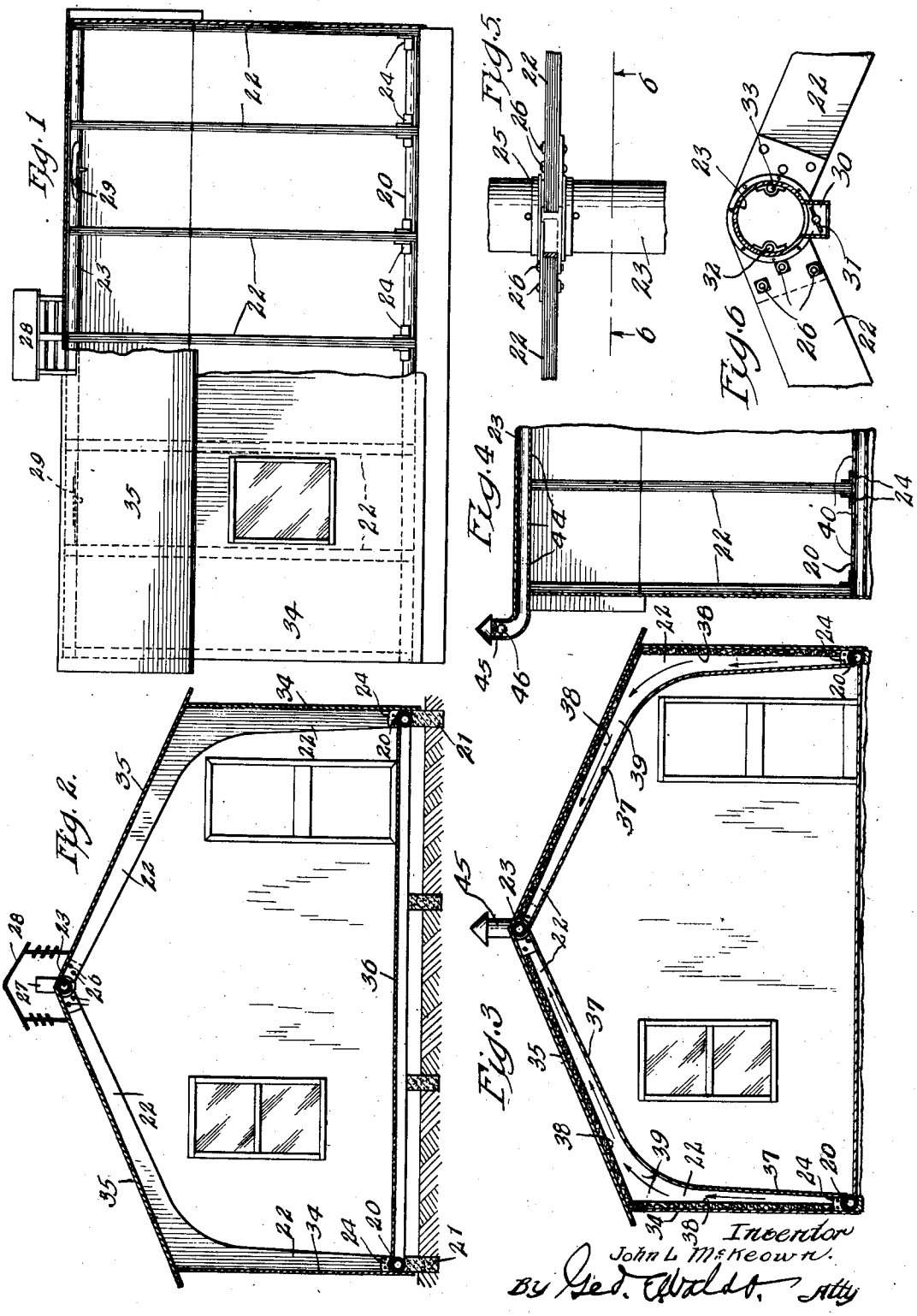
Sept. 17, 1940. J. L. McKEOWN 2,214,886

BUILDING CONSTRUCTION

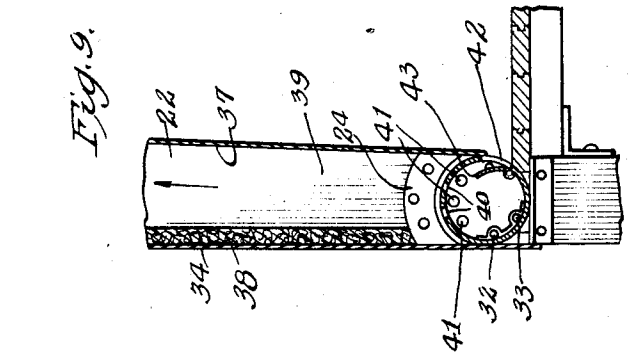
Filed Feb. 21, 1938 3 Sheets-Sheet 1

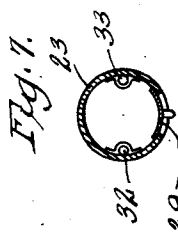


