

No. 725,575.

PATENTED APR. 14, 1903.

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M. B. MALLORY, EXECUTRIX.

FIREPROOF DOOR OR SHUTTER.

APPLICATION FILED JUNE 2, 1902.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.

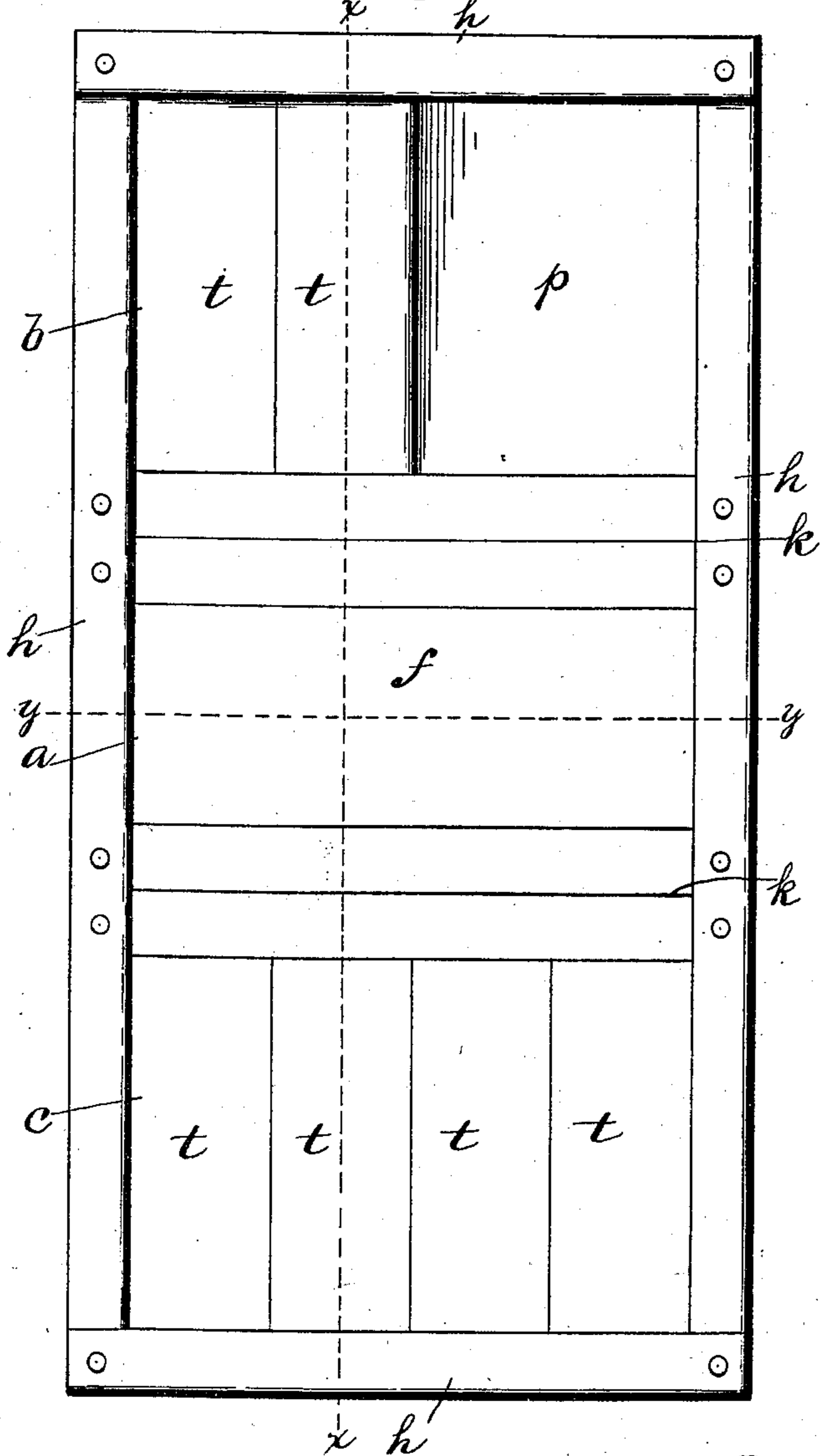


Fig. 2.

