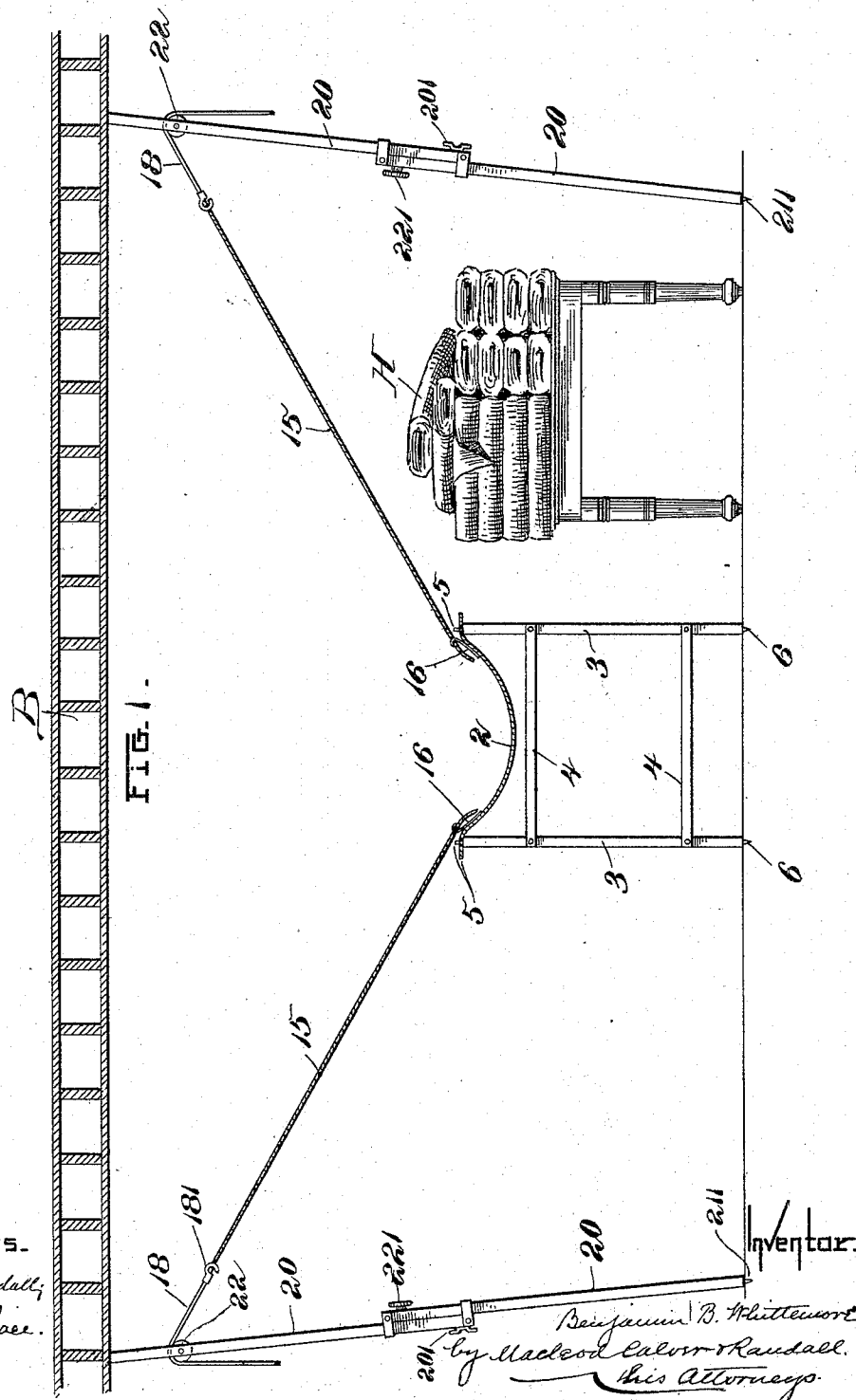


2 Sheets—Sheet 1.

No. 542,072.

Patented July 2, 1895.