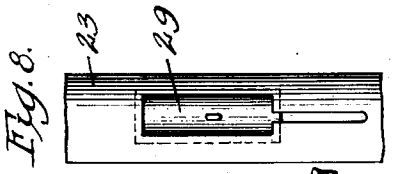
Sept. 17, 1940. J. L. McKEOWN 2,214,886

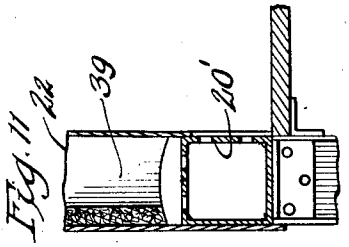
BUILDING CONSTRUCTION

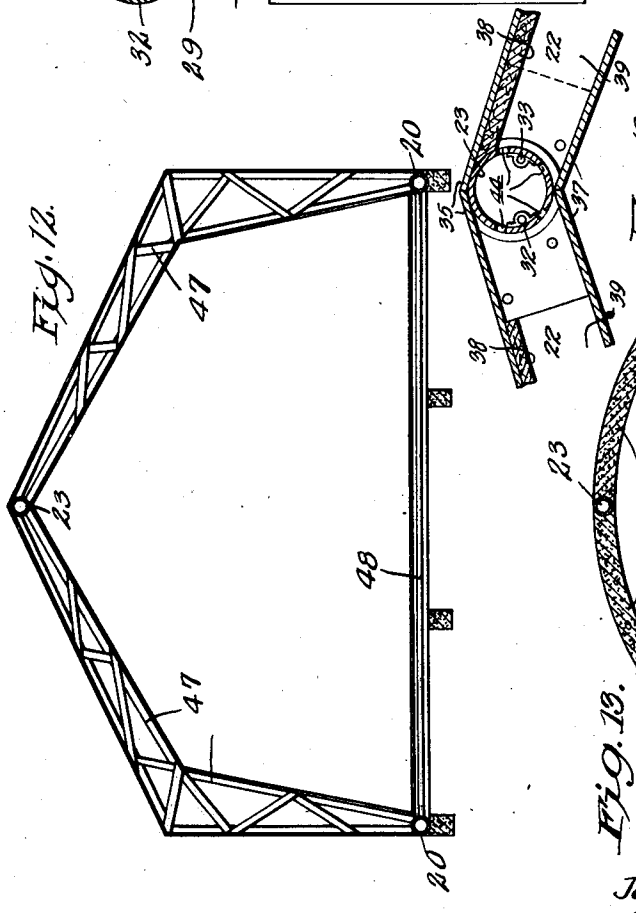
Filed Feb. 21, 1938 3 Sheets-Sheet 2



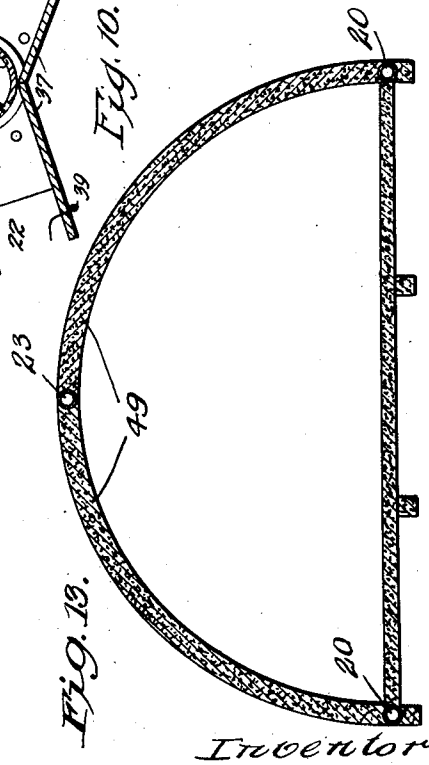




