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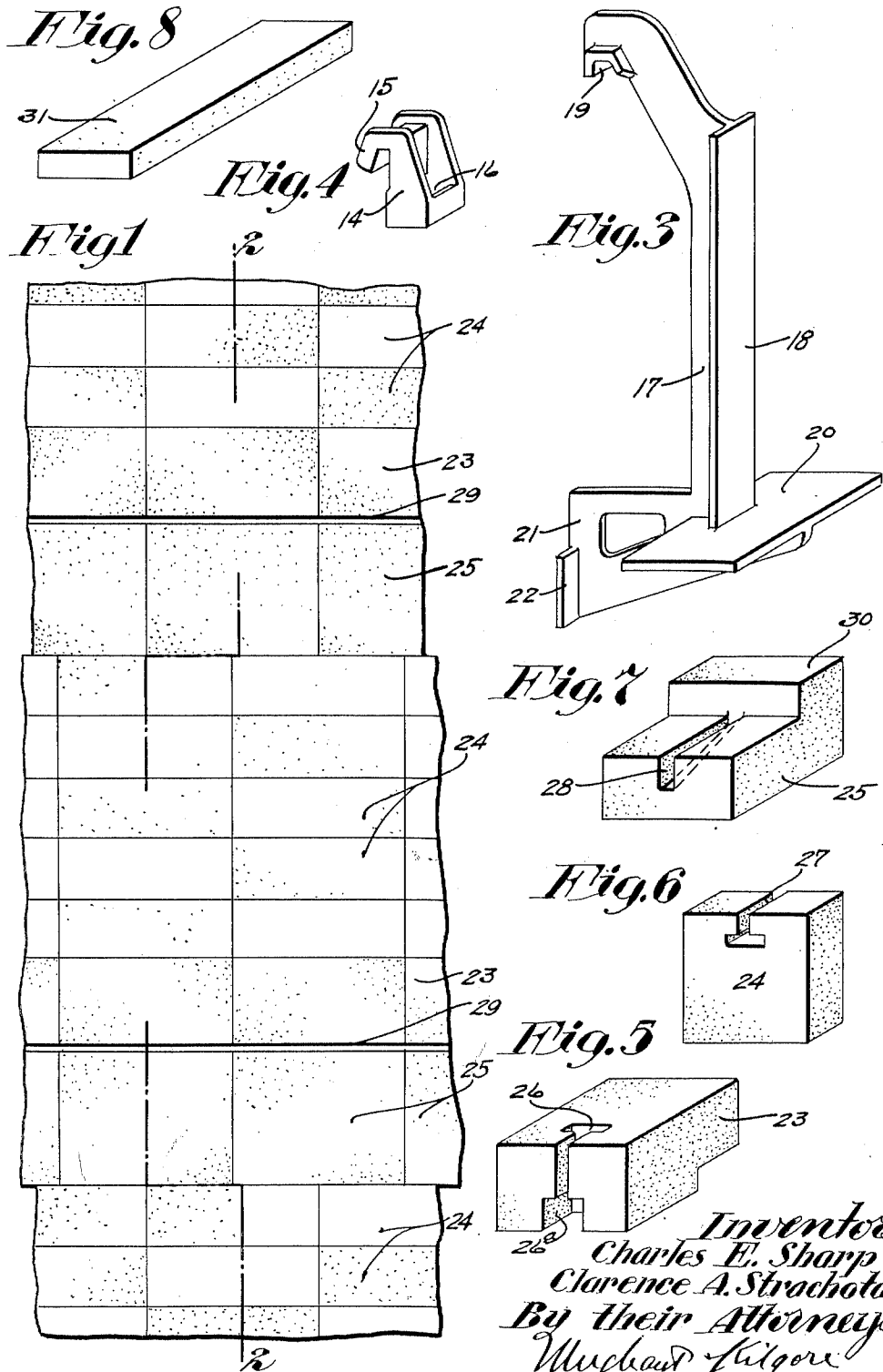
C. E. SHARP ET AL

