

(No Model.)

C. C. SCHREIBER.

FIRE PROOF SHUTTER.

No. 320,974.

Patented June 30, 1885.

Fig. 1.

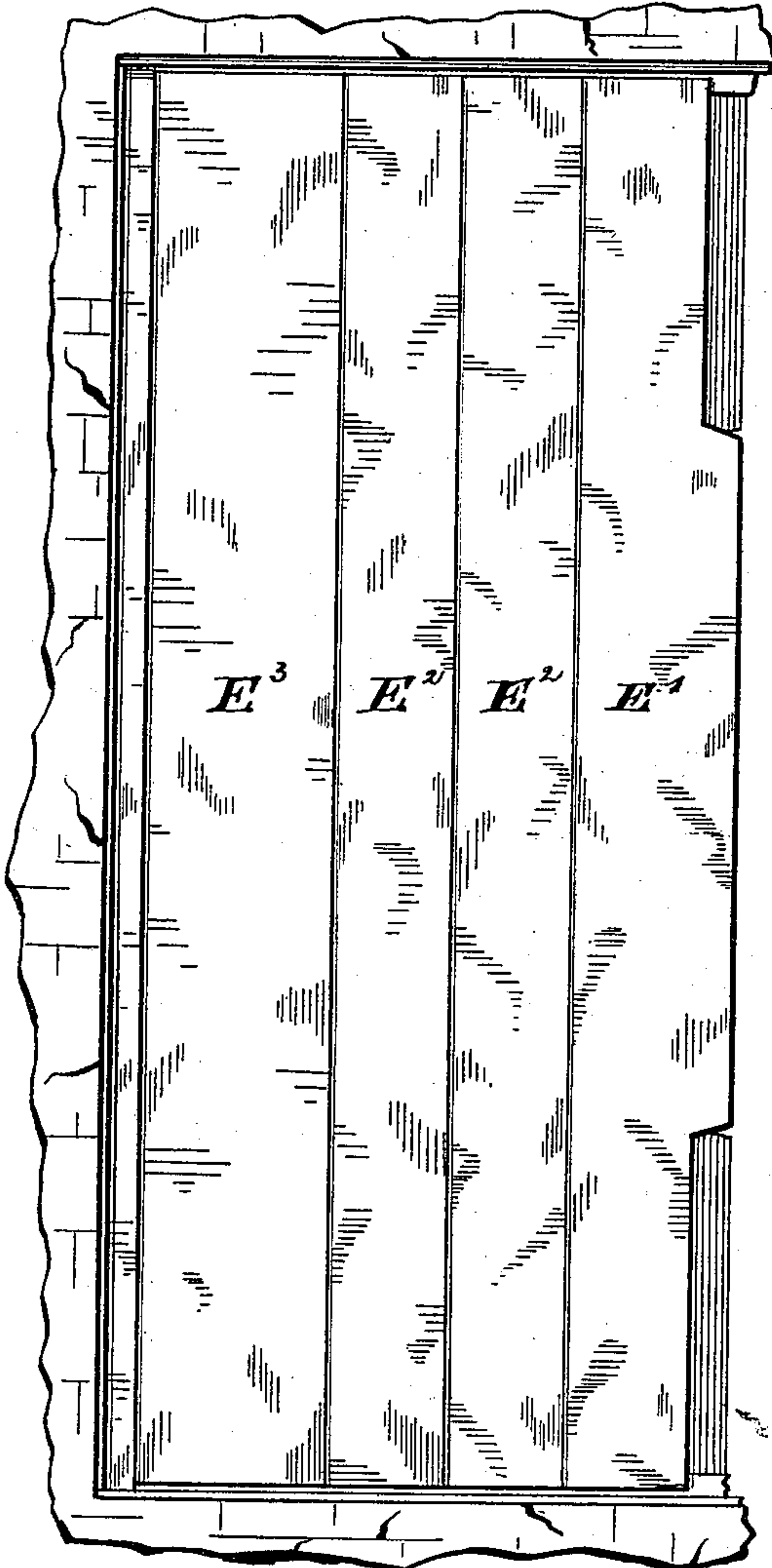
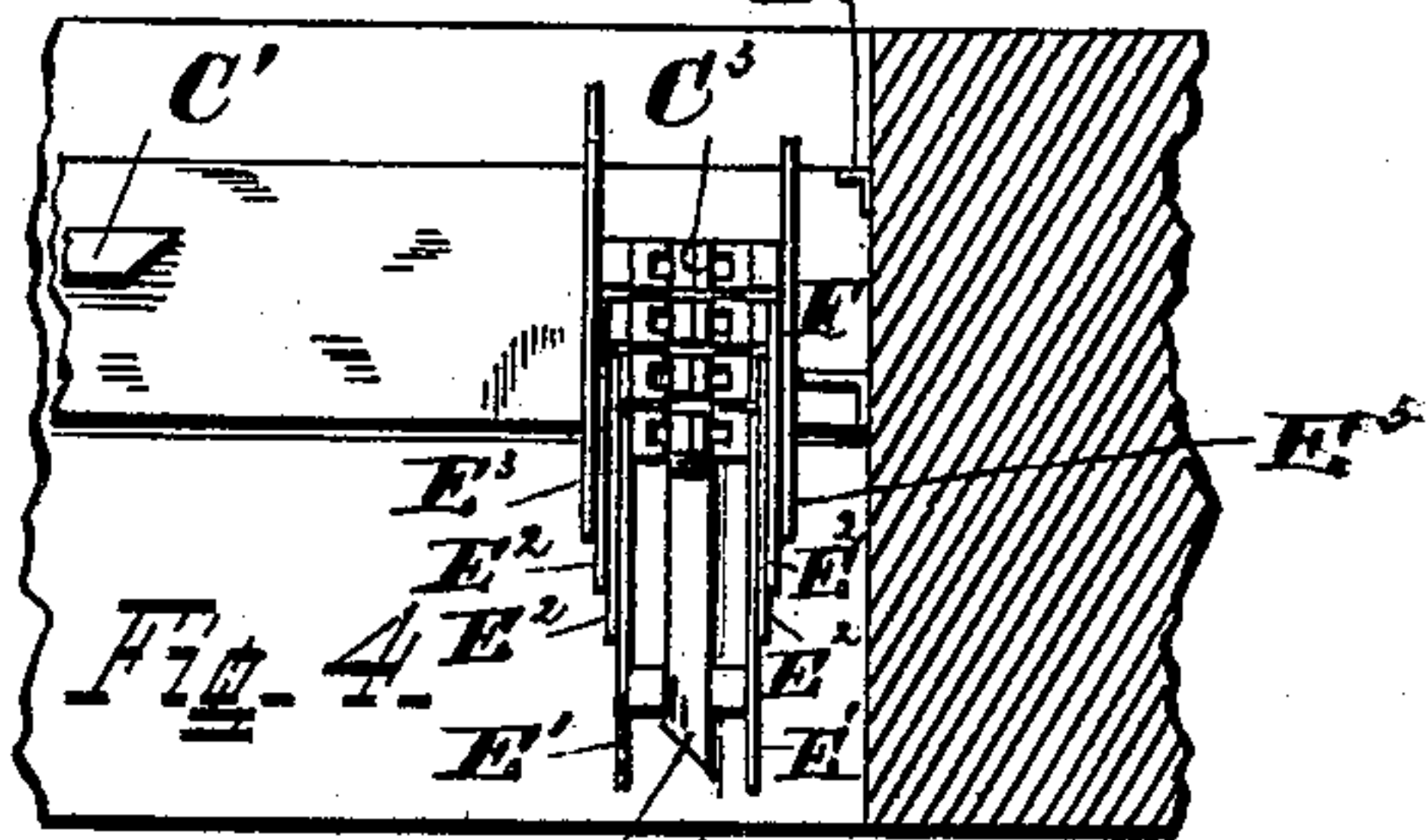