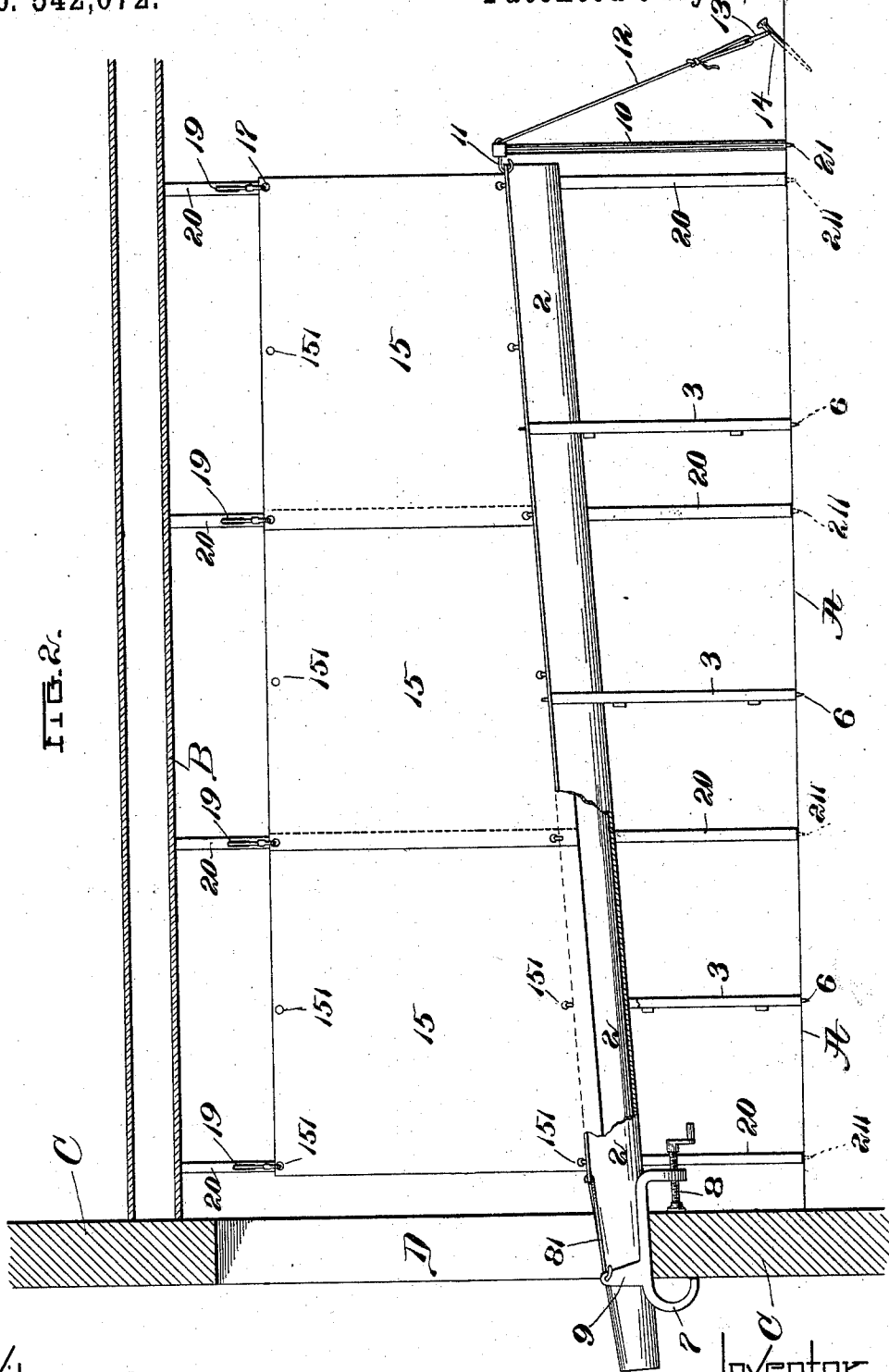
(No Model.)

2 Sheets—Sheet 2.

B. B. WHITEMORE.
PROTECTIVE APPARATUS.

No. 542,072.

Patented July 2, 1895.



