F. G. & H. O. McMILLAN.

METALLIC INSERT.

APPLICATION FILED MAY 22, 1916.

1,223,595.

Patented Apr. 24, 1917.

Fig. 1

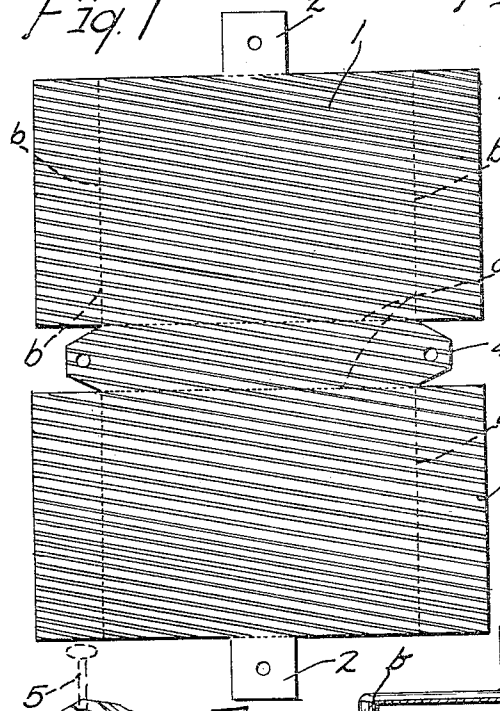


Fig. 4

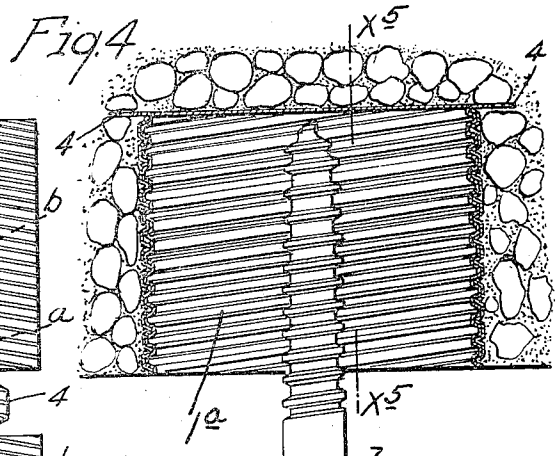


Fig. 5

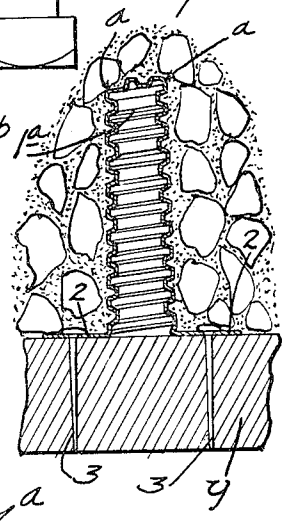


Fig. 3

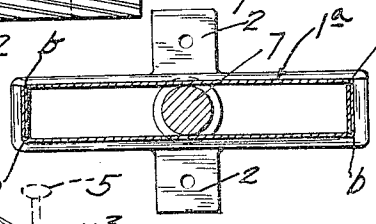


Fig. 2

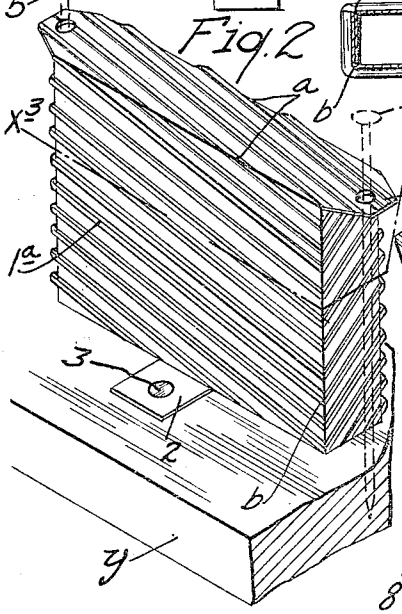
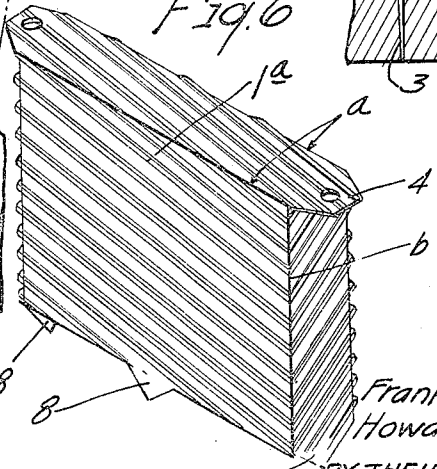


Fig. 6



WITNESSES

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METALLIC INSERT.

