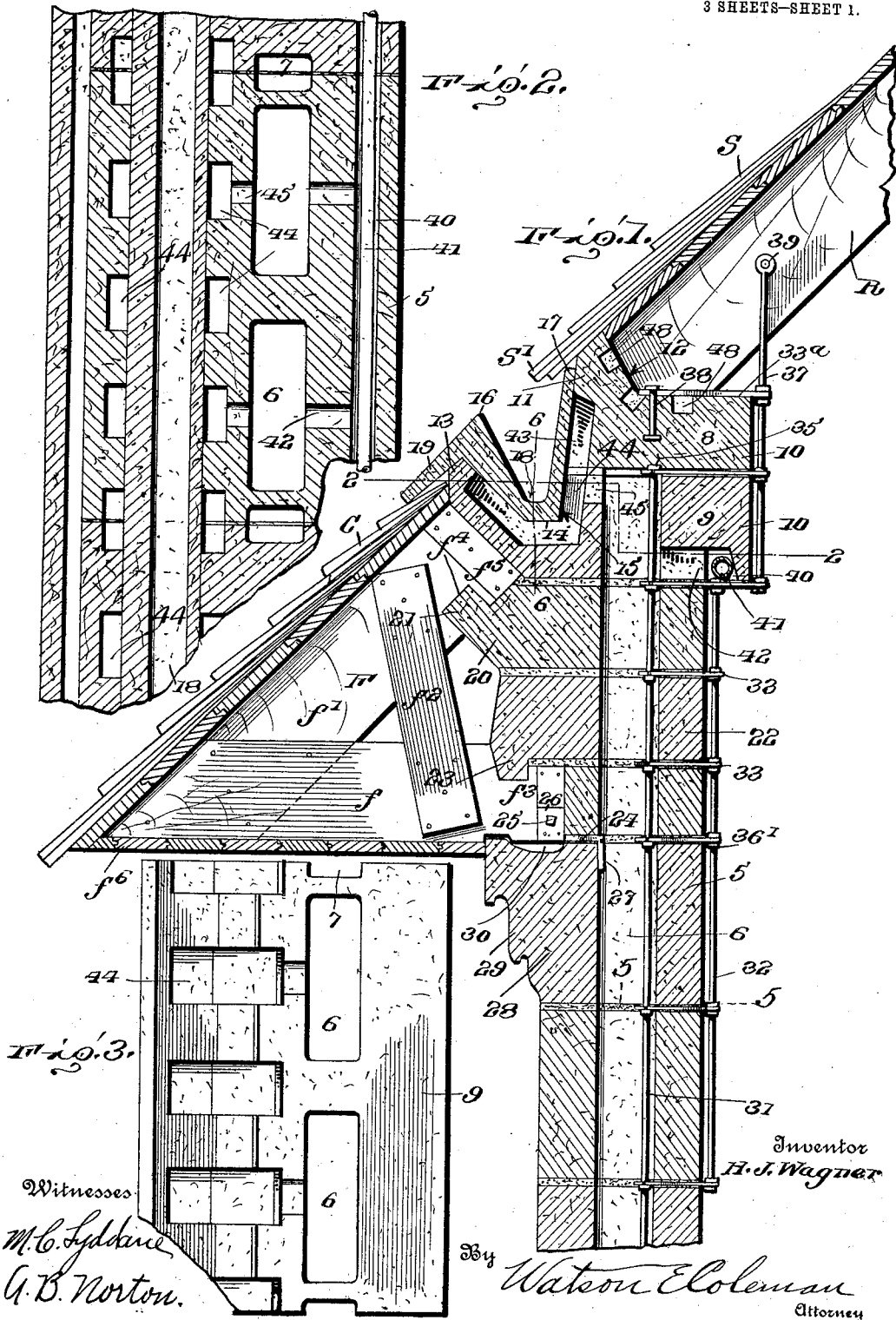


H. J. WAGNER.
BUILDING CONSTRUCTION.
APPLICATION FILED NOV. 13, 1911.

1,046,910.