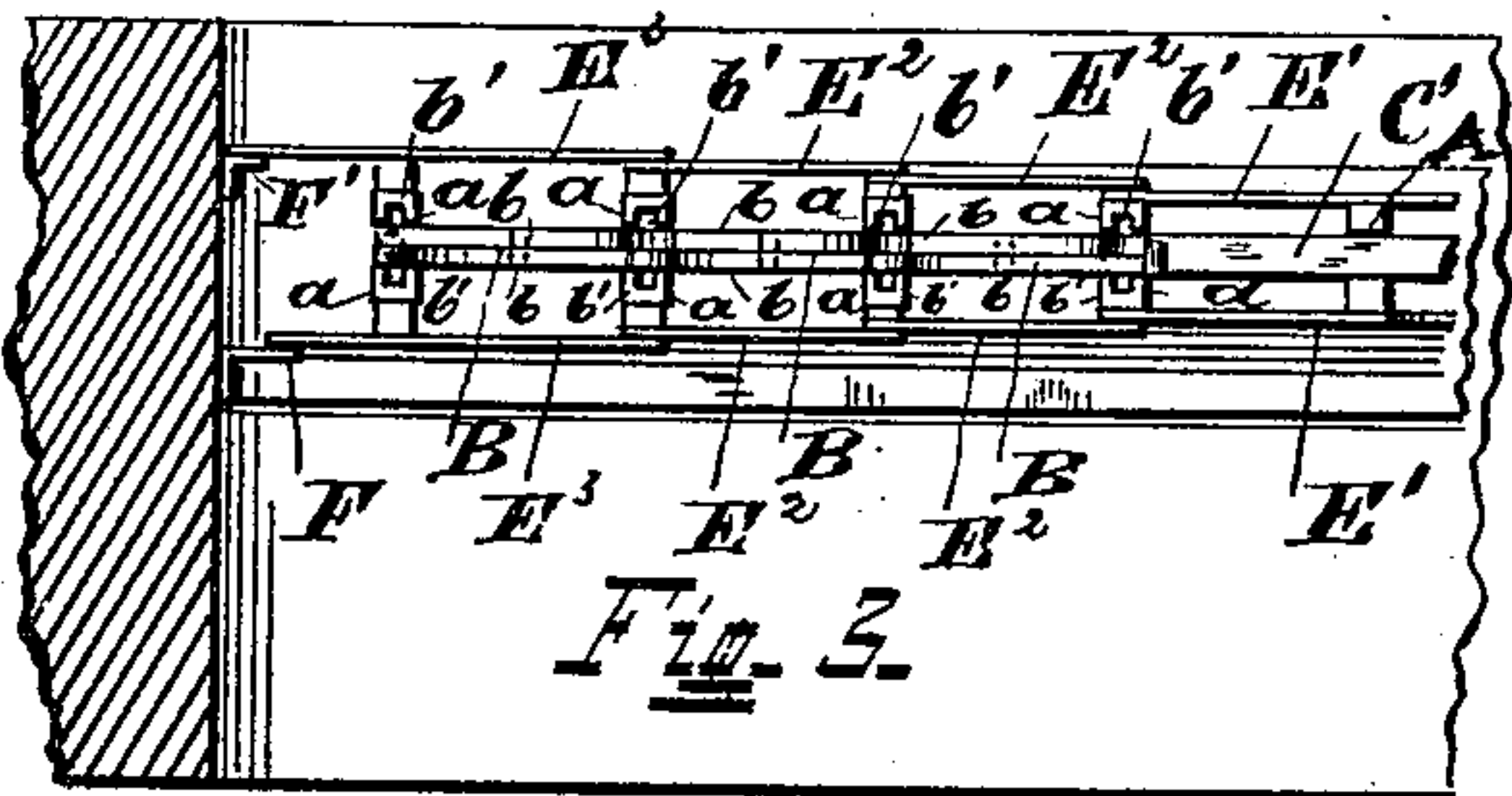
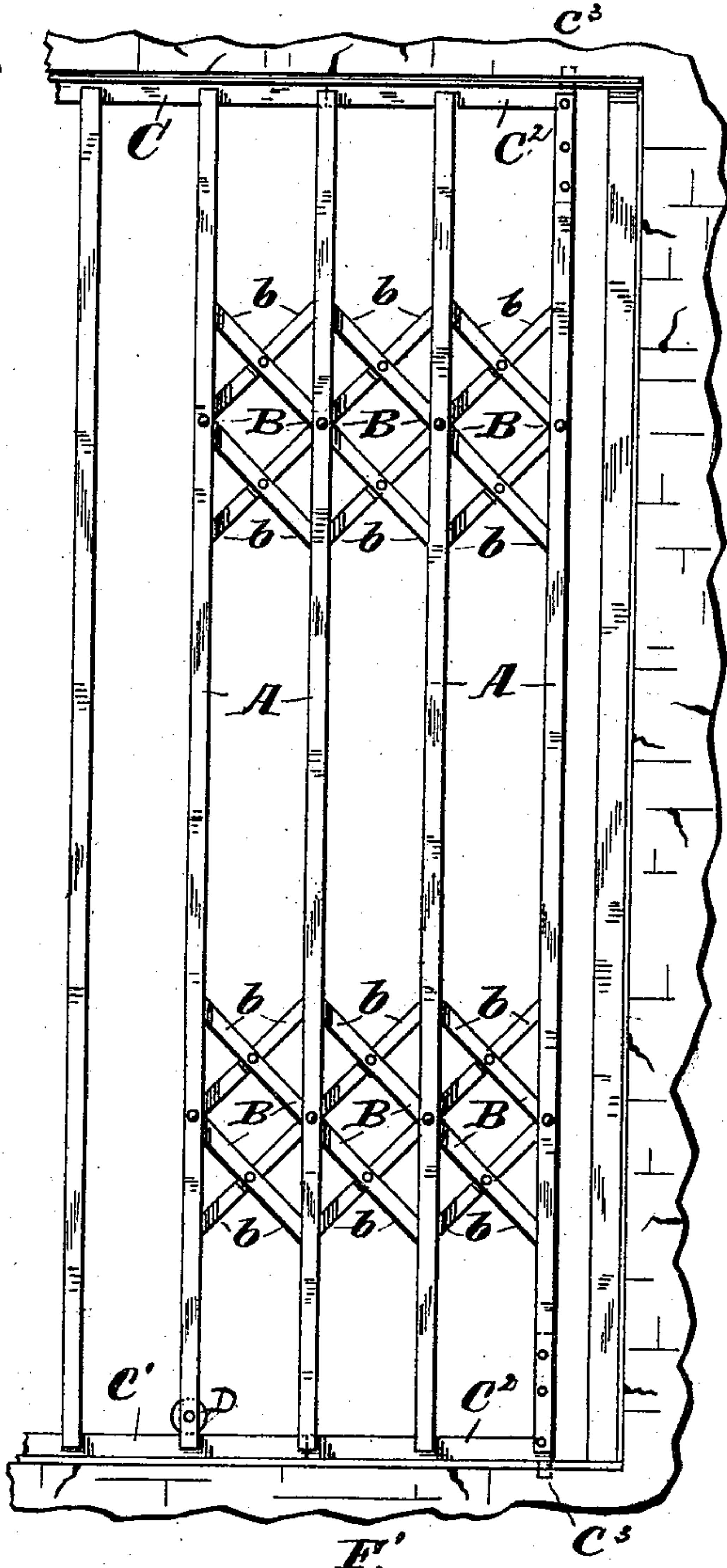