Fig. 13.

Inventor:
John L. McKeown.
By. Geo. E. Waldo. Atty.

Sept. 17, 1940. J. L. McKEOWN 2,214,886

BUILDING CONSTRUCTION

Filed Feb. 21, 1938 3 Sheets-Sheet 3

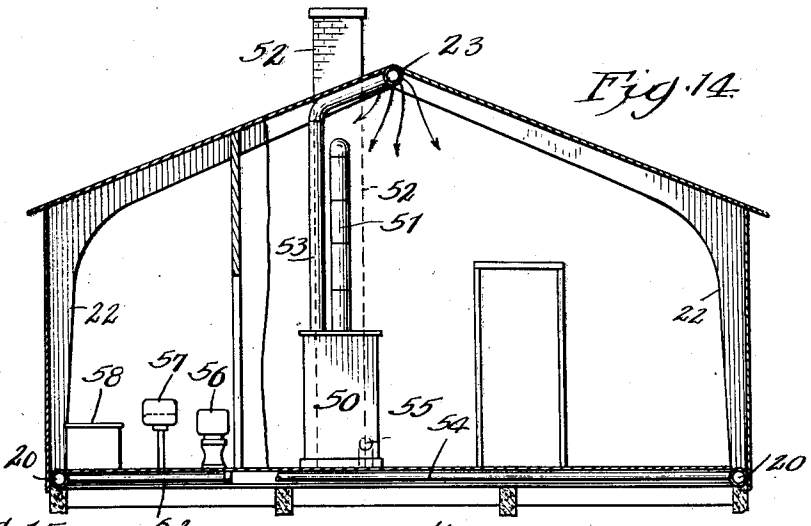



Fig. 14.

Fig. 15.

