

J. M. CARMEAN.  
HOLLOW TILE.  
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955,847.

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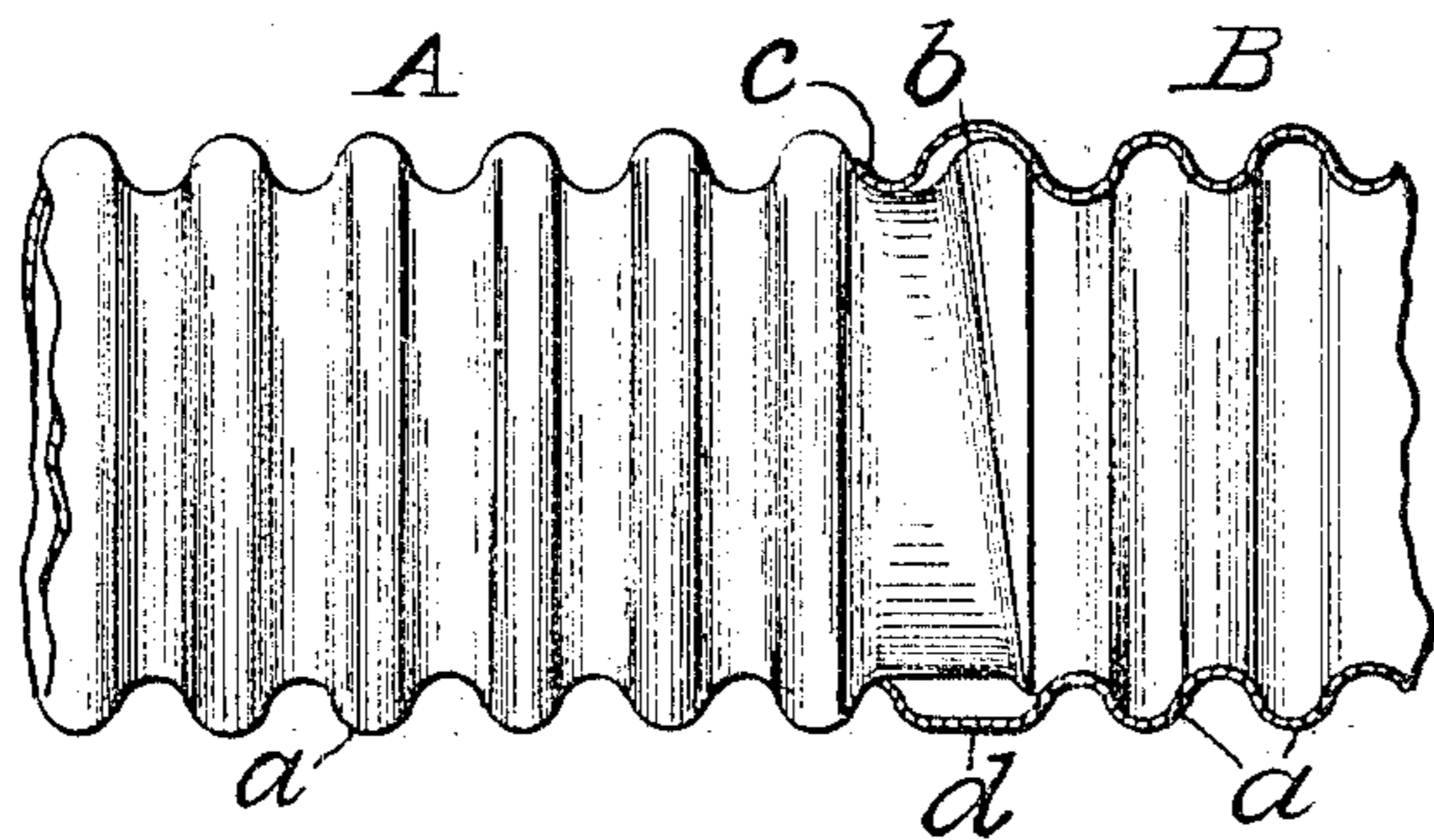


Fig. 1.

