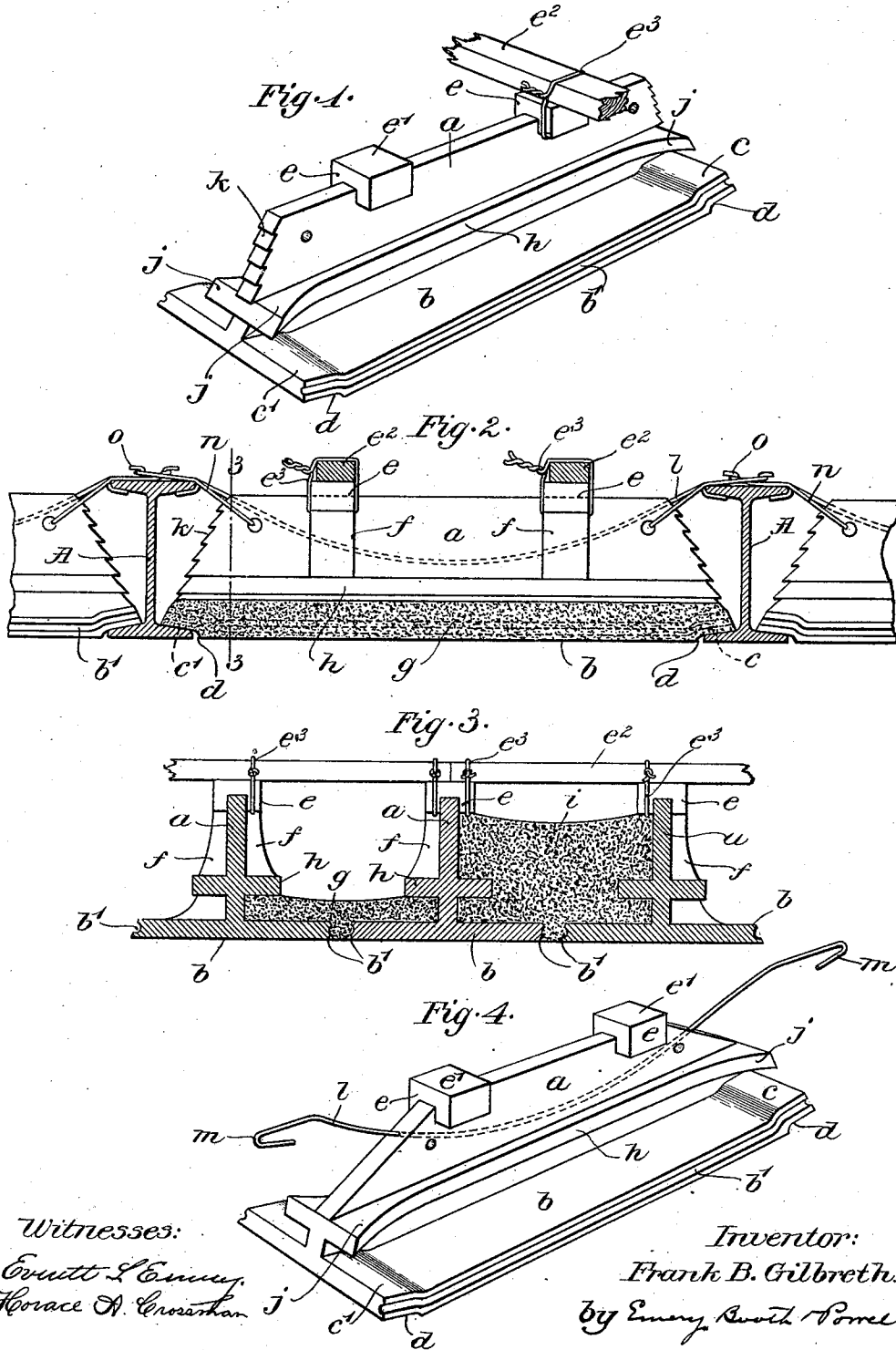


F. B. GILBRETH.
BUILDING CONSTRUCTION.
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Patented Dec. 10, 1912.



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UNITED STATES PATENT OFFICE.

