

(No Model.)

P. A. PALMER.

MEANS FOR PROTECTING BUILDINGS FROM FIRE.

No. 466,831.

Patented Jan. 12, 1892.

Fig. 1.

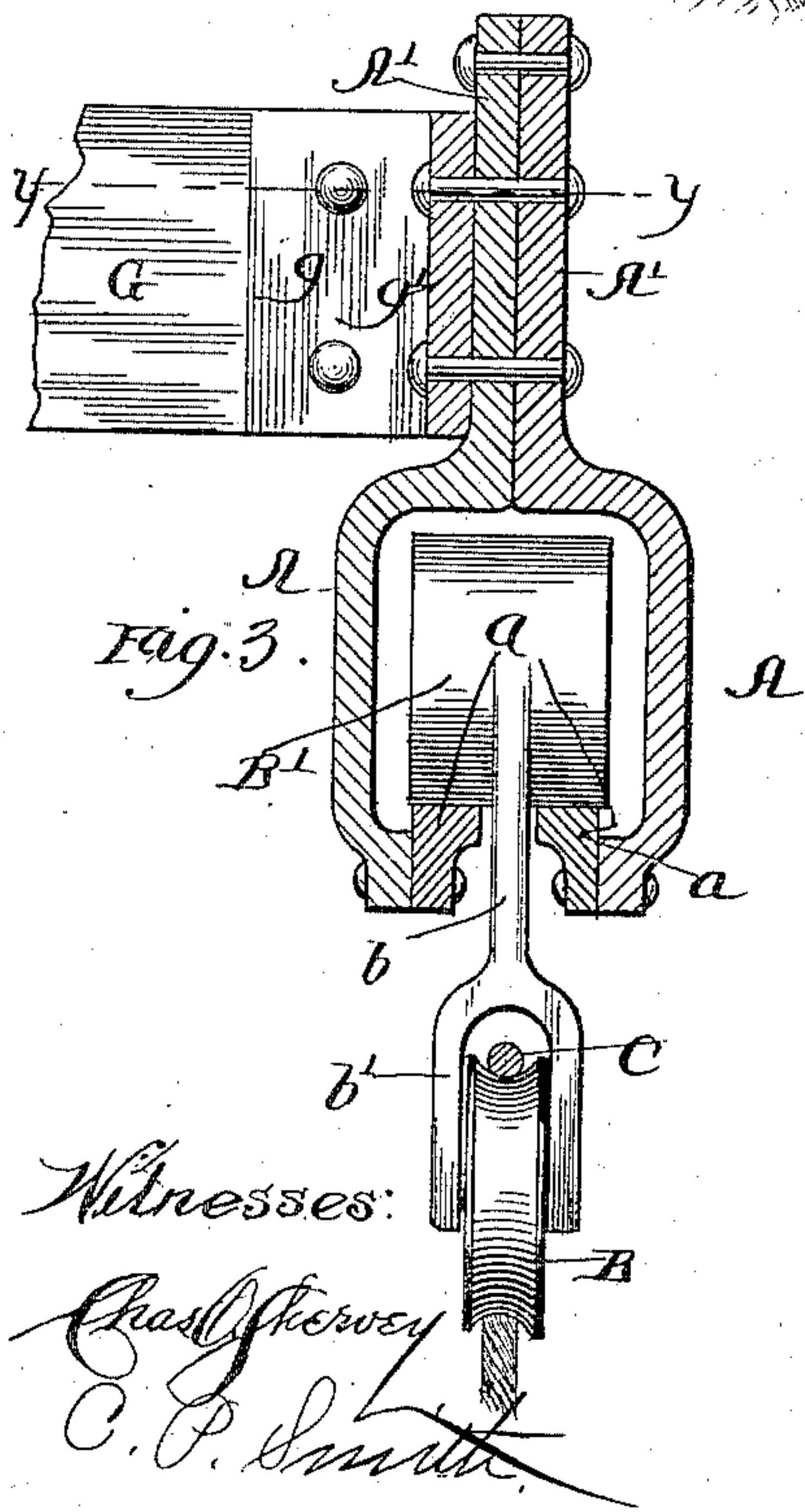
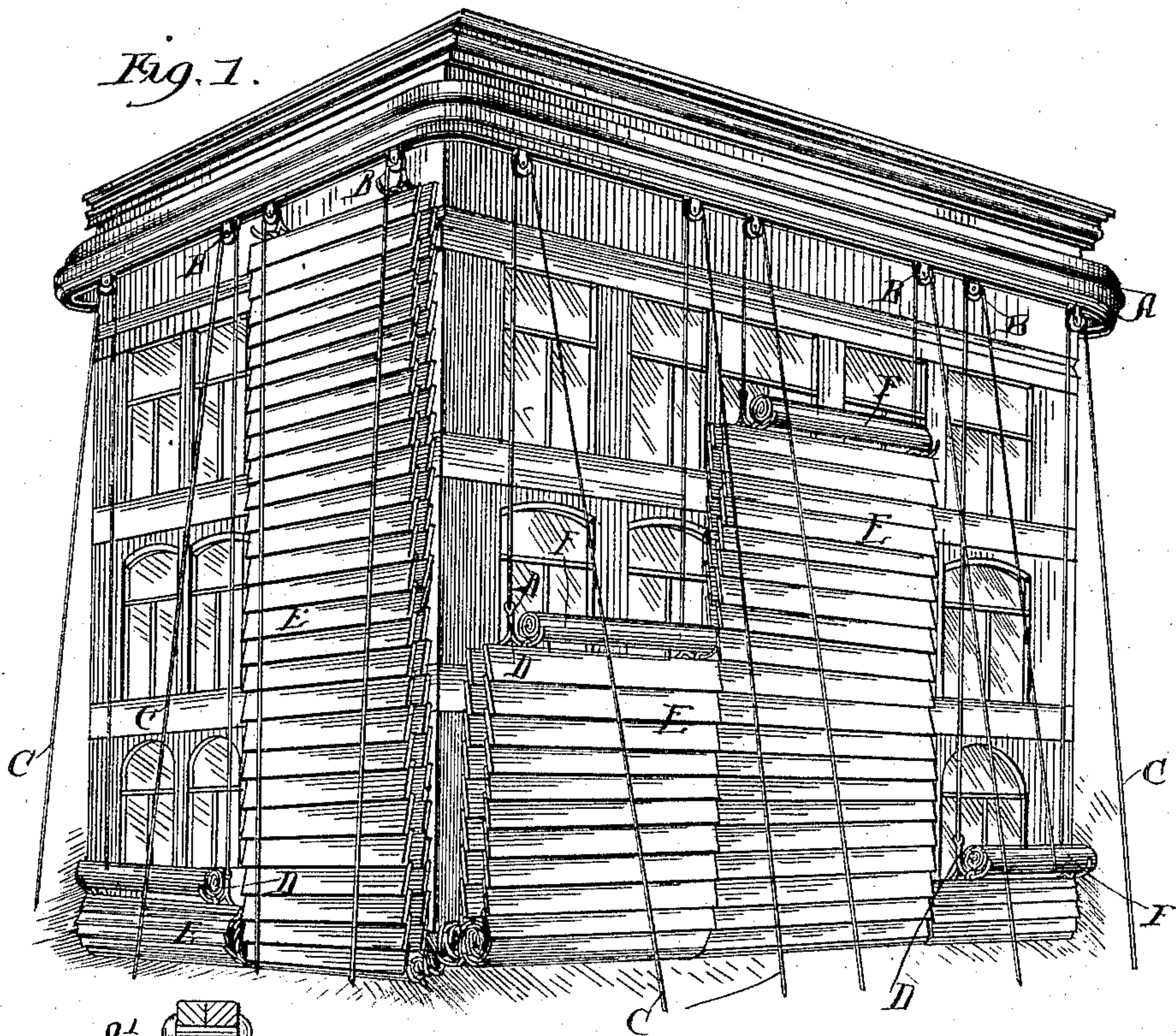


Fig. 2.

