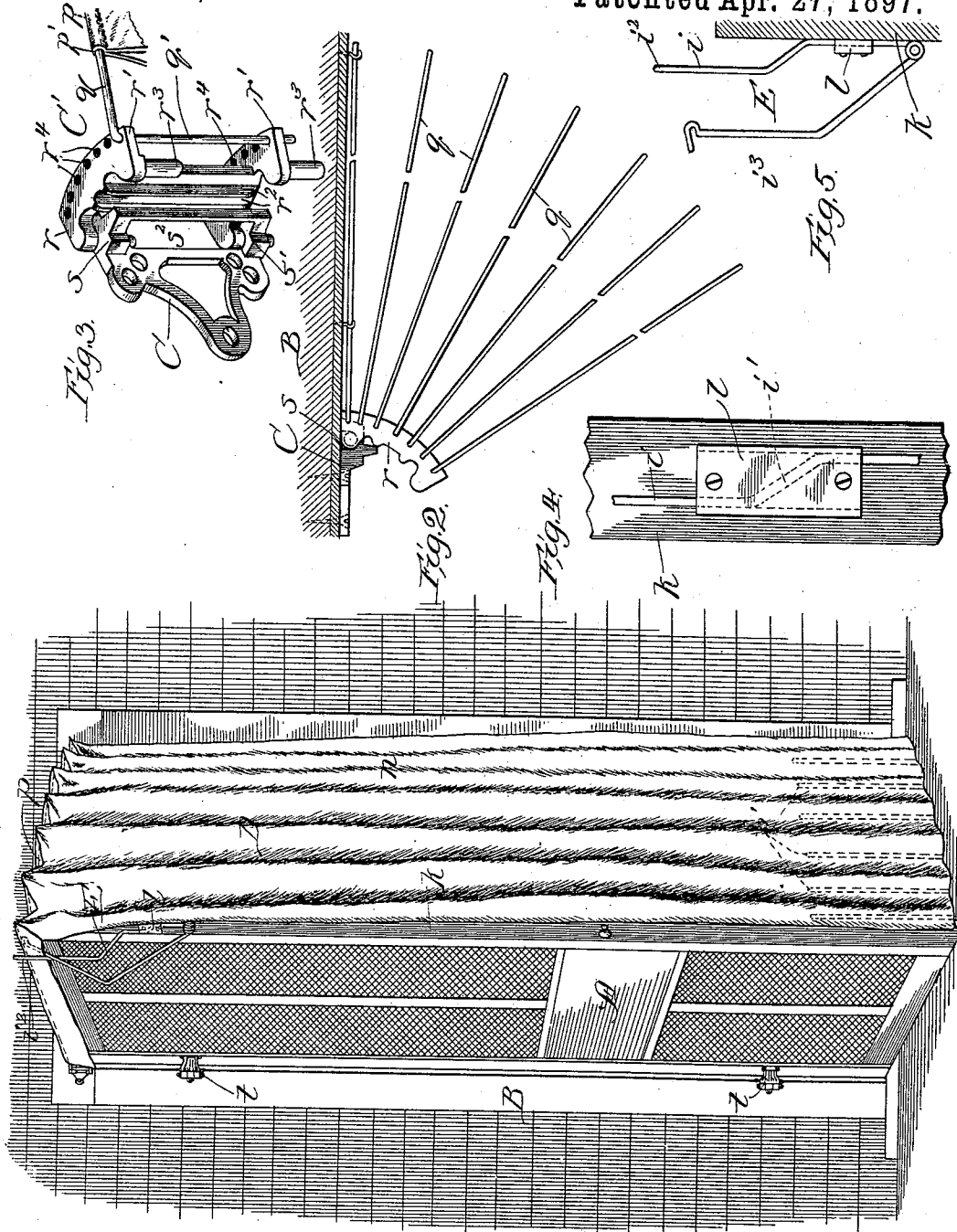


(No Model.)

F. A. BIEHN.
FLY GUARD FOR DOORS.

No. 581,410.

Patented Apr. 27, 1897.



Witnesses:
E. C. Claydon.
L. E. Allen.

Fig. 1

Inventor:
Frank A. Biehn.
By *Dyrenford* *Dyrenford*,
Attys.

UNITED STATES PATENT OFFICE.

FRANK A. BIEHN, OF CHICAGO, ILLINOIS.

FLY-GUARD FOR DOORS.

SPECIFICATION forming part of Letters Patent No. 581,410, dated April 27, 1897.

Application filed August 8, 1896. Serial No. 602,110. (No model.)

To all whom it may concern:

Be it known that I, FRANK A. BIEHN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Fly-Guards for Doors, of which the following is a specification.

My invention relates to improved means for preventing the ingress of flies to a room when the door is opened by persons passing in or out; and my object is to provide such means in the form of a cloth curtain connected with the door-casing and door and arranged to fold and unfold as the door is closed and opened, the curtain affording an effective fly-guard without interfering with the functions of the door.

