No. 828,532. PATENTED AUG. 14, 1906.

L. J. CARTER.

FIREPROOF CURTAIN.

APPLICATION FILED MAR. 10, 1905.

2 SHEETS—SHEET 1.

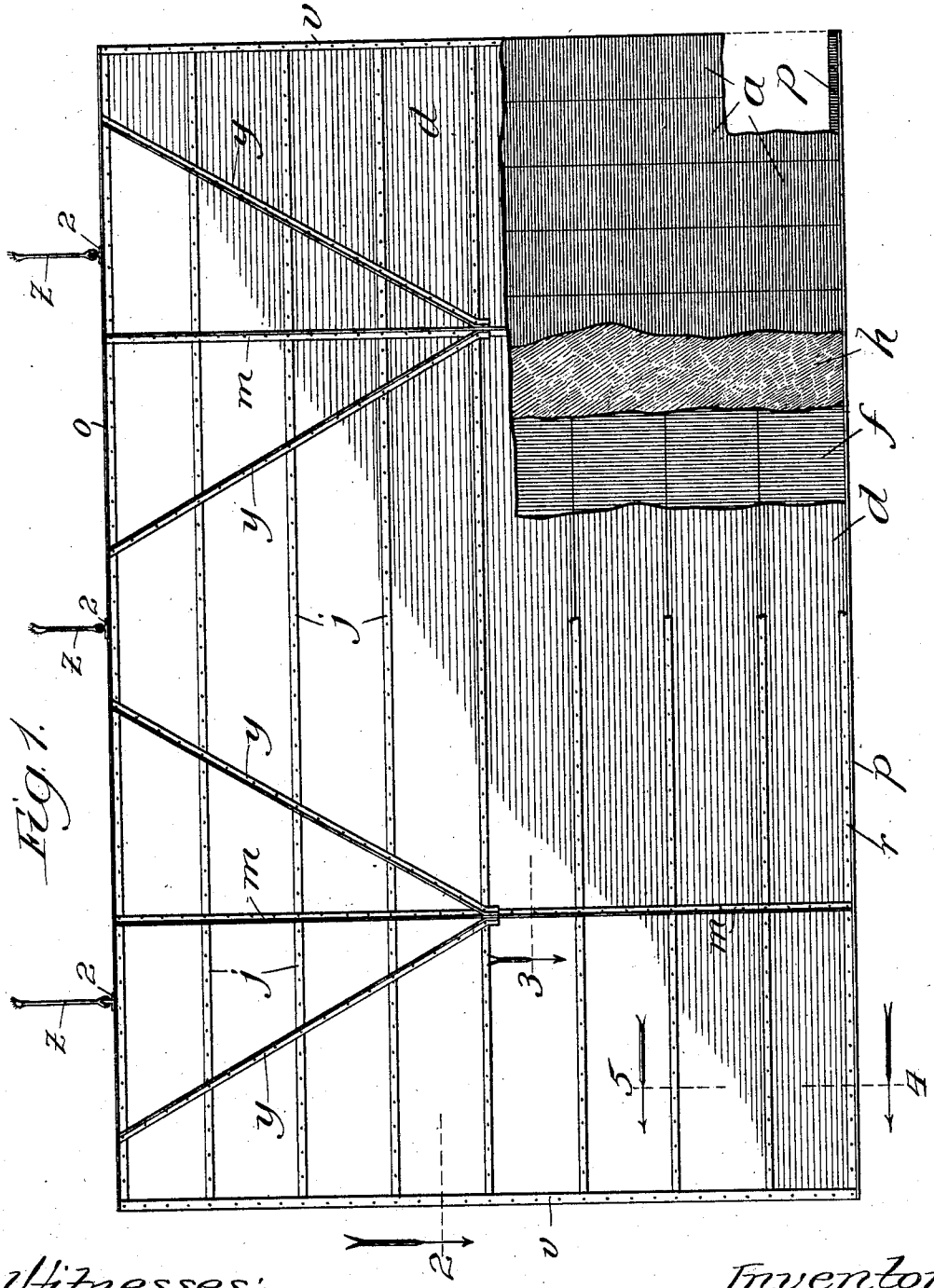

Fig. 1.

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2 SHEETS—SHEET 2.

Fig. 3.

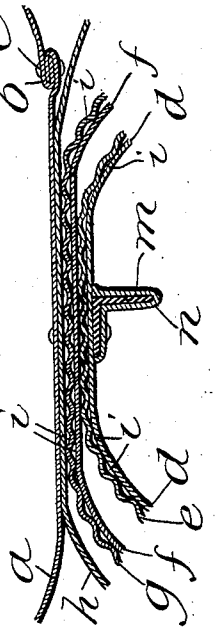


Fig. 2.

