

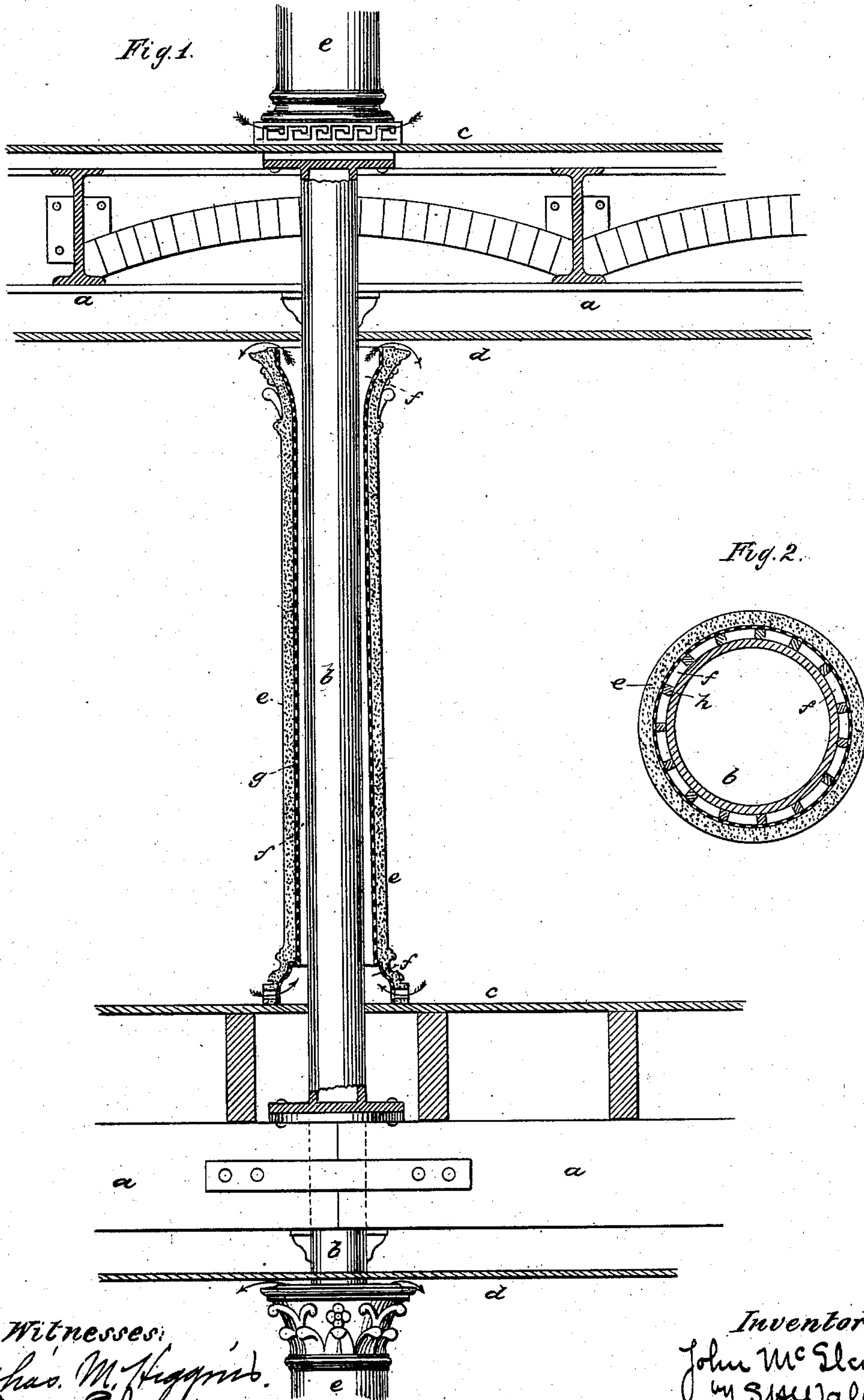
(No Model.)

J. McGLENSEY.

Method of Protecting Iron Columns from Fire.

No. 227,985.

Patented May 25, 1880.



Witnesses:
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UNITED STATES PATENT OFFICE.

JOHN MCGLENSEY, OF NEW YORK, N. Y.