Witnesses.

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UNITED STATES PATENT OFFICE.

BENJAMIN B. WHITTEMORE, OF BOSTON, MASSACHUSETTS.

PROTECTIVE APPARATUS.

SPECIFICATION forming part of Letters Patent No. 542,072, dated July 2, 1895.

Application filed December 4, 1894. Serial No. 530,812. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN B. WHITTEMORE, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Protective Apparatus, of which the following is a specification, reference being had therein to the accompanying drawings.

Almost invariably it happens when a building is partially destroyed by fire that the damage done by the water used in extinguishing the fire exceeds greatly that due to the effect of the fire itself. The largest proportion of this damage usually results from the fact that when the fire is in the upper part of the building the greater part of the water which is thrown upon and around the burning portions runs or leaks downward by the stairways and through the floors and ceilings. In thus working its way downward it damages the goods, &c., on the lower floors, and also the building itself. At present there is no means employed in practice, so far as known to me, for preventing the water from thus finding its way to the lower portions of the building, although a certain amount of protection sometimes is afforded to the goods, &c., which are on each of the floors beneath the fire by throwing tarpaulins or rubber blankets over them. These tarpaulins or blankets are not fully efficient in protecting the goods to which they are applied, and also, as is well known, the water which falls on them from above simply sheds off and continues to work its way downward from floor to floor, extending the damage throughout the whole structure. Moreover, this mode of affording protection necessitates the use of a very considerable number of tarpaulins or blankets in a single building.

My invention has for its object to obviate as completely as possible all water damage to the building and the things stored therein below the location of the fire, and to render unnecessary the employment of the great number of tarpaulins which now have to be used in a single building; and it consists, therefore, in a fire-protective apparatus which may be arranged on the floor next below the fire, and which is adapted to catch the whole or the larger part of the water which may

run or leak through from above, and to discharge such water out of a window or otherwise out of the building, so as thereby not only to shield the goods which may be stored on the floor on which the apparatus is placed, but also to protect the floor and the lower portion of the building, together with the things contained in such lower portions.

My apparatus is of such a character that the employment of the same on any one of the floors beneath the fire is sufficient to protect the building beneath the same and the contents of such portions.

My invention is set forth fully in the following description, and the novel features thereof are pointed out in the claims which are appended hereto.

In the accompanying drawings, to which the description makes reference, Figure 1 is a view showing one of the stories of a building in section and showing also a protective apparatus embodying my invention, some portions of the apparatus being in transverse section. Fig. 2 is a similar view showing the apparatus as viewed from one side of the central portion or main conductor, with the protecting blankets or sheets on that side removed and the main conductor shown partially broken away.

A represents the floor of one of the stories of a building. B is the ceiling thereof, and C is the exterior wall having a window or opening therein at D.

At H is represented a pile of goods on a table. At a point preferably opposite a window or opening in the outer wall of the building and extending therefrom across the floor a main conductor 2 is located. This conductor consists, preferably, of flexible material which is waterproof—as, for example, rubber cloth. As will be obvious, it may be made in sections. When set up, it occupies an inclined position, its higher end being the farther from the window or opening in order that the water falling into the same may flow in the direction of its length and be discharged at its lower end out of said window or opening.

While I have mentioned the conductor as having its discharge end extending out of a window or other opening in a wall, it is obvious that the said discharge end may be arranged to deliver the water wherever desired.

For the purpose of supporting the conductor 2 and of holding it securely in place a series of upright supports are provided, which may be of any approved and suitable character and construction. Those shown consist each of two uprights 3 3, having suitable cross-pieces 4 4 secured thereto. The upper ends of the uprights are fitted to engage in some suitable manner with the sides of the conductor 2. For example, as shown, they may be provided with pins or other hooks 5 5 and these may enter and engage eyelets or holes in the sides of the conductor 2, or in lieu of said eyelets or holes loops may be provided on the sides of said conductor 2, with which the said hooks or pins 5 may be engaged. The distance between the uprights 3 3 of the supports is less than the measurement from side to side of the conductor 2, so that when the conductor is in position it assumes a trough-shape in cross-section, as shown, thus fitting it to form a conduit or conductor for the water. The supporting-frames may be set at any desired distance apart lengthwise of the conductor, and they are of gradually increasing height, so as to give the conductor an inclined position, as hereinbefore stated, to cause the water to flow quickly along the same. A sufficient number of the supports should be employed to insure the firm support of the conductor with its weight of water. The lower ends or feet of the uprights 3 of the supports preferably are provided with some means of engaging with the flooring—for example, sharpened spikes or pins 6, or rubber facings or coverings for the said ends or feet—in order to prevent displacement of the supports and insure their remaining in position.

