(No Model.)

J. D. MURPHY.

FLOOR ARCH.

No. 575,037. Patented Jan. 12, 1897.

Fig. 1.

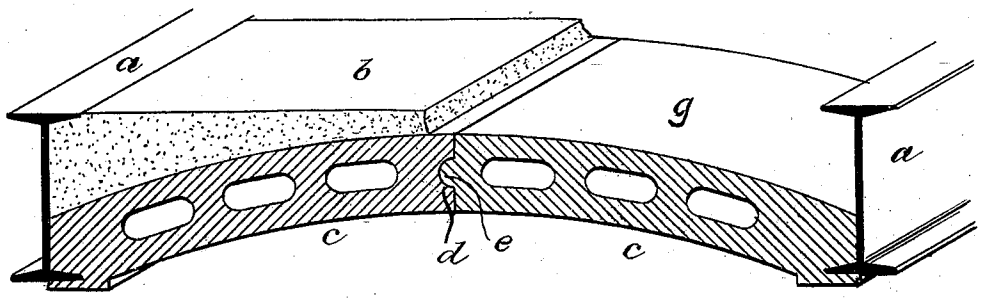
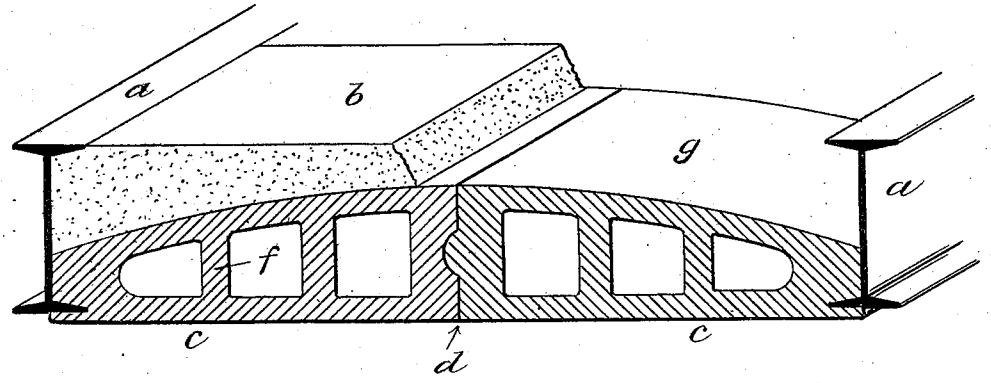


Fig. 2.



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UNITED STATES PATENT OFFICE.

JAMES D. MURPHY, OF NEW YORK, N. Y.

FLOOR-ARCH.

SPECIFICATION forming part of Letters Patent No. 575,037, dated January 12, 1897.

Application filed April 1, 1896. Serial No. 585,680. (No model.)

To all whom it may concern:

Be it known that I, JAMES D. MURPHY, a citizen of the United States, residing in the city, county, and State of New York, have invented a new and useful Improvement in Floor-Arches, of fireproof material, to be used for the filling in between iron beams in the erection or construction of buildings or other structures, of which the following is a specification.

The invention consists in the novel combination and arrangement of parts hereinafter described, and particularly pointed out in the claims appended.

In the drawings, Figure 1 is a perspective of one form of the arch, showing my improvement; and Fig. 2 is a side elevation showing another form of arch.

Referring to the various parts by letters, *a a* designate I-iron floor-beams of the usual construction, which are placed a suitable distance from each other and are properly supported. The spaces between these beams are bridged by fireproof arches formed of blocks *c c* of suitable fireproof material, such as terra-cotta, hard-burned brick, plaster block, &c., either cemented together or keyed in position in the usual manner. These blocks may be formed for the purpose of constructing segmental arches, that is, arches having a curved or arched under side, as in Fig. 1, or they may be formed so as to construct a flat arch, that is, an arch whose under side is flat or horizontal, as in Fig. 2. As shown in these figures, the arch is formed by means of two blocks whose outer edges are recessed to fit over the lower flanges of the supporting-beams, their inner edges or faces abutting against each other midway between the beams. The inner face of one of these blocks is formed with a horizontal groove *d*, and a corresponding rib *e* is formed on the inner face of the abutting block, said rib fitting in the groove *d* when the arch is formed. When the blocks are in position, the top, of concrete or other suitable material *b*, is laid over them after suitable cement has been filled in the joint between the blocks.

As shown in the drawings, each of the blocks is hollow and is formed with an arched top *g*, which is supported by vertical ribs or partitions *f*.

It is manifest that the walls of the blocks may be braced by any suitable arrangement of partitions, and that horizontal partitions may be employed in addition to the vertical ones, if desired.

It will also be understood that the solid portions of the blocks may be of any suitable thickness and will be regulated according to the strain the block is designed to bear.

It is manifest that when the blocks are assembled to form an arch the interlocking rib and groove will maintain them in their proper relative position and will prevent any displacement of them during the operation of laying the concrete.

It will also be noted that the rib and groove interlocking will greatly increase the strength of the arch.

It will also be noted that by means of the interlocking rib and groove the blocks may be more readily assembled to form the arch, and by reason of the increased strength of the arch larger spans may be formed with only two blocks, thereby materially reducing the amount of handling of the blocks and making it possible to lay the arches rapidly and accurately.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A floor-arch comprising a pair of blocks of suitable material adapted to fit together to form an arch, one of said blocks being formed with a groove in its abutting face, an integral rib formed on the other block, said rib being adapted to fit within the groove on the abutting block, substantially as described.

2. A floor comprising supporting-beams placed at suitable distances from each other, a pair of blocks bridging the space between said beams, said blocks being supported at their outer ends by said beams, their inner faces abutting together midway between said beams, an integral horizontal rib formed on the outer vertical face of one of said blocks, a corresponding groove being formed in the vertical face of the other block, said rib and groove interlocking, and a top of concrete laid over said blocks, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES D. MURPHY.

Witnesses:
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