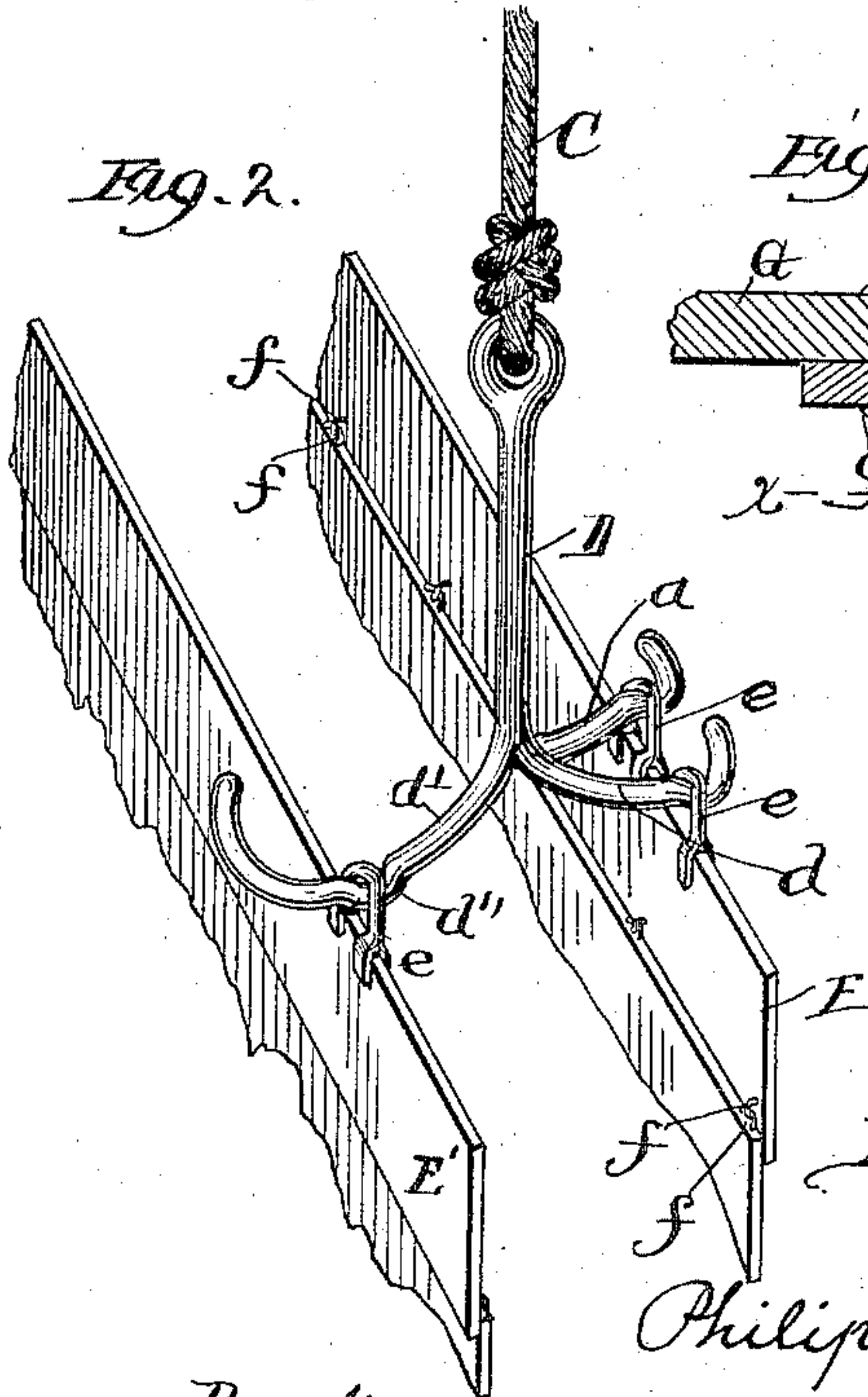