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FURNACE WALL

Filed April 27, 1925

2 Sheets-Sheet 1



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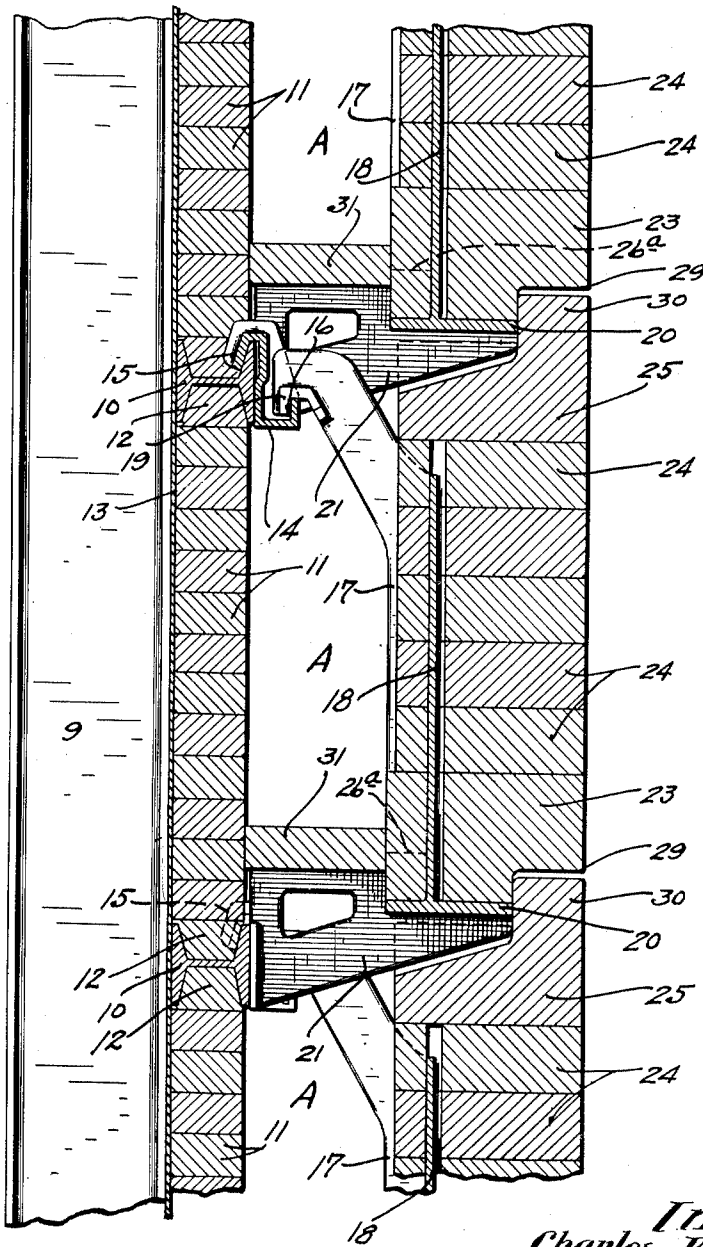
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Fig. 2



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UNITED STATES PATENT OFFICE.

CHARLES E. SHARP AND CLARENCE A. STRACHOTA, OF MEXICO, MISSOURI, ASSIGNORS, BY MESNE ASSIGNMENTS, TO BIGELOW-LIPTAK CORPORATION, OF DETROIT, MICHIGAN, A CORPORATION OF MICHIGAN.

FURNACE WALL.

Application filed April 27, 1925. Serial No. 26,274.

Our invention provides an improvement in furnace walls or walls adapted to stand high temperatures, and, more particularly, to that type of wall structure that comprises a permanent outer wall and a replaceable inner wall. The invention is directed chiefly to improved means for replaceably supporting blocks of the inner wall from the permanent or outer wall.

Generally stated, the invention consists of the novel devices and combinations of devices hereinafter described and defined in the claims.

In the accompanying drawings, which illustrate the invention, like characters indicate like parts throughout the several views.

Referring to the drawings:

Fig. 1 is an elevation showing a portion of the improved wall structure, looking at the inner face thereof;

Fig. 2 is a vertical section taken approximately on the irregular line 2—2 of Fig. 1, some parts being broken away;

Fig. 3 is a perspective showing in detail one of the metallic hanger brackets;

Fig. 4 is a perspective showing in detail one of the bracket anchors;

Fig. 5 is a detail in perspective showing one of the base blocks of the inner wall;

Fig. 6 is a perspective showing in detail one of the belt-forming blocks of the inner wall;

Fig. 7 is a detail in perspective showing one of the crown blocks of the inner wall; and

Fig. 8 is a perspective showing one of the horizontal partition blocks or plates.

The outer wall structure includes upright beams or buckstays 9, preferably I-beams or channel irons, vertically spaced horizontal beams 10, preferably I-beams, and outer wall blocks or bricks 11 and 12. The beams 10 are bolted or otherwise rigidly secured to the buckstays 9 and, as shown, an outer sheet metal casing 13 is interposed between the said beams 9 and 10 to form a covering for the brickwork 11 and 12. The bricks or blocks 11 may be common bricks laid in any suitable way but, as shown, are laid as headers. The upper and lower bricks or blocks 12 are beveled to fit the channels of the I-beams 10.