Fig. 2.



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UNITED STATES PATENT OFFICE.

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FIRE-PROOF SHUTTER.

SPECIFICATION forming part of Letters Patent No. 320,974, dated June 30, 1885.

Application filed February 12, 1885. (No model.)

To all whom it may concern:

Be it known that I, CHARLES C. SCHREIBER, a resident of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Fire-Proof Shutters, of which the following is a specification.

The several features of my invention and their use conjointly or otherwise will be apparent from the following description.

In the accompanying drawings, Figure 1 shows in elevation a window provided with my improved form of shutter. Fig. 2 shows in elevation the frame of the shutter divested of its cover or sheathing, and also shows parts of the window-frame. Fig. 3 is a top view of the shutter in position in a window, the top portion of the window being broken away. Fig. 4 is a top view of the hinge-end portion of the shutter in position in the window, the top portion of said window being broken away.

The shutter is made in two similar halves usually, and by preference; but for narrow windows a single shutter may be used. The shutter is arranged in segments which close into each other, or "telescope together," as is sometimes said. The frame-work on which the shutter is built consists of the vertical rods A, united by means of lazy-tongs B at top and bottom. The diagonal rods *b b*, which make up the tongs B, are arranged in pairs, in which the two rods cross each other at their centers, and are there pivoted together. The ends of the rods *b b* are pivoted to the ends of the rods *b b* of the adjoining pairs, and the pivots *b'*, which make these joints, are prolonged on each side into the channels *a* of the rods A. Now, when the rods A are pulled apart, the pivots *b'* slide in the channels *a*, and the rods A separate, keeping at equal distances apart and maintaining their parallelism.

