

July 17, 1923.

1,462,374

L. V. METZ
CONCRETE BLOCK

Filed March 16, 1922

2 Sheets-Sheet 1

Fig. 1.

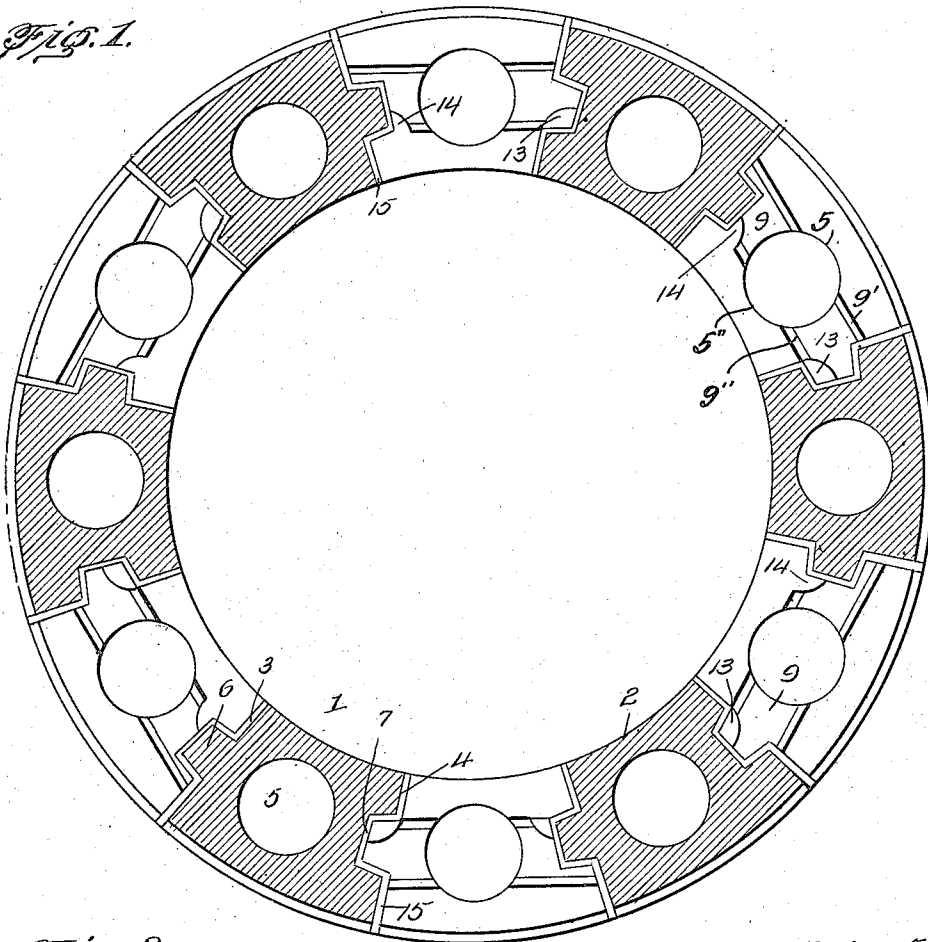


Fig. 2.

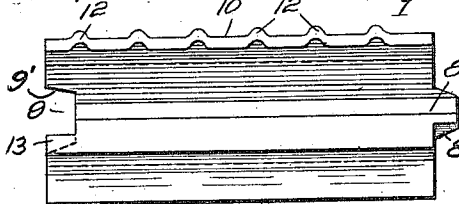


Fig. 3.

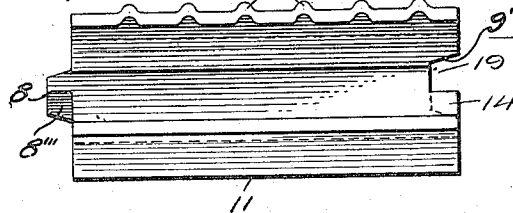


Fig. 4.

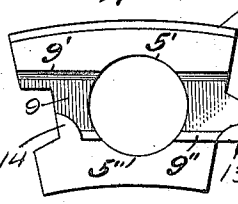
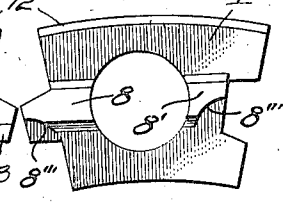


Fig. 5.



L. V. Metz.

INVENTOR.

BY
Geo. P. Kimmel.
ATTORNEY.

July 17, 1923.

1,462,374

L. V. METZ

CONCRETE BLOCK

Filed March 16, 1922

2 Sheets-Sheet 2

Fig. 6.