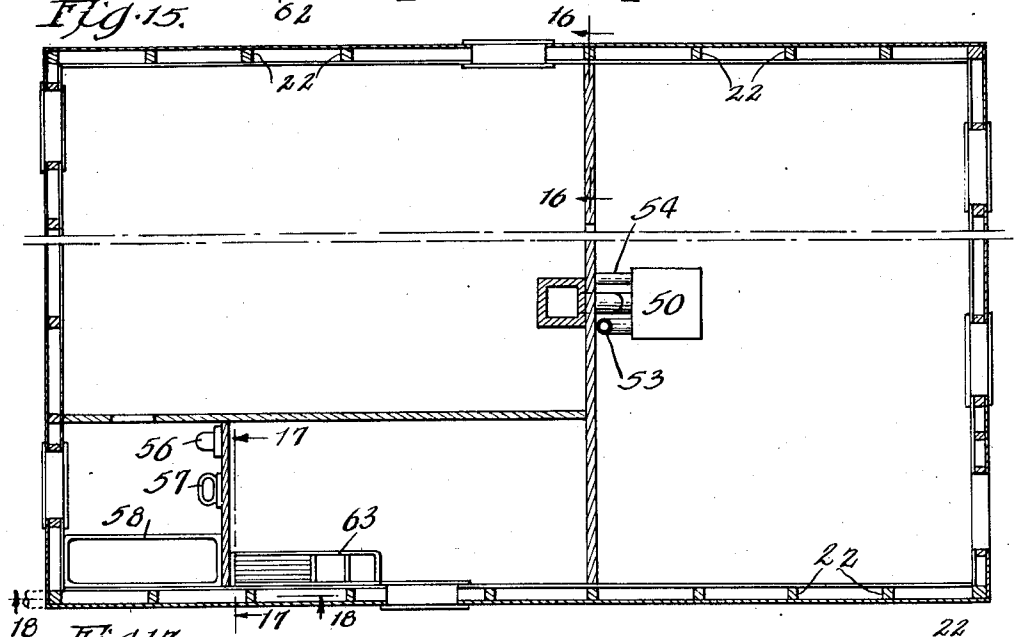



Fig. 17.

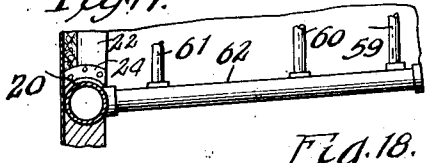



Fig. 16.

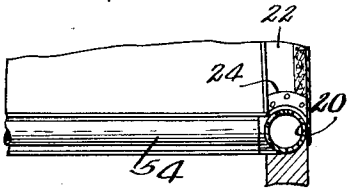
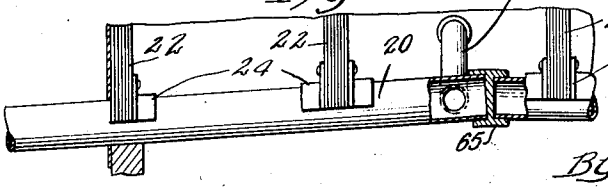



Fig. 18.




Inventor:
John L. McKeown.
By. Geo. E. Wolfe. Atty.

Patented Sept. 17, 1940 2,214,886

# UNITED STATES PATENT OFFICE

2,214,886

## BUILDING CONSTRUCTION

John L. McKeown, Winnetka, Ill.

Application February 21, 1938, Serial No. 191,743

7 Claims. (Cl. 189—1)

The invention relates to improvements in building constructions and has for its primary object the provision of an improved building construction whereby small houses may be constructed at small cost.

Other objects will appear hereinafter.

The invention consists in the combinations and arrangements of parts hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawings forming a part of this specification and in which:

Fig. 1 is a side view, shown partially in section, of a small house constructed in accordance with the invention;

Fig. 2 is a transverse, medial section of the same;

Fig. 3 is a view similar to Fig. 2 but showing a slightly modified form of construction;

Fig. 4 is a partial, longitudinal, medial section taken through one end of the house illustrated in Fig. 3;

Fig. 5 is an enlarged, detail view showing one of the connections between the wall and roof bents and the ridge member of the house;

Fig. 6 is a section of the modification shown in Figures 1 and 2 taken substantially on the line 6—6 of Fig. 5;

Fig. 7 is a transverse section of the modification shown in Figures 1 and 2 through the ridge member;

Fig. 8 is a bottom plan view of the modification shown in Figs. 1 and 2 corresponding with Fig. 7;

Fig. 9 is a transverse enlarged section of a sill member employed in the construction of Fig. 3;

Fig. 10 is a section taken substantially on the line 10—10 of Fig. 9;

Fig. 11 is a view similar to Fig. 9 but showing a modified form of sill member;

Fig. 12 is a transverse section showing another modified form of construction;

Fig. 13 is a transverse section showing still another modified form of construction;

Fig. 14 is a transverse section showing still another modified form of construction;

Fig. 15 is a horizontal section of the construction illustrated in Fig. 14;

Fig. 16 is a section taken substantially on the line 16—16 of Fig. 15;

Fig. 17 is a section taken substantially on the line 17—17 of Fig. 15; and

Fig. 18 is a section taken substantially on the line 18—18 of Fig. 15.

