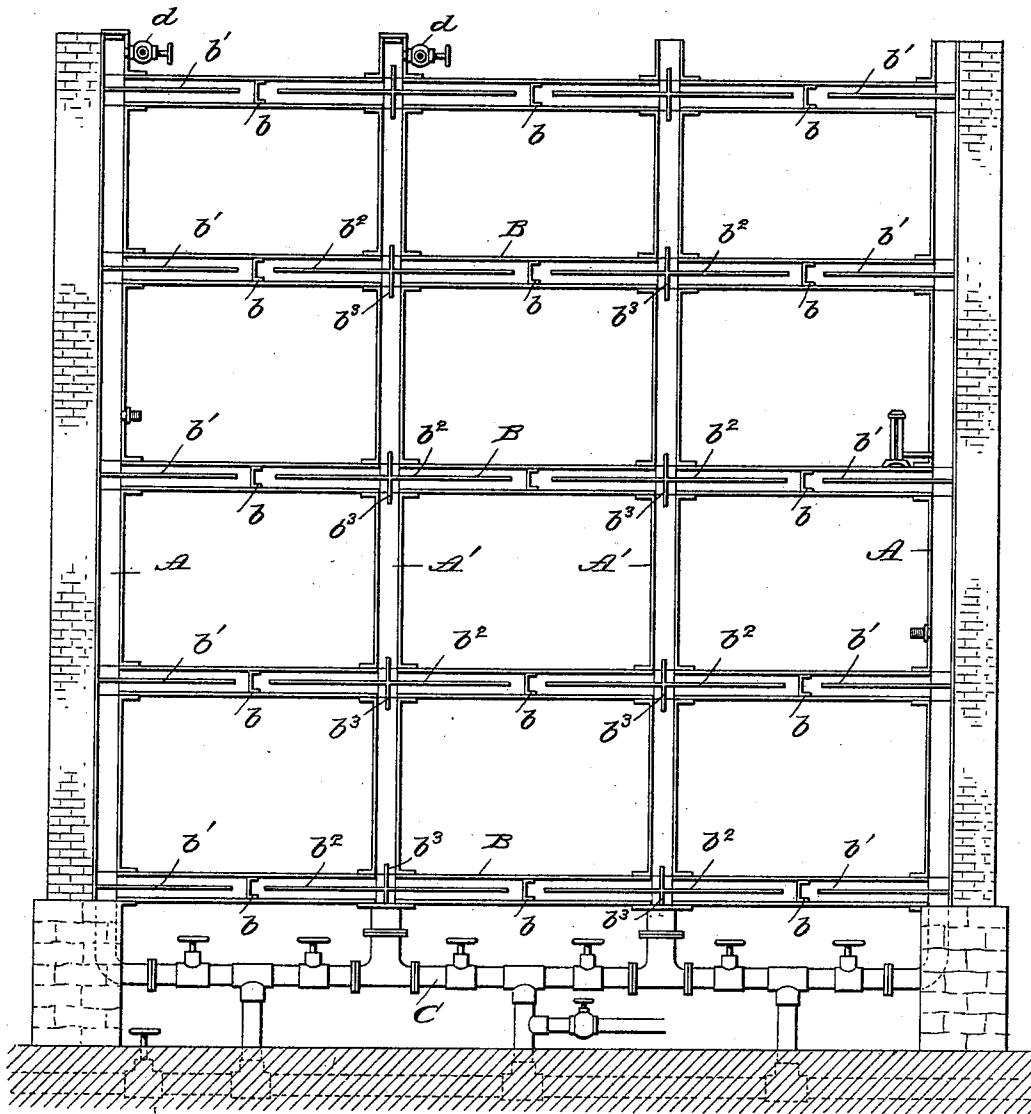


(No Model)

F. E. POMEROY.  
METALLIC FRAME FOR BUILDINGS.

No. 583,293.

Patented May 25, 1897.



WITNESSES  
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# UNITED STATES PATENT OFFICE.

FRED E. POMEROY, OF WARE, MASSACHUSETTS.

## METALLIC FRAME FOR BUILDINGS.

SPECIFICATION forming part of Letters Patent No. 583,293, dated May 25, 1897.

Application filed October 15, 1896. Serial No. 609,000. (No model.)

*To all whom it may concern:*

Be it known that I, FRED E. POMEROY, a citizen of the United States of America, residing at Ware, in the county of Hampshire and State of Massachusetts, have invented certain new and useful Improvements in Metallic Frames for Buildings; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawing, and to letters of reference marked thereon, which forms a part of this specification.

This invention relates to improvements in the construction of buildings, and more particularly to that class of buildings which are made up of metal frames faced with brick or stone.