The lower or discharge end of the main conductor 2 may be tubular and tapering to serve as a spout and caused to extend outwardly through the opening or window D, so as to project the water which may pass therethrough clear of the wall of the building, or a spout or delivery device of any suitable and approved character may be applied to the said lower end of the conductor. The said discharge end is provided with some suitable engaging or clamping device for the purpose of securing the same in place in the window or opening. Any approved device admitting of being applied and removed readily and quickly may be employed. The drawings show a hooked clamp 7, which is provided with a clamp-screw 8. The clamp-screw 8 enables the hook to be set on any wall of usual thickness and to be firmly secured in place. The hooked portion of the clamp is provided with an upwardly-projecting lug 9, having an eye therein, through which may be passed one of the hooked ends of a rod 81, the other hooked end of which is engaged with one edge of the conductor 2. Other means of connecting together the conductor and the clamps may be adopted. When clamps are employed, preferably two are provided, one for each side of the conductor. While the clamp above de-

scribed and shown in Fig. 2 affords a ready and secure means for fastening the discharge end of the conductor quickly in place in the window or opening in the wall, I do not desire to limit myself to the use of any specific form of clamping or securing device to accomplish this purpose, it being evident that many simple devices may be employed. It is further apparent that a clamp of any kind may be dispensed with by employing a weight or bar at the discharge end of the conductor, which will keep said end outside of the window or opening. At the inner or higher end of the conductor a frame 10 is set on the floor, as in Fig. 2. This frame consists of suitable uprights and cross-pieces similar to the uprights and cross-pieces 3 and 4 of the intermediate supports, the lower ends of the upright portions thereof being provided with spikes 21 or other means for preventing the said frame 10 from slipping or becoming displaced. When the parts are set up, the higher end of the conductor is connected in suitable manner with the upper part of the frame 10. For example, at the top of the uprights of the said frame 10 are placed hooks 11, which engage with eyes or loops on the said end of the conductor 2 at the opposite sides of the latter. One or more ropes 12 are each secured at one end to the upper portion of said frame 10, the other end of each rope being carried through an eye or ring 13, which is secured to a spike 14. The spike 14 is driven into the floor or wall adjacent to the said frame 10, and the rope 12, after being passed through the eye 13, secured to said spike, is drawn taut and made fast. This stretches or tightens the conductor 2, so as to prevent it from sagging, and also serves to hold the conductor more firmly in place. As will be clear, a pulley arranged in the eye 13 to receive the rope 12 may be employed, if desired. A conductor arranged and supported as above described will operate to conduct any water which may be placed therein through the opening or window and discharge it clear of the building.

For the purpose of catching the water which may leak through the ceiling from the floor above and conveying said water into the conductor, thus protecting the goods, &c., which are on the floor on which my apparatus is placed, and also the lower portions of the building and the contents of such portions, I provide covers or shields 15, preferably consisting of tarpaulins or rubber blankets or sheets of equivalent flexible waterproof material, which may be of any convenient dimensions and preferably are provided with eyes or loops 151 at their opposite edges. These covers or shields are spread or extended in inclined positions on opposite sides of the conductor, with their lower edges resting on the sides of the latter and suitably engaged with said sides. For example, the hooks 16 which are fastened to the sides of the conductor 2, are caused to enter the eyes or loops at the said lower edges, as in Fig. 2. The eyes