In the form of construction illustrated in Figs. 1 and 2, two tubular sill members in the form of pipes 20 are arranged as shown on suitable supports or posts 21 to constitute the lower supporting sills for the side walls of the house. Arranged on the sill members 20 are a plurality of spaced, combined integral wall and roof bents 22 which extend upwardly and inwardly as shown to meet at the ridge of the house where they are secured to a tubular ridge member in the form of a pipe 23. Each of the bents 22 is provided at its bottom with lateral flanges 24 constituting pivotal bearings therefor on the corresponding sill 20 so as to permit of slight free rocking or pivotal movement thereon as best shown in Figs. 9 and 10. At their upper, inner ends, the bents 22 are loosely secured to the ridge member 23 by means of collars 25 loosely mounted on said ridge member and secured to said bents as best shown in Figs. 5 and 6 by means of bolts 26. The ridge member 23 is provided at its center with a vertical vent or escape pipe 27 enclosed in a suitable cupola 28 as shown, and is also provided with two slidable dampers or valves 29 arranged as indicated to control ventilating openings in the bottom therefor as best shown in Figs. 1, 7 and 8. Another ventilating arrangement for the ridge member 23 is illustrated in Fig. 6 in which a depending vent pipe 30 is arranged as shown and equipped with a pivotal damper 31 by means of which the escape of air may be regulated as desired.

The sill member 20 and the ridge member 23 are also provided in their interiors with water pipes 32 and electric conduit pipes 33 secured as best indicated in Figs. 6 and 7, to the interior walls thereof, and whereby the distribution of water and electricity through the house will be greatly facilitated without the necessity of making openings or passages through the bents 22.

A wall covering 34 is secured as shown to the outer vertical portion of the bents 22 and the roof covering 35 is secured as shown to the upper portions of said bents to constitute the outer sides and roof of the house. A suitable flooring 36 is also arranged as shown.

The construction disclosed constitutes a simple and efficient outer walls roof and floor of a small house which may be thus built with all parts and sections fabricated to exact size in a factory and therefor put up at relatively small cost when desired. By the use of the tubular sill and ridge members loosely connected with the wall and roof bents, a strong and rigid, substantially truss-like structure is provided in which a minimum of material may be utilized to the greatest advantage, lateral strains eliminated, and provision made for the ready accommodation and distribution of

household utilities such as water and electric light. Obviously the interior of the house thus provided may be partitioned off and otherwise equipped as the builders thereof may desire.

In the modification illustrated in Figs. 3 and 4 an interior wall and sill covering 37 is applied to the inner sides of the bents 22 and slabs of insulating material 38 to the inner sides of the wall and roof coverings 34 and 35, thereby enclosing spaces 39 between said bents. Ventilating openings 40 and 41, as best shown in Figs. 4 and 9 are provided respectively in the tops and ends of the sills 20 to permit of the free entry of air from the outer atmosphere to the spaces 39. Additional ventilating openings 42 are provided in the inner sides of the sills 20 and are controlled by swinging dampers or valves 43 and whereby air from the lower portion of the interior of the house will also be freely admitted to the spaces 39 as will be readily understood.

As best shown in Figs. 6 and 7, ventilating openings 44 are provided in the sides of the ridge member 23 to communicate with the spaces 39 to permit of the free escape of air from said spaces to the ridge member 23. At one end the ridge member 23 is provided with an upwardly extending escape pipe 45 equipped with an electric blower 46 and whereby a forced ventilation may be induced through the entire house, thereby readily ventilating the same as will be readily understood.

