Nov. 4, 1941. J. E. ATCHESON 2,261,510

DOUBLE WALL CONSTRUCTION

Filed April 6, 1940 2 Sheets-Sheet 1

Fig. 1.

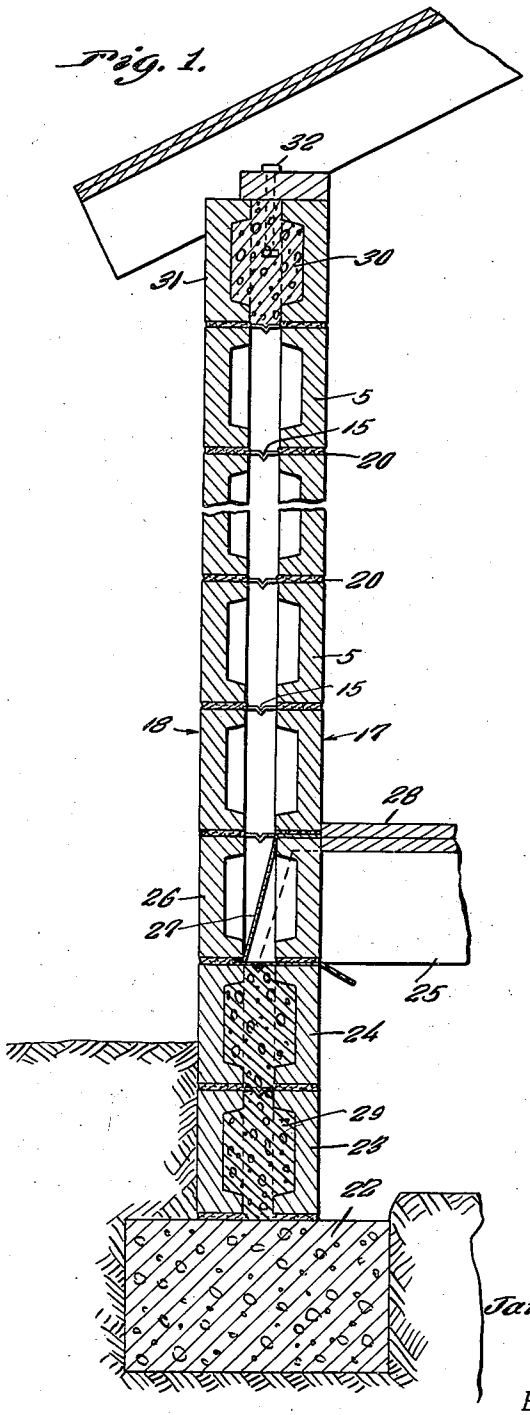


Fig. 2.

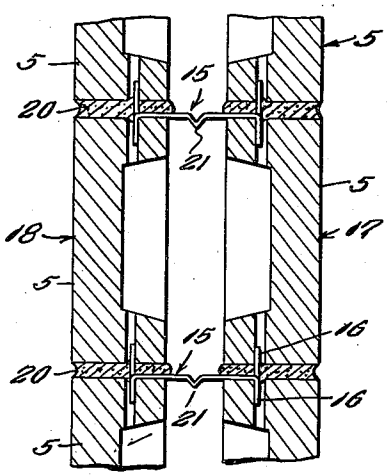


Fig. 7.

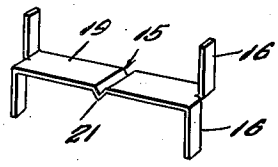


Fig. 8.

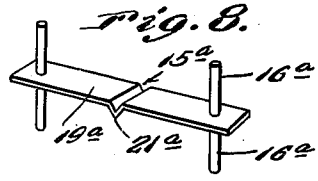
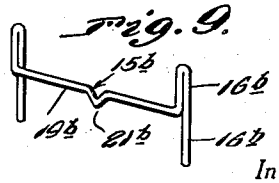


Fig. 9.