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BUILDING CONSTRUCTION.

1,046,582.

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To all whom it may concern:

Be it known that I, FRANK B. GILBRETH, a citizen of the United States, residing at New York, in the borough of Manhattan, county and State of New York, have invented an Improvement in Building Construction, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

My invention consists in improvements in building construction and particularly in floor construction where use is made of blocks or lintels formed from concrete or its equivalent.

My invention will be best understood by reference to the following description of one specific embodiment thereof taken in connection with the accompanying drawings, while its scope will be more particularly pointed out in the appended claims.

In the drawings, Figure 1 is a perspective showing one form of lintel embodying certain features of my invention and showing also the mode of screed attachment; Fig. 2 is a cross-sectional view of a floor construction showing the lintel illustrated in Fig. 1 supported between two floor beams; Fig. 3 is a similar cross sectional view taken transversely the length of the lintels; and Fig. 4 shows in perspective a modified form of the lintel shown in Fig. 1.

In the drawings I have illustrated one form of my invention as embodied in the lintel shown in Fig. 1. This has the longitudinal central upright web *a* with a broad double base flange *b*, the latter being provided with the slightly raised ends *c c'* to provide at each end an underlying notch or recess *d*, when the lintel is in place these notches fit the bases of the usual I-beams *A A* commonly used in floor or roof construction as shown in cross-section in Fig. 2.

When the lintels are used for floor construction they are supported at their ends by the broad base flanges *b* as shown in Fig. 2, the adjacent lintels being placed in close proximity as shown in Fig. 3, each lintel presenting a generally inverted T-shaped cross-section. The adjacent edges of the flanges which are in close proximity as shown are beveled and also grooved with suitably shaped pockets *b'* to give a firmer

adherence to such filling material as may be used.

At the top of the central web and preferably overhanging the sides of the latter I have provided suitable screed holding supports *e e* and in the present instance these comprise raised portions, molded into and forming parts of the vertical web *a* of the lintel and presenting screed supporting surfaces *e'* of appropriate shape. To these screed supports the screeds *e²* may be and preferably are directly secured by fastening as with flexible fastening means such as the twisted wire loop *e³* or the like, as illustrated in Fig. 1. By employing this mode of screed attachment and screed support a screed of rectangular cross section may be employed instead of the more expensive dove-tailed cross-section heretofore used, and the necessity of cutting or dove-tailing the upright walls of the lintel to provide a screed holding recess and thereby structurally weakening the same is avoided. On the contrary the lintel shown has as great a depth beneath the screed as elsewhere.

To give an extended and underlying support to the screed and therefore to the floor when the latter is in position, or to support the lintels against relative rocking movement, the spaces beneath the screed support, or in fact, at any other point, may be filled in with a rib of concrete or other filling material as shown at *f* in Figs. 2 and 3, or if desired, such screed supporting rib may be made a part of the original molded structure of the lintel. After the lintels have been placed in position the spaces between their upright central webs and above the flanges of the same may be filled in with concrete, mortar or the like, to any desired extent; or if desired, the floor construction may be completed without such filling, the shape of the lintel being such that a deep filling, a shallow filling or no filling at all may be used as desired.

In order to permit the use of a shallow filling, such as is shown at *g* in Fig. 3, and at the same time render such filling most effective for solidifying and furnishing a safety support to the entire floor construction and for causing adjacent lintels to render mutual support to each other, I have shown the upright web of each lintel pro-

vided on each side with a lateral rib h so that when the spaces between the upright webs are filled up to the bottom of the lateral ribs h , the filling material will solidify under and about the said ribs, giving the floor construction greater solidity and tending to prevent any rocking or tilting of the individual lintels upon the beams, which tilting movement might arise from unevenness along the supporting edges of the lintel. On the other hand if the spaces intermediate the upright webs of the lintels are filled in to some greater height such as is shown by the filling i in Fig. 3, the lateral ribs also assist in interlocking the structures of adjacent lintels.