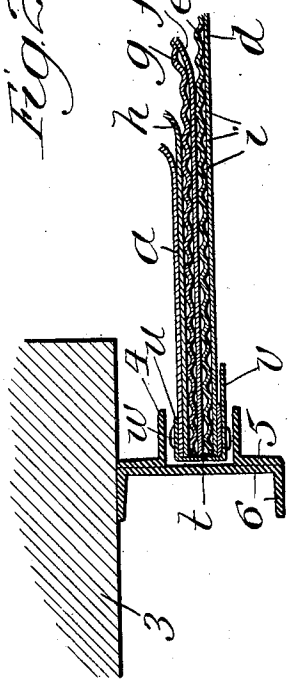


Fig. 5.

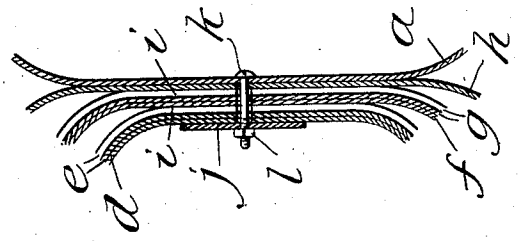


Fig. 6.

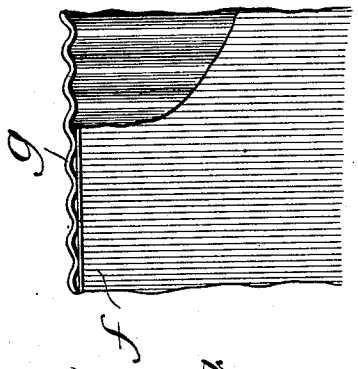
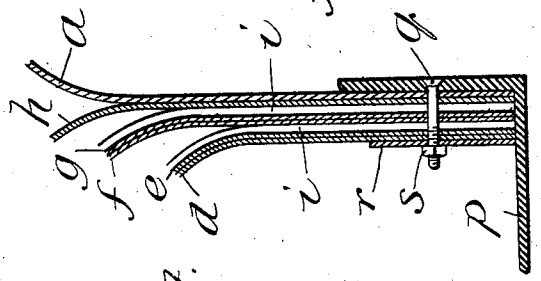


Fig. 4.



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UNITED STATES PATENT OFFICE.

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FIREPROOF CURTAIN.

No. 828,532. Specification of Letters Patent. Patented Aug. 14, 1906.

Application filed March 10, 1905. Serial No. 249,413.

To all whom it may concern:

Be it known that I, LINCOLN J. CARTER, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, am the inventor of certain new and useful Improvements in Fireproof Curtains, of which the following is a specification.

My invention relates to that class of stage or drop curtains having wall portions of refractory or non-combustible material provided with air-spaces therebetween.

The principal object of the invention is to provide a simple, economical, and efficient fireproof stage or drop curtain.

A further object is to provide a fireproof stage-curtain having wall portions of refractory or non-combustible material provided with inner air-spaces for rendering it so far as possible a non-conductor of heat, such curtain being adapted to resist or stop the progress of fire and at the same time being sufficiently light to permit it to be readily operated.

Other and further objects of the invention will appear from an examination of the following description and claims.

The invention consists in the features, combinations, and details of constructed hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a rear elevation of a curtain constructed in accordance with my improvements, portions being broken away to show the different wall portions or layers of material of which it is composed; Fig. 2, a sectional plan view of a portion of the curtain, taken on line 2 of Fig. 1 looking in the direction of the arrow; Fig. 3, a sectional plan view of a fragment of the curtain, taken on line 3 of Fig. 1 looking in the direction of the arrow, showing one of the seams of the front sheet-metal wall and one of the angle-irons on the rear side of the curtain in section; Fig. 4, a sectional elevation of a bottom portion of the curtain, taken on line 4 of Fig. 1, showing the bottom angle-iron in section. Fig. 5 a sectional elevation of a fragment of the curtain, taken on line 5 of Fig. 1 looking in the direction of the arrow, showing the manner of connecting the wall portions; and Fig. 6 a view in elevation of a fragment of the asbestos material with a portion of the flat layer thereof broken away to show the corrugated layer of such material.

In the art to which this invention relates it is very desirable that a fireproof or non-combustible curtain be provided which is adapted to resist or stop the progress of any fire which may occur in a theater or other building in which it is placed, so as to prevent loss of life. It is desirable that such a curtain should be as light as possible consistent with the objects of the invention, so that it may be readily raised or lowered or operated in any desired ordinary and well-known manner.