Inventor

James Edward Atcheson

By Clarence A. O'Brien

Attorney

Nov. 4, 1941. J. E. ATCHESON 2,261,510

DOUBLE WALL CONSTRUCTION

Filed April 6, 1940 2 Sheets-Sheet 2

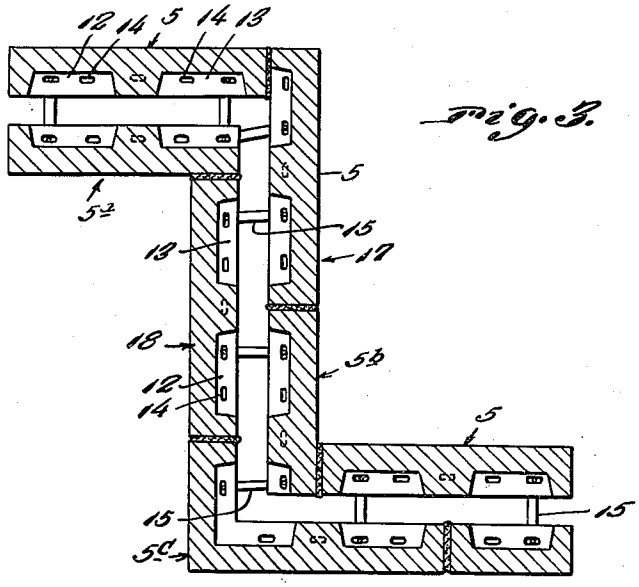


Fig. 3.

Fig. 4.

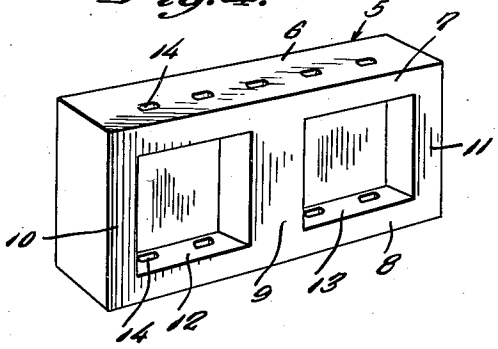
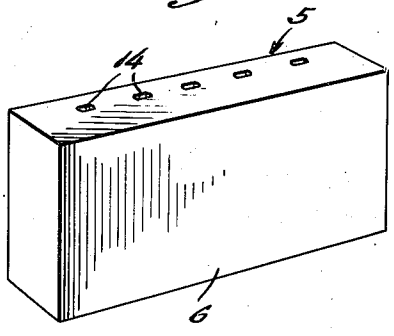


Fig. 5.



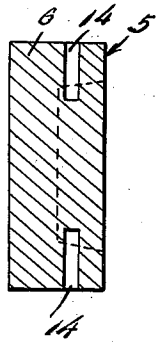


Fig. 6.

Inventor

James Edward Atcheson

By Clarence A. O'Brien

Attorney

Patented Nov. 4, 1941

2,261,510

UNITED STATES PATENT OFFICE

2,261,510

DOUBLE WALL CONSTRUCTION

James Edward Atcheson, Lubbock, Tex.

Application April 6, 1940, Serial No. 328,289

1 Claim. (Cl. 72—16)

My invention relates to improvements in double wall construction, and the primary object is to provide an arrangement of this character involving an improved type of spreader, in connection with precast blocks, whereby the wall may be built more economically, more easily, and readily varied in details to suit conditions.

Another important object of my invention is to provide double wall construction of the character indicated which facilitates use of insulation between the inner and outer walls or the installation of other provisions looking to the strengthening, damp-proofing, fire-proofing, and other special treatment of both the inner and outer walls or of one of them.

Other important objects and advantages of my invention will be apparent from a reading of the following description taken in connection with the drawings, wherein for purposes of illustration I have shown preferred embodiments of the invention.

In the drawings:

Figure 1 is a general transverse vertical sectional view taken through a double wall construction in accordance with the present invention.

Figure 2 is an enlarged vertical transverse fragmentary view taken through a double wall in accordance with the present invention to show structural details thereof.

Figure 3 is a horizontal sectional view showing a hypothetical plan arrangement of double wall construction in accordance with the present invention.

Figure 4 is a back view of one of the preformed units.

Figure 5 is a front elevational view of Figure 4.

Figure 6 is a transverse vertical sectional view taken approximately centrally through Figure 4.

Figure 7 is a perspective view of a preferred form of spreader.

Figure 8 is a perspective view of another form of spreader.

Figure 9 is a perspective view of a still further form of spreader.

Referring in detail to the drawings, the numeral **5** generally designates a typical unit or block in accordance with the present invention which is to have a size and shape and surfacing in accordance with requirements. The block **5** is capable of shortening and also of deformation to meet specific conditions, as is evident in the cases of the block **5***a*, shown in Figure 3 of the drawings, which is abbreviated at one end, the block **5***b* which is approximately a half length block, and the corner block **5***c* which has a special extension to accommodate the construction.