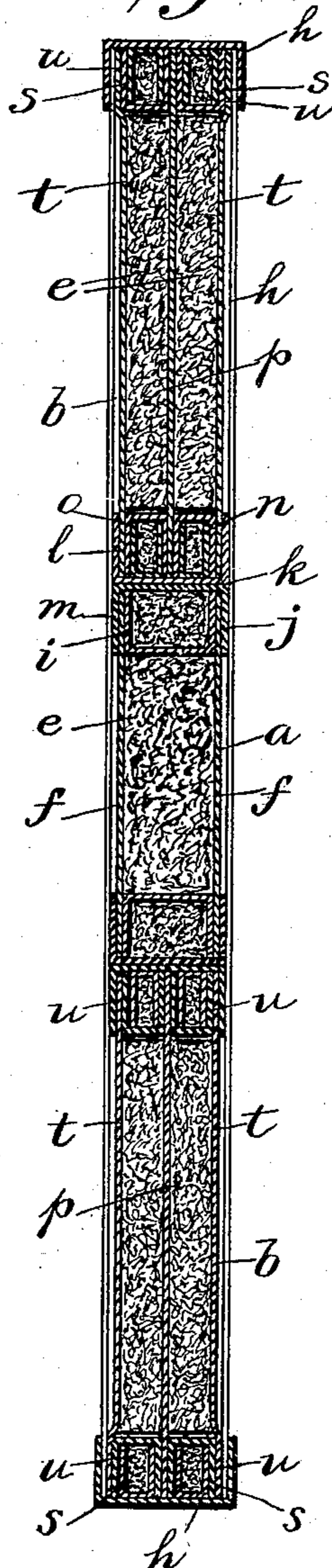


Fig. 3.

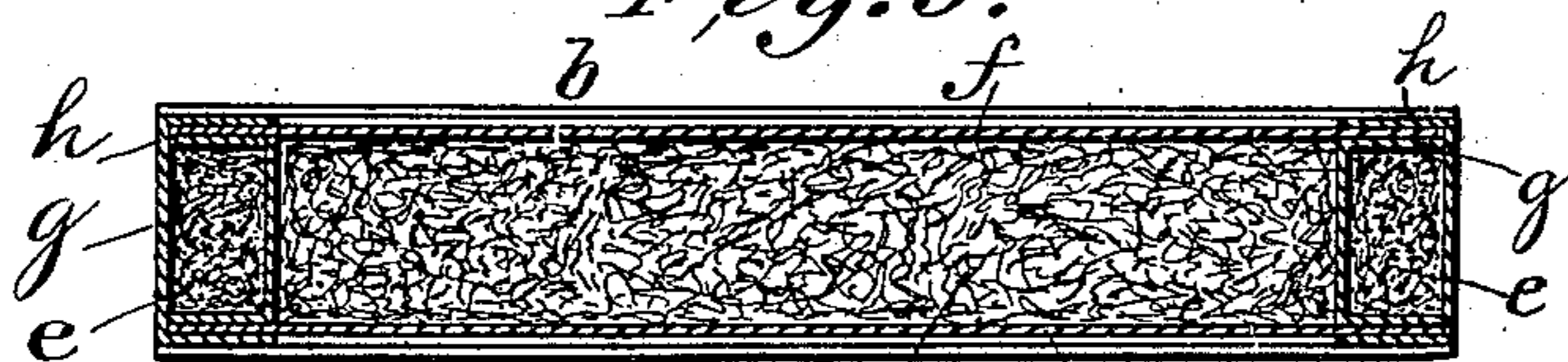
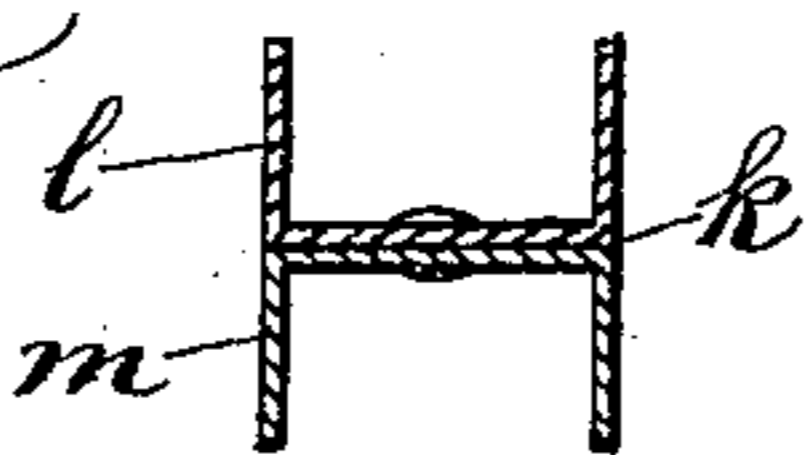


Fig. 4.