To perform their functions, the ribs h are not required to be of great breadth, and in the illustrated embodiment of my invention they are shown as comparatively narrow or shallow excepting at their ends, where they are flared out to provide the broader end supporting members j , which overlie the ends $c c'$ on the flanges. This construction may be advantageously employed to give a stronger and more rigid end support to the lintels by using a small amount of filling material between the lintel ends and the floor beams $A A$ and causing such filling material to enter under and about the flared supporting members j . The presence of the filling beneath the flared ends of the ribs h causes the latter to give an end support to the lintel supplementing that which is afforded by the flange ends $c c'$. The ends of the web portions a are made "battering"—that is, sloped off downwardly and outwardly from their upper edges to permit the lintels to be positioned by first resting them at one end of the bottom flange and then swinging the opposite flange into supporting engagement with the flange of the opposite floor beam.

Where filling material is employed between the floor beams and the ends of the lintels, the battering ends thereof may be made to strengthen the floor construction by forming the same with supporting faces, which in the lintel illustrated, consist of the series of notches k in and between the teeth of which the filling material is caused to enter, and when hardened, to give direct support and rigidity to the positioned lintel.

In Fig. 4 I have shown a modification of the lintel described, the series of supporting notches being dispensed with and the battering ends of the lintel web being sloped to the sides of the screed support. In this modification I have also shown a feature which obviously may be applied to the lintel shown in Fig. 1, or to any other lintel employed for a like purpose. This feature consists in a reinforcement l secured to the lintel, having the projecting ends m by which

it may be attached to the floor beams $A A$ as indicated in Fig. 2.

In Fig. 4 the reinforcement is shown as molded into the web of the lintel to form an integral part thereof, being so shaped and so related to the lintel when the latter is in position, as to provide in effect a reinforcing truss construction. This is adapted, not only to prevent tilting or rocking of individual lintels but the adjacent ends of consecutive reinforcements being attached to the same floor beam, a continuous and interconnected reinforcement for the entire floor structure is thereby provided.

In the lintel shown in Fig. 2 I have not only shown the molded-in reinforcement but also another form of reinforcement comprising the tie pieces n secured to the lintel at its opposite ends in any suitable way as by passing through a perforation in the web thereof and being then secured to the adjacent floor beam as by attachment to the clip o .

Claim—

1. A molded lintel, for floor construction, having a cross section of a generally inverted T-shape, its central web having thereon and integral therewith at intervals screed-holding members projecting above said web and also projecting laterally therefrom, for the purpose set forth.

2. A flanged lintel, for floor construction, having an upright web provided with transverse screed-holding supports located at intervals on the upper edge of said web, and longitudinally extending lateral ribs on the web underlying said screed-holding supports.

3. A molded lintel, for floor construction, provided with a medial upright web which is in turn provided with a plurality of screed supports arranged at intervals upon said web and projecting laterally therefrom, for the purpose set forth.

4. In a floor construction, a lintel having an upright web provided with a flanged base and a lateral rib above said flanged base extending lengthwise of the web and between the top and bottom thereof and substantially parallel therewith and widened at its ends.

5. In floor construction, a lintel having an upright web, a broad base flange, and a relatively narrower lateral rib extending lengthwise of the web above said flange and widened at its ends.

6. In floor construction, a lintel having a generally inverted T-shaped cross section, the central web being provided with a lateral rib extending lengthwise thereof and widened at its ends.

7. A lintel for building construction having an upright web provided on each side with a laterally longitudinally disposed rib

having flared ends and located below the upper edge of the upright web.

5 8. A molded lintel for floor construction having an upright web and separated, transverse, screed-holding rests molded to the upper edge of the web and extending laterally beyond the web thereby affording projecting portions to which screeds may be bound.

In testimony whereof, I have signed my name to this specification, in the presence 10 of two subscribing witnesses.

FRANK B. GILBRETH.

Witnesses:

THOMAS B. BOOTH,
FREDERICK L. EMERY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."