Patented Dec. 10, 1912.

3 SHEETS-SHEET 1.

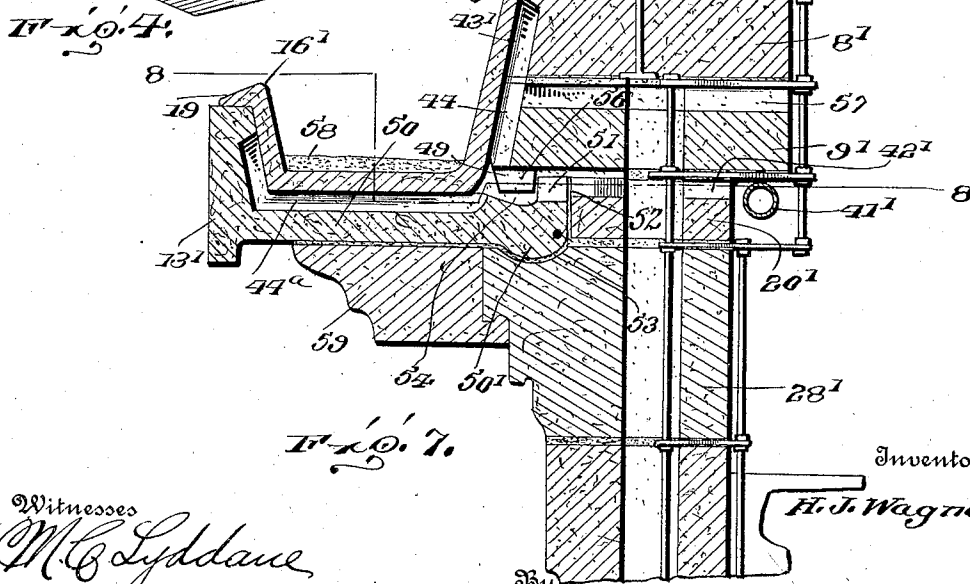
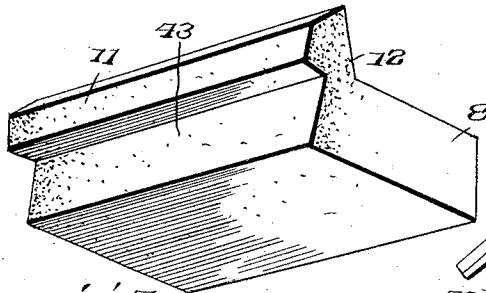
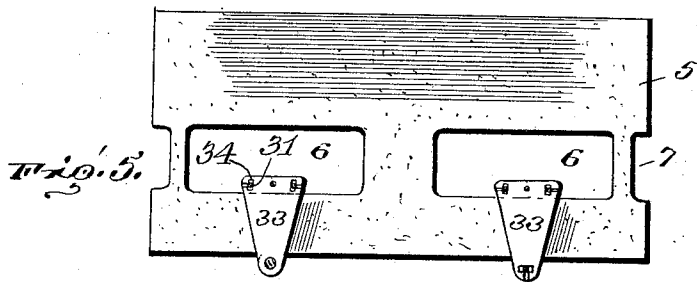
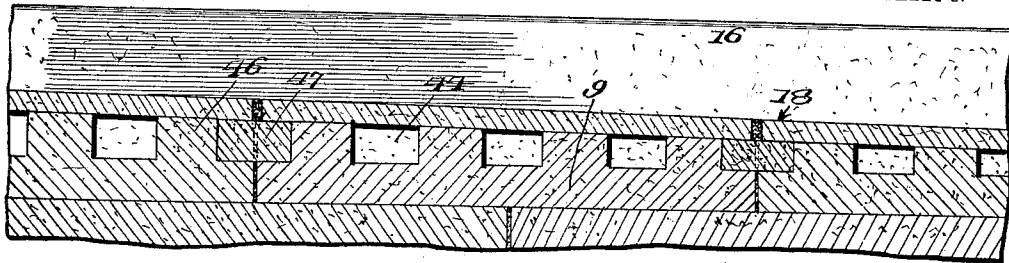


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3 SHEETS-SHEET 2.