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2 SHEETS—SHEET 2.

Fig. 5.

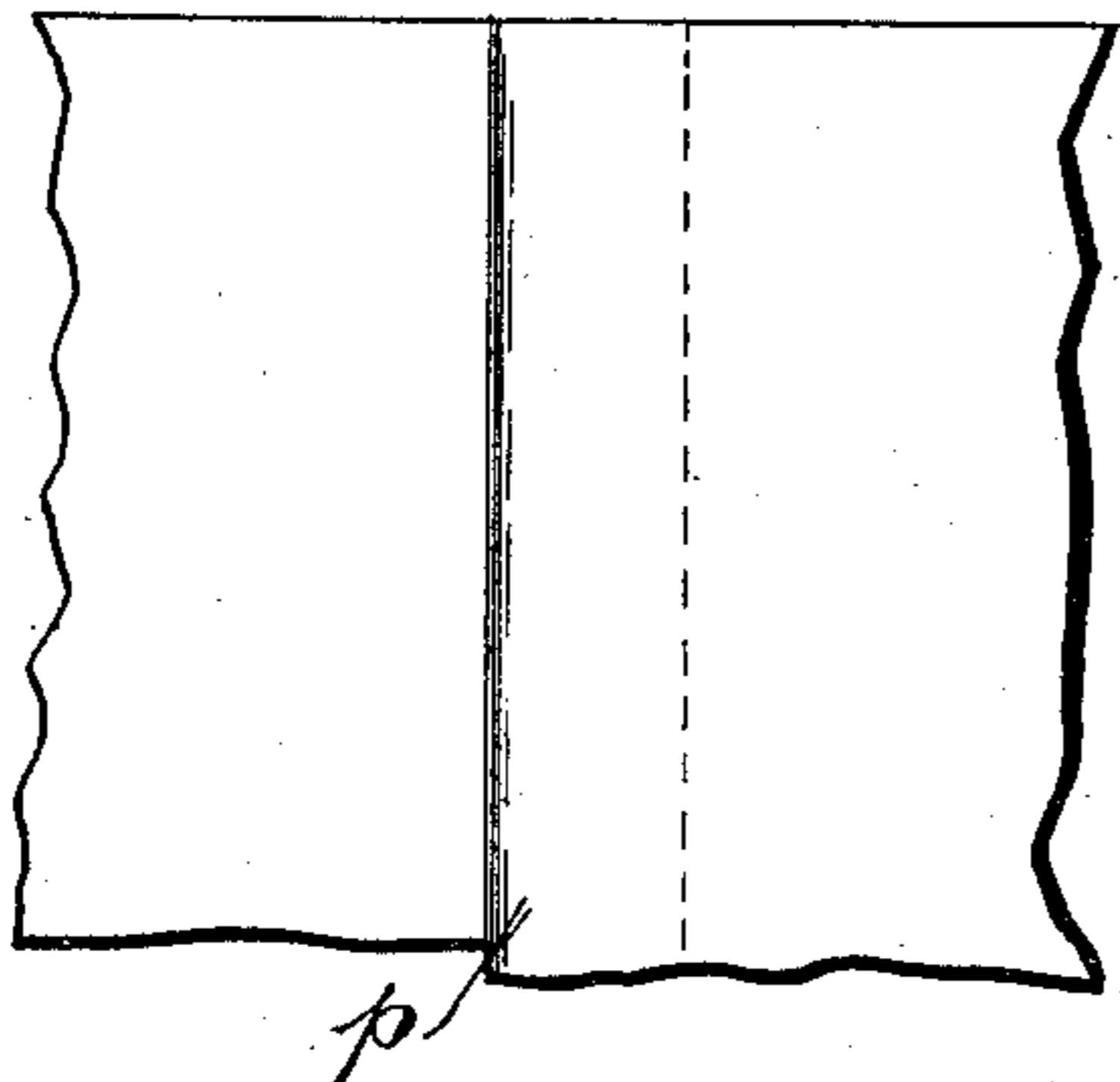


Fig. 6.



Fig. 7.

