

(No Model.)

J. D. LAZELL.
CONSTRUCTION OF FIREPROOF BUILDINGS.

No. 560,587.

Patented May 19, 1896.

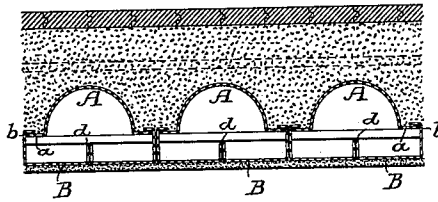
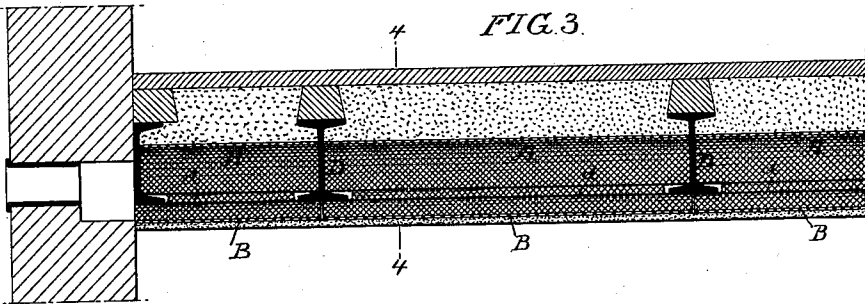


FIG. 4.

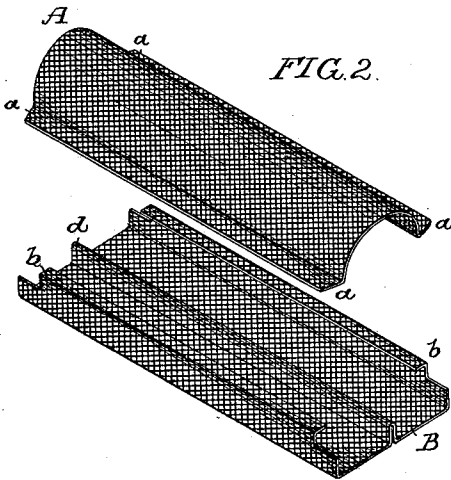


FIG. 2.

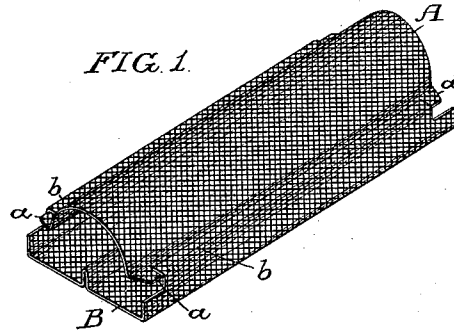


FIG. 1.

FIG. 5.

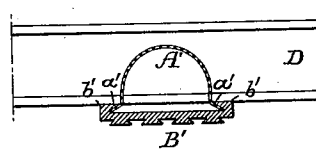
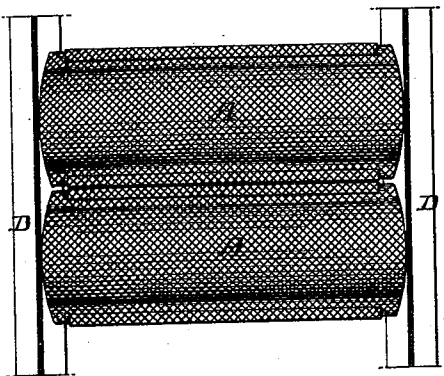
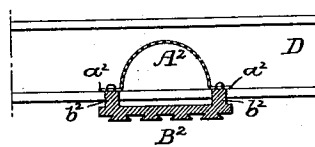


FIG. 6.

FIG. 7.



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UNITED STATES PATENT OFFICE.

JAMES D. LAZELL, OF PHILADELPHIA, PENNSYLVANIA.

CONSTRUCTION OF FIREPROOF BUILDINGS.

