

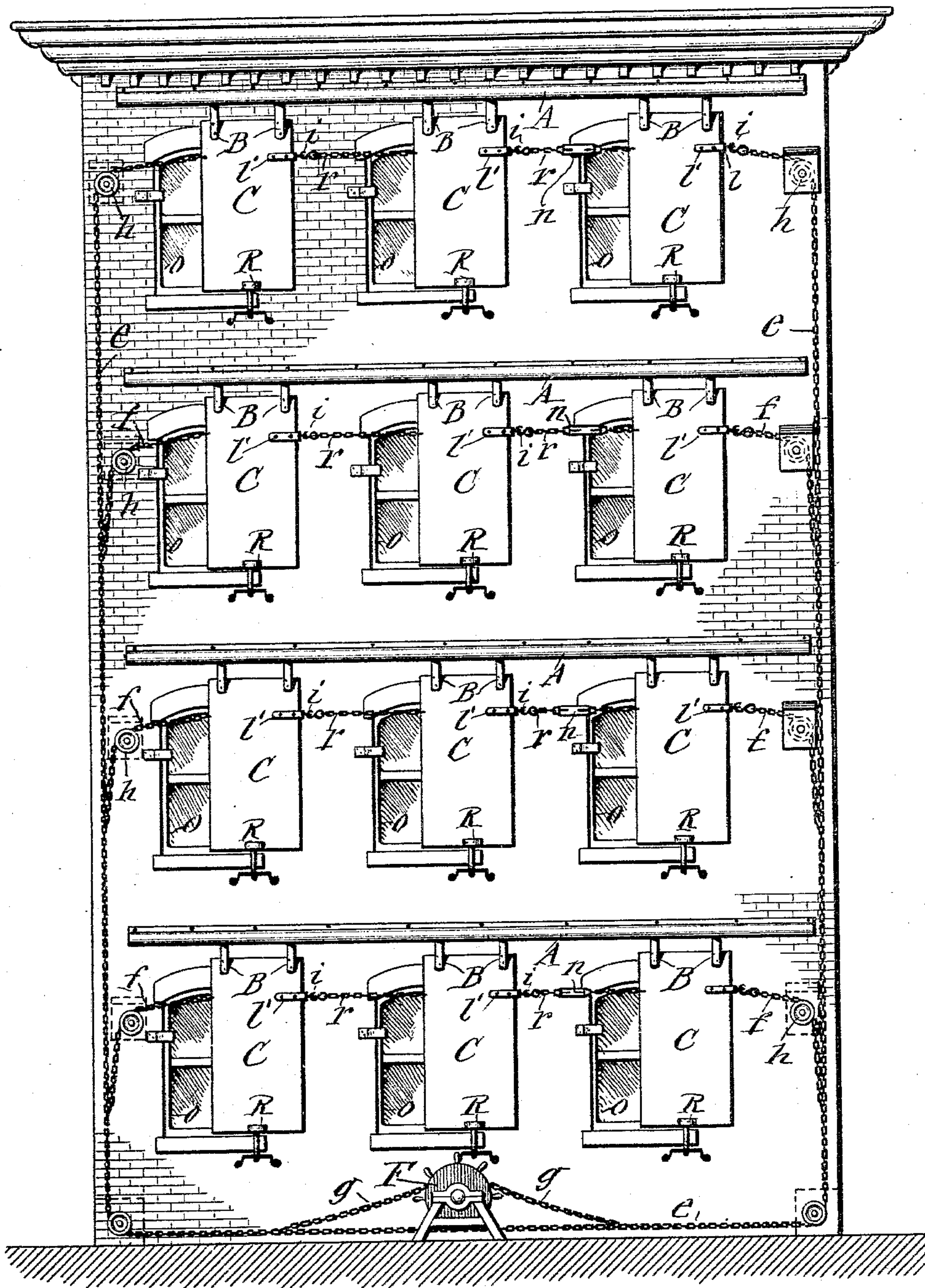
(No Model.)