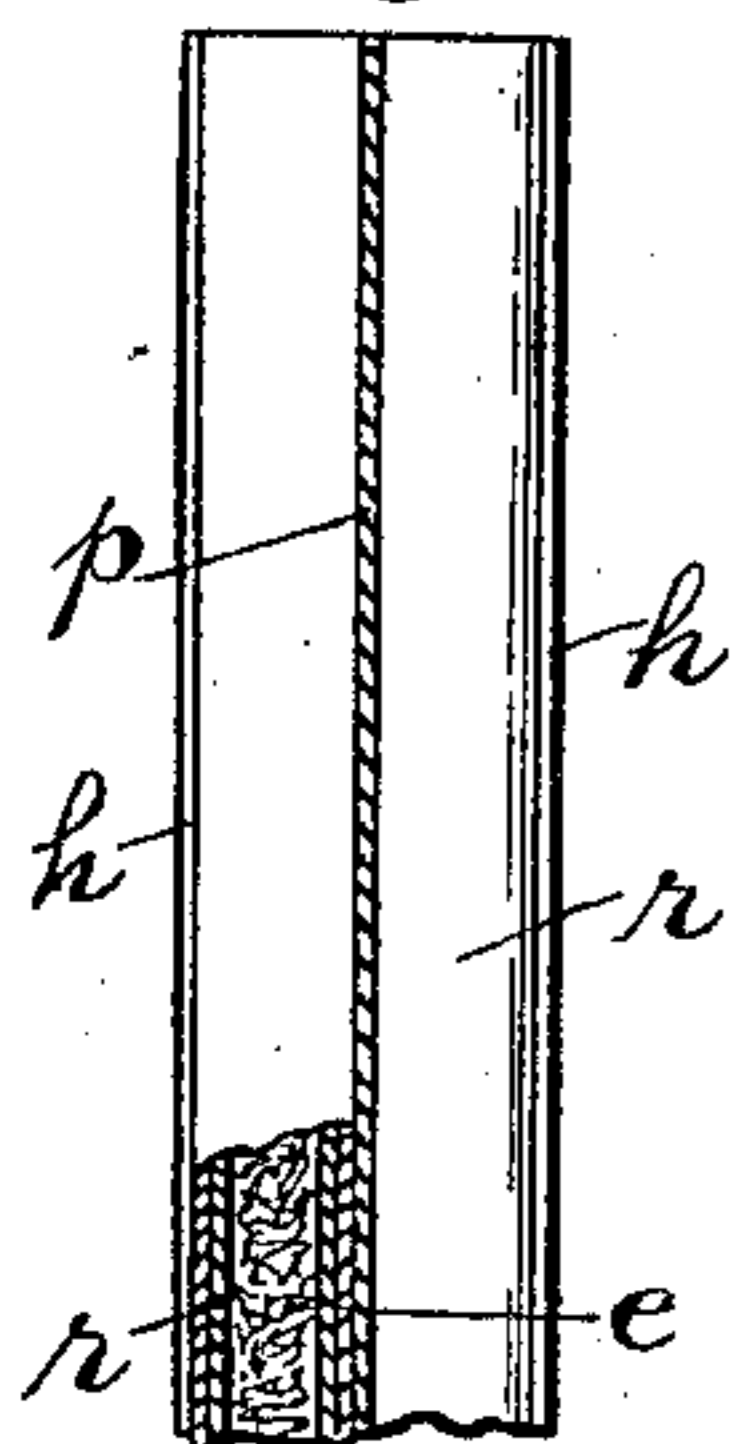


Fig. 8.