Witnesses
M. C. Lyddane
G. B. Norton.

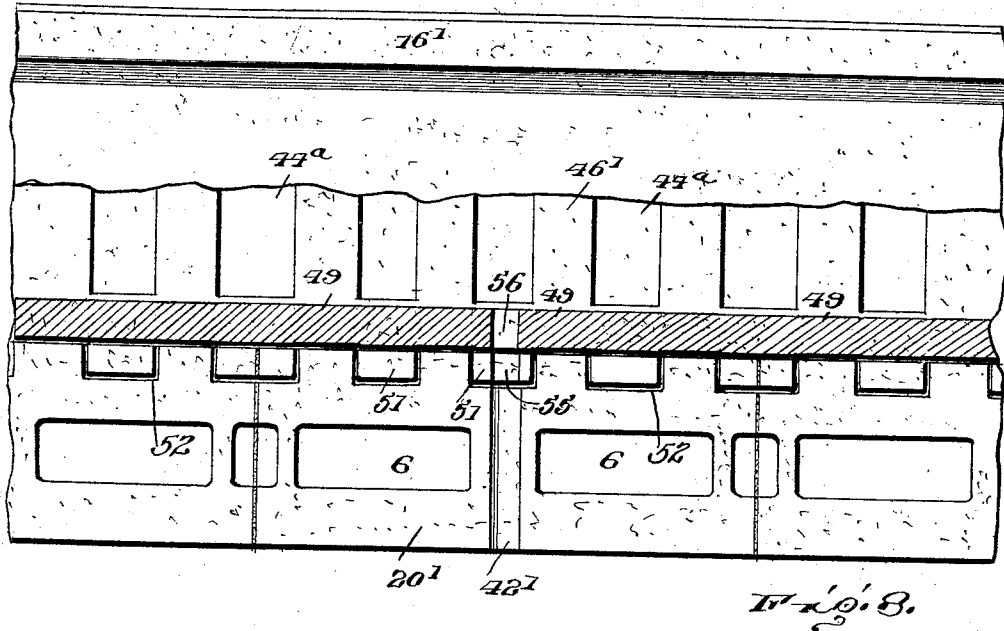
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

HENRY J. WAGNER, OF DELLWOOD, NEW YORK.

BUILDING CONSTRUCTION.

1,046,910.

Specification of Letters Patent.

Patented Dec. 10, 1912.

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To all whom it may concern:

Be it known that I, HENRY J. WAGNER, a citizen of the United States, residing at Dellwood, in the county of Erie and State of New York, have invented certain new and useful Improvements in Building Construction, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to building construction and has for its principal object to provide a hollow building wall built up of a plurality of plastic blocks, a gutter removably arranged in certain of the blocks in line with the roof covering of the building, and means for supplying hot air to the gutter supporting blocks whereby snow or ice accumulating in the gutter is melted.

Another object resides in the provision of improved means for supporting the gutter, said supporting means being provided with a plurality of intercommunicating air channels or passages whereby a continuous circulation of hot air beneath the gutter may be maintained.

A further object of the invention is to provide an improved gutter construction and mounting therefor which may be readily assembled upon a building wall at a minimum expenditure of time and labor, is extremely strong and durable in construction and may be produced at comparatively small cost.