The object of my invention is to construct the metal frame in such manner that water or steam may circulate therein, suitable cut-offs or cocks being provided to control the inlet and outlet of the steam or water, as hereinafter fully set forth, and particularly pointed out in the claims.

In the accompanying drawing, forming part of this specification, the figure is a vertical sectional view through a building constructed in accordance with my invention.

In constructing a building according to my invention the vertical portion of the frame is so constructed as to leave between each floor unobstructed vertical columns or frames, and the horizontal beams are divided by a central partition, so that there will be a flow of water in opposite directions in said longitudinal beams, and in order that there may be a greater amount of circulation in the horizontal beams partition-plates or angle-beams are located therein midway of each room or compartment of the building. The water-supply is preferably connected to each vertical column of the building or frame.

Referring to the drawing, A designates the outer vertical portion of the frame, which may be hollow columns provided with flanges for connecting the parts of the frame together, as is well known in the construction of buildings of this type.

A' designates the interior vertical columns, which are constructed similar to the columns

A, and to the several columns the horizontal beams B are connected, said horizontal beams from side to side of the building being on the same plane, and to the under side of said beams are attached the ceilings, while the floors are laid upon the same. Filling and facing bricks are placed in the iron structure in the usual manner.

Midway between each compartment or room the horizontal beams are provided with vertical plates  $b$  and with horizontal dividing plates or partitions  $b'$  and  $b^2$ , the plates  $b'$  extending from a point near the outer vertical columns A to a point near the vertical partitions  $b$ , while the plates  $b^2$  extend from near said partitions  $b$  across the upper ends of the vertical columns A' to a point near the partition of the next compartment, and where the plates  $b^2$  cross the vertical columns A' there are vertical deflecting-plates  $b^3$ .

C designates the supply - pipe, which is adapted to receive water or steam, and a coupling is made between this pipe and the lower horizontal beams on a line with the vertical columns. There may be suitable cut-offs in the pipe C, so that communication with the water-supply can be made when desired.

When the supply-valve, which may be of any suitable type, is opened, the water or steam will enter the hollow supporting-beams of the frame by passing first into the horizontal beams of the lower series and then around the partitions  $b'$  and  $b^2$  upward through the columns to the other horizontal beams, so that there will be a constant circulation of water throughout the frame. This gives a serpentine passage-way and divides the building into several different series of water ways or passages, so that in case of fire in any part of the building the water could be let into the same by properly manipulating the cocks or cut-offs. It will also be noted that the water is caused to flow under each compartment or room of the building. This is done so that the greatest effect of the water will be at such points where the greatest heat is.

In carrying out my invention I may provide means for conveying water to only one vertical section of the building by providing cut-off valves at suitable points in the supply-pipe.

By the construction herein shown and described a constant circulation can be kept up

in all the beams and columns constituting the frame of the building, and it is well known that while such circulation is maintained the frame is not liable to give way or be injured by heat in case of fire. This manner of construction also provides means for readily attaching fire-hose at any part of the building. Therefore the use of the ordinary stand-pipe will be obviated. The system will be generally used for heating purposes by circulating steam through the beams and columns, and in case of fire the supply of steam could be readily shut off and water turned on to take its place, and when water is introduced the valves *d* at the top of the building will be opened to permit the water to flow out and induce a rapid circulation.

I claim—

1. As an improvement in the construction of metal frames for buildings, the combination, of the vertical columns or supports *A* and *A'*, horizontal or transverse hollow beams *B*, plates *b* and *b'* located in said beams, so as to intersect the water passage or space in the vertical columns, and a supply-pipe connected to the hollow beams and columns, substantially as shown, and for the purpose set forth.

2. In the construction of buildings, the com-

30 bination, of the vertical columns *A A'*, hollow transverse beams *B*, assembled to provide the compartments or rooms of the building, the hollow transverse beams having at or adjacent the center of each compartment a vertical plate *b*, horizontal plates *b'* and *b''*, and a supply-pipe connected to the frame or structure at points below the vertical columns, substantially as shown and for the purpose set forth.

3. In the construction of buildings, a frame made up of a series of vertical columns and hollow transverse beams, a supply-pipe connected to the lower beams at points on a line with the columns; division-plates *b* located within the transverse beams, and division-plates *b'*, *b''* and *b'''*, substantially as shown, whereby each vertical column may have an independent water-supply, the water admitted being caused to circulate in opposite directions in the horizontal beams, for the purpose set forth.

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

FRED E. POMEROY.

Witnesses:

THOMAS A. GLEASON,  
CHAS. H. LOVETT.