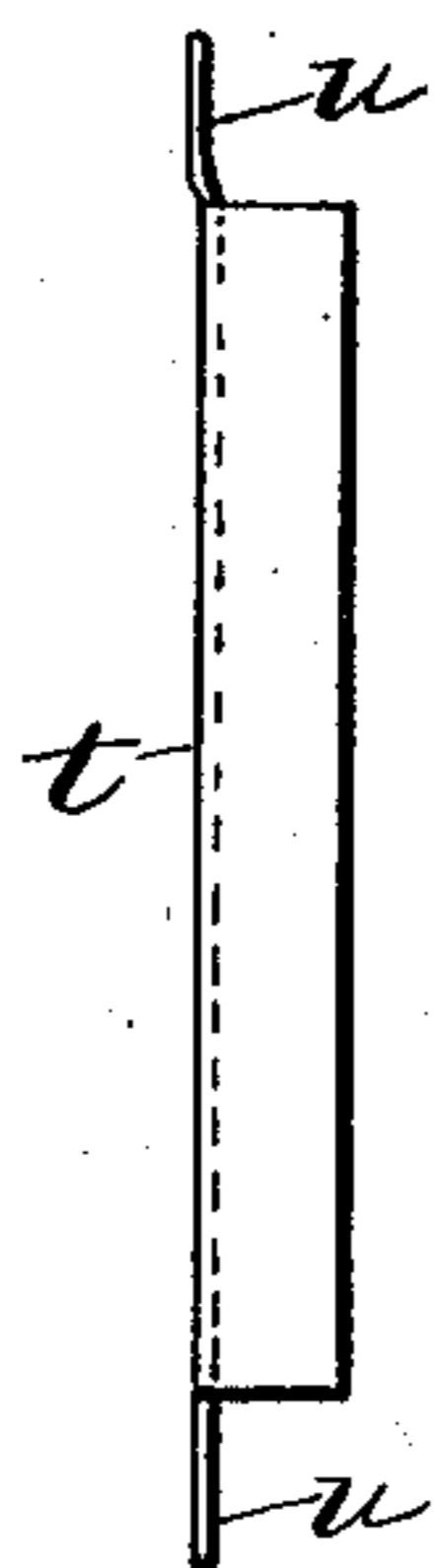


Fig. 9.

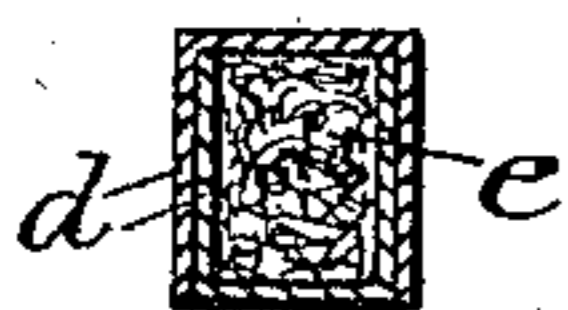
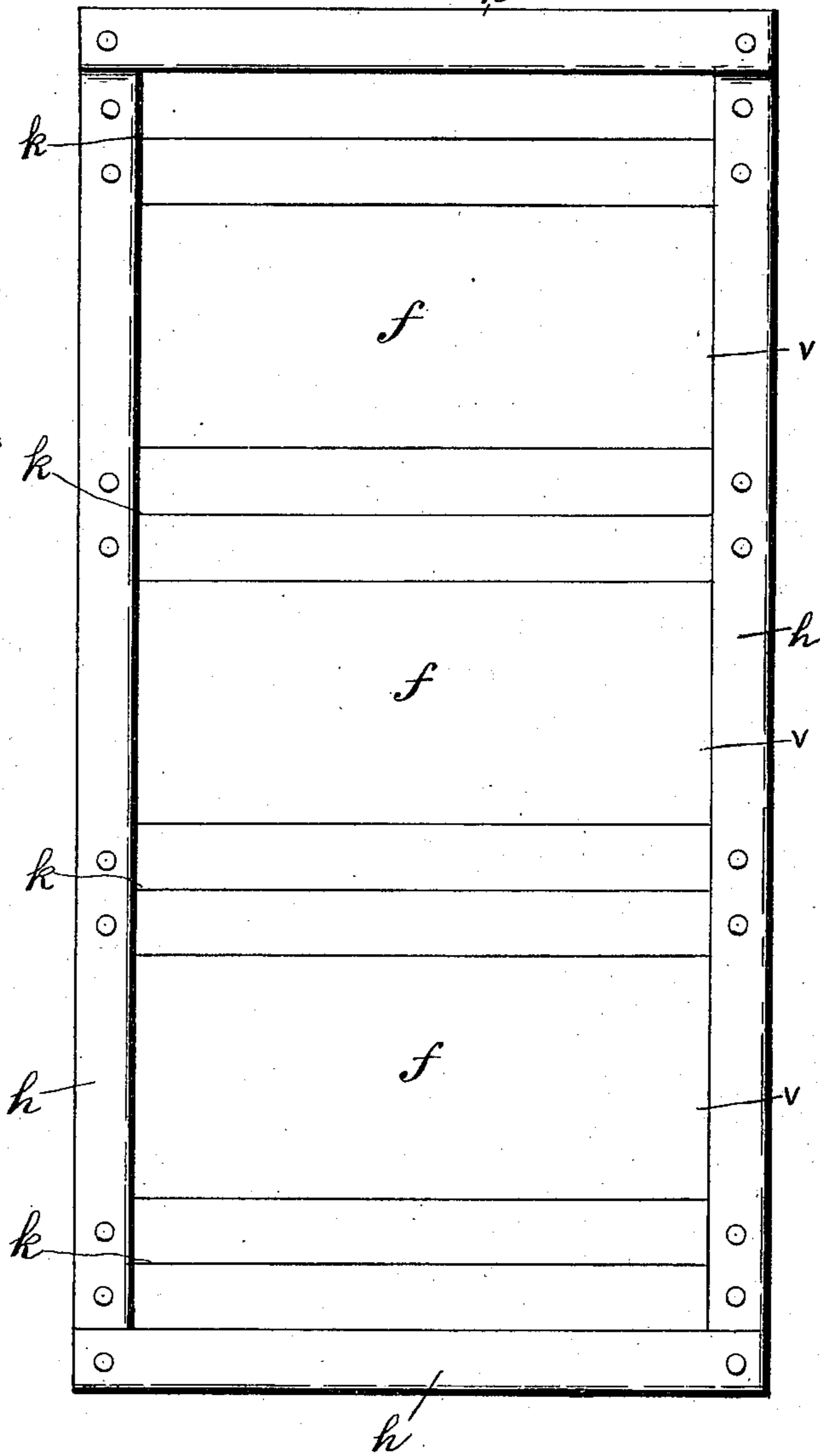