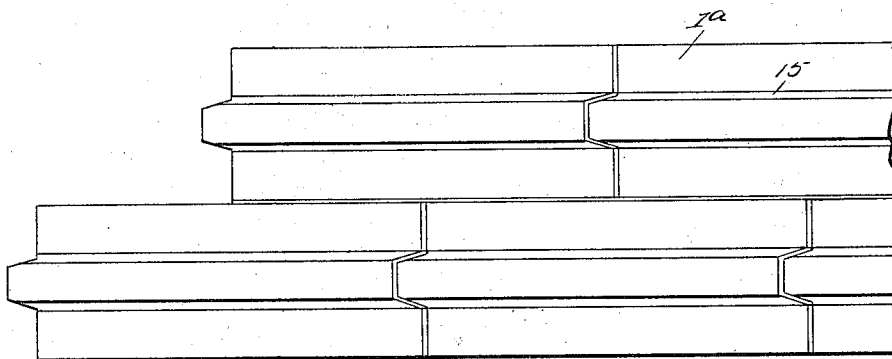


Fig. 7.

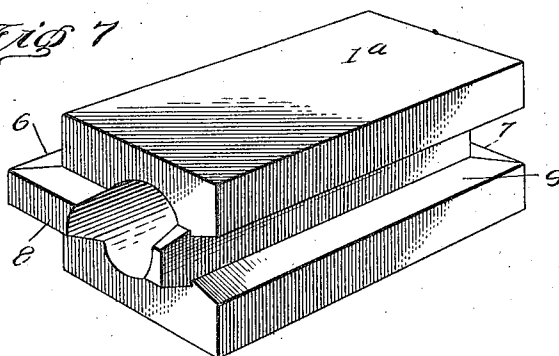


Fig. 8.

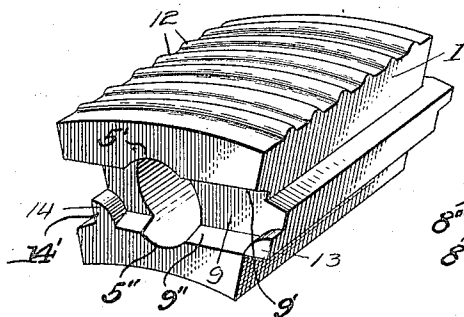
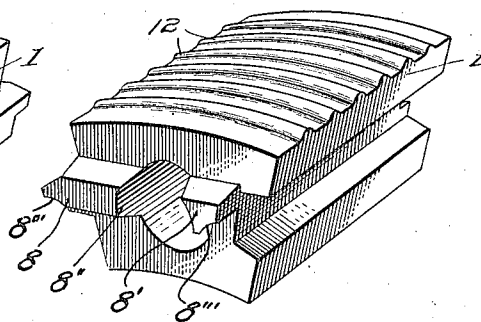


Fig. 9.



L. V. Metz.

INVENTOR.

BY

Geot. Kimmel.
ATTORNEY.

Patented July 17, 1923.

1,462,374

UNITED STATES PATENT OFFICE.

LEO VINCENT METZ, OF ERIE, PENNSYLVANIA.

CONCRETE BLOCK.

Application filed March 16, 1922. Serial No. 544,119.

To all whom it may concern:

Be it known that I, LEO VINCENT METZ, a citizen of the United States, residing at Erie, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Concrete Blocks, of which the following is a specification.

This invention has reference to concrete blocks for building purposes and more particularly concrete blocks of segmental shape, although for some purposes the blocks may be of rectangular outline.

The invention has to do with concrete or cement blocks for fabrication into walls of different thicknesses and of one or many courses with the blocks interfitting and held together by intermediate layers of mortar or other cementitious material, either joining the blocks together at abutting portions and arranged about a common axis as in the formation of drains or the like, or where the blocks are arranged in courses with the sides and ends of the blocks in contact and also the faces of the blocks in contact.

In the preferred form of the invention, the cement blocks are each of segmental form with a tongue along one long edge and a groove along the other long edge so that the blocks may be assembled in interlocking engagement and the ends of the blocks, these blocks being longer in one direction than in the other, are likewise capable of interlocking. Extended lengthwise through the block is a centrally disposed duct so that when the blocks are placed end to end, the ducts will coalesce into a long or unbroken passageway with the walls of the passageway sufficiently thick to impart the requisite strength to the structure made up of the blocks.

In the segmental form of the invention, one face, preferably the outer face of the block is formed with numerous parallel reinforcing ribs having the function of preventing the blocks from slipping in the moulds when green concrete is in course of transportation between the moulding machine and the drying or curing shed.

The invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawings forming part of this specification with the understanding that the invention is not confined to any strict conformity with the showing of the

drawing but may be changed and modified so long as such changes and modifications mark no material departure from the salient features of the invention as expressed in the appended claims.