3 Sheets—Sheet 1.

E. J. McCORMICK.
FIRE PROTECTIVE WINDOW SHUTTER.

No. 545,209.

Patented Aug. 27, 1895.



WITNESSES:

W. H. Robinson
C. L. Bendixen

Fig. 1

INVENTOR:

Edwin J. McCormick
By E. Laess
his ATTORNEY

(No Model.)

3 Sheets—Sheet 2.

E. J. McCORMICK.
FIRE PROTECTIVE WINDOW SHUTTER.

No. 545,209.

Patented Aug. 27, 1895.

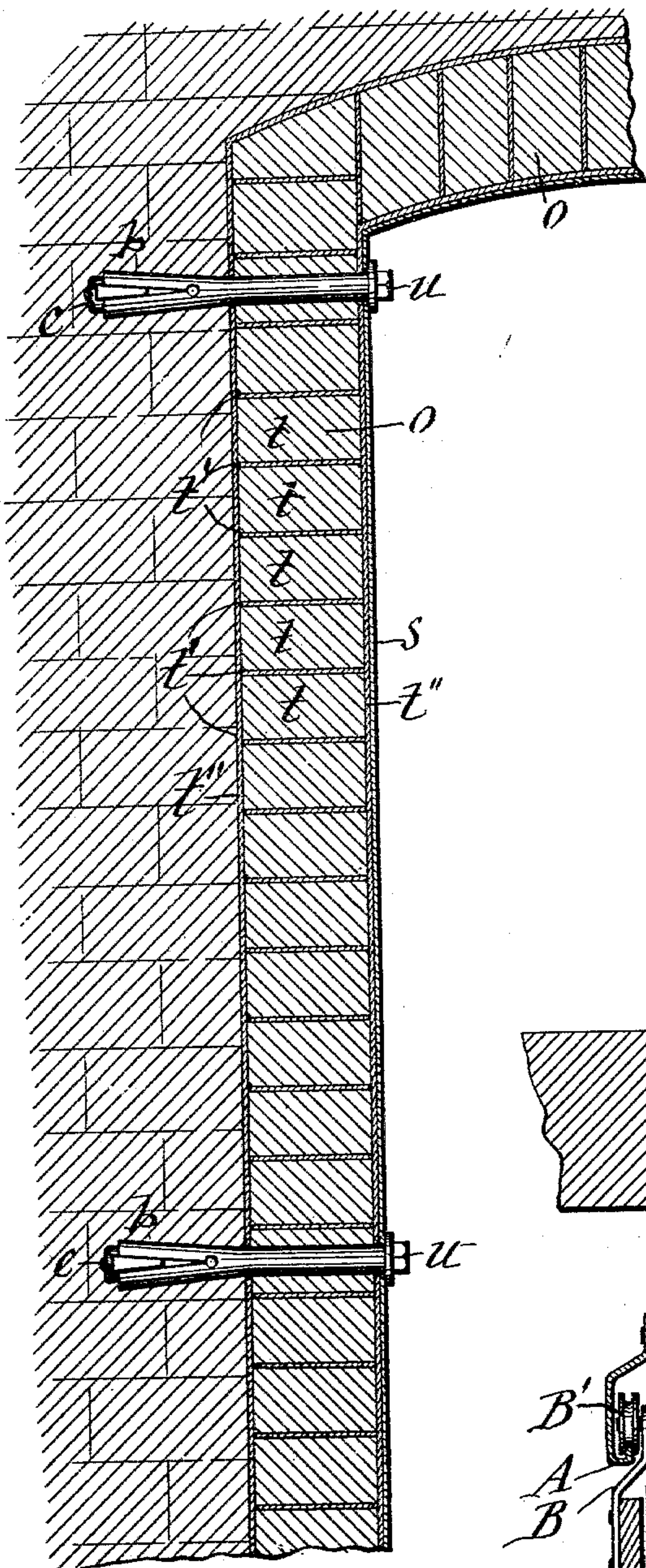


Fig. 2

WITNESSES:

W. J. Robinson

C. L. Bendixen

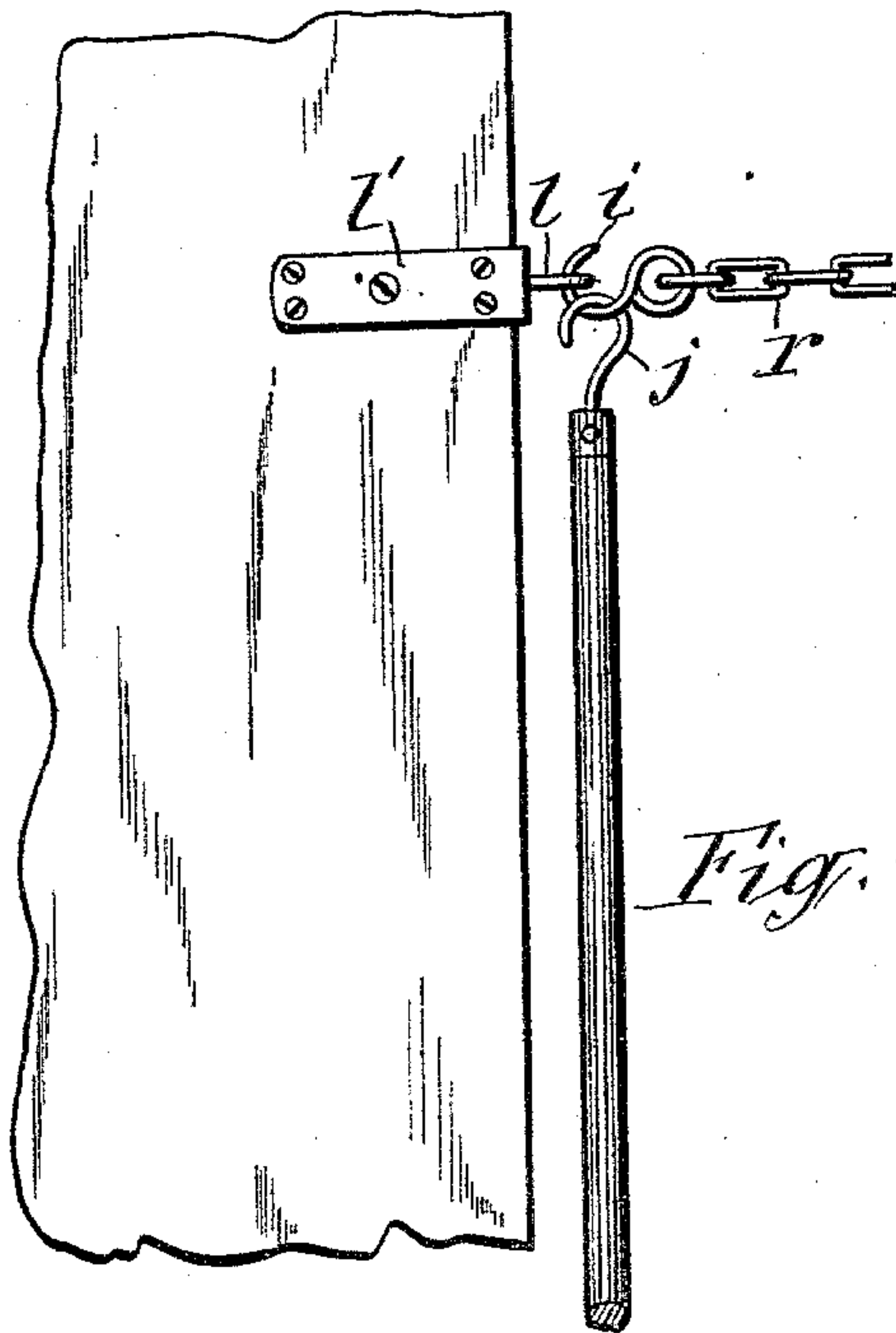


Fig. 4

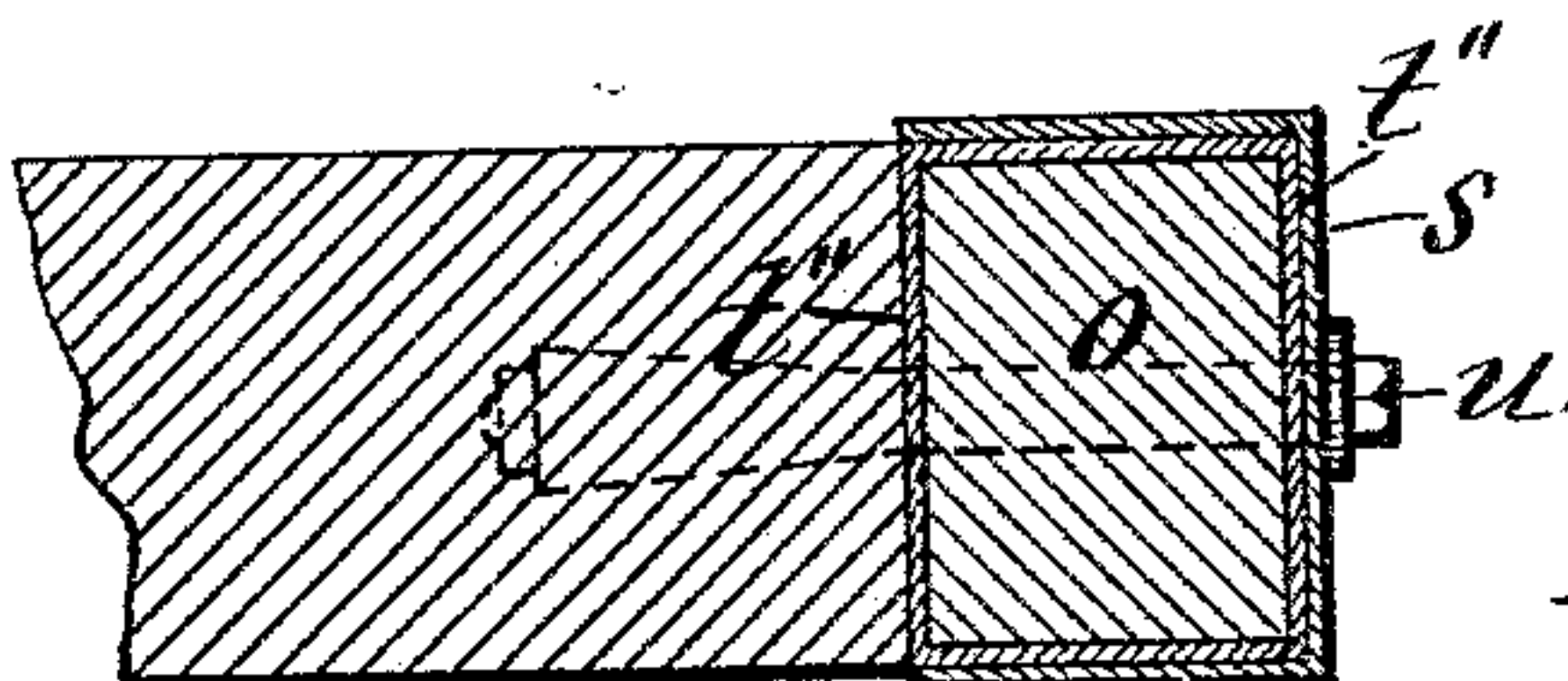