Fig. 10.



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EXECUTRIX OF SAID JOHN C. MALLORY, DECEASED.

FIREPROOF DOOR OR SHUTTER.

SPECIFICATION forming part of Letters Patent No. 725,575, dated April 14, 1903.

Application filed June 2, 1902. Serial No. 109,885. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. MALLORY, a citizen of the United States, residing at Franklin, in the county of Venango and State of Pennsylvania, have invented certain new and useful Improvements in Fireproof Doors or Shutters, of which I hereby declare the following to be a full, clear, and exact specification, such as will enable others skilled in the art to which such improvements belong to use the same.

My invention relates to fireproof doors and shutters, and has for its objects to provide an article of this character of strong and compact construction with an arrangement whereby a maximum heat-resisting efficiency with a minimum of weight of metal is obtained and whereby warping of the structure under heat will be prevented and of such construction as will enable it to be easily and cheaply manufactured.

To these ends my invention consists of a door or shutter of metallic cellular construction, having a packing of fireproof substance and having its cellular parts provided with lapping joints, by which the parts will be permitted to expand and move upon each other without distortion of the structure under the effect of heat.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of front of door; Fig. 2, a section on line *xx*; Fig. 3, a section on line *yy* of Fig. 1; Fig. 4, a cross-section of the double channeled clamping-beam which engages the central shell or body; Fig. 5, a plan view of main end plates adjoining the central shell or body; Fig. 6, a section of such plates; Fig. 7, a side view of one of the side tubes and its inclosing casing; Fig. 8, a section of locking end brace; Fig. 9, a section of the double tube which is the unit of the arrangement, and Fig. 10 a plan view of the front of modified form of door.

Referring to the drawings, the door shown in Figs. 1 to 9 consists of a central shell or body *a* and upper and lower panels *b c*. The number of said shells or bodies and adjoining panels may be increased as desired, however, without departing from my invention. The unit of construction of my improved door

or shutter is shown in Fig. 9 and consists of a double tube formed of two interfitting U-shaped metallic pieces *d* and filled with a packing *e* of some fireproof material, preferably a mixture of asbestos and plaster-of-paris. There is thus formed a two-part tube having overlapping joints, so that the parts will be capable of expansion and movement one upon the other, with a filling of fireproof substance that will check the communication of heat from one metallic part to another and will form a compact and resistant packing for the tube that will assist in maintaining the shape of the latter. By this arrangement an exceedingly strong as well as light fireproof structure is obtained. The central shell or body is hollow and is formed principally of the two plates *f f*. The sides of the plates extend between and are clamped by the flanges of a semitubular side section *g* and an outer casing *h*, which together form a double or lapped tube which is filled with the fireproof packing before described. The upper and lower ends of the plates *f* each extend between the flanges *i j* of the double tube, forming one-half of a double beam *k*, which has two semitubular sections *l* and *m* thereof riveted together back to back. The outer half of the double beam *k* is closed to complete the tube formation by two semitubes *n o* instead of one, as in the inner side of the beam. The outer flange of the beam is riveted to the outer casing *h*. Between the semitubes *n o* is held, above and below the central shell, two main plates *p*, having their inner edges *q* bent over and engaged, so as to form a lapped joint extending along the vertical median line of the door or shutter. The plates *p* are firmly held between the semitubular sections *n o*, and the double beam thus serves to connect the middle with the upper and lower sections of the structure. The sides of the plates *p* are firmly held between the tubular side pieces *r* and similar end pieces *s*, said side pieces being clamped between and abutting against the central beam *k* and said end pieces *s*. The side sections on both sides of the plates *p* are embraced by a single section of the casing *h*, and the end tubes are similarly embraced by a single section of casing. The casing is riv-