or loops 151 preferably are placed a short distance inward from the edges of the blankets, so that when the lower edge of a tarpaulin or blanket is connected with one side of the conductor the water will discharge from the said tarpaulin or blanket into the conductor with certainty and without danger of escaping onto the floor or goods. The eyes or loops or equivalent securing devices at the upper edge of each blanket are engaged by hooks or the like 181, having connected therewith cords or ropes 18, which pass through eyes or openings 19 near the upper ends of the uprights or supporting-rods 20. Each of the uprights or supporting-rods 20 preferably is formed in two parts and provided with a set-screw 221, so that it may be lengthened or shortened in well-known manner. They may thus be adapted to be used in rooms having ceilings of different heights. The lower ends of the rods 20 preferably are provided with sharpened pins or spikes 211 or other means of firmly engaging the flooring to prevent slipping. In putting the rods up they are extended so as to be somewhat longer than the distance between the floor and the ceiling. Their lower ends then are set nearer the main conductor 2 than their upper ends, the latter being forced against the ceiling to engage the same or into the angle between the ceiling and a vertical wall, and the rods are then in a position to withstand considerable strain without giving way. The cords 18, which are passed through the eyes 19 near the upper ends of said uprights 20, then are drawn tight and secured, thereby spreading or straining the blankets 15 and holding them in an extended or inclined position, as shown. The cords 18 may be made fast to the rods 20 by means of rings or cleats 201 thereon, or a spike provided with an eye or ring, similar to the spike 14, may be set into the floor at the proper point and the other end of the cord 18 be secured thereto. The proximate edges of the tarpaulins or blankets 15 are made to overlap each other, one of the hooks 181 or other devices engaging the outer edges of the blanket being passed through each pair of overlapping eyes or loops in the corners thereof, as shown in Fig. 2. In this way the blankets may be extended in an inclined position on each side of the main conductor 2 from the said conductor toward or to the adjacent sides of the room and at any given height desired, thus being placed in a position to catch the water which may leak through the floor and ceiling above and convey it to the main conductor, whence it is discharged outside the building. In this way not only protection is afforded to the floor upon which the apparatus is placed, as also to the goods, &c., which are stored thereon, but all the lower portions of the building and their contents are protected.

As will be clear, the precise angle of incli-

nation of the blankets 15 is not material, so long as they are inclined sufficiently to cause a speedy discharge of the water which may be caught upon them into the central or main conductor 2.

By providing a suitable number of covers or shields of proper size any floor of moderate area may be protected. For the protection of floors of exceedingly great area two or three sets of the apparatus may be set up therein. As the apparatus is light and portable and admits of being readily put into place, it is but the work of a few minutes for firemen or others who are skilled and who are familiar with the setting up of the apparatus to take the same into a building and onto the desired floor and put it in proper position. It is contemplated that the apparatus will be handled by a trained protective corps, such as at the present time is in existence in most cities.

In the openings 19 in the uprights 20 I have shown pulleys 22, over which the cords 18 pass. These pulleys are desirable in facilitating the drawing of the cords taut; but in many instances, where the apparatus is used in small rooms and the shields or blankets 15 are not very large, such pulleys will not be required. I do not consider them an essential feature of my invention.

The apparatus may be packed into small compass, is not of great weight, may be readily carried and placed in position, and is relatively little more expensive than the tarpaulins or blankets which are now employed. When in position, it is not liable to become displaced, and it is much more efficient in protecting the goods than are blankets which are thrown loosely over them, while at the same time it protects the floors and other portions of the building so as to reduce the damage resulting from water used in extinguishing the fire to a minimum.

What I claim is—

1. A portable protective apparatus comprising covers or shields to be spread or extended in a room or the like space and a conductor to receive the water that is shed from the said covers or shields and discharge it where desired, substantially as described.

2. A portable protective apparatus comprising covers or shields to be spread or extended in a room or the like space means for securing said cover or shields in proper position and a collecting trough or conductor to receive the water that is shed from the said covers or shields and discharge it where desired and means for supporting said trough or conductor, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

BENJAMIN B. WHITTEMORE.

Witnesses:

WM. A. MACLEOD,
CHAS. F. RANDALL.