In the drawings:—

Figure 1 is a cross section through a pipe-like structure made up of a plurality of segmental blocks joined end to end and side to side in the form of a pipe, these blocks being arranged in alternation about the longitudinal center line of the pipe.

Fig. 2 is a side elevation of one of the blocks, with surface reinforcing ribs.

Fig. 3 is a view similar to Fig. 2, but showing the opposite edge view of the block of Fig. 2.

Fig. 4 is an end view of the block of Fig. 2.

Fig. 5 is an opposite end view of the block of Fig. 2.

Fig. 6 is a side elevation of an assembly of rectangular blocks constituting a portion of a wall.

Fig. 7 is a perspective view of one of the blocks.

Fig. 8 is a perspective view from one end of the block illustrated in Fig. 2.

Fig. 9 is a similar perspective view taken from the other end thereof and appearing more particularly in Fig. 3.

Since the concrete blocks are all alike it is only necessary to describe one block for the description will apply to all the blocks employed, especially as to the manner of constructing these blocks.

In forming the blocks, the usual procedure of fabricating concrete blocks is followed and in itself does not form any part of the invention.

Referring to the drawings, which all relate to the same general form of blocks, there is shown a block 1 of generally elongated segmental form and adapted particularly to be assembled into the shape of a pipe or duct with numerous of the blocks 1 grouped about a common axis. Each block comprises a body member 2 of somewhat elongated contour with meeting sides 3 and 4 arranged generally on radii meeting at the center of the pipe or drain made up of a suitable number of blocks 1.

Extending centrally and longitudinally through each block 1 is a passage 5, preferably though not necessarily of tubular outline. The passages or holes 5 are long

enough to extend completely through each block 1 midway of the sides and top and bottom surfaces of the block and may be used as an air duct or drainage duct in wet trench or for other purposes. Otherwise than that as stated the block is solid.

One end of the block is formed centrally with a transverse groove 9, intersecting the opening 5, and with the upper wall 9' and lower wall 9'' of the groove 9 provided intermediate the ends thereof with a curved portion, and the said curved portions are indicated at 5', 5'', and form continuations of the wall of the opening 5. The remaining portions of the walls 9', 9'' are bevelled. The lower wall 9'' of the groove 9, at one end terminates in an upwardly extending projection 14, having a curved inner side, and the other end of the bottom wall 9'' of the groove 9 merges into an upwardly disposed projection 13, having its inner side curved. The projection 14, is integral with the body 2, and the projection 13 is not only integral with the body 2, but also with the tongue 6 to be presently referred to. The inner sides of the projections 13, 14, are oppositely disposed with respect to each other. The projection 14, is overhung by one end of the top wall 9' of the groove 9.

Formed integral with the other end of the block 1, centrally thereof, is a transversely extending bevelled split tongue, formed of two sections, and with one of the sections thereof indicated at 8, and the other section at 8'. The section 8 of the split tongue, projects beyond one side of the body portion 2, of the block 1 and said section 8, is of greater length than the section 8'. The inner side of each of the sections 8, 8', is curved as at 8'', and the said inner sides of the sections 8, 8' form continuations of the wall of the opening 5. The bottom of each of the sections 8, 8' at the outer ends is undercut as at 8'''. The undercuts 8''' are oppositely disposed with respect to each other and correspond in contour to the inner sides of the projections 13, 14.

The inner sides of the sections 8, 8' of the transverse split tongue are disposed at right angles with respect to the curved portions 5', 5'' of the top and lower walls of the groove 9, so that when a transverse tongue is inserted in a transverse groove the wall of the opening 5, will be extended to the end of the block.

One side of the block 1, centrally thereof, is formed with a longitudinal groove 7, having the upper and lower walls thereof bevelled. One end of the groove 9 merges into the groove 7, at one end thereof, above the projection 14, and the outer face 14' of the latter forms one end terminal portion of the inner wall of the groove 7.

The other side of the block 1, centrally thereof, is formed with the tongue 6, the

latter is integral with the body portion 2 of the block and extends longitudinally thereof. The tongue 6, is bevelled and has the portion 8 of the split tongue integral with one end thereof.

The groove 7 of one block is adapted to receive the longitudinal tongue 6 of an adjacent block and the shape of the tongue corresponds in contour to the shape of the groove.

Wherever the block comes into contact there is introduced a layer 15 of mortar or other appropriate cementitious material co-acting with the contacting surfaces of the blocks to effectively anchor the blocks together longitudinally and circumferentially.

The segmental blocks are intended more particularly for curved contours, such as are found in drain pipes and the like, with the passages 5 for use as supplemental ducts.