METHOD OF PROTECTING IRON COLUMNS FROM FIRE.

SPECIFICATION forming part of Letters Patent No. 227,985, dated May 25, 1880.

Application filed April 7, 1880. (No model.)

To all whom it may concern:

Be it known that I, JOHN MCGLENSEY, of New York city, county and State of New York, have invented certain new and useful Improvements in Protecting Iron or other Columns in Buildings or other Structures from Fire, of which the following is a specification.

It is well known that ordinary unprotected iron columns, as used in supporting the floors or other parts of buildings, whether cast or wrought, are so sensitive to the direct attacks of fire that even though the fire be not great enough to heat it red-hot, and thus destroy its rigidity, yet a concentration of undue heat on one side of the column will cause it to expand on that side and bow or bend under its weight, thus causing the floor or walls to sag or fall. Indeed this has been known to occur so quickly after the starting of a fire that many serious accidents have occurred to firemen and others from the fall of walls or floors so soon after the discovery of fire as to have averted suspicion of such danger.

Now, my invention aims to provide an effective protecting-covering for iron columns which will enable them to resist fire for a long time, or sufficient to prevent any serious danger to the structure or its occupants in cases of slight fires, or quick and unexpected disasters in case of fierce and long-continued fires.

Figure 1 of the drawings annexed gives a vertical sectional elevation of my protected iron columns in the interior of a building, supporting the floors thereof. Fig. 2 is an enlarged cross-section of the protected column.

In the figures, *a* indicates the girders, on which the floors are built, as usual, and *b* the iron or other columns, extending vertically from girder to girder and supporting the same. *c* indicates the floors, and *d* the ceiling, which are all of about the ordinary architectural construction.

Now, according to my invention I cover or inclose the column from floor to ceiling with a jacket or inclosure, *e*, of some fire-proof or non-conducting material, which completely envelops the column, and is also sufficiently isolated from the column as to leave an air space or jacket, *f*, between the two, while the enveloping-jacket *e* is perforated or open both at top and bottom, or at the base and capital

of the column, so as to admit a free circulation of air through said air-jacket up and around the column. This circulating air-jacket, in connection with the outer fire-proof or non-conducting envelope, constitutes the chief novelty of my invention, and, as may be observed, will form a most effective protection for the iron or other column.

I prefer, of course, to make the outer protecting-envelope, *e*, of some material which is both fire-proof or incombustible, as well as a bad or non conductor of heat; and for this purpose I prefer a mixture of plaster-of-paris, cinders, and Keene's cement, which is applied while in a plastic condition and in a layer of substantial thickness over an inner supporting-sheath, *g*, of wire-cloth, surrounding the column at the proper isolated distance therefrom to form the air-jacket *f*, as will be readily understood, and supported against the same at intervals by narrow slabs *h*, of plaster or equivalent material. Instead, however, of using the wire-cloth sheath *g*, sheet metal, perforated or punctured like a grater, to afford adhesion for the plaster, may be substituted.

The outer plastic covering may hence be so formed and manipulated as to constitute a fine external finish to the column, while the inner iron column may be rough. The external capital and base of the column may thus be formed in the same or equivalent plastic material, which admits of easy working and artistic treatment, and the inlets to the air-jacket and the outlets therefrom may be so formed respectively in the base and capital as to be readily concealed by the figuring thereon, or made to serve as ornaments themselves.

It will now be observed that not only does the outer envelope, *e*, strongly resist the passage of heat to the inclosed iron column, but the free air-circulation allowed through the intervening space *f* constantly acts to absorb and convey away any heat that may penetrate the outer envelope, and thus prevents the concentration of heat upon the iron column. Hence only a long-continued and fierce fire could finally injure the column, while it is effectually protected from injury in all ordinary cases, thus forming a material improvement over those protections having a mere outer

layer of fire-proof material or those having an intervening dead-air space.

What I claim as my invention is—

5 The mode herein set forth of protecting iron or other columns in buildings or other structures from fire, consisting in enveloping the columns with a covering of fire-proof or non-conducting material isolated from the column, to form an air-space between the two, with

openings at top and bottom of said covering to permit a free circulation of air between the column and its outer envelope, substantially as herein specified.

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