From the top and the bottom of the window-sash flat bars C C' project, and they fit between the two sets of vertical bars A, serving as guides for the shutter to run on, and at the same time holding the shutter in position.

The forward or loose end of the shutter preferably rests directly upon a roller or rollers, as D. This roller is usually placed, as shown, between a pair of the vertical bars A. The roller facilitates the sliding of the shutter.

As shown in Figs. 2 and 4, the bars C C' are cut diagonally across, forming the short piece C² at each end. From the short piece C² lugs C³ project into the casing and form the preferred axis or means on which the shutter turns. When the bars A are forced close together, their ends are all on the short pieces C² above and below, and the collapsed or telescoped shutters may now be rotated on the lugs C³ and opened, so that only its width obstructs the light of the window.

On each side of this frame-work leaves or panels of metal, preferably sheet-iron, are placed. The first leaf, E', is placed flat against the first rods A; the second leaf, E², is attached to the next rod A, but is set out far enough from it to permit the first leaf, which its edge overlaps, to slide under it; and so the remaining leaves, as E² E³, are placed, each one set out a little farther than the preceding one.

When the frame is closed, the leaves close with it, and thus telescope the shutter into small dimensions. It can now be turned aside, owing to the cut in the bars C C', and does not project beyond the face of the wall, and at the same time clear opening of the window is encroached upon only by the thickness of the shutter.

The frame may be sheathed on one or both sides, the latter being the preferable form, as it forms an air-space between the two metallic plates, which makes the shutter much more nearly fire-proof.

Some difficulty has been experienced in having the plates on each side extend clear to the wall, and still allow the shutter to be swinging open. This difficulty has been met by the arrangement shown in Figs. 3 and 4. The inner plate, E³, of the outer sheathing is made short, so that it does not quite reach the wall when the shutter is closed, and clears the wall when the shutter is thrown open. A narrow plate, F, extends from the wall just over the edge of this inner plate and immediately in front of it, so that it serves to close over the break made by the shortening of this outer plate, and when the shutter is opened it comes in contact or nearly in contact with the face of the plate, as shown by the position of the shutter in Fig. 4.

The joint or point of junction between the

inner plate, A³, and the window-frame may be made tight by a vertical strip, F', attached to the window-frame, and so located that when the shutter is extended, as shown in Fig. 3, the strip comes inside of and overlaps this inner plate, E³.

The overlapping edges of each plate, since they do not slide under the adjoining plate, may be ornamented by a bead or similar design.

While the various features of my invention are preferably employed together, one or more of them may be employed without the remainder. In so far as applicable one or more of said features may be employed in connection with folding or extension shutters or gates other than the one particularly herein specified.

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

1. The vertical rods A, arranged in pairs, each rod carrying a groove or channel, *a*, and the lazy-tongs located between the rods A of a pair, the pins *b* of said tongs being prolonged on each side of said tongs and located and working in their respective grooves, and the leaves, as E E' E² E³, secured to said vertical rods, and each leaf, respectively, passing under or over its adjacent leaf, substantially as and for the purposes specified.

2. The vertical rods A, arranged in pairs,

and provided with grooves or channels *a*, and the lazy-tongs located between the rods A of a pair, the pins *b*' of said tongs located and working in said grooves *a*, and the leaves, as E E' E² E³, secured to said vertical rods on the outer side of the latter, and each leaf sliding alongside of its adjacent leaf, substantially as and for the purposes specified.

3. The vertical rods A, arranged in pairs, each rod carrying a groove or channel, *a*, and the lazy-tongs located between the rods A of each pair, the pins *b*' of said tongs located and working in said grooves *a*, and the leaves, as E E' E² E³, secured to said vertical rods, each leaf passing alongside of its adjacent leaf, and the upper and lower guide-bars, C C', respectively located between ends of opposing vertical rods A, substantially as and for the purposes specified.

4. The collapsing frame consisting of rods A and tongs B, in combination with the guide-bars C C', having detached short end pieces, C², provided with axial lugs C³, substantially as and for the purposes specified.

5. The piece F, in combination with leaves on a collapsing sheathed hinged shutter, substantially as and for the purposes specified.

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Witnesses:

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JNO. W. STREHLI.