July 10, 1928. 1,676,385

D. M. COLWELL

STRUCTURAL BLOCK

Filed Jan. 11, 1928

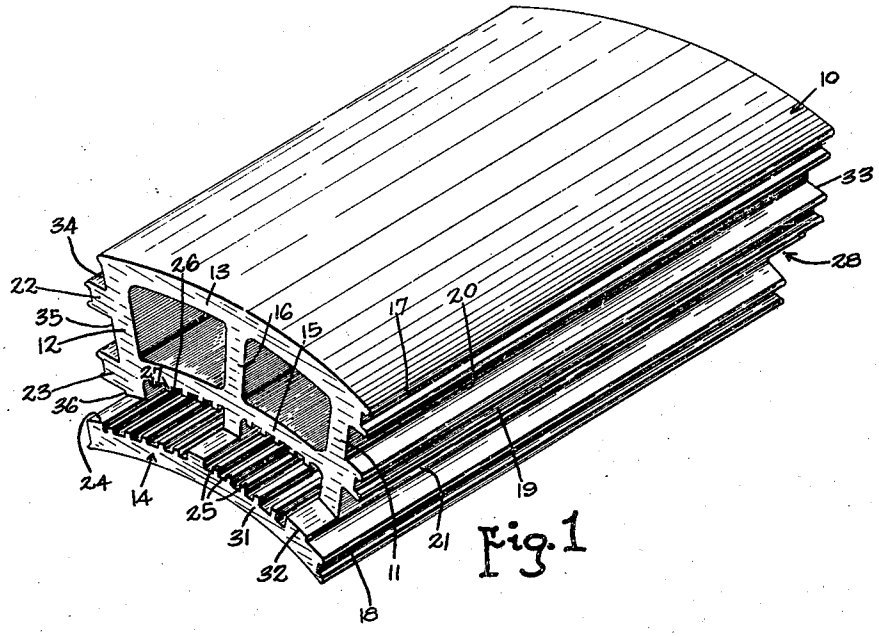



Fig. 1

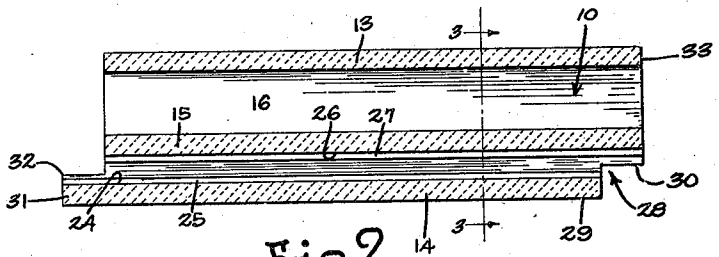



Fig. 2

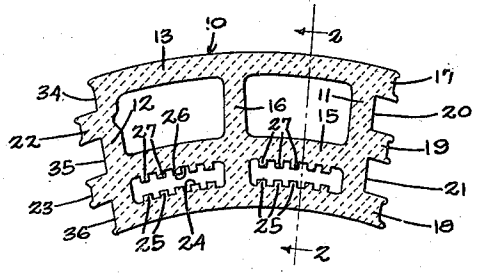



Fig. 3

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# UNITED STATES PATENT OFFICE.

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## STRUCTURAL BLOCK.

Application filed January 11, 1928. Serial No. 245,823.

My invention relates to structural blocks, particularly structural blocks for forming a tubular structure, such as a sewer, and the principal object of my invention is to provide a new and improved block of this type. In the drawings accompanying this specification and forming a part of this application I have shown, for purposes of illustration, one form which my invention may assume, and in these drawings:

Figure 1 is a perspective of the embodiment of my invention herein shown,

Figure 2 is a longitudinal section taken on the line 2—2 of Figure 3, while

Figure 3 is a transverse section taken on the line 3—3 of Figure 2.

The structural block 10 herein shown comprises a first radial side 11, a second radial side 12, an outer circumferential wall 13 connecting the sides 11 and 12 at the outer edges thereof, an inner circumferential wall 14 connecting the sides 11 and 12 at the inner edges thereof, and an intermediate circumferential wall 15 connecting the sides 11 and 12 intermediate their inner and outer edges, also the block herein shown comprises a radial bracing wall 16 connecting the three circumferential walls 13 and 14 and 15 intermediate the radial sides 11 and 12.

Extending from the exterior face of the side 11 are three longitudinal ribs, a top rib 17 positioned at the outer edge of the side 11, a bottom rib 18 positioned at the inner edge of the side 11, and a center rib 19 positioned intermediate the top and bottom ribs 17 and 18 and defining with the top rib 17 an outer longitudinal groove 20 and with the bottom rib 18 an inner longitudinal groove 21, and the side 12 is provided with an outer longitudinal rib 22 positioned to fit into the outer longitudinal groove 20 of a like block 10, and with an inner longitudinal rib 23 positioned to fit into the inner longitudinal groove 21 of such like block 10.