SPECIFICATION forming part of Letters Patent No. 560,587, dated May 19, 1896.

Application filed March 2, 1896. Serial No. 581,534. (No model.)

To all whom it may concern:

Be it known that I, JAMES D. LAZELL, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain
5 Improvements in the Construction of Fireproof Buildings, of which the following is a specification.

My invention consists of an improved form of lintel for insertion between the adjoining
10 floor or roof beams in fireproof constructions, the object of my invention being to provide a lintel which, while possessing the necessary amount of strength, is extremely light and cheap and can be readily packed, transported,
15 and applied.

In the accompanying drawings, Figure 1 is a perspective view of one of my improved lintels. Fig. 2 is a perspective view showing the two parts of the lintel detached from each
20 other. Fig. 3 is a sectional view of part of a structure, illustrating the application of the lintels to the beams. Fig. 4 is a transverse section on the line 4 4, Fig. 3. Fig. 5 is a sectional plan view illustrating two of my im-
25 proved lintels applied to adjoining beams, and Figs. 6 and 7 are views illustrating certain modifications of my invention.

Lintels of the character to which my invention relates are intended to span the spaces
30 between adjoining beams in fireproof structures, and are usually composed of a single piece of terra-cotta in the form of a hollow shell with transversely-arched top and flat bottom, the top of the lintel serving as a "center"
35 for supporting the concrete filling between the beams when the same is applied and before it becomes "set," so as to be self-supporting, while the lower portion of the lintel projects below the base of the beam or girder
40 to which the lintel is applied and serves as a "lath" for receiving the plaster constituting the ceiling of the room or apartment below.

My improved lintel in its preferred form consists wholly of woven wire or perforated
45 sheet metal, these two materials, so far as my invention is concerned, being substantial equivalents of each other. Hence the lintel is cheap and possesses the minimum of weight consistent with its desired strength.

50 The top portion or center of the lintel consists of a transversely arched or bowed strip

A of a length dependent upon the space between adjoining beams in the structure to which it is to be applied, said transversely
arched or bowed strip having at each side a
55 projecting flange *a*, as shown in Fig. 2.

The lower portion or lath of the lintel consists of a strip B of a length dependent upon the distance between the centers of adjoining
60 beams in the structure to which the lintel is to be applied, said strip having at each side a hooked flange *b* for engagement with the opposite flanges *a* of the upper portion A of the lintel, as shown in Fig. 1. The lower
65 portion of the lintel has also by preference a central upwardly-projecting rib *d*, both rib and flanges being readily formed by bending the material of which the lintel is composed.

The upper portion A of the lintel is at each end rounded, as shown in Fig. 5, on a curve
70 described from an axial point at the longitudinal center of the lintel, or otherwise so formed that the lintel can be introduced between the adjoining beams D while parallel
75 with said beams or at such an angle that it will clear the flanges of the same and when in proper vertical position can be turned round to a position at right angles to the
beams, as shown in Fig. 5, so that the top portion of the lintel will rest at the ends upon
80 the lower flanges of the beams, as there illustrated.

The hooked flange *b* at the lower portion of the lintel is cut away at each end to accommodate the lower flanges of the beams D, said
85 lower portion of the lintel projecting beneath each beam to or about the center line of the same, as shown in Fig. 3, the opposite ends of the central longitudinal rib *d* having a bearing against the under flange of each beam, as
90 there shown, so as to stiffen the under part of the lintel and prevent upward deflection or distortion of the same by pressure from below.

The provision of the upper portion of the lintel with laterally-projecting flanges, to
95 which the lower portion of the lintel is secured, insures the formation of spaces between adjoining lintels, so that the concrete filling interposed between the lintels and the floor above has a bearing upon the lower
100 flanges of the beams D as well as upon the lintels. Hence the weight of the concrete

when the same becomes set is not borne by the lintels alone, but by the lower flanges of the beams themselves.

