

(No Model.)

H. B. MURLLESS.
COLUMN FOR BUILDINGS.

No. 512,049.

Patented Jan. 2, 1894.

Fig. 1

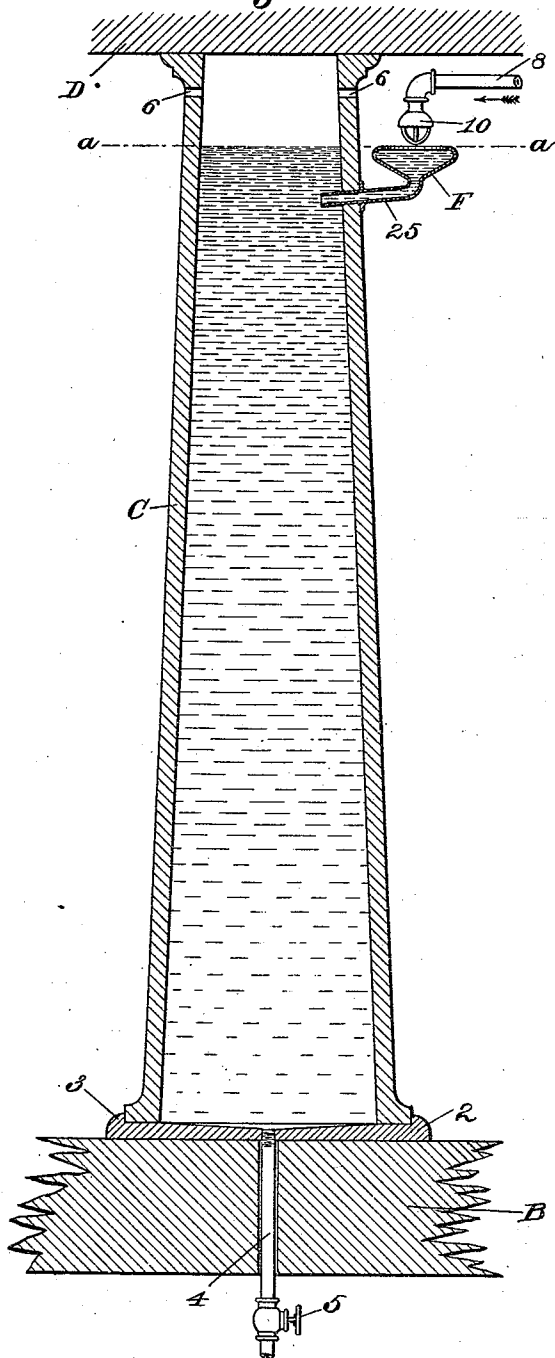
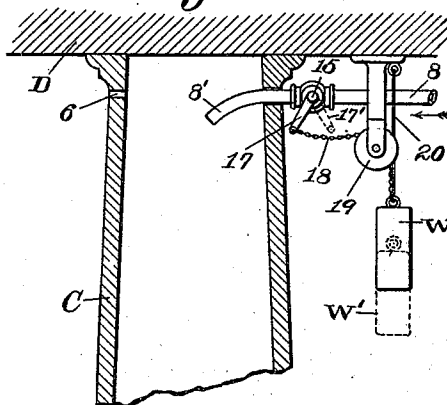


Fig. 2



Witnesses:

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UNITED STATES PATENT OFFICE.

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COLUMN FOR BUILDINGS.

SPECIFICATION forming part of Letters Patent No. 512,049, dated January 2, 1894.

Application filed September 14, 1891. Serial No. 405,610. (No model.)

To all whom it may concern:

Be it known that I, HERBERT B. MURLLESS, a citizen of the United States, residing at Rockville, in the county of Tolland and State of Connecticut, have invented certain new and useful Improvements in Columns for Buildings, of which the following is a specification.

This invention relates to the construction of columns for buildings, and to the protection thereof from fire.

The object of my invention is to provide a hollow column for buildings, with means for protecting the same against the destructive effects of heat by supplying water to the interior of the column.

In the drawings accompanying and forming a part of this specification, Figure 1 is a sectional elevation of a hollow column provided with means for automatically supplying water thereto in case of fire, and embodying my present invention. Fig. 2 is a view similar to the upper part of Fig. 1, and shows a modification of the apparatus.

Similar characters designate like parts in both the figures.