With the above and other objects in view, the invention consists of the novel features of construction, combination and arrangement of parts hereinafter fully described and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a vertical section through a portion of a building wall, the cornice thereof and a fragment of the roof showing the manner in which the wall blocks are assembled and constructed and the trough or gutter held in position; Fig. 2 is a horizontal section taken on the line 2—2 of Fig. 1; Fig. 3 is a top plan view of the gutter supporting block; Fig. 4 is a perspective view of the roof supporting block; Fig. 5 is a section taken on the line 5—5 of Fig. 1; Fig. 6 is a longitudinal section taken on the line 6—6 of Fig. 1; Fig. 7 is a vertical section similar to Fig. 1, showing a slightly modified form of the gutter holding block; Fig. 8 is a horizontal section taken on the line 8—8 of Fig. 7.

The building wall consists of a plurality

of blocks generally designated by the numeral 5 and each of said blocks is provided with spaced vertical air passages 6. The ends of the blocks are also recessed so that the abutting ends of the adjacent blocks form the smaller supplementary air passages 7. The uppermost blocks designated 8 and 9 respectively are of greater width than the blocks forming the body of the wall to provide the inwardly extending overhanging portions 10 whereby the stability of the wall structure is increased. The top blocks 8 of the wall are also provided upon their upper outer edges with the longitudinally extending shoulders 11 the inner or rear faces 12 of which are inclined as clearly shown in Fig. 1 and against these faces and the upper face of the inner portion of the blocks the lower outer ends of the rafters R of the roof abut. The blocks 9 are also formed with the ledges or flanges 13 which project upwardly and outwardly from the outer faces of said blocks whereby the grooves or channels 14 are formed therein. The rear walls of these grooves or channels and the outer faces of the blocks 8 are slightly inclined as indicated at 15 and against the same the inclined rear wall of the gutter blocks 16 engages. The upper edge of this rear wall of the gutter blocks extends beneath the overhanging shingles S' of the roof covering S.

The gutter blocks 16 are preferably of the cross sectional form shown in Fig. 1 to provide a comparatively deep trough 18. These gutter blocks simply rest upon the blocks 8 and 9 and are not secured thereto so that they may be readily removed when desired. The opposed ends of the blocks forming the gutter, are, however, connected permanently by means of cement or other binding material. Each of the gutter blocks is provided upon its outer edge with a downwardly and outwardly inclined extension 19 which overlaps upon the covering C of a cornice frame F. This frame is constructed from the transversely disposed timbers *f* to the outer ends of which the angularly extending timbers *f'* are rigidly secured, said timbers being connected and braced by means of the bars *f*². The inner ends of the timbers *f* and *f'* are notched in their upper and lower edges respectively as shown at *f*³ and *f*⁴. To the ends of the timbers *f* and *f'* the wood reinforcing strips *f*⁵ are secured. The building blocks 20 which are disposed immediately beneath the blocks 9 are provided with

outwardly inclined projections 21 upon their outer faces to be received in the notches or recesses f^4 in the upper ends of the frame timbers f' . The building blocks 22 are also provided with the downwardly disposed ribs or extensions 23 at their outer edges to be received in the notches f^3 of the frame timbers f . The retaining brackets shown in detail in Fig. 13 are secured to the inner ends of the cornice timbers and consist of a body plate 24 provided on one end with the spaced arms 25 between which the reinforced ends of the timbers are received. A bolt 26 extends through the ends of these arms to rigidly secure the frame timber therebetween.

Of course it is understood that the superimposed building blocks are secured together by mortar placed between them and the end of the plate 24 of the timber bracket is embedded in this mortar and has its inner end angularly disposed over the edge of one of the openings in the wall block as indicated at 27. The construction of the cornice is finished by means of the trimming planks f^6 which are secured to the lower edges of the transverse timbers f . The blocks 28 of the building wall immediately beneath the cornice have their outer faces finished with any desired ornamentation as indicated at 29 and are provided in their upper surfaces beneath the inner ends of the cornice timbers f with the longitudinal grooves or channels 30 so as to permit of a free circulation of air beneath said timbers.

