

No. 824,636.

PATENTED JUNE 26, 1906.

A. B. FOANS.  
ARCH CONSTRUCTION.  
APPLICATION FILED JUNE 29, 1906.

2 SHEETS—SHEET 1.

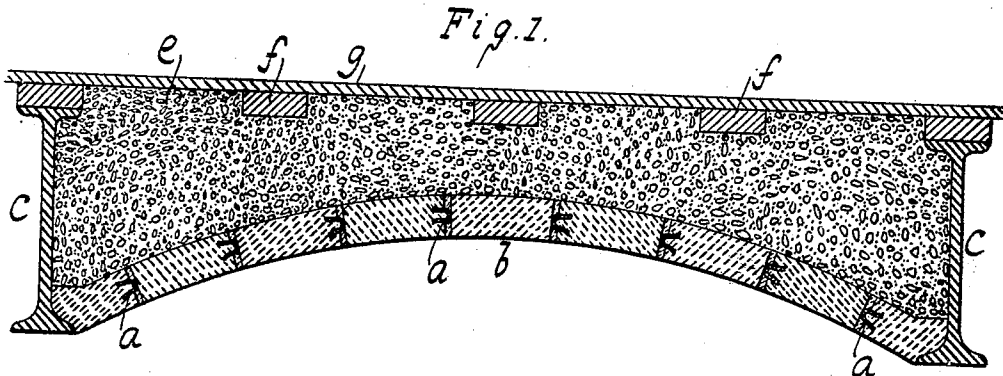
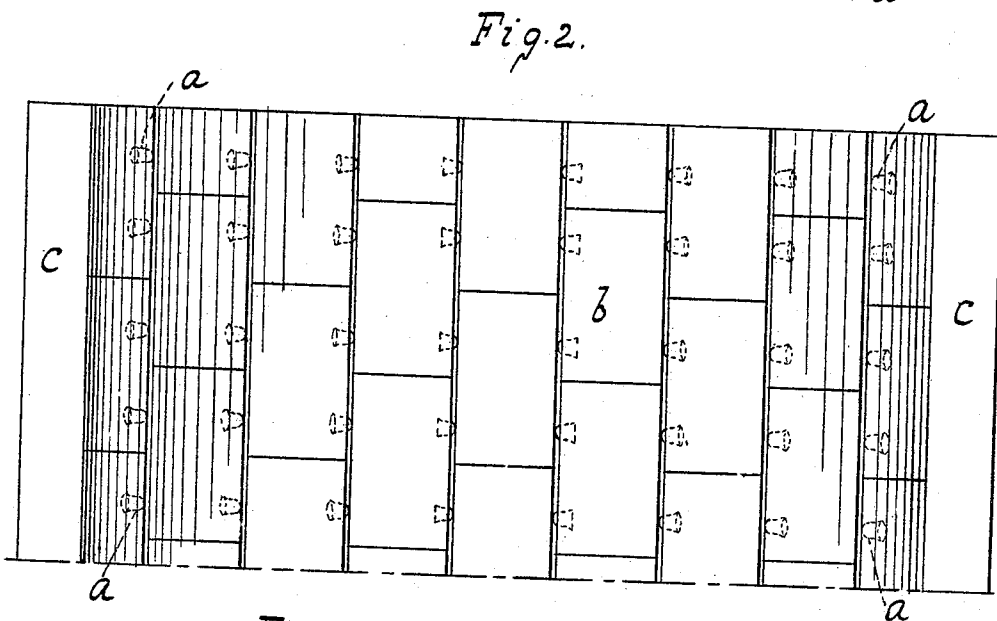
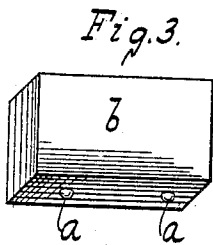
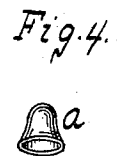
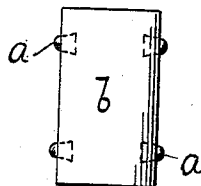


*Fig. 5.*



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2 SHEETS—SHEET 2.

*Fig. 6.*

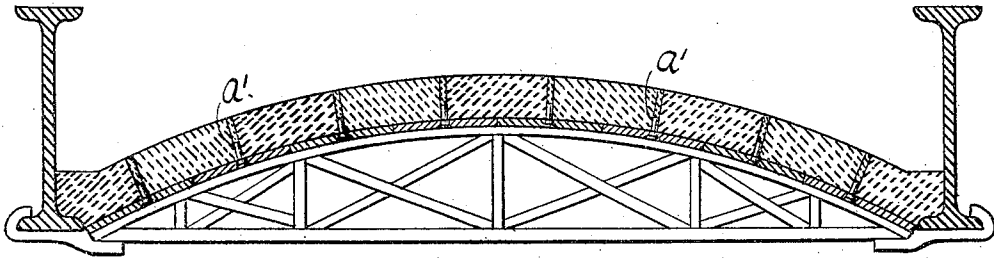


*Fig. 7.*

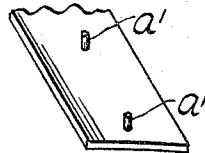
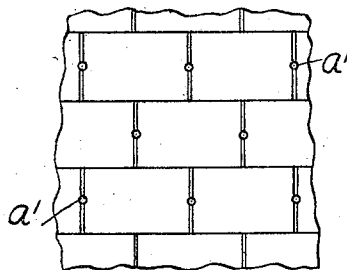


*Fig. 9.*



*Fig. 8.*



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# UNITED STATES PATENT OFFICE.