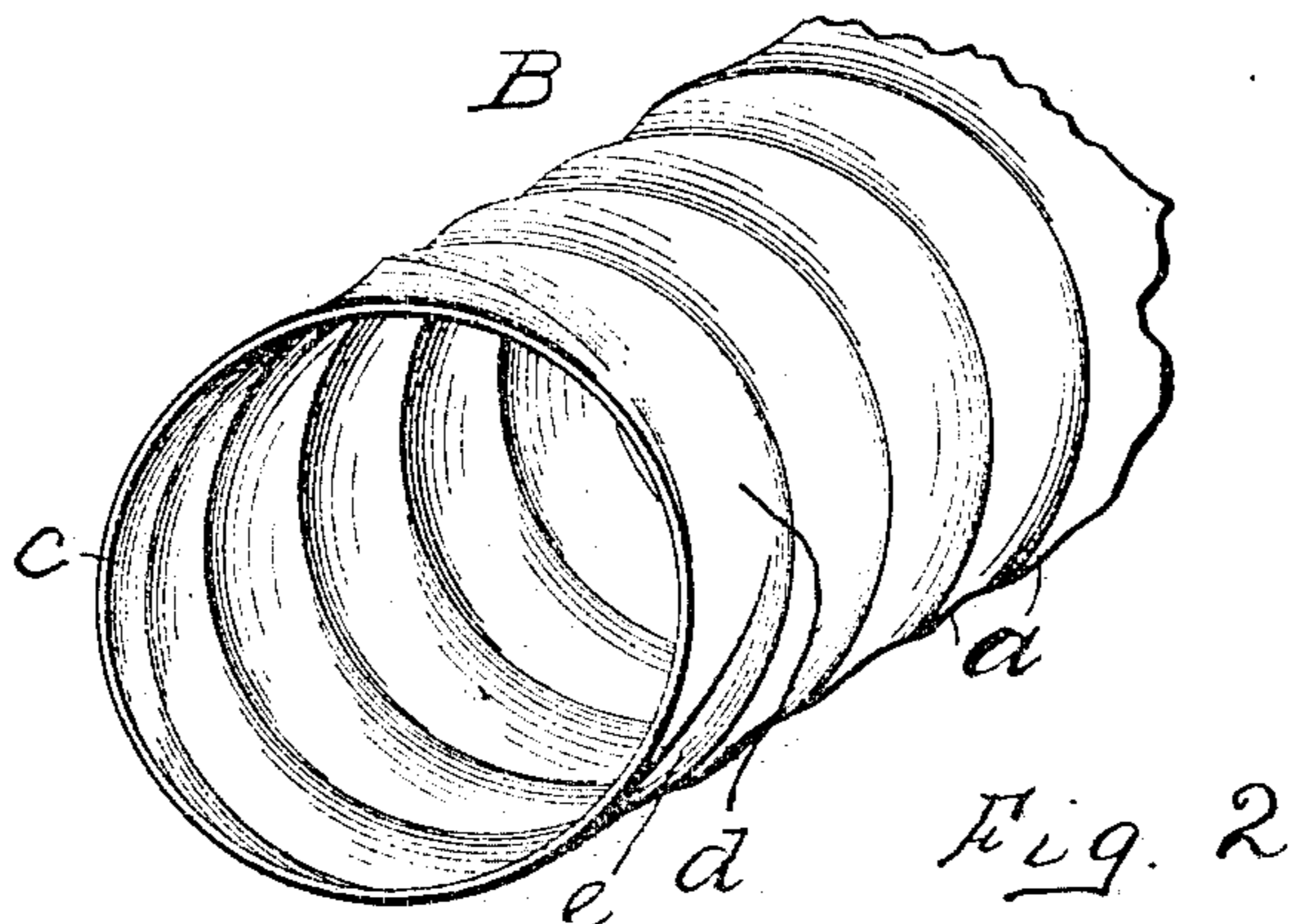


Fig. 2.

