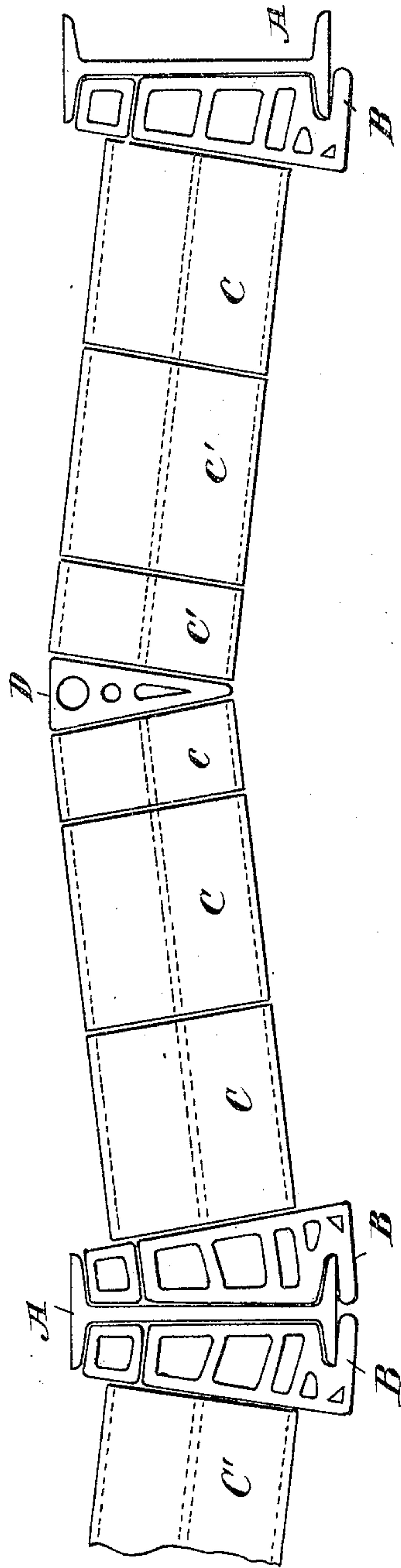


No. 789,729.

PATENTED MAY 16, 1905.

H. L. HINTON.  
HOLLOW TILE ARCH.  
APPLICATION FILED JAN. 8, 1903.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

HENRY L. HINTON, OF NEW YORK, N. Y.

## HOLLOW-TILE ARCH.

SPECIFICATION forming part of Letters Patent No. 789,729, dated May 16, 1905.

Application filed January 8, 1903. Serial No. 138,186.

*To all whom it may concern:*

Be it known that I, HENRY L. HINTON, a citizen of the United States, residing in the city of New York, in the county and State of New York, have invented certain new and useful Improvements in Hollow-Tile Arches, of which the following is a specification.

Heretofore in the construction of hollow-tile floors two forms of arch have been employed—that is, the rounded or segmental arch and the so-called “flat” arch. In the former case the blocks or tiles employed are either in the shape of keystones, having their sides lying on the radii of a common circle, or are rectangular, being in contact only in their lower parts. In the construction of the flat arch the intermediate blocks or tiles have the same batter, meaning thereby the variation of the bearing-faces of the block from the vertical when standing on a horizontal plane, as the skewbacks and key-blocks. In both these forms of arch the use of a considerable quantity of mortar between the blocks is essential not only to make the arch capable of sustaining a superimposed weight, but to make it self-sustaining after the centers are removed. This use of mortar is disadvantageous not only because of the added expense and the time required for the mortar to set before the centers can be removed, but also because the mortar is liable to crumble under the action of heat, thus constituting a source of danger in case of fire. To obviate these objections and provide a floor-arch which shall be not only self-sustaining, but capable of upholding a material weight without the use of mortar between the blocks or tiles composing it, is the object of my improvements. To this end, while I make the intermediate tiles or blocks of the arch (*i. e.*, the blocks which lie between the skewbacks and the key-blocks) with a uniform batter, as in the well-known flat arch, I give to the skewbacks or end pieces of the arch a greater batter than that of the intermediate blocks. In this way the blocks are inclined upward from the horizontal and a pointed arch is formed, the pitch or rise of which will be determined by the difference between the batter of the skewbacks and that of the inter-

mediate blocks. The batter of the key-block of the arch also differs from that of the intermediate blocks, being the same as the batter of the skewbacks. In this form of construction it is not necessary to use any mortar to give the arch rigidity and sustaining power and the blocks composing the arch are laid as closely together as possible.

