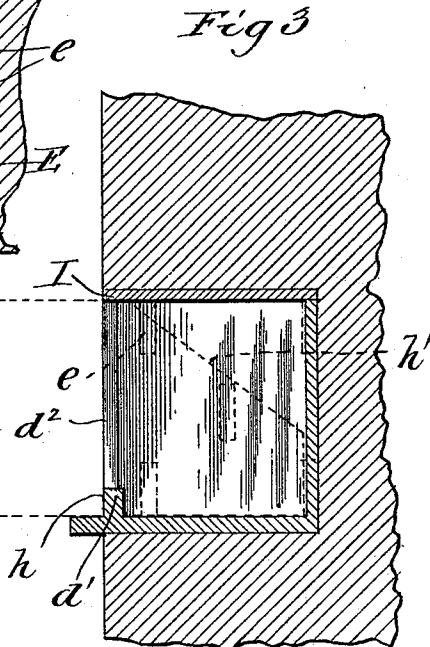
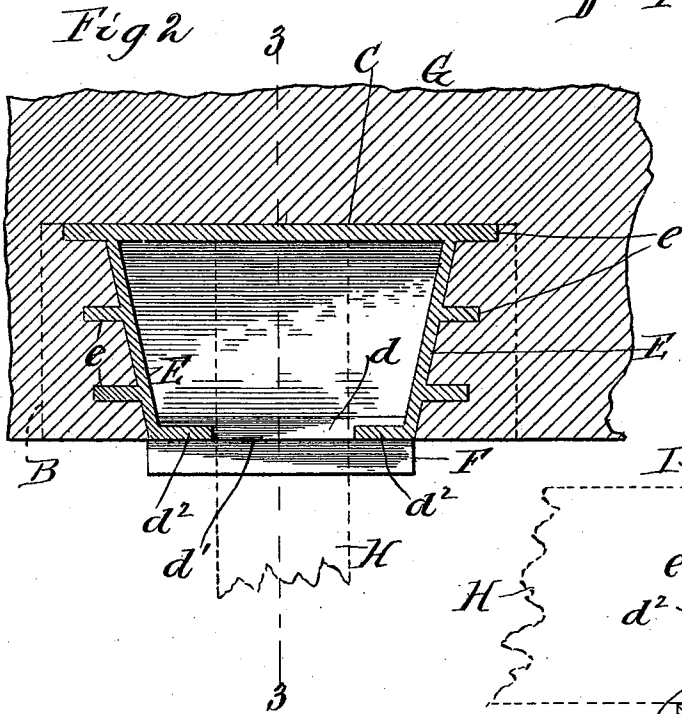
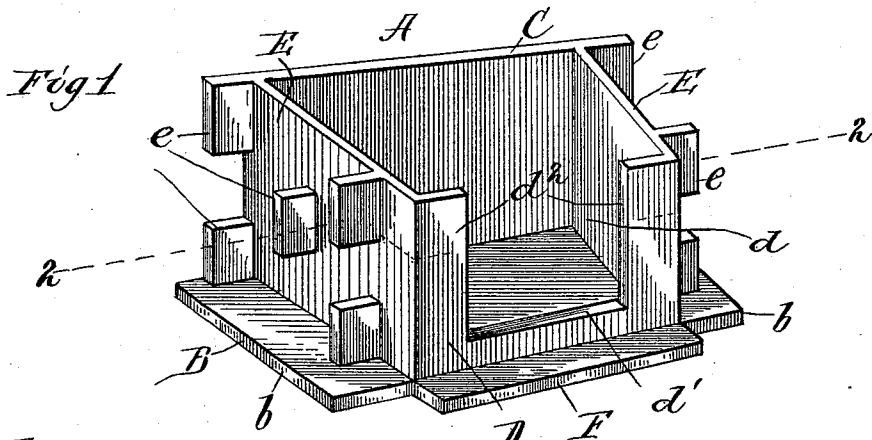


(No Model.)

H. A. GOETZ.
ANCHOR BOX.

No. 517,186.

Patented Mar. 27, 1894.



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UNITED STATES PATENT OFFICE.

HENRY A. GOETZ, OF NEW ALBANY, INDIANA.

ANCHOR-BOX.

SPECIFICATION forming part of Letters Patent No. 517,186, dated March 27, 1894.

Application filed February 13, 1893. Serial No. 462,074. (No model.)

