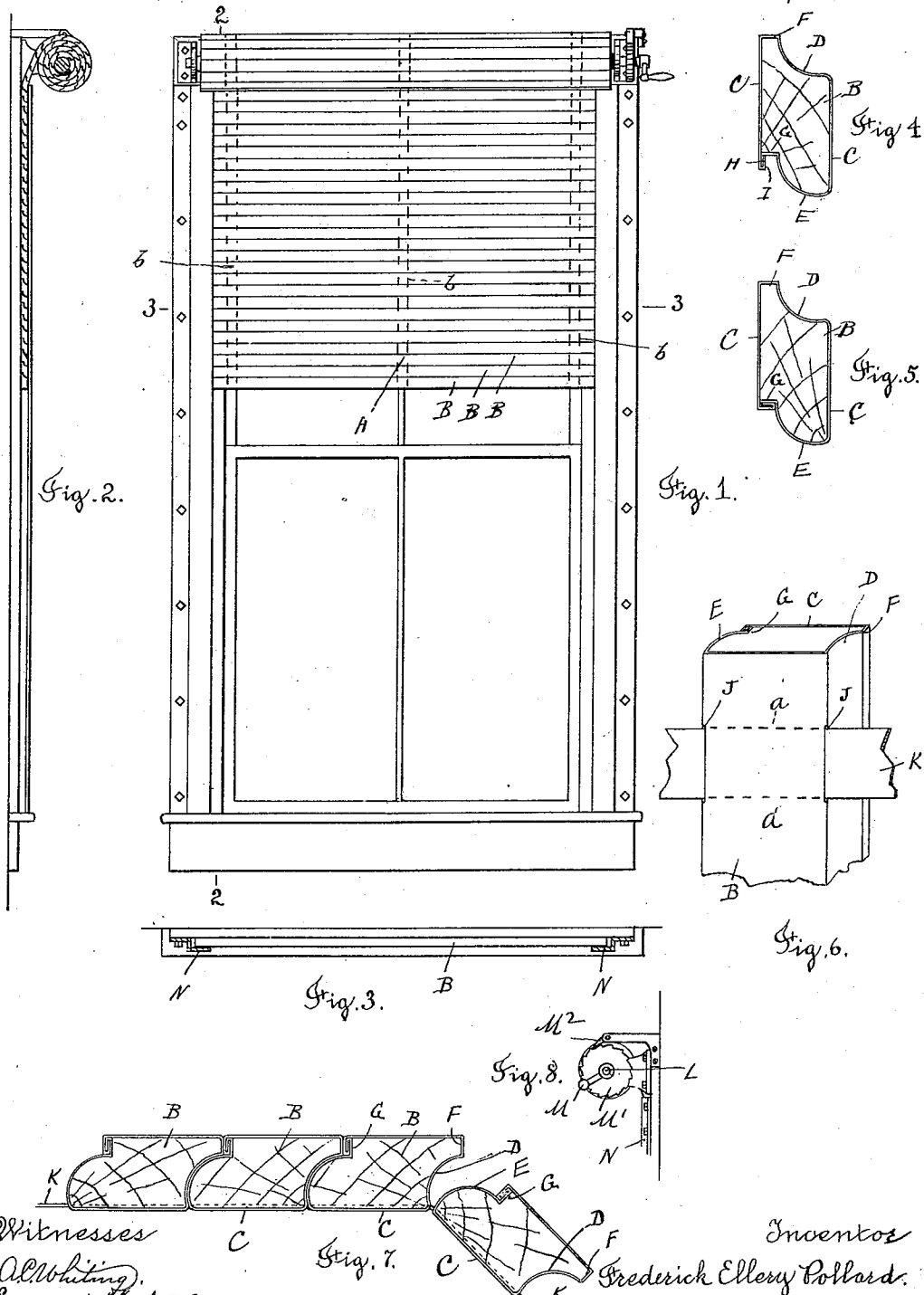


(No Model.)

F. E. POLLARD.  
FIREPROOF SHUTTER.

No. 553,540.

Patented Jan. 28, 1896.



Witnesses  
All Whiting  
Emma Foster

Inventor  
Frederick Ellery Pollard.  
By his Attorney

Rufus B. Fowler

# UNITED STATES PATENT OFFICE.

FREDERICK ELLERY POLLARD, OF WORCESTER, MASSACHUSETTS.

## FIREPROOF SHUTTER.

SPECIFICATION forming part of Letters Patent No. 553,540, dated January 28, 1896.

Application filed March 30, 1894. Serial No. 505,800. (No model.)

