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E. N. GARNSEY.

APPARATUS FOR USE IN LAYING FLOORS.

(Application filed Jan. 26, 1901.)

(No Model.)

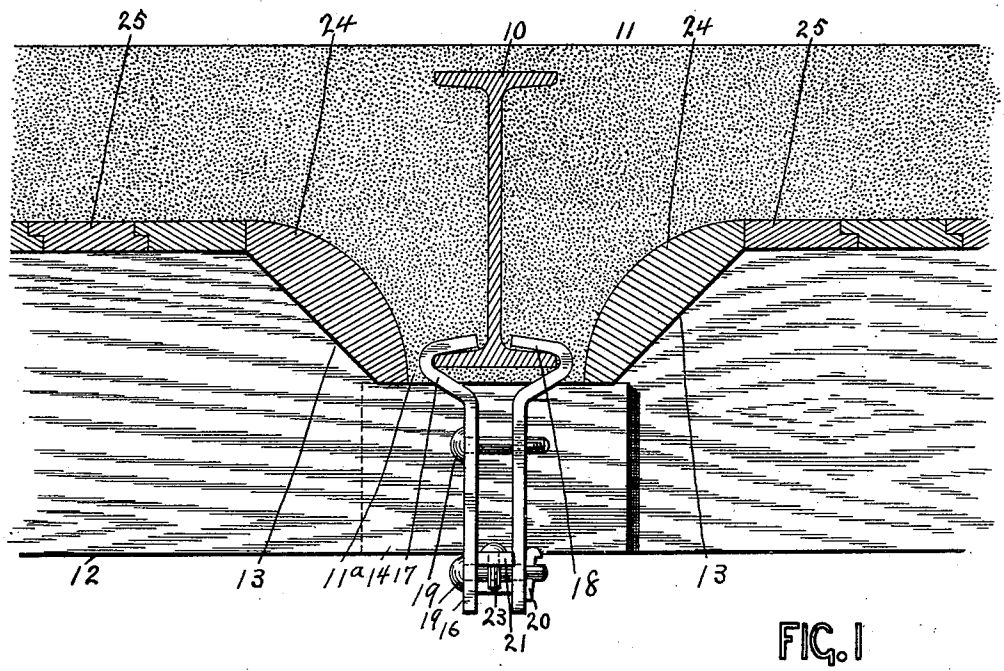

FIG. 1

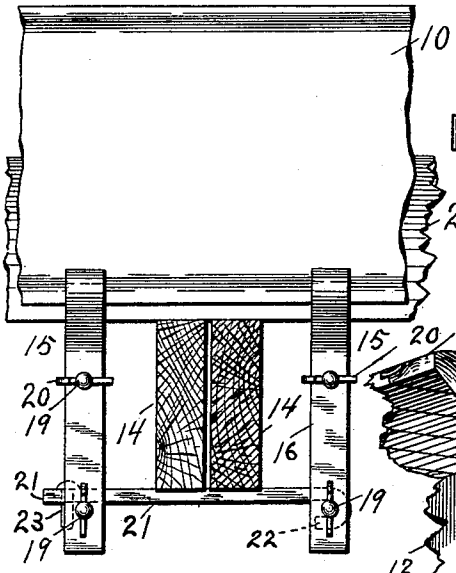

FIG. 2

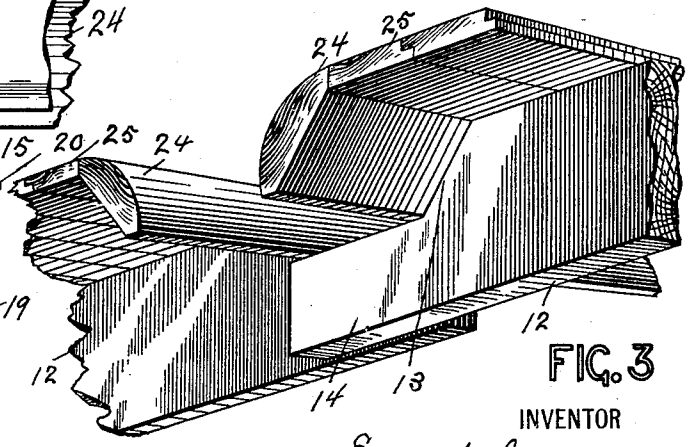

FIG. 3

WITNESSES:

Helen L. Oberlinffer

Gerard Cohen.