The blocks **5** consist essentially of a body **6** of suitable material for the type of wall to be constructed, the said material capable of being cut on the job or precut, or preformed to assume the different forms suggested, but every block being characterized by upper and lower flanges **7** and **8**, respectively, a middle vertical rib **9** and end vertical ribs **10** and **11** which are spaced on the opposite sides of the middle rib **9** to define concavities **12** and **13** in the case of the blocks **5**. For the purposes of the invention, while the three rib type of block will find most common use, the blocks may be provided with any desired number of ribs and flanges in accordance with the size of the blocks and structural requirements. In the upper and lower flanges **7** and **8** and distributed longitudinally therealong in registered pairs are the upper and lower holes **14** which are arranged to receive the vertical, oppositely extending ears **16** on the spreader **15**, or the ears **16***a* on the spreader **15***a*, or the similar ears **16***b* on the opposite ends of the spreader **15***b* in the manner indicated in Figure 2 of the drawings whereby the inner and outer walls generally designated **17** and **18**, respectively, are positively held in a spread and assembled condition, with the flat longitudinal plates **19** of the spreader lying between the bottom of the upper blocks and the top of the blocks immediately below, with the mortar **20** connecting the blocks and the spreaders and sealing all openings therebetween. In the center of the plate **19** of the spreader is a V-shaped drip **21** which acts to prevent travel of moisture along the spreader from the outer to the inner wall.

The spreader **15***a* shown in Figure 8 of the drawings, involves a flat plate **19***a* with a middle drip **21***a*, but instead of having ears cut in its opposite ends and bent in opposite directions, short rods constitute the fingers **16***a*.

In the form of spreader shown in Figure 9 of the drawings, the same is made entirely of rod and the longitudinal-rod **19***b* corresponding to the flat plates in the other forms of spreaders has also a drip indentation **21***b*. In this form of spreader the opposite ends of the rod are closely hairpin bent to provide the oppositely projecting fingers **16***b*.

It will be observed that in the case of each of the spreaders, the usual inadequacies of reliance on friction or grip of the mortar to hold the spreaders in place and maintain the positions of the inner and outer walls are not re-

lied on, but a structurally sound positive mechanical connection is achieved by the ears 16 engaging in the holes 14 in the blocks, which is supplemented also by friction and the grip of the mortar on the plate 19 of the spreaders. It is obvious that spreaders of various widths and lengths and weights may be provided as required or desired, and that the size and shape of the holes 14 may also be varied.

Referring to Figure 1 of the drawings, a typical double wall construction in accordance with the invention is shown as comprising a concrete foundation 22 on which a lower course 23 of blocks 5 is laid and on top of this another course 24 which reaches to the level of the floor joists 25 with the floor joists 25 projecting into the next course 26 and being protected by a plate 27 which is angulated to decline toward the outer wall 18 away from the inner wall 17. The flooring 28 is thereby protected against any moisture which might drip from the spreaders 15, such moisture being deflected by the plates 27 toward the outside of the wall. The plates 27 also function as termite shields. A reinforced concrete stem is produced below the level of the floor joists 25 by filling in the space between the inner and outer walls with concrete or the like as indicated by the numeral 29. The units 5 form an outer shell for the stem and render the usual wood forms unnecessary for producing the concrete stem. The flanges 7 and 8 of the units and the spreaders with the concrete 29 produce a very solid and compact stem. A concrete tie-beam 30 is formed like the lower courses 23 and 24 by filling the space between the units of the upper course 31 with concrete or the like and is advantageously formed at floor and ceiling levels by being poured on metal laths, so that no forms are required and the tie-beam 30 is entirely concealed.

Although I have shown and described herein preferred embodiments of my invention, it is to be definitely understood that I do not desire to limit the application of the invention to the specific arrangement and association of parts set forth herein, except as required by the scope of the subjoined claim.

Having described the invention, what I claim as new is:

In a wall construction, inner and outer spaced walls each including courses of opposed spaced blocks, tie means connecting the blocks of the inner and outer walls of each course, said blocks of the inner and outer walls having recesses in opposing faces, some of the blocks of one of the courses of the inner wall being spaced to permit floor joists to extend into the space between the inner and outer walls, shield plates arranged between the inner and outer walls opposite the ends of the floor joists and inclined downwardly and outwardly towards the outer wall to deflect moisture away from said joists toward the outside of the wall, plastic material filling the spaces between the blocks of the inner and outer walls and extending from one course to another below the floor joists, and plastic material filling the spaces between the blocks of the uppermost course.

JAMES E. ATCHESON.