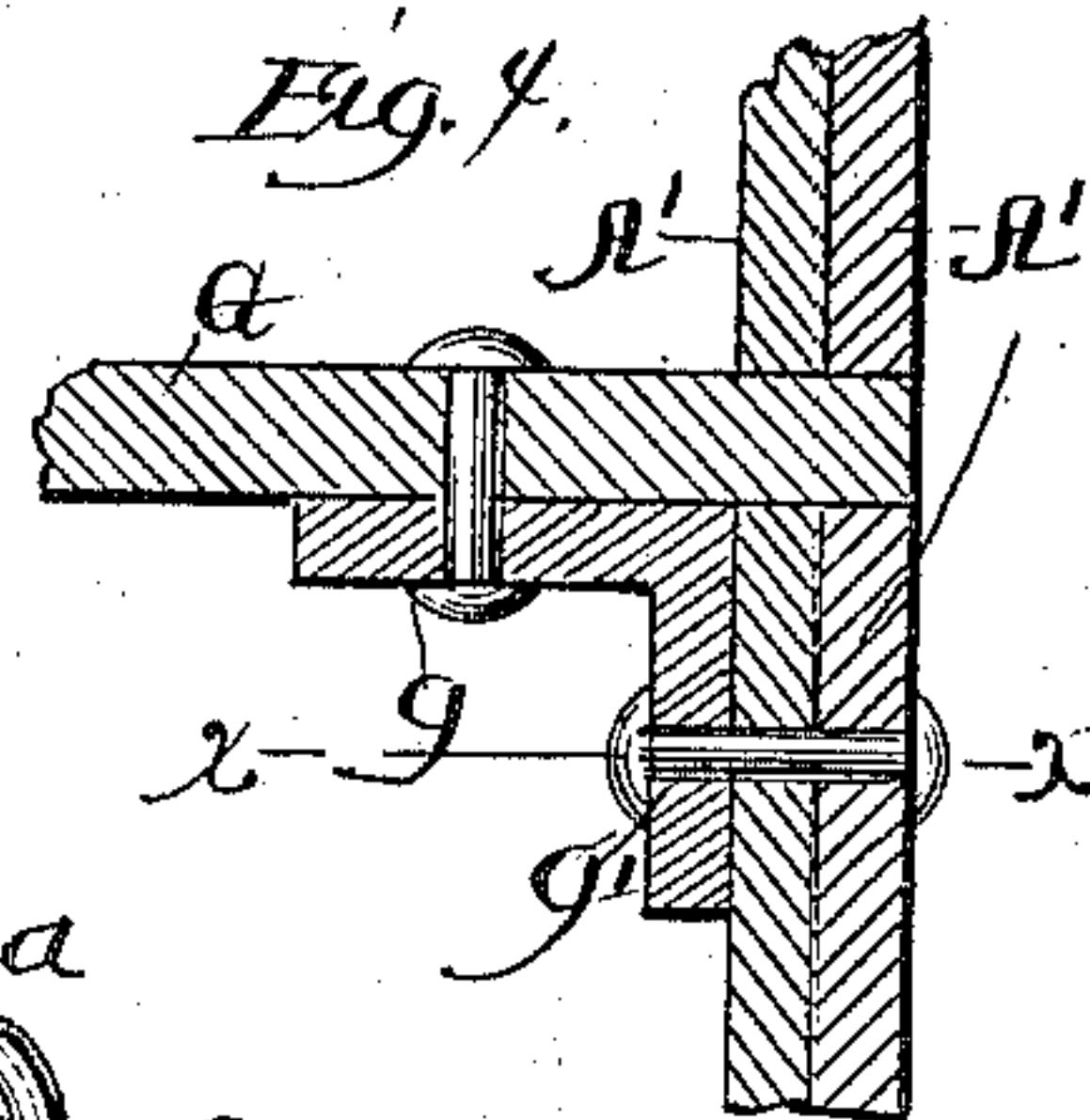