Formed on the outer face 24 of the inner circumferential wall 14 are a plurality of mortar anchoring ridges 25, and formed on the inner face 26 of the intermediate circumferential wall 15 are a plurality of similar mortar anchoring ridges 27, while formed at one end of the block 10 is a recess 28 extending entirely across the end of the block and extending into the block from the inner face 29 of the inner circumferential wall 14 to a point 30 intermediate the top of the ridges 25 on the outer face 24 of the inner circumferential wall 14 and the top of the ridges 27 on the inner face 26 of the intermediate circumferential wall 15, and formed on the other end of the block 10 is a tongue 31 also extending across the end of the block 10 and extending from the inner face 29 of the inner circumferential wall 14 outwardly to a point 32 disposed somewhat inwardly of the point 30 to which the recesses 28 extend, wherefore the tongue 31 is positioned to form a ship-lap joint with the projection 33 formed by the recess 28 of a like block 10, and to form a ship-lap joint wherein there is left between the tongue 31 of the one block 10 and the projection 33 of the other block 10 a small space in which may be positioned mortar lying in gripping relation with the ridges 25 of the tongue 31 of the one block 10 and with the ridges 27 of the projection 33 of the other block 10 and therefore particularly effective to hold each block 10 firmly engaged with the longitudinally adjacent blocks 10 tightly sealed thereto.

In this connection it also may be pointed out that the longitudinal ribs 22 and 23 are of somewhat less extent than the longitudinal grooves 20 and 21 into which the ribs 22 and 23 enter, and that correspondingly the ribs 17 and 19 and 18 are of somewhat less extent than the grooves 34 and 35 and 36 defined by the longitudinal ribs 22 and 23, so that mortar may be inserted between each block 10 and the circumferentially adjacent blocks 10, also that the various ribs 17 and 19 and 18 and 22 and 23 all are ridged to increase the surface on which the mortar may grip, so that the mortar may be effective to hold each block 10 firmly united and tightly sealed also to the circumferentially adjacent blocks 10, wherefore the various blocks 10 may be firmly united into a tightly sealed tube.

It also will be noted that in the particular block 10 herein disclosed the intermediate rib 15 is positioned to overlap both the center rib 19 and the inner rib 23 to form a direct strut between these two ribs to offer the maximum resistance to crushing of the block by pressure applied to or at these ribs.

From the foregoing it will be apparent to those skilled in the art that I have provided a new and improved block particularly suited for the purpose specified.

At the same time those skilled in the art will realize that this block may be employed for other purposes than those set forth or suggested herein, and that this block possesses advantages other than those set forth or suggested herein, also that the particular block herein shown may be variously changed and modified without sacrificing these advantages, or departing from the spirit of my invention, wherefore it will be understood that the disclosure herein is illustrative only, and that my invention is not limited thereto.

I claim:

1. A structural block, for forming a tubular structure, such as a sewer, comprising: a first radial side provided with a top longitudinal rib, a bottom longitudinal rib, and a center longitudinal rib, said top and center ribs forming between them an outer longitudinal groove, and said center and bottom ribs forming between them an inner longitudinal groove; a second radial side provided with an outer longitudinal rib positioned to fit into said outer longitudinal groove of a like block and an inner longitudinal rib positioned to fit into said inner longitudinal groove of said like block; an outer circumferential wall connecting said sides at the outer edges thereof; an inner circumferential wall connecting said sides at the inner edges thereof; and a single intermediate circumferential wall connecting said sides intermediate said outer wall and said inner wall overlapping at said first side said center rib and at said second side said inner rib.

2. A structural block, for forming a tubular structure, such as a sewer, comprising: a first radial side provided with a top longitudinal rib, a bottom longitudinal rib, and a center longitudinal rib, said top and center ribs forming between them an outer longitudinal groove, and said center and bottom ribs forming between them an inner longitudinal groove; a second radial side provided with an outer longitudinal rib positioned to fit into said outer longitudinal groove of a like block and an inner longitudinal rib positioned to fit into said inner longitudinal groove of said like block; an outer circumferential wall connecting said sides at the outer edges thereof; an inner circumferential wall connecting said sides at the inner edges thereof and provided on its outer face with mortar-anchoring ridges; and a single intermediate circumferential wall connecting said sides intermediate said outer wall and said inner wall and provided on its inner face with mortar-anchoring ridges; said block being provided at one end with a recess extending across said block and extending into said block from the inner face of said block to a point between the top of the ridges on the outer face of said inner wall and the top of the ridges on the inner face of said intermediate wall, and at the other end with a tongue which is positioned to form a ship-lap joint with said recess of a like block but is of somewhat less thickness than the depth of said recess to provide a mortar space therebetween.

In testimony whereof I hereunto affix my signature.

DAVID M. COLWELL.