INVENTOR

Everett N. Garnsey.

BY

W. B. Hutchinson,

ATTORNEY

UNITED STATES PATENT OFFICE.

EVERETT N. GARNSEY, OF NEW YORK, N. Y.

APPARATUS FOR USE IN LAYING FLOORS.

SPECIFICATION forming part of Letters Patent No. 680,483, dated August 13, 1901.

Application filed January 26, 1901. Serial No. 44,796. (No model.)

To all whom it may concern:

Be it known that I, EVERETT N. GARNSEY, of the city, county, and State of New York, have made certain new and useful Improvements in Apparatus for Use in Laying Floors, of which the following is a full, clear, and exact description.

My invention relates to improvements in that class of apparatus which is used for laying floors, and especially fireproof floors of the kind that have concrete or substance of a concrete nature forming the upper portion of the floor.

One object of my invention is to produce a simple and inexpensive apparatus, which can be conveniently suspended from the I-beams of a building, which will form a temporary support for the concrete or concrete cement, or similar substance while in a plastic condition, and which can be quickly and easily knocked down after the concrete, cement, or other substance has become set and hardened.

Another object of my invention is to produce a structure which will give a flat top and arched bottom to the floor and cause the plastic material to settle around the I-beams, so as to form secure bases for the part of the floor lying between the beams. It will be seen, therefore, that this apparatus is designed, first, to cause the floor to assume the correct shape, and, second, to expedite the work of laying the floor, to the end that it may be cheaply done.

With these ends in view my invention consists of certain features of construction and combinations of parts, which will be hereinafter fully described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference refer to similar parts throughout the several views.

Figure 1 is a vertical cross-section through one of the I-beams and a portion of the floor, showing my improved apparatus in position with the concrete supported on it. Fig. 2 is a broken sectional elevation at right angles to that illustrated in Fig. 1 and gives another elevation of the hanger used to carry the floor-supporting timbers, and Fig. 3 is a broken detail perspective view illustrating the supporting-timbers and the manner in which the temporary floor is supported upon them.

The invention is designed, as above remarked, to facilitate the laying of the floor 11, which may be of concrete, cement or similar material and which forms the body portion of the ordinary fireproof floor. This cement or concrete structure is supported ordinarily on I-beams 10 of a common kind, and to facilitate the laying of this floor my improved apparatus is used.

In carrying out my invention I employ cross-timbers 12, which can be made of varying sizes, according to the character of the floor to be supported, and can be spaced apart at requisite distances. These lie a little below and at right angles to the I-beams 10, each timber 12 being widest in its middle or body portion and having its ends reduced or beveled, as shown at 13, finally merging in tenon-like ends 14. It will thus be seen that when the timbers are supported, as in Fig. 1, with the reduced ends beneath the I-beams, the middle portion will project well up above the bottoms of the I-beams, so that the concrete floor, which is formed above the timbers, (as described more in detail below,) will be on the under side of a generally arched shape, as the drawings illustrate.

When the timbers 12 are stretched below a proposed floor, the ends of two adjacent timbers will overlap, as shown in Figs. 2 and 3, and in order that they may be supported firmly and at the right height a hanger 15 is used, each hanger comprising the opposed arms 16 and the mechanism carried by them. Each arm 16 has at the top a hook formed by bending the arm outward, as shown at 17, and then inward, as at 18, so that the hook may fit upon the flange of the I-beam 10. The two opposed arms are held together by headed pins 19, each pin having near the point a key 20 to prevent its accidental removal. The arms 16 are arranged in pairs, and two pairs are placed near together, as shown best in Fig. 2, and the two pairs are connected by a cross-bar 21, one end of which is formed into the hook 22, which engages the pin 19 of one pair of arms 16, while the opposite end of the cross-bar is pierced by a pin 23, which, engaging the opposing pin 19 of the arms 16, prevents the spreading or separating of the

opposed pairs of arms 16. The cross-bar 21 forms the support of the timbers 12 and is spaced in relation to the I-beam so that when the reduced ends 14 of the timbers are placed upon the cross-bar there will be a little space between the timbers and the base of the I-beam 10.