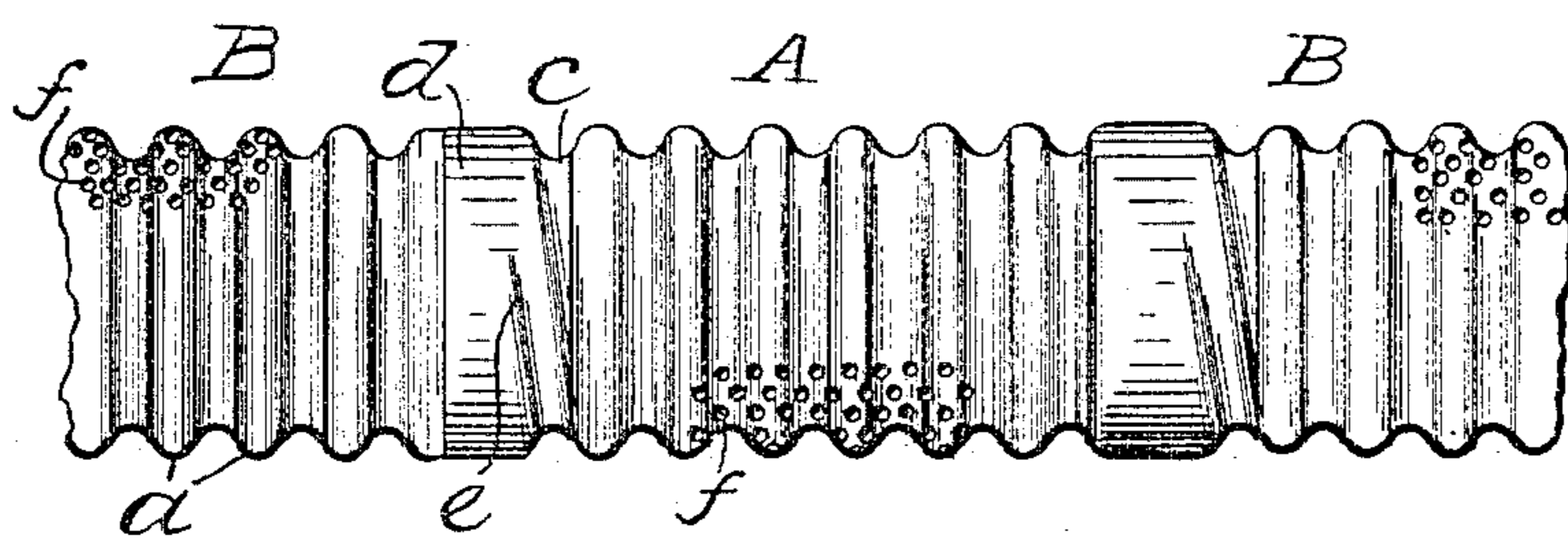


Fig. 3.

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# UNITED STATES PATENT OFFICE.

JOHN M. CARMEAN, OF MARSHALLTOWN, IOWA.

## HOLLOW TILE.

955,847.

Specification of Letters Patent.

Patented Apr. 26, 1910.

Application filed August 20, 1909. Serial No. 513,819.

*To all whom it may concern:*

Be it known that I, JOHN M. CARMEAN, a citizen of the United States of America, and a resident of Marshalltown, Marshall county, Iowa, have invented certain new and useful Improvements in Hollow Tiles, of which the following is a specification.

My invention relates to improvements in hollow tile, and the object of my invention is to provide hollow cylindrical tile with suitable connecting means so contrived that when such tile are secured together they may be turned relative to each other in one direction for adjustment without separating, while if turned in an opposite direction they may be readily separated, thus fitting them especially for use as drain tile, and when desired such tiling may be perforated at suitable locations to facilitate the process of drainage thereinto. This object I have accomplished by the means which are herein-after fully described and claimed, and which are illustrated in the accompanying drawings, in which:

Figure 1 is a side elevation of one end of a drain tile showing it removably connected in my improved manner to another tile, the latter being in central longitudinal section, and both tiles being broken away intermediate of their lengths. Fig. 2 is a perspective view of one end of a tile showing the construction of the receiving end thereof, the rest of the tile being broken away. Fig. 3 is a side elevation of a tile united removably at each end in my improved manner with other tiles, the latter being immediately broken away.