Fig. 3

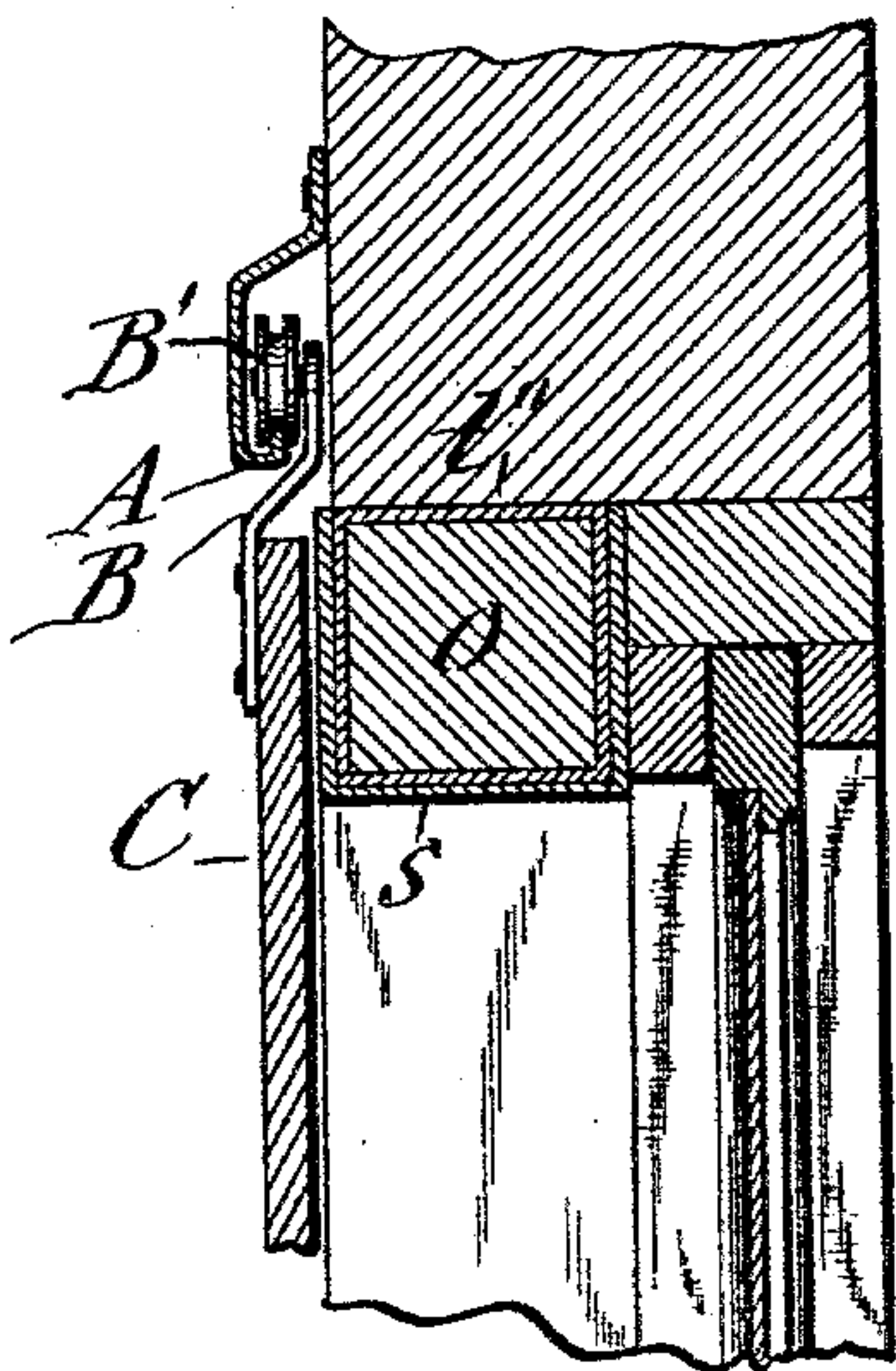


Fig. 5

INVENTOR

Edwin J. McCormick

By E. Laess

his ATTORNEY

(No Model.)

3 Sheets—Sheet 3.

E. J. McCORMICK.
FIRE PROTECTIVE WINDOW SHUTTER.

No. 545,209.

Patented Aug. 27, 1895.

