W. S. HUDSON.

BUILDING BLOCK.

APPLICATION FILED APR. 20, 1914.

1,115,542. Patented Nov. 3, 1914.

Fig. 1.

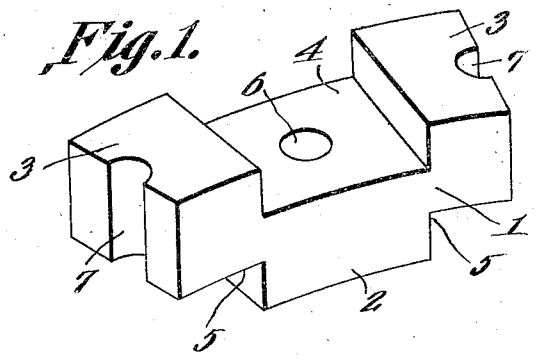


Fig. 2.

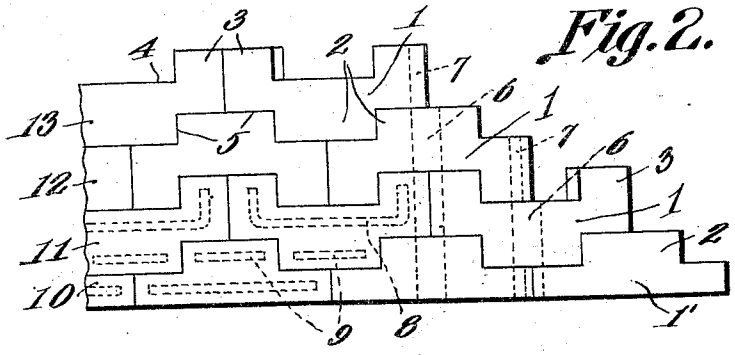
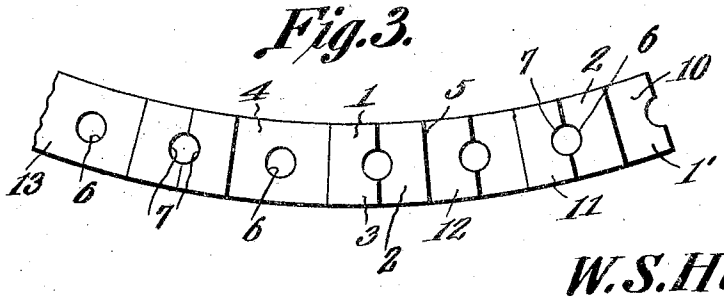


Fig. 3.



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BUILDING-BLOCK.

1,115,542. Specification of Letters Patent. Patented Nov. 3, 1914.

Application filed April 20, 1914. Serial No. 833,302.

To all whom it may concern:

Be it known that I, WILLIAM S. HUDSON, a citizen of the United States, residing at Henderson, in the county of Henderson and State of Kentucky, have invented a new and useful Building-Block, of which the following is a specification.

The present invention appertains to building blocks and aims to provide a novel and improved building block for constructing silos, granaries, cisterns, reservoirs and other cylindrical structures.

The present invention contemplates the provision of a unique building block whereby the same will interlock with its companion blocks in a peculiar and effective manner, so that the circular wall formed by the blocks will resist or withstand the outward pressure to which the wall may be subjected, as is particularly desirable in silos, granaries and other similar structures.

It is also within the scope of the present invention to provide a building block of the nature indicated, which may be simply and inexpensively molded or otherwise fashioned, and which will be simple and non-encumbering in construction, as well as being convenient, practical and efficient in its use.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

The invention has been illustrated in its preferred embodiment in the accompanying drawing, wherein:—

Figure 1 is a perspective view of the improved building block. Fig. 2 is a fragmental elevation illustrating a portion of a circular wall constructed with the improved blocks. Fig. 3 is a plan view of the fragmental wall construction illustrated in Fig. 2.

The present building block, which may be constructed of concrete, wood, or other material, comprises an arcuate body 1, the radius of curvature of which may be of any suitable length according to the diameter of the structure or wall to be built. The ends of the body 1 lie in lines radiating from the center of curvature of the body 1, whereby the parts may abut endwise on a circular or arcuate line. The body 1 is constructed of any suitable size desired, according to the circumstances.

The body 1 of the block is provided with a key portion 2 projecting from one of its faces intermediate the ends of the body 1, the sides of the portion 2 adjacent the ends of the block 1 being disposed on lines extending radially from the center of curvature of the body 1, similar to the ends of the body. The other sides of the portion 2 are convexed and concaved similar to the outer and inner sides of the body 1, so as to be flush therewith.

The body 1 is provided with a pair of semi-key portions 3 projecting from its other face at the ends of the body 1, and flush with the end portions of the body. The portions 3 taper inwardly, similar to the opposite key portion 2, the key portion 2 being of a width approximately equal to the combined or aggregate widths of the portions 3, whereby the recess 4 between the portions 3 will be approximately co-extensive with the portion 2 which lies opposite the recess. The end recesses 5 provided by the portion 2 which is disposed midway between the ends of the body 1, are approximately co-extensive with the opposite key portions 3. The key and semi-key portions of the block are tapered from the convexed to the concaved side of the block, as will be apparent.