It will of course be obvious that the covering of the roof and cornice may consist of slate or metal plates so that my improved wall construction provides an absolutely fireproof roof for the building. The entire cornice could be consumed by flames without endangering the roof proper owing to the interpositioning of the heat resisting plastic blocks 8 and 9 and also the peculiar construction and arrangement of the gutter having the outwardly and downwardly extending edge portion which laps upon the covering of the cornice.

While the foregoing constitutes the principal and essential features of the present invention, I have also devised several other novel features in the construction of walls of the character which I will now proceed to describe in detail.

In order to provide a perfectly rigid wall and to prevent the relative movement of the building blocks or the buckling of the wall, the tie rods 31 and 32 are employed, the rods 31 being disposed within the wall and extending through the alined air passages 6 of the building blocks. Between the inner portions of the superimposed blocks the triangular connecting plates 33 are arranged and embedded in the mortar or other binding material. The inner ends of these plates extend a slight distance into the openings 6 of

the blocks and are provided with a plurality of openings 34 through which the rods 21 extend. These openings are of rectangular form and are provided with the entrances 34' which open upon the longitudinal edges of the plate. One end of the rod 31 is provided with an enlarged head 31' and a rectangular enlargement 31^a to fit into the opening 34 in the tie plate. In this manner the rod may be inserted from the top of the wall through the alined openings in the building blocks, and the portion 31^a thereof readily moved into the openings 34 through the entrance 34'. The uppermost blocks 8 of the wall are not provided with air passages 6 but in their under surfaces are recessed as indicated at 35 to receive the upper ends of the rods 31. These rods are threaded to receive the nuts 36 which engage upon the opposite faces of the plates 33 and rigidly secure the tie rods thereto. The outer ends of the plates 33 are also each provided with a single opening 34' to receive the tie rods 32 which are arranged upon the inner faces of the building wall and have nuts 36' threaded thereon to retain the rods in their adjusted positions. The connecting plate between the blocks 9 and 20 is also provided with a central opening 34^a to receive the upper end of the tie rod 32. The end of this plate and of the plate between the blocks 8 and 9 receive the tie rod 37 which also extends through the end of a plate 33^a disposed upon the top of the wall block 8 and beneath the end of the roof rafter R. The other end of this latter plate is arranged upon the upper end of a bolt 38 which is embedded in the block 8. The upper end of the tie rod 37 is bolted or otherwise rigidly secured as indicated at 39, to the rafter R. In this manner it will be seen that an absolutely rigid connection between the superimposed wall blocks is obtained whereby a maximum of rigidity is secured and liability of buckling of the wall is obviated.

As above stated the blocks 8 and 9 are provided with inwardly projecting stabilizing portions and the under side of this portion of the blocks 10 has a channel 40 formed therein in which a steam pipe 41 is arranged. Transverse channels 42 open into the channel 40 at one of their ends and at their other ends open into the air passages 6 in the blocks. As clearly shown in Fig. 1 the outer faces of the blocks 8 and 9 are also provided with air chambers 43 and 44 respectively, the latter chambers extending across the base of the trough 14 in the blocks 9 and the inclined flanges 13 thereof. A short transverse channel 45 connects the chamber 44 with the central air passage 6 of the building block thereby providing a series of communicating passages through the blocks 8 and 9 for the continuous circulation of the heated air.

Attention is now directed to Fig. 6 wherein a plurality of ribs 46 are shown formed upon the blocks 9 and separating the spaced channels or chambers 44. It will be observed that the ribs 46 at one end of the building wall are of greater height than those at the other end thereof, said ribs gradually diminishing in height from end to end of the wall so that the gutter is longitudinally inclined to form a raceway for the water and direct the same into the drain spout arranged at one end of the roof. The chambers 43 in the blocks 8 extend throughout the length thereof and form one continuous channel or passage behind the rear wall 17 of the gutter into which the heated air flows from the chambers 44 of the blocks 9. The channels or chambers 44 formed in the ends of adjacent blocks 9 are filled in with cement or other plastic material as indicated at 47 so as to provide an absolutely water-tight joint between said blocks. By this construction it will be readily seen that accumulations of snow and ice in the gutter 19 will be readily melted by heating the walls of the gutter in the manner above described. The surface of the blocks 8 including the shoulders thereon are provided with longitudinal recesses 48 whereby air chambers are formed between said block and the roof rafters thus further insuring the protection of the roof against fire.