*To all whom it may concern:*

Be it known that I, FREDERICK ELLERY POLLARD, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Fireproof Shutters, of which the following is a specification, reference being had to the accompanying drawings, forming a part of the same, in which—

Figure 1 represents a window having a fireproof shutter embodying my invention applied thereto. Fig. 2 is a vertical sectional view on line 2 2, Fig. 1. Fig. 3 is a transverse sectional view on line 3 3, Fig. 1. Fig. 4 represents an end view of one of the strips or leaves of the shutter, showing the overlapped edges of the metallic shell before they are pressed down into place. Fig. 5 represents an end view of one of the strips or leaves of the shutter, but with the overlapped edges of the metal case pressed down against the body of the leaf. Fig. 6 is a perspective view of one end of one of the strips or leaves of the shutter, showing a portion of the flexible metal band or ribbon by which the leaves are united. Fig. 7 represents four of the strips or leaves, shown in end view and as connected together by a flexible band or ribbon; and Fig. 8 shows a side view of the crank and ratchet-wheel attached to the roll upon which the shutter is wound.

Similar letters refer to similar parts in the different figures.

The object of my present invention is to provide a fireproof shutter adapted to close the openings in warehouses and stores; and it consists of a series of metallic shells hinged together at their edges, which are made to overlap so as to break the joint between the leaves or strips, the strips being preferably filled with some heat non-conducting material—such as wood, asbestos, mineral wool, or gypsum.

In the accompanying drawings I have represented one of my improved fireproof shutters as applied to a window-opening, and it consists of a flexible curtain A, formed of a series of strips or leaves B, each consisting of a metal shell C, which is most conveniently made of tin or thin sheet metal bent into the form of a shell equal in length to that of the

strips or leaves B, and having its cross-section correspond to the cross-section of the strip or leaf, preferably with one of its edges concave, as at D, and with its opposite edge convex, as at E, so as to correspond to and fit the concave edge of the next adjacent leaf, and the two edges of the shell having the straight surfaces F and G at right angles with the sides of the shell. The sheet metal is locked together upon the surface G by means of a seam formed by turning up the edge H of the sheet metal, and carrying the opposite edge I around the upturned edge H, as represented in Fig. 4, and then bending the overlapped edges down against the surface G, as represented in Fig. 5.

In Figs. 4 to 7 I have shown the sheet metal as bent around a strip of wood, which is inclosed by the metal shell which forms a core or filling; but in place of wood other heat non-conducting material can be employed. In order to hinge the strips or leaves B together, I form two openings or narrow slits J J upon opposite corners on one side of the shell through which I pass a metal band K, preferably of tempered steel, the band passing beneath one side of the hollow shell, as indicated by the broken lines *a a*, Fig. 6. These metal bands K are arranged transversely to the leaves B throughout the curtain, as indicated by broken lines *b*, Fig. 1. The leaves B are connected by extending the bands K through the slits J J of each leaf when they are placed with their edges in contact, as shown in Fig. 7, and the two outer leaves of the series are attached to the metal bands K, causing the several intervening leaves to be held in position. One end of the shutter is conveniently attached to a roll L journaled above the window-opening, and having connected means by which the shutter is wound—such as a crank M, ratchet-wheel M', and retaining-pawl M'. Metal plates N are attached at the sides of the window-casing, forming ways by which the shutter is conducted down and held against the casing.

By the above-described method of making a fireproof shutter, I secure a body of wood or other heat non-conducting material of considerable thickness protected from the action of fire upon its outer surface by means of a metallic shell, and forming a shutter which is much lighter than fireproof curtains made

of metal strips hinged at their edges, and is sufficiently flexible to allow the shutter to be wound and unwound upon a roll L.

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

1. In a fire-proof shutter, the combination  
of a series of shells in the form of strips or  
leaves extending transversely across the shutter  
with their edges overlapping, a heat non-  
10 conducting material inclosed in said shells,  
said shells being arranged together at their  
abutting edges, substantially as described.

2. In a fire proof shutter, the combination  
of a series of shells in the form of strips, or  
15 leaves, extending transversely across the

shutter with their edges overlapping, said  
shells being united at their edges by a flexible  
connection, substantially as described.

3. In a fire-proof shutter, the combination  
of a series of shells formed of sheet metal and 20  
having a series of slits, or openings J upon  
opposite corners and a flexible metallic band  
extending through said slits, or openings,  
whereby said shells are united, substantially  
as described.

Dated this 21st day of March, 1894.

FREDERICK ELLERY POLLARD.

Witnesses:

RUFUS B. FOWLER,  
HENRY W. FOWLER.