It is preferable, although not necessary, to provide the central portion of the body 1 and the projecting portion 2 with an opening 6, and to provide the ends of the body 1 and the corresponding sides of the projecting portions 3 with semi-circular channels or cavities 7, for the purpose which shall hereinafter appear.

If the block is constructed of concrete or other plastic material, the same is preferably reinforced by longitudinal reinforcing rods or bars 8 embedded within the body 1 at the sides of the opening 6 and having angular ends engaging within the portions 3, as suggested in dotted lines in Fig. 2. Similarly, reinforcing bars or rods 9 may be embedded within the projecting portion 2. Thus, the longitudinal reinforcing rods 8 being embedded within the block, and having the angular end portions engaging within the portions 3 of the block, will prevent the said portions 3 from being broken off, under the

strains to which they are subjected when the blocks are assembled in building a curved or circular wall.

In building up a wall with the present blocks, the blocks are arranged in circular courses, and the blocks of each course are arranged end to end. The blocks 1′ of the lower course 10, as illustrated in Fig. 2, are preferably devoid of the portions 3, in order to rest flatly upon the base or foundation, but have the portions 2 which project upwardly. The blocks of the second course 11 are inverted and staggered relative to the blocks 1′ of the lower course 10, so that the key portions 2 of the blocks of the course 11 depend and fit snugly within the recesses 5—5 between the upstanding portions 2 of the blocks 1′. Thus, the portions 3 of the blocks of the second course 11 project upwardly, and the adjacent portions 3 of the respective blocks of the second course abut against each other, and provide key portions 3—3 projecting upwardly. The blocks of the third course 12 are inverted and staggered relative to the blocks of the second course 11, and have their semi-key portions 3 projecting downwardly and abutting, similar to the blocks of the second course. Thus, the depending portions 3 of the third course 12 fit within the upwardly disposed recesses 4 of the blocks of the second course 11, while the upstanding portions 3 of the blocks of the second course fit snugly within the downwardly disposed recesses 4 of the blocks of the third course 12. The blocks of the fourth course 13 are disposed similar to the blocks of the second course 11, and having their lower portions 2 fitting between the upwardly disposed portions 2 of the blocks of the third course 12. In this manner, the alternate portions of blocks are inverted and staggered relative to the adjacent or intervening courses, the key portions of the blocks of the adjacent courses interlocking or interengaging in a unique manner. It is of course understood that the wall may be constructed in arcuate or circular form, and to any height desired. The diameter of the structure depends upon the radius or curvature of the blocks, which may be altered in view of the various circumstances.

The blocks may be bound or bonded together by cement or mortar, in the usual manner, it being noted that the blocks are arranged in a "break joint" manner, which is desirable for obvious reasons. When the openings or recesses 7 are provided in the blocks, they not only lighten the weight of the blocks, but provide channels or passages within the wall, for the reason that the blocks when abutting endwise cause the recesses 7 of the adjacent ends of the blocks to match or mate each other, to register with the central openings 6 of the over and underlying blocks, as will be obvious by reference to Figs. 2 and 3. In this manner, the wall may be provided with vertical passages or channels, which is desirable in many instances.

Particular attention is directed to the fact that the blocks of the successive or superimposed courses being interlocked in the manner above described, will enable the wall to resist outward pressure in a most effective manner. Thus, the coacting recesses 5 of the blocks of the second course 11 engaging over the portions 2 of the blocks of the first or lower course 10, will serve to lock the blocks of the second course 11 against outward movement, inasmuch as the portions 2 of the blocks of the lower course 10 will tend to resist outward displacement of the blocks of the second course. Similarly, the blocks of the third course 12 having their recesses 4 engaged over the coöperating portions 3—3 of the blocks of the second course, will lock the blocks of the third course 12 against outward movement, due to the tapered or wedge form of the coöperating portions 3—3 and the recesses 4. In this manner, blocks of the successive courses are interlocked in such a manner as to enable the wall to effectively resist the outward pressure by the bulging or expanding effect to the contents of the structure as is most noticeable in silos, granaries, cisterns, and the like, wherein hoops are usually employed for resisting the outward pressure.

The present invention eliminates the use of hoops or bands for embracing the structure, inasmuch as the interlocked blocks will in themselves be bound together to hold them intact, even under considerable pressure from the inside.

From the foregoing, taken in connection with the drawing, the advantages and capabilities of the present invention will be obvious to those versed in the art without further comment being necessary.

Having thus described the invention, what is claimed as new is:—

A curved wall comprising superimposed courses of blocks arranged end to end, each block comprising an arcuate body having a key portion projecting from one face intermediate its ends, and providing end recesses, and semi-key portions projecting from the other face of the block at its ends, and providing an intermediate recess therebetween, the key and semi-key portions being tapered from the convexed to the concaved sides of the blocks, the first mentioned key portions of the blocks fitting within the corresponding end recesses of the companion blocks, the coöperating semi-key portions fitting within the intermediate recesses of the companion blocks, the central portion and key portion of each block having an opening, the ends and semi-key portions of the blocks having channels, the

channels of the blocks registering to provide openings alining with the central openings of the companion blocks, and longitudinal reinforcing rods embedded within the body of each block at the sides of the central opening and having angular end portions engaging within the semi-key portions.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

WILLIAM S. HUDSON.

Witnesses:
JNO. F. MITCHELL,
M. S. MCCORMICK.