In the structure shown in Figs. 6 and 7, the block 1^a therein shown has side and end tongues 6 and 8, respectively, and side and end grooves 7 and 9, respectively, but the blocks, instead of being segmental are shown as of rectangular shape and are particularly adapted for the building of walls or the like, and these walls may include several courses similar to the formation of brick walls with mortar layers between them, or they may be laid up endwise with tongue 6 and groove 9 upwards.

The structure shown in Fig. 1 is particularly adapted for drain or sewer pipes with the blocks of which the pipe is made interlocking and of particularly rigid and resistant construction. The interior of the sewer pipe is utilized for the carrying of various fluids while the walls composed of the blocks 1, provide numerous ducts for various purposes, among which the holes or passages 5 may be utilized for the carrying of electric conductors, gas pipes and for other like purposes, or drainage.

What is claimed is:—

1. A concrete block comprising a body portion formed with a lengthwise opening and transverse groove at one end intersecting said opening, the upper and lower walls of said groove having curved portions forming continuations of the wall of said opening, said body portion further having its other end formed with a transversely extending split tongue conforming in contour to the contour of said transverse groove and with the inner side of each section of the tongue shaped to form a continuation of the wall of said opening, one of the sections of said split tongue projecting beyond one side of the body portion, said body portion further having one of its sides formed with a longitudinally extending tongue having one end integral with one of the sections of the transverse tongue and its other end provided with a projection positioned at one end of

the transverse groove, said body portion having at its other side a longitudinal groove conforming in contour to the shape of the longitudinal tongue and further
5 formed with a projection at that end provided with a transverse groove, and said transverse tongue being undercut for seating on said projections.

2. A concrete block comprising a body
10 portion formed with a lengthwise opening and a transverse groove at one end intersecting said opening, the upper and lower walls of said groove having curved portions forming continuations of the wall of said
15 opening, said body portion further having its other end formed with a transversely extending split tongue conforming in contour to the contour of said transverse groove and with the inner side of each section of the
20 tongue shaped to form a continuation of the wall of said opening, one of the sections of said split tongue projecting beyond one side of the body portion, said body portion further having one of its sides formed with a
25 longitudinally extending tongue having one end integral with one of the sections of the transverse tongue and its other end provided with a projection positioned at one end of the transverse groove, said body portion
30 having at its other side a longitudinal groove conforming in contour to the shape of the longitudinal tongue and further formed with a projection at that end provided with a transverse groove, and said transverse
35 tongue being undercut for seating on said projections, said opening being arranged centrally of said body portion and the inner faces of the sections of the transverse tongue forming continuations of the curved portions in the upper and lower walls of the
40 transverse groove.

3. A concrete block comprising a body
portion formed with a lengthwise opening and transverse groove at one end intersecting
45 said opening, the upper and lower walls of said groove having curved portions forming continuations of the wall of said opening, said body portion further having its other end formed with a transversely extending
50 split tongue conforming in contour to the contour of said transverse groove and with the inner side of each section of the tongue shaped to form a continuation of the wall of

said opening, one of the sections of said
split tongue projecting beyond one side of
55 the body portion, said body portion further having one of its sides formed with a longitudinally extending tongue having one end integral with one of the sections of the transverse tongue and its other end provided with
60 a projection positioned at one end of the transverse groove, said body portion having at its other side a longitudinal groove conforming in contour to the shape of the longitudinal tongue and further formed with a
65 projection at that end provided with a transverse groove, and said transverse tongue being undercut for seating on said projections, said transverse groove opening into said longitudinal groove above that projection
70 integral with one end of said body portion and the said projection having its outer face forming one end terminal of the inner wall of the longitudinal groove.

4. A concrete block comprising a body
75 portion formed with a lengthwise opening and transverse groove at one end intersecting said opening, the upper and lower walls of said groove having curved portions forming continuations of the wall of said opening, said body portion further having its
80 other end formed with a transversely extending split tongue conforming in contour to the contour of said transverse groove and with the inner side of each section of the tongue shaped to form a continuation of the wall of said opening, one of the sections of
85 said split tongue projecting beyond one side of the body portion, said body portion further having one of its sides formed with a longitudinally extending tongue having one end integral with one of the sections of the transverse tongue and its other end provided
90 with a projection positioned at one end of the transverse groove, said body portion having at its other side a longitudinal groove conforming in contour to the shape of the longitudinal tongue and further formed with a projection at that end provided with
95 a transverse groove, and said transverse tongue being undercut for seating on said projections, said tongue being bevelled and said projection having curved inner sides.
100

In testimony whereof, I affix my signature hereto.

L. VINCENT METZ.