To all whom it may concern:

Be it known that I, HENRY A. GOETZ, a citizen of the United States, residing at New Albany, in the county of Floyd and State of Indiana, have invented a certain new and useful Improvement in Anchor-Boxes, which is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1, represents a perspective view of an anchor box embodying my invention; Fig. 2, a plan section of the same taken on the line 2. 2. of Fig. 1 and with the box represented as set in the wall; and Fig. 3, a vertical section taken on the line 3. 3. of Fig. 2.

My invention relates to protectors for the ends of beams which are built into the brick or stone walls of the edifice, and have for their object the protection of the beams from dampness and decay and from ignition through proximity to smoke flues, and at the same time form, in connection with the beams, effective lateral braces for the walls, and provide for the self release of the beams from the protectors in case of fire without injury to the walls. This device is usually made in the form of a box, open at top and front end, and of some suitable metal, usually cast in the form required. Illustrations of this device are found in Letters Patent Nos. 386,976 and 387,004, both dated July 31, 1888. When placed in the wall the box must, of course, be provided with a cover, as seen in the said patents, and the boxes when built into the wall in process of construction are intended to be suitably anchored therein so as to be firmly held and not readily displaced.

My present invention consists in certain improvements upon the construction of this device as shown and described in the above mentioned patents.

In the drawings I have shown a box, A, embodying my present improvements. This box consists of a bottom plate, B, a back plate, C, and front plate, D, and two side plates E. The back, front and side plates are upright or vertical to the bottom plate, and the two side plates unite the front and back plates. It will be seen that these upright plates form walls to a kind of box structure, the bottom of which is the plate B. The side walls, E, are not parallel to each other, but are inclined out-

ward somewhat from front to rear, so that the box gradually widens from front to rear, as seen in Figs. 1 and 2. The front wall, D, is not entire, but is formed with a large rectangular opening, *d*, for the admission of the beam. This opening is not cut down to the bottom plate, but a narrow flange, *d'*, something like a rib, is left at the bottom standing up a little distance above the bottom plate. The rib is sometimes cut into sections, forming upwardly projecting lugs; or the rib can be left out and round upwardly projecting lugs substituted; of these various modes the rib is preferred. This opening in the front wall does not extend across to either of the side plates, and, hence, there is left on each side of the opening a narrow upright section, *d''*, standing in from the front edge of each of the side walls and appearing something like flanges in respect to the latter. A narrow ledge or flange, F, is provided on the bottom plate, being made in one piece therewith and arranged at the front edge of the latter, so as to extend outward in front of the rib, *d'*. This ledge is preferably in length about equal to the front length of the wall, D, and being flush with the bottom plate, projects out immediately in front of this wall, D, as seen in Figs. 1 and 3. The bottom plate, B, is extended somewhat beyond the side walls, thereby providing what appear like ledges or flanges, *b*, with reference to the side walls, as seen in Fig. 1. Each of the side walls, E, is provided with a series of projections or lugs, *e*, extending directly outward from the outer face of each of said walls. These lugs serve as anchors when the boxes are built into the wall, as will be presently described, and may be of any number desired, and arranged upon the walls according to judgment.

It will be understood, of course, that in practical use these boxes are put into position when the walls of the edifice are built, and the material of this wall, G, of the building is built around the box, as seen in Fig. 2, and the beam, H, is dropped into place as seen in Fig. 2, the respective ends resting, of course, in boxes in opposite walls of the building. The boxes are left open at the top for this purpose, and after the beam is in position are closed by a suitable covering, I, laid

over the top of the box. The beam, H, is provided with a notch, *h*, on its under side which is adapted to engage with the upright flange or rib, *d'*, which is intended to enter the notch when the beam is placed in position, as seen in Fig. 3. The upper corner at the end of the beam, H, is cut away so as to present an inclined or beveled edge, *h'*, as seen in Fig. 3, and when in place this bevel extends almost to the front of the box, as is also seen in said Fig. 3. The box is made of considerable depth so as to provide a good bearing for the beam.