eted to the central shell and to the end and side sections at suitable intervals. Between the central-shell-holding beam and each end of the structure and on each side of the plates and bearing against said plates are placed vertical locking-braces *t* of the unitary tubular construction with fireproof packing. The braces are provided with projecting end flanges *u*, which extend between the flanges of the tubes of the beam and end sections.

It will be seen that the lapped connecting-joints of the upper and lower plates *p* and the overlapping of the central-shell plates upon their beams and the interfitting tube formation of all the other parts of the structure permit of a ready expansion of the parts, so that they move upon each other under the effect of heat without distortion or warping of said parts, while the fireproof packing tends to prevent the communication of the heat from one metal part to another, while offering almost a solid barrier of heat-resisting material. The arrangement into cellular separated bodies gives not only a light but very strong construction that will resist ordinary wear and tear and prolong the life of the door or shutter. It is clear that all the parts of the device being small and light and of simple construction and the means of securing them together consisting of rivets, they can be readily and quickly assembled.

The device may be provided with suitable hanging and locking means, according to its use as a door or shutter.

Another advantage of the device is that some of the independent members comprising the body of the door may be omitted or readily removed for the insertion of a glass or other panel.

In Fig. 10 is shown a modified form of the device, in which the door or shutter is composed merely of separated sections *v*, made of parts like the central shell *a* and its connecting channel-beams.

Having thus described my invention, what I claim is—

1. A fireproof structure comprising a collection of separate, independent, hollow members, each provided with a fireproof filling, substantially as described.

2. A fireproof structure made of separate hollow bodies having expansible joints and each provided with a fireproof filling substantially as described.

3. In a fireproof structure a cellular or tubular body composed of two parts which fit into each other, and are capable of movement upon each other, said body having a packing of fireproof material, substantially as described.

4. In a fireproof structure for doors or

shutters, a section forming the central portion of the structure composed of two plates and end beams having double flanges which overlap and hold said plates and side pieces which engage said plates, said plate-beams and side pieces inclosing a space which is filled with a fireproof packing, substantially as described.

5. In a fireproof structure for doors or shutters, a section formed of two plates, a cellular section formed of two side pieces, engaging said plates, a double beam at each end of said plates, said beam having a double tube formed on each half and having said halves riveted together said plates being held between the parts of the double tube of one half and the other half formed to engage the adjoining part of the structure and tubular sections forming said adjoining part, substantially as described.

6. In a fireproof structure for doors or shutters, in combination with a plate, tube-sections at the sides and ends of the structure between which the plate is held and tube-sections on both sides of said plate between the sides of the structure, said tube-sections filled with a packing of fireproof material, substantially as described.

7. In a fireproof structure for doors or shutters in combination with a plate-like formation, a series of separate, hollow metallic bodies filled, with fireproof substance, on each side of said plate-like formation, a casing on each side of said structure, formed of a single piece and embracing at the sides both series of said bodies, and means for joining said casing at the corners, substantially as described.

8. A fireproof structure for doors and shutters comprising a central shell or body having a fireproof packing and formed of expansibly-held plates, a beam at the upper and at the lower end of said plate and engaging the same and having a double tube, middle plates secured to each other by overlapping joints, and engaged with said beams on either side of said central shell or body, side and end pieces formed of double tubes provided with fireproof packing, a casing inclosing said side and end pieces and tubular locking-braces on each side of said plates and between the central shell and end pieces, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN C. MALLORY.

Witnesses:

C. S. SANFORD,
MARSHALL PHIPPS.