Fig. 4.



Witnesses:

Chas. Hervey
C. P. Smith

Inventor:

Philip A. Palmer,

By Niles Green & Bitner attys.

UNITED STATES PATENT OFFICE.

PHILIP A. PALMER, OF CHICAGO, ILLINOIS.

MEANS FOR PROTECTING BUILDINGS FROM FIRE.

SPECIFICATION forming part of Letters Patent No. 466,831, dated January 12, 1892.

Application filed August 14, 1891. Serial No. 402,615. (No model.)

To all whom it may concern:

Be it known that I, PHILIP A. PALMER, a citizen of the United States of America, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Means for Protecting Buildings from Fire, of which the following is a specification.

My invention relates to improvements in means for protecting buildings from fire, and is fully described and explained in this specification and shown in the accompanying drawings, in which—

Figure 1 is a perspective view of a building provided with devices embodying my invention. Fig. 2 is a perspective view showing parts of the screens or curtains constituting a feature of my invention, together with a preferred form of hook for handling the same. Fig. 3 is a transverse section of the pulley-track embraced in my invention, one of the supporting-beams which sustain the track and one of the pulley-hangers which move upon the track being shown in elevation; and Fig. 4 is a horizontal section through the line *y y*, Fig. 3.

In the views, A is a track permanently fastened to a building at or near the cornice, the track being preferably a tube, open below, and of the general form and construction illustrated in cross-section in Fig. 3, the specific construction shown in that figure being hereinafter explained in detail. Upon this track is supported a series of hangers of suitable form and construction, supporting a corresponding series of pulleys B B, which lie below the track and are provided with chains or cables C, of metal or other non-combustible material. Each of these cables is provided at one of its ends with a hook D, which may be of any form adapted to the use for which the hook is designed—namely, that of raising from below a series of fire-proof curtains E E, adapted when in their raised position to screen one or all of the exposed fronts of the building. The screen for an entire front of the building might, if desired, be formed in a single curtain; but the weight of such curtain of such dimensions as to cover the entire front of a building of considerable

size would render it difficult and extremely inconvenient to move and store, and I prefer, therefore, that each of the screens be made up of a series of curtains, each of such length as to reach from top to bottom of the building, but of such width as to cover only a part of the front, as indicated in Fig. 1. The curtains may be made of any suitable fire-proof material; but I prefer to make them of overlapping slats or plates of metal joined by staples *f f*, Fig. 2, or other devices permitting the curtain to be rolled for storage when not in use. Each of the curtains should be provided at its upper margin with loops or staples *e e*, Fig. 2, adapted to receive the ends of the hooks D at the ends of the hoisting-cables.

I have found from experiment that while a single screen shielding the front of the building exposed to fire will protect it under all ordinary circumstances it is not sufficient when the fire is violent and long continued; but I have found that in every such case the use of a shield made up of two screens hung one in front of the other and separated by a suitable air-space gives absolute protection against any fire, no matter how long continued or severe it may be. Where two such screens are used, they may be of similar material and construction; but it is necessary, of course, either to provide a separate set of pulleys and hooks for each screen or to provide each cable with a hook adapted to support two screens and maintain the proper space between them. The latter construction is the one which I prefer, and for this purpose I provide each cable with a terminal hook D, having a single claw or prong *d'*, extending in one direction, and two prongs or claws *d*, extending in the opposite direction, the ends of the two claws *d* being in a line substantially at right angles to the length of the claw *d'*. It is evident that if the two claws *d* be engaged with corresponding loops *e e* on one of the screens or curtains these two loops will prevent rotation of the hook about its vertical axis and will hold the claw *d'* at right angles to the curtain supported by the two claws *d*; and if the hook *d'* be engaged with a staple fastened to the second

curtain E' the staple will rest in the lowest point of the claw and will be held at an unvarying distance from the curtain E.