In Figs. 7 and 8 of the drawings I have illustrated a slightly modified form of the gutter holding blocks. The roof supporting blocks 8' are of substantially the same form as those previously described. The blocks 9', however, are provided on their outer lower edges with the depending ribs 49 which are adapted to engage over the lugs or projections 51 formed upon the inner edges of the gutter blocks 50. These lugs are received in the spaced recesses 52 provided in the outer edge of the wall blocks 20'. The block 20' is provided in its upper surface and at its outer edge with a shallow longitudinal groove or depression 53 to provide a seat for the convex face of the curved inner edge 50' of the gutter block on which the aforementioned lugs or projections 51 are formed. By thus forming the inner edge of the gutter block a space 54 is provided between the concave surfaces of the gutter blocks and the lower ends of the longitudinal ribs 49 on the blocks 9'. Certain of the lugs 51 formed on the inner edges of the gutter blocks 50 are provided with recesses 55 which coincide with the transverse channels 42' formed in the upper surfaces of the blocks 20'. The longitudinal ribs 49 on the blocks 9' are also provided with recesses 56 which connect the space 54 between said blocks and the gutter blocks with the air receiving chambers 43' and 44' of the blocks 8 and 9 respectively. In this form of the

invention wherein the separate gutter supporting blocks are employed, the gutter supporting surfaces of said blocks are also provided with the alternate ribs and air chambers 46' and 44^a respectively. The upper surfaces of the blocks 9' are also provided with grooves or channels 57 into which the air passes from the chambers 44' back into the building. The steam pipe 41' is located adjacent to the inner end of the passage 42'. In this form of the invention, the comparatively wide and shallow gutter blocks 16' are provided, and the ribs 46' on which said gutter blocks rest are all of the same height, the base of the gutter being built up as indicated at 58 to provide the inclined raceway for the water. The outer edges of the gutter supporting blocks 50 are provided with the vertically disposed ledges or shoulders 13' upon which the laterally disposed flange 19' on the upper edge of the outer wall of the gutter block rests. The rear wall of the gutter rests closely against the outer faces of the blocks 8' and 9' and extends upwardly beneath the overhanging shingles or other roof covering as described in connection with the preferred form of the invention. Supporting brackets 59 are secured to the outer faces of the blocks 28' and project beneath the gutter supporting blocks 50. These brackets may be constructed of the same or other materials than the building blocks. The same method of bracing or reinforcement for the wall of the building is employed as that above described in detail. The bolt 38', however, which is embedded in the block 8' extends above the same and is rigidly fixed at its upper end to the roof rafter as indicated at 60.

In assembling the above described parts, the gutter supporting blocks 50 may be readily inserted by elevating their outer edges so that the blocks are disposed at an angle of about 45°. The provision of the groove or recess 53 in the upper surface of the blocks 28' permits of the ready insertion of the lugs or projections 51 beneath the overhanging shoulder 49 on the blocks 9'. The gutter supporting blocks are then lowered upon the brackets 59 and the sections of the gutter arranged in place thereon. The supporting brackets 59 may be suitably ornamented and are preferably arranged between the joints of the adjacent wall blocks 28'. In this manner it will be readily seen that the various parts of the structure may be easily and quickly assembled upon the building wall and when properly arranged present a very neat and artistic appearance.