In the modification illustrated in Fig. 11 a tubular sill member 20' which is rectangular in form in the portions between the bents 22 is provided, but otherwise the construction is the same as that already described.

In the modification illustrated in Fig. 12, bents 47 of structural steel construction are shown which arrangement will be advantageous where unusual strength is required. To add to the strength, horizontal tie rods 48 connect the sill members 20 as shown.

In the modification illustrated in Fig. 13, bent members 49 of moulded concrete are illustrated for use in conjunction with a concrete floor.

In the modification illustrated in Figs. 14, 15, 16, 17 and 18, a central heating furnace 50 is shown as equipped with a smoke pipe 51 leading to a chimney 52 and an upward forced draft pipe 53 leads therefrom to the ridge member 23. A cold air intake pipe 54 leads from the corresponding sill member 20 to the cold air intake 55 of the furnace and whereby the said sill and ridge members may be utilized in conjunction with the heating of the house as will be readily understood. In this arrangement the said corresponding sill member will not be provided with openings 40. Toilet facilities 56 and 57 and 58 are also shown as connected by pipes 59, 60 and 61 with a sewer pipe 62 leading to the other end of the sill members 20 and whereby said sill member may be utilized for sewage disposal. A sink 63 is also shown as connected by pipe 64 with the corresponding sill 20 as shown. As shown in Fig. 18 the connected end of the sill 20 is sealed from the other end thereof by a partition 65 and is also inclined to afford better drainage.

While I have illustrated and described the preferred forms of construction for carrying my invention into effect, these are capable of variations and modifications without departing from the spirit of the invention. I therefore do not wish to be limited to the precise details described but desire to avail myself of such variations and modifications as fall within the scope of the appended claims.

I claim:

1. A building frame construction comprising two tubular sill members; wall and roof bents loosely supported on said sill members and extending to the ridge of the frame; a tubular ridge member loosely secured to said bents at the ridge of the frame; and means for utilizing the interiors of said sill and ridge members in association with household utilities.

2. A building frame construction comprising two tubular sill members; wall and roof bents loosely supported on said sill members and extending to the ridge of the frame; a tubular ridge member loosely secured to said bents at the ridge of the frame; and means for utilizing the interiors of said sill and ridge members for ventilating purposes.

3. A building frame construction comprising two tubular sill members; wall and roof bents loosely supported on said sill members and extending to the ridge of the frame; a tubular ridge member loosely secured to said bents at the ridge of the frame; and means for utilizing the interiors of said sill and ridge members for heating purposes.

4. A building frame construction comprising two tubular sill members; wall and roof bents loosely supported on said sill members and extending to the ridge of the frame; a tubular ridge member loosely secured to said bents at the ridge of the frame; and household conduits located in said sill and ridge members.

5. A building construction comprising a tubular sill member; wall and roof bents loosely supported on said sill member and extending to the ridge of the frame; a tubular ridge member loosely secured to said bents at the ridge of the house; wall and roof coverings secured to said bents to enclose spaces between them, there being openings in said sill and ridge members communicating with said spaces; and means for utilizing said sill and ridge members and said spaces in association with household utilities.

6. A building construction comprising a tubular sill member; wall and roof bents loosely supported on said sill member and extending to the ridge of the frame; a tubular ridge member loosely secured to said bents at the ridge of the house; wall and roof coverings secured to said bents to enclose spaces between them, there being openings in said sill and ridge members communicating with said spaces; and means for utilizing said sill and ridge members for ventilating purposes.

7. A building construction comprising two tubular sill members; wall and roof bents loosely supported on said sill members and extending to the ridge of the frame; a tubular ridge member loosely secured to said bents at the ridge of the house; wall and roof coverings secured to said bents to enclose spaces between them, there being openings in said sill and ridge members communicating with said spaces; and means for utilizing said sill and ridge members and said spaces for ventilating said house.

JOHN L. McKEOWN.