As above remarked, the hangers 15 and the supporting-timbers 12 are placed at necessary intervals, and before the concrete or cement floor 11 is laid a temporary flooring is placed upon the timbers 12. On the inclined or beveled portion of the timbers are placed the forming-plates 24, which are substantially half-round planks—that is to say, they have the side next the cement rounded, so that the opposed forming-plates 24—that is, the two on opposite sides of the I-beam—form between them a mold into which the concrete or cement is run—and when the forming-plates are removed the concrete will have formed a base 11^a around and beneath the I-beam, this base having on the outside a curved arch-like appearance. The middle portions of the timbers 12 support the body of the temporary flooring, which is formed, preferably, of strips 25 of ship-lap, though other kinds of board may be used, if necessary or desired. The forming-plates 24 above referred to have their edges straight, so that the lower edges will rest securely on the timber ends 14, while the upper edges will fit snugly against the flat portion of the temporary flooring.

In carrying out my invention the hangers 15 are suspended as described, the pins 19 preventing the separation of each pair of arms 16, and the cross-bar 21 preventing the separation of the pairs of arms and the temporary flooring comprising the forming-plates 24 and the flat flooring 25. The temporary flooring being placed as described a concrete or cement is then poured upon the flooring and allowed to settle; but it will be understood, of course, that some sort of a support, in case the wire lath is not used, must be placed upon the timber ends 14 and beneath the I-beams, so as to prevent the concrete or cement from running out. After the flooring has set the temporary flooring and its supports are removed, and in this connection it will be seen that the removal can be very handily accomplished by means of my improved apparatus. The pin 19, near the pin 23, is simply removed by taking out its key 20 and then driving out the pin 19, whereupon the cross-bar 21 and the timber ends 14 will drop; but the cross-bar will not be separated from the hanger, because the hook 22 will hang on the pin 19 of the second pair of arms 16. After this the hangers are removed. It will be seen that by the mere dropping of the cross-bar the whole superstructure—that is, the timbers 12, the forming-plates 24, and the flat flooring 25—will also drop, and the floor 11 will be rigid in its place. It will be noticed that the shape of the timbers 12, together with the forming-plates, so shapes the floor 11 that when the ordinary tiling is hung beneath in the usual way a sufficient space is left between the tiling and the concrete, also that the floor is shaped so as to give it the greatest strength, and, further, that the I-beam is completely embedded, so that no part of it can be acted upon by fire in case one should occur.

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

1. In an apparatus of the kind described, the combination of the supporting-timbers having reduced ends, and the separable hangers for carrying the timbers, the said hangers having opposed pairs of arms adapted to engage an I-beam, a supporting means for carrying the timber ends, and a removable pin to carry the supporting device.

2. An apparatus of the kind described, comprising hangers adapted to be suspended from I-beams, timbers having relatively thick middle portions and reduced ends, the said timbers being beveled from their middle portions to the ends, a flat flooring supported on the body portion of the timbers, and forming-plates arranged between the reduced ends of the timbers and the flat flooring.

3. In an apparatus of the kind described, the hanger comprising opposed pairs of arms, each pair being separably connected together and provided with top hooks to engage an I-beam, and a cross-bar supported by and connecting the two pairs of arms.

4. In an apparatus of the kind described, the hanger comprising opposed pairs of arms, each pair of arms having means for engagement with an I-beam and cross-pins connecting them, and a cross-bar connecting the opposed pairs of arms and supported on the pins thereof, one end of the cross-bar having a hook to engage the pin of the aforesaid arms.

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

EVERETT N. GARNSEY.

Witnesses:

ERASMUS D. GARNSEY,

LOUIS SCHRAG.