Fig. 6

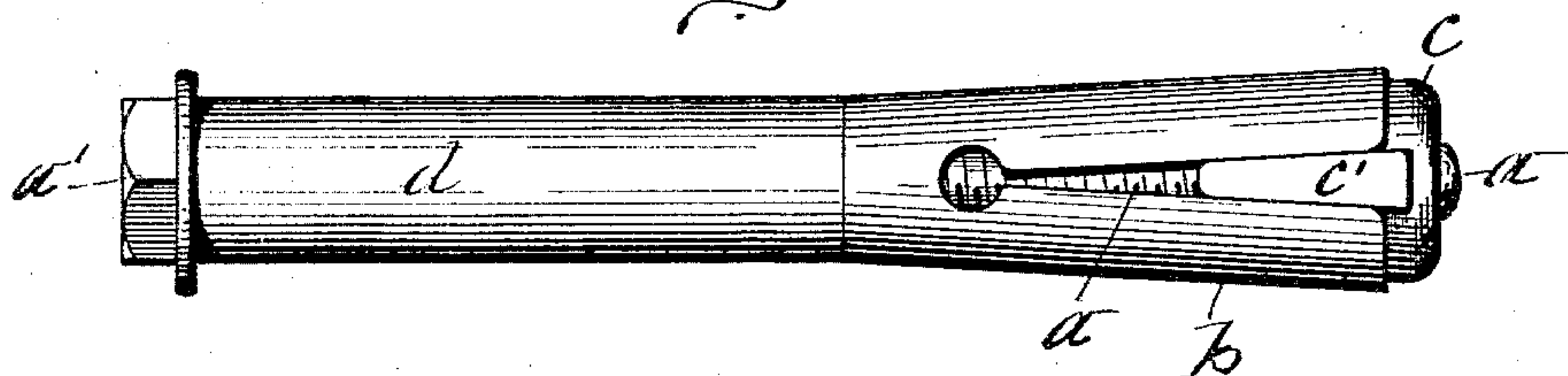


Fig. 7

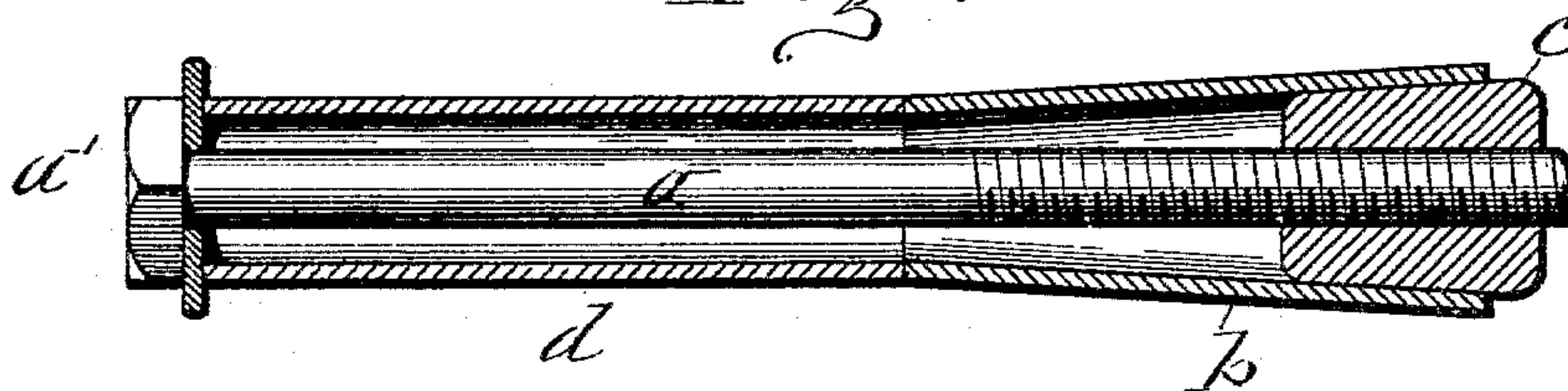
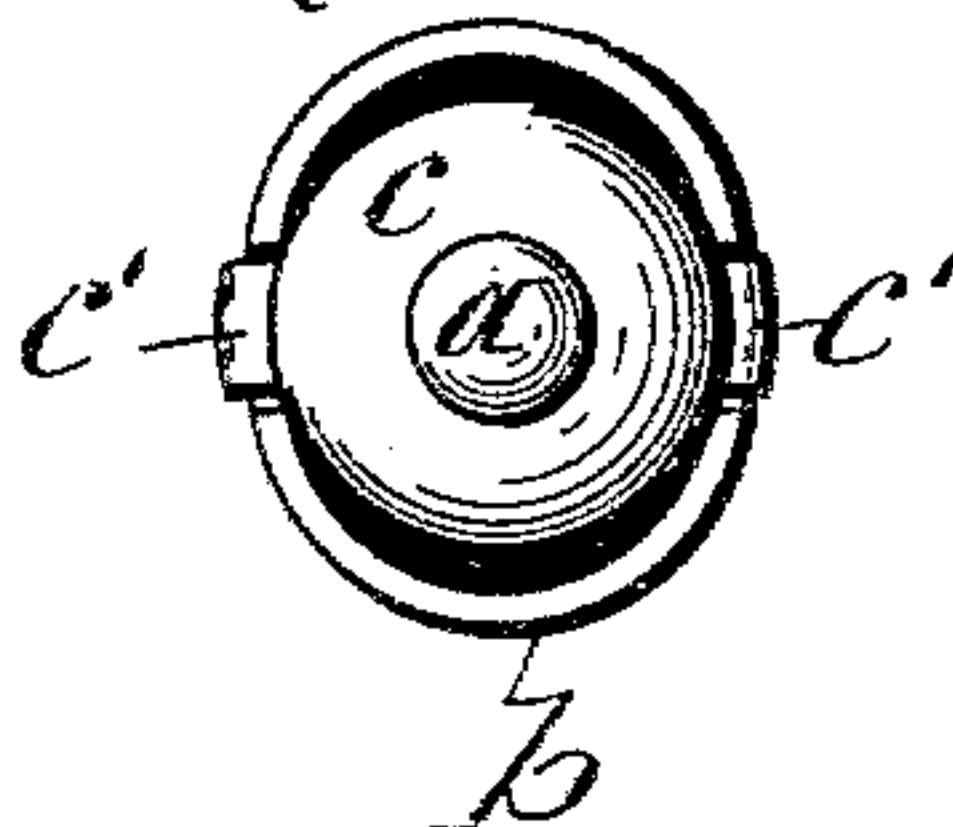


Fig. 8



WITNESSES:

C. L. Bendison
C. L. Bendison

INVENTOR

Edwin J. McCormick
By E. Laass
his ATTORNEYS.

UNITED STATES PATENT OFFICE.

EDWIN J. McCORMICK, OF SYRACUSE, NEW YORK.

FIRE-PROTECTIVE WINDOW-SHUTTER.

SPECIFICATION forming part of Letters Patent No. 545,209, dated August 27, 1895.

Application filed March 11, 1895. Serial No. 541,230. (No model.)

To all whom it may concern:

Be it known that I, EDWIN J. McCORMICK, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Fire-Protective Window-Shutters, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to devices employed for opening and closing sliding doors and shutters on the exterior of buildings, especially in case of fire.

The object of the invention is to equip buildings with shutters which shall protect said buildings more effectually from fire, and also to provide less expensive and at the same time more convenient and efficient means for opening and closing from the exterior of the building either all the shutters simultaneously or only a portion of them without disturbing the remainder of the shutters, as may be desired.

To that end the invention consists in the novel construction and combination of parts hereinafter described, as specifically set forth in the claims.

In the annexed drawings, Figure 1 is an elevation of a building equipped with my invention. Figs. 2 and 3 are respectively longitudinal and transverse sections of the fireproof jamb with the adjacent shutter and its support. Fig. 4 is an enlarged detail view of the detachable connection of one of the chains to the shutters. Fig. 5 is a transverse section of the track from which the shutters are suspended. Fig. 6 is an enlarged detached side view of one of the bolts by which the aforesaid jamb is secured to the building. Fig. 7 is a longitudinal section of said bolt, and Fig. 8 is a view of the expanding end of the same.