From the foregoing description it is thought that the construction and manner of assembling the several forms of the invention as above set forth will be fully understood. It will be obvious that many other

arrangements of the various elements than those above described, may be resorted to without materially departing from the principle of the invention.

5 The various elements of construction above referred to are all of simple form and may be readily manufactured at a minimum expense.

10 It will be understood that I am in no wise restricted to the exact form of the various parts shown in the drawings and therefore reserve the right to modify the same in such respects as would readily occur to one skilled in the art.

15 Having thus described the invention what is claimed is:—

1. In building construction, a building wall, a horizontal series of gutter supporting blocks arranged thereon, said blocks 20 having outwardly projecting ledges to form a continuous trough, a gutter removably mounted in said trough, said gutter supporting blocks having transverse air passages extending beneath the gutter and a series of air intake passages communicating with said transverse passages, and a pipe arranged contiguous to the entrance passages of said blocks to supply a continuously circulating current of heated air 30 to the passages beneath the gutter.

2. In building construction, a building wall, a horizontal series of gutter supporting blocks arranged thereon and projecting inwardly from the face of the building wall, a gutter supported upon said blocks, said blocks having a plurality of transverse air passages extending beneath the gutter and a series of air supply passages in communication with said transverse passages, the inwardly extending portions of said blocks being provided with longitudinal channels in their bottom faces, and a pipe arranged in said channels contiguous to the entrance passages to supply a constantly circulating current of heated air to the transverse passages beneath the gutter. 45

3. In building construction, a building wall, gutter supporting blocks arranged thereon and having portions projecting beyond the inner and outer faces of the wall, a gutter removably mounted upon the outwardly projecting portions of said blocks, said blocks having a plurality of transverse air passages extending beneath the gutter and entrance passages in communication with said transverse passages, a series of superposed blocks arranged on the gutter supporting blocks, the outer faces of the latter blocks being recessed to provide a 60 continuous longitudinal chamber connecting the several transverse passages with each other, and a pipe arranged contiguous to the entrance passages to supply a continu-

ously circulating current of heated air to the passages beneath said gutter and to said 65 chamber.

4. In building construction, a building wall, gutter supporting blocks mounted upon said wall and having outwardly projecting portions extending beyond the face 70 of the wall, a gutter arranged upon the projecting portions of said blocks, said projections being provided with a series of transverse recesses extending beneath the gutter, a series of superposed blocks arranged upon the gutter blocks, said latter blocks having recesses in their outer faces to provide a continuous chamber, the transverse passages in the first named blocks communicating with said chamber, said 80 gutter having a rear wall disposed over and entirely covering the recesses in the second named series of blocks, and means for supplying a current of heated air to the transverse passages of the first named blocks 85 adjacent their point of communication with said chamber.

5. In building construction, a building wall including a horizontal series of plastic blocks arranged at the top of the wall, each 90 of said blocks having a channel formed therein to provide a continuous trough, said blocks also having a plurality of transverse intercommunicating passages formed therein, a gutter arranged in said trough over 95 said passages, a second series of wall blocks arranged in superposed relation upon the first named series, said latter blocks being provided upon their outer faces with recesses forming a continuous longitudinally 100 extending air receiving chamber connecting the transverse passages of the first named block, said gutter having a rear upwardly extending wall disposed over said chamber, and means for supplying heated air to said 105 passages.

6. In building construction, a building wall, a horizontal series of gutter supporting blocks mounted thereon, each of said blocks having a plurality of transverse air 110 passages therein, a gutter removably mounted upon said blocks over said air passages and having a rear upwardly extending wall, an air receiving chamber arranged against the rear faces of said wall and connecting 115 the transverse passages of said supporting blocks to conduct air from one passage to the other, and means for supplying heated air to said transverse passages.

In testimony whereof I hereunto affix my 120 signature in the presence of two witnesses.

HENRY J. WAGNER.

Witnesses:

G. A. BERGE,

G. H. BICKSLER.