My invention will be best understood by reference to the accompanying drawing, which shows an end section of a floor-arch constructed in accordance therewith.

Referring to the drawing, A A indicate floor-beams, against which rest the skewbacks or end pieces B B of the arch.

C C are the intermediate blocks between the skewbacks B B and the key-block D, which fills the triangular space between the intermediate blocks at the center of the arch. The intermediate blocks C C' all have the same batter, which is less than that of the skewbacks B B and key-block D. Thus the blocks forming the arch are inclined upward from the horizontal and form a pointed arch, as shown. The amount of rise of the arch will depend upon the difference between the batter of the skewbacks B B and the blocks C C'. Thus if the skewbacks have a batter of two inches to the foot of depth and the intermediate blocks a batter of one inch the arch will have a rise of one-half inch to the foot of span. With the same skewbacks and intermediate blocks of a greater batter the arch would approach more nearly to the horizontal, and vice versa.

It should be noted that by a pointed arch I do not mean one which rises to a sharp point or necessarily has a great amount of pitch, since in practice I may make an arch in accordance with my invention which has a rise no greater than one-eighth of an inch to the foot of arch; but my arch never becomes an absolutely horizontal or flat arch.

The key-block D is made with the same batter as the skewbacks B B and of such size as to tightly fill the triangular space left at the top of the arch between the intermediate blocks C C'.

In building the arch the blocks or tiles composing it are laid as close together as



possible without leaving any space for mortar between them and are still further forced together by driving in the key-block. An arch made in this manner will sustain its figured load without the use of any mortar whatever. In practice, however, after the arch is laid I run in sufficient thin mortar to fill the interstices which may appear between the blocks on account of the roughness of their surface.

By means of my invention I not only effect a considerable economy by dispensing with the use of mortar as heretofore employed and facilitate the removal of the supporting centers, but also make an arch which is safer and stronger in case of fire—advantages which will be readily apparent to those skilled in the art.

What I claim as new, and desire to secure by Letters Patent, is—

1. In an arch construction, the combination with the skewbacks each having a block-engaging face disposed at an angle to the vertical, and a key-block having converging block-engaging faces parallel to the angular faces of the skewbacks, of intermediate blocks having parallel end faces arranged end to end between the key-block and skewbacks, whereby said arch will support itself and its figured load without mortar or other binding material, substantially as described.

2. In an arch construction, the combination with the skewbacks each having a block-engaging face disposed at an angle to the vertical, and a key-block having converging faces parallel to the opposing faces of the skewbacks, of a plurality of intermediate

blocks inserted between the key-block and each skewback, each of said intermediate blocks having parallel end faces of a less batter than the block-engaging faces of the skewbacks and key-blocks, whereby said arch will support itself and its figured load without mortar or other binding material and whereby by varying the batter of the intermediate blocks arches of varying rise may be constructed with the same skewbacks and key-block, substantially as described.

3. In an arch construction the combination with the skewbacks, each having a plane block-engaging face, extending from the top to the bottom thereof, and disposed at an angle to the vertical, and a key-block having plane converging block-engaging faces, parallel to the opposing angular faces of the skewbacks, and intermediate blocks, arranged end to end between the key-block, and each skewback, said intermediate blocks having their end faces parallel and of a less batter than the block-engaging faces of the skewbacks and key-block, whereby said arch will support itself and its figured load without the use of mortar or other binding material, and whereby arches of varying rise can be constructed with the skewbacks and key-block by varying the batter of the intermediate blocks, substantially as described.

In testimony whereof, I have hereunto subscribed my name this 6th day of January, A. D. 1903.

HENRY L. HINTON.

Witnesses:

CLARKSON A. COLLINS,  
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