While I prefer to construct my improved
5 lintel wholly of woven wire or perforated sheet metal for the reasons before set forth, a composite lintel composed in part of woven wire or perforated sheet metal and in part of fire-brick, terra-cotta or imperforate metal
10 might be made within the scope of my invention. For instance, in Fig. 6 I have illustrated a lintel composed of an upper portion or center A' of woven wire or perforated sheet metal and a lower portion or lath B' of terra-cotta,
15 the latter having on the under side ribs for receiving and holding in place the plaster and having at each side hooked flanges b' for engaging with the lateral flanges a', formed upon the upper portion A' of the lintel, and
20 in Fig. 7 I have illustrated another construction, in which the upper portion A² of the lintel, composed of woven wire or perforated sheet metal, is combined with a lower portion B² of terra-cotta, having upwardly-projecting
25 flanges b², which are secured to the laterally-projecting flanges a² by means of nails, screws, or other available fastenings. In these cases the terra-cotta-lath portion of the lintel is preferably composed of two or more sections,
30 so that it can be made upon ordinary brick or tile machinery and can be burned without warping.

It will be evident that the parts composing my improved lintel can be readily formed into
35 proper shape at the point where the building is being erected, or if made at a point remote from the building can be closely packed and readily transported, thereby overcoming objections which are inseparable from the use of
40 terra-cotta lintels. Moreover, my improved lintels can be made of any desired length, so as to permit of any required spacing of the beams or girders D, whereas terra-cotta lintels are necessarily of limited length and demand comparatively close spacing of said
45 beams D.

I have shown my invention in the form of a lintel such as that set forth in Fawcett's Patent No. 415,339, dated November 19, 1889,
50 said lintel being constructed so as to provide air-spaces beneath the beams or girders as well as through the lintels, but it will be evident that the main features of my invention may be embodied in lintels in which this air-
55 space beneath the beams is not provided for.

I wish it to be understood that I do not claim, broadly, a lintel composed of woven wire or perforated sheet metal, as lintels of such material, but differing in structural detail from mine, have heretofore been proposed. Hence

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

1. The within-described lintel, adapted to span the space between the beams or girders
65 of a structure so as to form a center for the concrete above and a lath for the plaster below it, said lintel comprising a transversely arched or bent top strip with lateral edge flanges and a bottom strip having portions
70 secured to said lateral edge flanges, substantially as specified.

2. The within-described lintel, adapted to span the space between adjoining beams or girders of a building and to form a center for
75 the concrete above and a lath for the plaster below it, said lintel consisting of a transversely arched or bent top strip with lateral edge flanges and a bottom strip having hooked flanges for engaging with those of the top
80 strip, substantially as specified.

3. The within-described lintel, adapted to span the space between adjoining beams or girders of a building, and to form a center for the concrete above and a lath for the
85 plaster below it, said lintel consisting of a transversely arched or bent upper strip with lateral edge flanges, and a lower strip having portions secured to said lateral edge flanges, said lower strip projecting at each end be-
90 neath the lower flange of the beam to which the lintel is applied, substantially as specified.

4. The within-described lintel, adapted to span the space between adjoining beams or girders of a building and to form a center
95 for the concrete above and a lath for the plaster below it, said lintel consisting of a transversely arched or bent upper strip with lateral edge flanges and a lower strip having portions secured to said lateral edge flanges,
100 said securing portion being recessed at each end for the reception of the lower flanges of the beams or girders, whereby said lower strip is permitted to project beneath said beams or
105 girders, substantially as specified.

5. The within-described lintel, adapted to span the space between adjoining beams or girders of a building and to form a center for the concrete above and a lath for the plaster below it, said lintel consisting of a trans-
110 versely arched or bent upper strip with lateral edge flanges and a lower strip having portions secured to said edge flanges, said lateral strip projecting at each end beneath the beam or girder on which the lintel is sup-
115 ported, and having an upstanding rib bearing against the under side of said flange, substantially as specified.

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

JAMES D. LAZELL.

Witnesses:

FRANK E. BECHTOLD,
JOS. H. KLEIN.