ANDREW B. FOANS, OF NEW YORK, N. Y.

## ARCH CONSTRUCTION.

No. 824,636.

Specification of Letters Patent.

Patented June 26, 1906.

Application filed June 29, 1905. Serial No. 267,597.

*To all whom it may concern:*

Be it known that I, ANDREW B. FOANS, a citizen of the United States, residing at Manhattan borough, in the city, county, and State of New York, have invented new and useful Improvements in Arch Construction, of which the following is a specification.

This invention relates to an arch to span from beam to beam which can be rapidly and cheaply constructed and which is composed of blocks or slabs of fireproof material, the side of said blocks or slabs to have inserted hollow metal cups, known as "separators," to separate the blocks when assembled upon the center in forming the arch, thereby forming a space for a joint. By having the blocks suitably wedge-shaped the joint resulting will be of equal size bottom and top to insure strength and equal bearing of arch throughout. Upon the said spaces thus formed between the blocks by the separators being filled with cement or mortar the joints are made, thus completing an arch of great strength by reason of the joints being the same size bottom and top and the strain or thrust of the arch equalized throughout by the removal of the center. This arch is turned upon a wooden form or center suspended between the beams. The separators permit compression of the joints, due to the weight of the arch upon the removal of the center, thus insuring a perfect bearing or pressure throughout. This removal of the center should be done while the cement in the joints is still green or before it has become set or hard.

This invention is set forth in the following specification and claims and illustrated in the annexed drawings, in which—

Figure 1 is a sectional side view of an arch. Fig. 2 is an inverted plan view of Fig. 1. Fig. 3 shows a block or slab. Fig. 4 shows a spacer. Fig. 5 shows a modification. Fig. 6 shows another modification. Fig. 7 shows a spacer for use in the construction of Fig. 6. Fig. 8 is a plan view of Fig. 6. Fig. 9 shows a further modification.

In the drawings are shown beams *c*. The arch spans from beam to beam. The arch is composed of blocks or slabs *b*.

The spacers are indicated at *a*.

Sheets or disks of metal shaped into hollow or cup shape will answer for spacing; but of course other suitable material is included in the invention. For example, cork, rubber, or other compressible or flexible substance,

either hollow or solid, can be used for spacing.

The filling of ashes or the like (indicated at *e*) can be of the usual kind for fireproof building.

The floor-sleepers *f* and flooring *g* form no part of this invention.

The separators *a* can be placed at one or both sides of the block, Figs. 3 and 5. When the center customarily used in arch construction is removed and the spacers or cups flattened by the settling of the slabs or arch, the cement which has been introduced in the joints becomes compressed or is made to bite or secure a firm hold in the joints. The center of course should be removed and the arch allowed to settle to its own bearing while the cement is still green or before it has become set. The spacers might be carried by the center, as seen at *a'*, Fig. 6. The spacers, as before noted, hold the slabs or arch-blocks suitably separated for cement to be introduced in the joints, and on removal of the spacers or flattening of the arch the cement in the joints is compressed. The spacers of Fig. 6 are withdrawn with the removal of the center, and the blocks then can settle. When the center is removed and the spacers *a'* withdrawn, the cement in the joints on the settling of the arch fills the space formerly occupied by the spacers, so that the joint is thoroughly filled or closed by the compacted cement.

In the use of spacers *a'* the blocks, if made with recesses or seats for entry of the headless spikes or spacers *a'*, will be held against lateral displacement or kept in line for the proper formation or filling of the longitudinal joint. Another method of holding slabs spaced is shown in Fig. 9, where the slabs have projections or prongs *a''* fixed therein and engaging the center. On removal of the center the blocks can come together, as before described. The separators are intended to make the joints between the blocks of the same size or uniform, so that the arch will present a uniform appearance. While it is not necessary for the joints to be all exactly uniform throughout, yet this uniformity is considered to be of advantage.

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

1. The compressible separator of suitable material attached to a block or placed at the side of same, to separate the blocks and form joint, substantially as set forth and described.

2. An arch composed of blocks or slabs, hollow projecting metal cups or separators in the blocks to separate or space the same when assembled and filling for said spaces or  
5 separations.

3. An arch to span from beam to beam composed of blocks or slabs of fireproof material, cups or separators at the meeting faces of the blocks to space the same when assembled on a center forming the arch and form a  
10 uniform joint to insure strength and equal

bearing, and filling for the spaces, said separators being made to permit compression of the joints by the weight of the arch upon the removal of the center.

In testimony whereof I have hereunto set my hand in the presence of two subscribing  
15 witnesses.

ANDREW B. FOANS.

Witnesses:

EDWARD WIESNER,  
GEORGE HULSBERG.