Similar characters of reference designate the same parts throughout the several views.

The hollow tiles A and B are shown as being formed with a plurality of annular corrugations, but this is not an essential feature of my invention, since the tile may be shaped as plain cylinders if desired, but my invention resides in the manner of coupling the tiles. I have also shown in Fig. 3, the tiles provided with a plurality of orifices *f*, which become useful when the tiles are formed of metal and used for drainage. However, the orifices may be dispensed with, not being an essential part of my invention, when the tile is used as a conduit rather than for drainage purposes.

As shown in Fig. 1, the received end of each tile is supplied with one turn of a spiral corrugation *b* at its end, and if de-

sired the corrugation may be less than a single turn. However, this turn of spiral corrugation *b* is adapted to be received into a similar spiral corrugation of one turn or less on the receiving end of the abutting tile, as shown at *c* in said figure. The receiving corrugation *c* takes at a feather edge as shown, conducing to ease in assembling.

The character *d* designates a broad annular corrugation on the receiving portion of the tile B, and as shown in Fig. 3, the spiral corrugation *c* opens into this closed annular corrugation *d* from the side, the annular corrugation *d* being disposed about the tile B so as to conform itself to the adjacent corrugation *c* as nearly as possible, that is, is set somewhat obliquely about the tile, to conduce to the ready leading of the one or spiral corrugation into the other or annular corrugation. The corrugation *d* is also made of considerable breadth, so as to wholly receive the spiral corrugation *b* within it and permit of the corrugation *b* being turned about within it without binding. The object of this manner of connection between the tiles A and B is to permit any tile to be turned in one direction relative to the other connected tile without either becoming disconnected or on the other hand so tightly bound thereto as to be prevented from freely turning. When the short spiral corrugation *b* has been received wholly into the broad annular corrugation *d*, it may be turned in the same direction as that in which it was introduced without binding or becoming detached, and when the tile is perforated at *f* as shown in Fig. 3, for irrigating or drainage purposes, the separate tiles may be turned and adjusted with reference to each other as desired so as to bring the orifices *f* into locations desired. When it is necessary to separate a tile A from a tile B, it is only requisite to reverse the movement, turning back the spiral corrugation *b* so that, when a slight pull is added, its end enters the way provided by the other spiral corrugation *c*, when it may be removed with but a single turn from the latter. The broad annular corrugation *d* therefore serves as a holding trough or channel for the short spiral corrugation *b*, and when the latter is within the trough so provided, it cannot escape therefrom when continuously turned in the direction in which it entered the trough. The corrugation *d* being broad gives scope for the turning therein, and a provision for ex-

pansion under heat without binding, when used for certain installations.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is:

1. In combination, hollow sections of tiling having connecting-means comprising a short spiral ridge on the received end of one section, a short spiral trough on the receiving end of the other section adapted to contain the said spiral ridge, and an annular trough in the second-mentioned section adjacent to and communicating with said spiral trough, said spiral ridge adapted to pass from said spiral trough into said annular trough, when rotated in one direction only.

2. In combination, hollow sections of tiling having connecting-means comprising a short spiral ridge on the received end of one section, a short spiral trough on the receiving end of the other section adapted to contain the said spiral ridge, and a broader annular trough in the second-mentioned section adjacent to and communicating with

said spiral trough, said spiral ridge adapted to pass from said spiral trough into said annular trough when rotated in one direction only, and to return from said annular trough into said spiral trough when rotated in a reverse direction only.

3. In combination, hollow sections of tiling having connecting-means comprising a short spiral ridge on the received end of one section, a short spiral trough on the receiving end of the other section adapted to contain the said spiral ridge, and an annular trough in the second-mentioned section adjacent to and communicating with said spiral trough, said spiral ridge adapted to pass from said spiral trough into said annular trough, and said sections being each provided with a desired number of small perforations in certain locations.

Signed at Marshalltown, Iowa, this 1st day of Aug. 1909.

JOHN M. CARMEAN.

Witnesses:

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J. CRELLIN.