1,223,595. Specification of Letters Patent. Patented Apr. 24, 1917.

Application filed May 22, 1916. Serial No. 99,148.

To all whom it may concern:

Be it known that we, FRANK G. McMILLAN and HOWARD O. McMILLAN, citizens of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Metallic Inserts; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention has for its object to provide an extremely simple, cheap, and highly efficient metallic wall insert for concrete walls and ceilings, and which insert is especially designed to receive and hold the threaded ends of lag screws, this term being used to include all sorts of externally threaded members.

Generally stated, the invention consists of the novel construction and arrangement of parts hereinafter described and defined in the claims.

In the accompanying drawings which illustrate the invention, like characters indicate like parts throughout the several views.

Referring to the drawings:

Figure 1 shows a metallic sheet of blank from which the box-like body of the insert is made.

Fig. 2 shows in perspective, the completed insert attached to one of the boards of a temporary flooring upon which a concrete floor is to be formed.

Fig. 3 is a horizontal section taken on the line x^3 x^3 of Fig. 2;

Fig. 4 shows the insert in vertical section applied in a concrete floor and with a lag screw inserted into the same.

Fig. 5 is a transverse section taken approximately on the line x^5 x^5 of Fig. 4; and

Fig. 6 is a view corresponding to Fig. 2, but illustrating a slightly modified construction of the insert.

The insert is preferably rectangular and of box-like form, but this form may be varied considerably. It is preferably made from a single piece of sheet steel 1 adapted to be bent on the dotted lines *a* and *b* to form the box-like structure best illustrated in Fig. 2. The sheet 1 is formed with thread-like corrugations 1^a which in the flat sheet are parallel throughout, or in other words, are oblique in the same direction. When the box is formed, the opposite parallel flat faces thereof are then formed with thread-like grooves that incline in opposite directions very much like the opposite sides of the threads of a nut. Obviously, this is just the arrangement desired for engagement with the threads of a lag screw or threaded bolt. These thread formed corrugations 1^a are preferably made to fit the threads of lag screws of some particular diameter and number of threads per inch, but, of course, lag screw threads that vary somewhat therefrom can be screwed into the insert, although not with the same good fit.

The edges of the sheet 1 are preferably provided with perforated laterally bent ears 2 which by means of small nails 3 may be temporarily secured in proper position to one of the floor or form boards. At the ends of its top plate, the insert box is also preferably formed with projecting anchoring ears 4 adapted to be embedded into the concrete. These ears may also be perforated so nails 5 shown by dotted line in Fig. 2 may be inserted therethrough, and temporarily driven into the board *y*.

When the insert box is embedded in the concrete, the external corrugations will be completely filled with the concrete, and in this way the insert is rigidly anchored in the concrete, and the filled corrugations are stiffened and made solid.

After the concrete has hardened, the boards are, of course, removed, leaving the embedded insert with an exposed open face into which the lag screw 7 may be inserted for the purpose of anchoring supporting brackets or devices of different kinds and character such as required in the erection of buildings. Obviously, the lag screw may be screwed into the insert at any point longitudinally thereof, or between the ends of the said insert and this, of course, makes it unnecessary to set the insert with great accuracy.

The construction illustrated in Fig. 6 is like that illustrated in Fig. 2, except that instead of the anchoring ears 3, the edges of the insert are provided with sharp barbs or pointed flanges 8 adapted to be driven into the board *y* to temporarily hold the insert in position until the concrete has been placed around the same.

An insert of the above character may be made at very small cost, and may be easily set for embedment in the concrete either of

a wall or floor, and when the concrete is set will be firmly anchored.

What we claim is:

1. A wall insert constructed from a single piece of obliquely corrugated sheet metal bent to form the four walls and closed inner end of a box-like structure, with said corrugations on opposite walls reversely oblique and exposed at the inner surface of the box for engagement with the threads of a lag screw inserted into the box structure, and with the corrugated surfaces at the exterior thereof, serving to anchor the same in the concrete.

2. A wall insert constructed from a single piece of obliquely corrugated sheet metal bent to form the four walls and closed inner end of a box-like structure, with said corrugations on opposite walls reversely oblique and exposed at the inner surface of the box for engagement with the threads of a lag screw inserted into the box structure, with the corrugated surfaces at the exterior thereof, serving to anchor the same in the concrete, and the said box having integral laterally projecting ears at its outer edge adapting it to be temporarily secured to a mold form.

In testimony whereof we affix our signatures in presence of two witnesses.

FRANK G. McMILLAN.
HOWARD O. McMILLAN.

Witnesses:
CLARA DEMAREST,
B. G. WHEELER.

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