In constructing a curtain in accordance with my improvements I provide a wall *a*, preferably the front wall, formed of sheet metal, such as charcoal-iron or sheet-steel, the sheets being secured together by means of seams *b*, which I prefer to make of sufficient width to permit them to be riveted securely with rivets *c*. A rear wall formed of sheets of vitrified asbestos and preferably composed of a flat layer *d* and a corrugated layer *e*, secured together by means of fireproof cement in any ordinary and well-known manner, is mounted back of the sheet-metal wall, and between these walls additional layers of non-combustible material are mounted, consisting, preferably, of alternate flat layers *f* and corrugated layers *g* of asbestos. A flat layer *h* of asbestos may be placed immediately adjacent to or in contact with the inner surface of the sheet-metal wall portion. The flat and corrugated layers of asbestos should, however, be alternately arranged. By this arrangement it will be seen that openings or air-spaces *i* are provided between the two outer walls and between all of the corrugated and flat layers of fireproof material of which the curtain is formed. The fireproof material which I employ is what is commonly known commercially as "asbestos" and may be purchased in the open market in the sheet form above described, consisting of flat and corrugated layers cemented together by means of fireproof cement, so as to form air-spaces therebetween. I prefer to place the material so that the corrugations and the air-spaces formed thereby extend vertically.

The sheets of asbestos or similar non-combustible material are secured together at their edges and are at the same time secured to the sheet-metal wall by means of metallic strips *j*, which extend from one side to the other of the curtain along the edges of the asbestos sheets, binding them together. These metallic strips are secured in position and the sheets of asbestos are secured to-

gether and to the front metallic wall by means of small stove-bolts *k*, which extend through such metallic strips and through all of the layers of which the curtain is formed. The stove-bolts are secured, by means of nuts *l*, upon the threaded ends thereof, which are preferably upon the back or stage side of the curtain and in engagement with the metallic strips *j*. These metallic strips extend, preferably, horizontally along the back or stage side of the curtain, and vertical angle-irons *m* are arranged at intervals upon the rear side of the curtain, each covered by a layer of asbestos *n* and extending from top to bottom of the curtain. An angle-iron *o* forms a top frame portion, and a horizontally-arranged angle-iron *p* forms a bottom frame portion. To these the top and bottom ends of the angle-iron braces are secured in any ordinary known manner. These upper and lower angle-irons *o* and *p* are identical in form and are both attached to the curtain in the same manner as illustrated in Fig. 4 by means of bolts *q*, which extend through all the layers of the curtain and through metallic strips *r*, to which they are secured by means of nuts *s* upon the threaded ends of such bolts. The vertical or side edges of the curtain are each provided with a side frame portion formed of a channel-iron *t*, having a front flange *u* and a rear flange *v*, between which the edges of all the layers or walls of the curtain are secured by means of rivets or bolts *w*, which extend through such channel-irons or side frame portions. These channel-irons or side frame portions are secured to the ends of the top and bottom angle-irons and, together with the intermediate strengthening-angles *m*, form a framework which efficiently holds the walls or different layers of which the curtain is composed in position. Inclined strengthening-angles *y* extend from the top of the curtain at an incline down to the intermediate strengthening angle-irons and serve as additional braces for the curtain. The curtain is suspended by means of cables *z*, of refractory material, such as strong wire rope, which may be covered by a layer of asbestos or similar non-combustible material. The cables are secured at their lower ends to the upper edge of the curtain by means of lugs 2 and are passed over sheave-pulleys rotatably mounted above the curtain, and counterweights are secured to the cables in any ordinary and well-known manner, so as to enable the curtain to be easily operated. To the permanent wall 3 of the building or stage is secured vertical guides formed of metallic angle-irons 4 and 5, which engage the front and rear surfaces, respectively, of each edge of the curtain, such angle-irons being secured together by means of a channel-beam 6, as shown in Fig. 2.

By this arrangement it will be seen that a curtain is provided which is adapted to retard or stop the progress of a fire and which has the advantage of being so far as possible a non-conductor by reason of the nature of the material of which it is composed and the air-spaces formed between the layers of such material. This curtain has also the advantage of great economy of construction and is efficient and durable.

I claim—

1. A fireproof curtain, comprising front and rear walls formed of metal and asbestos respectively, flat and corrugated asbestos layers arranged in alternate order between such front and rear walls and forming air-spaces therebetween, metallic strips extending along the outside of the asbestos wall, and bolts extending through such metallic strips, inner asbestos layers and metallic wall for securing them in position.

2. A fireproof curtain, comprising front and rear walls formed of metal and asbestos respectively, flat and corrugated asbestos layers arranged in alternate order between such front and rear walls and forming air-spaces therebetween, means for securing such walls and layers of asbestos together, and means for suspending such curtain.

3. In a fireproof curtain, the combination of front and rear walls formed of metal and asbestos respectively and a plurality of corrugated layers of asbestos arranged therebetween forming air-spaces between such corrugated portions, metallic strips secured to the rear wall, and upper and lower frame portions formed of metal and secured to the edges of such walls.

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