In the drawings, Figure 1 is a broken view in elevation of a wall and a screen-door opened part way, showing my improved fly-guard in use; Fig. 2, a broken plan section of the door-casing and showing the fly-guard-supporting frame; Fig. 3, an enlarged broken perspective view of the said frame; Fig. 4, an enlarged broken elevation of a door-stile, showing the means for holding a tensioning-spring; and Fig. 5, a view in elevation of the tensioning-spring.

My improvements are shown in Fig. 1 applied to a screen-door A, which is mounted against a door-casing B and held normally closed by spring-hinges *t*.

Fastened against the casing B above the door and in line with the hinges *t* is a bracket C, having upper and lower projecting bearing-sockets *s s'*, respectively, and a cross-piece or stop *s*².

C' is a frame comprising a head *r* and horizontally-extending rods *q*, which are of a length somewhat greater than the width of the door A. The head *r* consists of two segmental end plates *r' r'*, joined by a bar *r*². On the under side of the opposite ends of each plate *r'* is a downward-extending bearing-lug *r*³, and the plates are provided with coincident series of openings *r*⁴ to receive the vertical end portions *q'* of the rods *q*. The head C' is placed in position by passing the lugs *r*³ at one side of the head into the bearing socket-pieces *s s'*, whereby the plates *r r'* rest upon the socket-pieces, the edge of the head is in contact with the door-casing, and the bar *r*²

is against the cross-piece or stop *s*², as shown in Figs. 2 and 3. This construction causes the guard-support, consisting of the bracket C and head C', to be applicable to either a right or a left hand swinging door, and the rods *q* swing freely in the horizontal plane.

D is a curtain, of canvas or other suitable cloth, having the top or horizontal portion *p* and hanging or vertical portion *n*, both formed with plaits or folds. The folds correspond in number with the rods *q*, and the folds of the part *p* at their upper edges are preferably formed with pockets *p'* to receive the rods *q*, though the folds may be secured to the rods in any other desirable way. The part *n* of the curtain extends to or nearly to the ground, and between the folds therein I provide vertical pockets *n'* for short rods, which operate as weights. The rod *q* nearest the casing is held thereto by screw-hooks *m*, while the outer flap of the upper part of the curtain extends over the upper edge of the door.

A spring E, formed, preferably, of a single length of wire bent to the shape shown, is fastened by means of a plate or clip *l* against the upper outer side of the latch-stile *k* of the door. The spring E has an arm *i*, formed with a zigzag portion *i'* to pass across opposite sides of the screws which hold the plate *l*, as shown in Fig. 4, whereby the spring is fastened rigidly in place, and an end portion *i*², which projects above the door and affords a stop for the curtain. The yielding arm *i*³ of the spring is formed at its end into a hook and engages the edge of the curtain or guard, as shown.

In operation the guard or curtain folds at the plaits just beyond the top and latch-stile of the door. In swinging the door open the spring E draws the curtain outward to unfold it, as shown in Fig. 1, the rods *q* swinging apart, as shown in Fig. 2. After the door has been opened so far as to stretch the guard or curtain to the limit further opening of the door will cause the spring E to yield and thus prevent sudden jar and possible tearing of the cloth. In the closing movement of the door the stop *i*² on the spring engages the rods *q* and swings them toward the casing, thereby folding the guard or curtain against the latter.

The shaking of the curtain when it is pushed aside by a person passing through the door

will keep flies away, and as the curtain closes quickly behind the person there is no danger of flies entering while the door is being swung. Thus my improvement affords a very effective fly-guard without interfering with the use of the door.

While I prefer to construct my invention in all its parts as shown and described, it may be modified in the matter of details of construction without departing from the spirit of my invention as defined by the claims.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a fly-guard for swinging doors, the combination of a folding and unfolding frame provided toward one end with means for securing it in place toward the top and hinged edge of the door and for holding it at opposite sides respectively to the door and casing to unfold and fold as the door is opened and closed, and a folding and unfolding curtain upon the frame to extend along the upper edge portion and down the side of the door, to unfold and cover the top and side of the opening, when the door is swung, substantially as and for the purpose set forth.

2. A fly-guard for doors comprising, in combination, a folding and unfolding frame fastened against the casing at the upper end of the door, and a folding curtain fastened upon the frame and extending across the top and

side of the door, substantially as and for the purpose set forth.

3. In a fly-guard for doors, the combination of a supporting-frame, comprising a head with means for securing it in place, and swinging supporting-rods pivotally connected with the head, and a curtain mounted upon the rods to fold between them and extend across the top and side of a door, all arranged to operate substantially as and for the purpose set forth.

4. In a fly-guard for doors, the combination of a supporting-frame, comprising a head with means for securing it in place and swinging supporting-rods pivotally connected with the head, a curtain mounted upon the rods to fold between them and extend across the top and side of a door, and a tensioning-spring for the curtain with means for securing it in place, all arranged to operate substantially as and for the purpose set forth.

5. In a fly-guard for doors, the combination of the folding curtain D, having the parts *p*, *n*, the curtain-support, comprising the bracket C, head C' and rods *q*, and the spring E, all arranged to operate substantially as and for the purpose set forth.

FRANK A. BIEHN.

In presence of—

J. N. HANSON,
R. T. SPENCER.