In addition to these protecting-screens for the fronts of the building, I have found it advantageous to employ fire-proof coverings for the roofs. This covering for any given building may be in a single piece or in sections, and it may be kept in a suitable storage place upon the roof when convenient or stored in the basement of the building or at the headquarters of the fire department and raised to the roof when needed. As a convenient means of raising this roof-covering from the ground to the top of the building I have made the prong d' of each of the hooks D of such shape as to receive and support a roll of fire-proof material of considerable size, as illustrated in the drawings, this single prong d' being in practice turned outward from the building in order that the roll of roof-covering material may be readily accessible from the roof when raised to the pulleys B B. In order that the staple e , lying in the prong d' of the hook, may not interfere with the roll, I have found it advisable, though of course not essential, to form in the prong a suitable short downward bend or depression d^2 , Fig. 2, adapted to receive the staple. The formation of these bends d^2 in the prongs d' of these hooks has the further advantage that it fixes definitely the position of each of the staples e in the hook, and thus fixes with certainty the space between the two screens supported by the hooks.

So far as the use of the screen or screens, the pulleys, the cable, and the hooks is concerned, the track A may be of any desired construction, or may, in fact, be dispensed with entirely, the hangers for the pulleys being fastened directly to suitable supports attached to the building. I prefer, however, to use the track, since it provides a means for moving the pulleys from place to place along the wall of the building and renders it possible to mass them at any given point where the pulleys and their cables may be suitably covered, so as to be out of the way and freed from liability of use by improper persons or for improper purposes.

While the track may be of any desired construction, I prefer to make it in the form of a tube slotted below for the movement of the hanger, a very good construction of a track of this description being shown in Fig. 3. In this view, A A are two similar plates of iron provided with vertical flanges A' A', extending upward from the plates, these two flanges being bolted together and also bolted to one of the flanges g' of an angle-iron whose other flange is bolted to the side face of a beam or girder G, projecting from the building. The weight of the track might, if desired, be sustained entirely by the angle-iron; but I prefer to form suitable openings in the flanges A' A' for the reception of the end of the

girder in the manner indicated in Fig. 4, the weight of the track in such case being borne almost wholly by the flanges A' A', and the angle-iron $g g'$ being used only to prevent accidental movement of the track upon the girder. Any number of these girders may, of course, be set in the wall of the building, and any desired strength may therefore be given to the track-support.

To the inner lower edges of the plates A A are bolted or otherwise secured two rails $a a$, preferably chill-hardened, and on these rails rest the ends of a transverse bar B', which is connected by means of a downwardly-extending arm b with two plates b' , between which the pulley B is hung. The bar a , the arm b , and the plate b' are preferably formed in a single piece, and the transverse bar B' slides freely upon the rails of the track in either direction. I prefer to make the bar B' cylindrical, as shown, in order that the hanger may swing freely in the vertical plane of the track and may yield readily to a pull from below, tending to move the hanger in either direction along the track.

Having now described and explained my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a series of pulleys supported upon the exposed wall of a building, of chains or cables running on said pulleys, hooks fastened to said chains or ropes and provided with oppositely-extending prongs, and two sets of fire-proof screens provided with staples or other devices in their upper margins adapted to engage the oppositely-extending prongs of the hooks and to be raised and held at a suitable distance apart by said hooks, whereby both of said sets of screens may be brought into position to constitute a shield for the wall to which said pulleys are attached, said shield being made up of two fire-proof screens separated by a suitable air-space, substantially as shown and described.

2. The combination, with the pulleys B, supported upon the wall of the building, of the chains or ropes C, running on said pulleys, the hooks D, each provided with a single prong d' , extending in one direction, and two prongs d , extending in the opposite direction, and the screens E E', provided at their upper margins with staples e , adapted to engage the prongs of said hooks, whereby said screens are supported and held at a suitable distance apart, substantially as shown and described.

3. The combination, with the pulleys, the cables, screens E E', and a roll F of fire-proof material, of the hooks D, fastened to the cables and provided with the prongs $d d d'$, said prongs d' being adapted to receive and support the screen E and the roll of fire-proof material, and said prongs $d d$ being adapted to support the other screen, substantially as shown and described.

4. The combination, with the hangers B' and the flanges A' A', formed upon the upper
b b', the pulleys B hung therein, the ropes or edges of said plates and fastened to suitable 10
chains running on the pulleys and provided supports upon the building, substantially as
with suitable hooks, and the fire-proof screen shown and described.

PHILIP A. PALMER.

Witnesses:

ROBT. H. NILES,
C. P. SMITH.