Similar letters of reference indicate corresponding parts.

C C represent the shutters, which are formed of iron or steel in the usual manner, and are suspended from overhead tracks A by hangers B B, secured to the shutters and provided with rollers B' B', mounted on the aforesaid tracks. R R designate stay-rollers by which

the lower portions of the shutters are held closely to the wall of the building.

To permit all the shutters to be opened and closed simultaneously, the row of shutters of each story of the building is connected together by chains *r r* extending from one to the next of said shutters, and all the rows of shutters are connected at each end to a common main chain *e* by means of branch chains *f f* running upon pulleys *h h*, pivoted to the building. The ends of the main chain are connected to the ends of the row of shutters on the top story, as shown in Fig. 1 of the drawings. At the base of the building is a winch F, upon which is wound a chain *g*, which extends in opposite directions from the winch and is secured at its ends to the aforesaid main chain.

To permit one of the shutters to be opened from the outside of the building without disturbing the remainder of the shutters when desired, I provide the chains *r r* with coupling-hooks *i i*, which have their free ends projecting upward to allow them to enter the eyes *l l* from underneath the same for the purpose of allowing said hooks to be drawn out of engagement by means of another hook *j*, fastened to the end of a pole, as illustrated in Fig. 4 of the drawings. The said disconnection is readily effected, in the dark as well as in the light, by placing the hook of the pole upon the chain and then sliding said hook along until it drops into the coupling-hook *i*, and then by pulling down the pole the said coupling-hook is drawn out of the eye *l*.

n n denote turnbuckles by which to adjust the tension of the chains.

To protect the window frames or casings from excessive heat in case the shutters are exposed to fire from outside of the building, I provide the windows with the fireproof jambs *o o* around the outside of the frames or casings. These jambs are preferably formed of blocks of wood *t* and intervening layers of asbestos *t'*, all united by nails or screws or other suitable and well-known means and enveloped in asbestos *t''*, as illustrated in Figs. 2 and 3 of the drawings. Over this jamb is placed a sheet-metal sheath *s*,

and the whole is secured to the wall of the building by expansion-bolts *u*, the detail construction of which is illustrated in Figs. 6, 7, and 8 of the drawings, and consists of sleeves *d b*, placed end to end and receiving the bolt *a* through them. The sleeve *b* is slitted longitudinally from its outer end part way the length of the sleeve, and in said end of the sleeve is a nut *c*, which is tapered and has wedges *c''* projecting from its sides, said wedges entering the slits of the sleeve, and thereby expanding said sleeve when the bolt is tightened.

The aforesaid construction of the expansive bolt constitutes the subject-matter of another application for patent intended to be filed by me.

What I claim as my invention is—

1. A fire-protective system comprising fire-proof sliding outside shutters, separate chains between the respective shutters of each row and detachably connected thereto, a main chain extending in opposite directions from the drum of the winch and connected at its ends to opposite ends of the uppermost row of shutters, branch chains connecting the other rows of shutters to the main chain, and

pulleys pivoted to the building and carrying the branch-chains in the manner set forth and shown.

2. In combination with a row of shutters connected at opposite ends of the row to a main chain by which to open and close said shutters, the eyes —*l*— *l*— attached to the shutters, and the chains —*r*— *r*— provided with the coupling-hooks —*i*— *i*— having their free ends projecting upward to enter said eyes from underneath and allow the hooks to be withdrawn by downward pressure on the chain, substantially as described and shown.

3. The within described fire-proof jamb composed of wooden blocks —*t*— and intervening layers of asbestos —*t'*—, all united and enveloped in asbestos and the metallic sheathing —*s*— covering said jamb as set forth and shown.

In testimony whereof I have hereunto signed my name this 5th day of March, 1895.

EDWIN J. MCCORMICK. [L. S.]

Witnesses:

J. J. LAASS,

C. L. BENDIXON.