Now, in operation, I secure several advantages by the present improvements. In the use of the bottom rib to engage with a notch on the under side of the beam, as shown in my prior patent, No. 386,976, the beam is weakened by the notch that must be cut in its bottom edge. This loss of strength is considerable when it is remembered that at the edge of the wall a beam must afford its greatest strength. Now, in my present invention of a projecting flange at the front edge of the base plate I strengthen the beam and utilize the full area of its breaking strain by providing a support for the beam outside of the notch. Furthermore, with this flange the beam is more readily released from the rib, for in case the beam falls during a fire the projecting flange acts as a fulcrum some distance in front of the rib and notch, and so will actually lift the notch from the rib to release the beam as soon as it begins to drop out of its normal position. The beveled corner of the beam, of course, permits the end of the beam to drop out of the box without injury to the latter, and by the lifting of the notch from the rib, as described, there is less strain brought upon the box, and so there is less danger of displacing or injuring the wall. In the construction shown in my said patent, No. 386,976, I provide for locking the box in the wall by a double incline on each side, that is the outer faces of the box sides are inclined first inward and then outward. But this device for locking is somewhat objectionable, for it requires very careful work in building up around the box sides, and any carelessness in this respect will leave the box insecure. With my present improvement, by inclining the sides of the box outward away from each other the entire distance from front to rear, I avoid this difficulty for the flare of the sides is so great that it does not require great care in fitting the brick or other material around these sides to securely lock the box. In addition to this locking device, of making the box wedge shaped in its entire depth, the addition of the exterior lugs on the sides of the box is a further means for securely locking the box in the wall, as these lugs serve as anchors, which, with the wedging sides, produce a bond between the box and the wall which will make it practically impossible to remove the box from the wall, after it is once built in, without destruction of the latter. I

do not wish to be understood, however, as limiting my present invention to the use of these lugs and inclined sides always together, for the anchor lugs may be used with any shape of box, and the inclined or wedge shaped sides may be used with very good results, even without the lugs.

In the prior patents referred to, several forms are shown whereby an air space is provided around the end of the beam, the object of which is to prevent dry rot. In these prior devices, however, it is somewhat difficult and expensive to provide the side guides; skilled labor and dry-sand cores are required to make the boxes. But in my improvement of providing simple flanges on each side of the beam opening in the front of the box, all these objections are overcome, for these flanges are so simple that there is no trouble whatever in putting them in the casting, skilled labor is not required, and there is no occasion for using dry sand cores, and less material is necessary. At the same time it will be seen that an ample air space is provided on each side of the beam within the box, as seen in Fig. 2.

I prefer to make this protecting box of cast iron, but it may be made of any other suitable material that is strong enough to serve the purpose; and some changes may be made in the particular form and arrangement of the parts as specifically herein set forth and shown.

It will be noticed that in the shape of the box, as described and shown in the drawings, a regular dove-tail is formed by the sides in horizontal plane and that consequently a regular dove-tail joint is formed by the box with the wall when properly built into the latter, as seen in Fig. 2, and this dove-tail joint extends the whole way from the front to back of the box.

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

1. An anchor box for the ends of beams in buildings, having a base plate, and sides vertical thereto, provided with lugs projecting laterally therefrom at different points distributed over the surface thereof for anchoring the box in the wall, substantially as described.

2. An anchor box having a rib rising slightly at the front edge of the base plate, and a horizontal flange or ledge projecting from the base plate in front of the rib, and the front plate D of the box in combination with a beam provided with a notch to receive said rib, substantially as described.

3. An anchor box for beams consisting of a base and four plain vertical walls cast in one piece, the front wall open centrally and part way across to receive the beam whereby the remainder of the wall forms a straight solid upright flange on each side of the beam when in place, substantially as described.

4. An anchor box for beams, provided with

sides flaring from front to rear, and a base plate provided with an upwardly projecting rib or lugs at its front edge, and a supporting flange or ledge extending from the front edge of said plate beyond and in front of said rib, substantially as described.

5. An anchor box provided with vertical sides, having exterior anchoring lugs projecting laterally therefrom, and a base plate with an upwardly projecting rib or lugs at its front edge, in combination with a beam notched to receive said rib or lugs, substantially as described.

6. An anchor box provided with vertical sides, having a flange at the front edge of each,

projecting inwardly therefrom partly across the front of the box in combination with a beam lying between the said flanges, substantially as described.

7. An anchor box provided with vertical sides, arranged at an angle inclining away from each other from front to rear and provided with an inwardly projecting flange at the front edge of each, in combination with a beam lying between said flanges, substantially as described.

HENRY A. GOETZ.

Witnesses:

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