For supporting the blocks or tile members of the replaceable inner wall, we pro-

vide hanger brackets and cooperating bracket anchors, both of which are preferably of cast iron. The bracket anchors 14 are preferably flanged for strength and are formed at their upper extremities with hook-acting lock flanges 15 and at their lower extremities with pockets 16. These anchors 14 are adapted to be hung on the upturned inner flanges of the horizontal I-beams 10 and, as is obvious, they could be likewise hung on upturned flanges of channel beams. When thus hung, the bracket anchors will bear against the inner faces of the respective beams 10, as best shown in Fig. 2, by reference to which it will be noted that certain of the blocks 11 and 12 have been chipped away or removed to afford clearance for the flanged upper portions of the anchors, and that the anchors are, by the said blocks, locked in working positions or against accidental removal.

The hanger brackets 17 are T-shaped in horizontal cross section, that is, they are provided with laterally projecting retaining flanges 18. The extreme upper portions of said brackets are extended obliquely to the vertical body portions and are terminated in hook-acting lock flanges 19 that are adapted to be seated in the pockets 16 of the respective anchors 14. At their lower portions, the brackets 17 are formed with horizontal shelves or bearing plates 20 and with outwardly projected stop webs 21 shown as formed with bearing flanges 22, which latter are arranged to bear directly against the inner faces of the horizontally aligned I-beams 10.

As best illustrated in Fig. 1, the replaceable inner wall is made up of blocks or tiles laid in horizontal belts with the blocks of the adjacent belts staggered and, hence, the cooperating hanger brackets 17 of the several belts will also be staggered. Each of the said belts is, as shown, made up of base blocks 23, intermediate blocks 24 and crown blocks 25. The base blocks 23 are formed with vertical T-shaped slots 26 that adapt them to be threaded or slid onto the retaining flanges 18 of the respective hanger brackets. These base blocks rest directly on the shelves 20 of said brackets. The intermediate blocks 24 are also formed with vertical T-shaped slots 27 that adapt them to be threaded or slid onto the said

retaining flanges 18. The crown blocks 25 are horizontally slid into position on top of the upper layer of blocks 24 and, to clear the webs 21 of the respective hanger brackets 17, they are formed with channels 28.

It should now be noted that the base blocks 23 are provided with notches 29 and that the crown blocks 25 are provided with upstanding portions 30 that are overlapped with the notched portions of the adjacent base blocks 23, so that they protect the metallic shelves 20 and the webs 21 of the hanger brackets 17. Also, it will be noted that there is clearance between the blocks 30 and the brackets and blocks 23, so that each belt is independently supported and capable of limited vertical movements to take care of uneven expansion and contraction of the metallic and non-metallic parts of the wall. By reference to Fig. 5, it will be noted that the lower portions of the T-shaped slots 26 of the base blocks 23 are widened at 26^a so that the said blocks, which are quite deep, can be freely moved horizontally from working positions when moved vertically on the guide flanges 18 of the brackets 17 upward to points where the narrow portions of the slots 26 are above said flanges 18. The horizontal partition blocks or plates 31 are laid on the upper edges of the webs 21 of the brackets 17 and thus divide the space between the inner and outer walls into separated horizontal air channels A. The blocks or plates 31 are preferably made long enough to span and rest upon the webs of two adjacent brackets.

With the arrangement described, the bracket anchors 14 are, as already indicated, permanently hung on or applied to the cooperating beams 10. This permits the brackets 17, as well as the inner wall elements, to be

placed from time to time without disturbing the outer wall.

What we claim is:

1. A wall structure comprising a relatively permanent outer wall and a replaceable inner wall, metallic members permanently incorporated in said outer wall, metallic anchors having hook-like portions interlocked to said permanently incorporated metallic members, hanger brackets having hook-like portions interlocked with and detachably hung from said anchors, said permanently incorporated metallic members having flanges that interlock with the hook-like portions of said anchors, and said anchors having flanges that interlock with the hook-like portions of said hanger brackets, and blocks laid in belts and supported by said hanger brackets.

2. A wall structure comprising a relatively permanent outer wall having horizontal flanged metal beams incorporated therein, metallic anchors having hook-like portions applied to the flanges of said beams and projecting from said outer wall, and hanger brackets having hook-like upper ends detachably interlocked to said anchors, said permanently incorporated metallic members having flanges that interlock with the hook-like portions of said anchors, and said anchors having flanges that interlock with the hook-like portions of said hanger brackets, said brackets at their lower portions having shelves, and blocks laid in belts and supported on the shelves of said brackets and constituting a replaceable inner wall.

In testimony whereof we affix our signatures.

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