According to my present invention, the hollow metallic column of a building, which stands upon the lower beam or base B and under the upper beam D, is normally closed at the lower end thereof, and at the upper end thereof is provided with one or more vents for the escape of air and steam, the top of the column being normally closed by said beam resting thereon; a water-supply is provided, as for instance a water-pipe or conductor, which is brought to a point adjacent to the column; which pipe is provided with means for directing said water-supply into the column in case of fire.

In Fig. 1, the column, designated in a general way by C and shown in section, is set upon the base or bottom-plate 2, within the flange 3 thereof, the joint between said column and plate being cemented or otherwise made substantially water-tight. Said bottom-plate (or the base of the column close above said plate) is furnished with means for emptying the column of water when this is required, said means being usually a drip-pipe, as 4, having a suitable stop-valve, as 5,

for closing the same. Said pipe 4 may be extended to a point without the building, to avoid damage to goods or machinery from the draining of the column. Ordinarily, said valve 5 should, of course, be kept closed. At the upper end of the water-holding column, this is shown provided with two vents, 6 6, for the escape of air during the filling of the column with water, and for the escape of steam when the water within the column has become heated by fire in the building. Adjacent to the top of the column, a pipe, 25, is fitted to enter the same, the outer end of said pipe being furnished with a suitable funnel, as F, for receiving the water from the water-supply and directing the same (through said pipe 25 forming the spout of the funnel) into the interior of the column. The water-supply is brought to a point adjacent to (and preferably above) the funnel F by an ordinary water-pipe, 8, leading from the water-mains or reservoir. As a means for automatically delivering the water to the funnel in case of fire, said pipe 8 is provided at the end thereof with an automatic sprinkler, 10, constructed in a well-known manner to be started into operation by the action of heat when the temperature shall rise above a certain predetermined point. On the starting of the sprinkler, which is here shown used merely as an automatic valve, the water flows from the pipe 8 into the funnel F and through this into the interior of the column, rapidly filling the column up to the normal water-line *a a*, which, of course, corresponds in height to the top of the funnel.

By constructing and arranging the conduit or inlet pipe 25 as described,—with one end leading into the column and having its opposite end funnel-shaped, or provided with a funnel-shaped piece,—said pipe serves two purposes; it not only acts to introduce the water into the column, but also acts as an over-flow for the water when it has reached a certain height in the column, to prevent its passage through the air-vents, which would preclude the escape of air or steam.

In the modification shown in Fig. 2, the funnel F is omitted, and as a substitute therefor, the end 8' of the pipe 8 is continued through a hole in the side of the column, and

a stop-valve, 15, is placed in the pipe outside the column, means being provided for opening this valve by the action of heat. For this purpose the valve-arm 17 is connected by a chain, 18, extending from the roller 19, with a weight, W, of sufficient mass to open the valve on the falling of the weight. Said weight is normally supported at a sufficient height to permit the closing of the valve by a cord or wire, 20, adapted to be burned or melted when the temperature rises to the desired predetermined point. On the severance of said connection 20, said weight drops to the position shown in dotted lines at W', thereby throwing the valve-arm 17 to the position 17', thereby opening the valve and directing the water-supply into the interior of the column.

In practice, it is not essential that the water-line *a*, Fig. 1, should be at the extreme upper end of the column, since the conducting power of the metal of which building columns are usually made is sufficient to keep the column cool enough to prevent crushing, provided the water comes within a few inches of the upper end thereof.

My improvement is particularly adapted for use in mills and factories, which, as is well known, are frequently destroyed in case of fire by the collapsing of the heated columns, when otherwise the fire might be subdued before the destruction of the building.

Having thus described my invention, I claim—

1. The combination with the water-holding column having vents at its upper end and having means at its lower end for draining the column, of an inlet-pipe or conduit leading into said column near the top and having the funnel-shaped outer end, as described, a water-supply pipe leading to a point adjacent to the funnel-shaped end of the inlet-pipe and provided with a thermally-controlled valve, substantially as and for the purpose described.

2. The combination with the water-holding column closed at its lower end and having means for draining said column and having one or more vents at the upper end thereof, of a conduit, substantially as described, leading into said column near the upper end thereof and adapted to receive and direct the water into the column, a water-supply pipe leading to a point adjacent to the conduit, the valve in said supply-pipe, a valve-actuator consisting of a suspended weight connected with the valve and a weight-retainer consisting of the connection 20 separable by heat and connected with said weight, for normally holding the same while the valve is closed, all being organized and co-acting to detach the weight to automatically open the valve on application of heat to said connection, substantially as described.

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Witnesses:

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