I. B. MALABY.

WALL ANCHOR.

APPLICATION FILED OCT. 29, 1915.

1,293,844.

Patented Feb. 11, 1919.

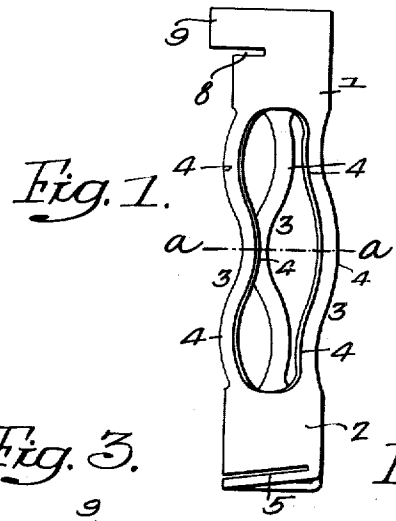


Fig. 1.

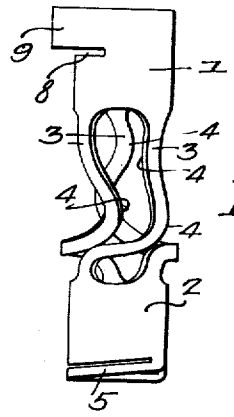
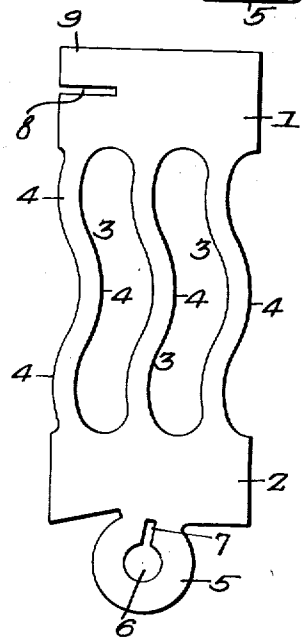


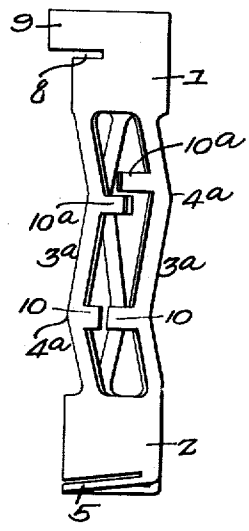
Fig. 2.

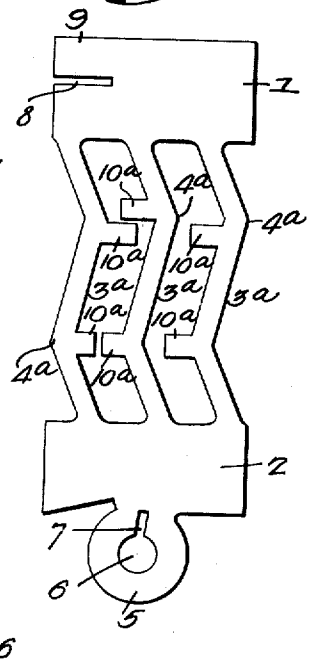
Fig. 3.

Fig. 4.

Fig. 5.







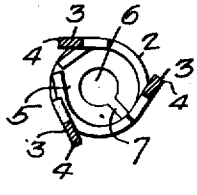


Fig. 7.

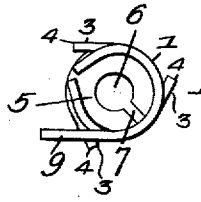


Fig. 6.

Witnesses:—
J. F. Wessner
Hill & Simmons

Inventor:—
Ira B. Malaby
by his Attorneys:—
Howson & Howson

UNITED STATES PATENT OFFICE.

IRA B. MALABY, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO NORMAN MELLOR, OF PHILADELPHIA, PENNSYLVANIA.

WALL-ANCHOR.

1,293,844. Specification of Letters Patent. Patented Feb. 11, 1919.

Application filed October 29, 1915. Serial No. 58,618.

To all whom it may concern:

Be it known that I, IRA B. MALABY, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Wall-Anchors, of which the following is a specification.

One object of my invention is to provide a form of wall anchor of the general type described and claimed in my Patent #1,084,458, dated Jan. 13, 1914, whose construction shall be such that when collapsed it shall possess a relatively large number of projections of points capable of biting into or frictionally engaging the wall of the cavity in which it is mounted; the invention further contemplating a form of holding device especially designed for use in solid structures such as brick, stone, concrete or the like.

Another object of the invention is to provide a wall anchor having its laterally weak side members so disposed and constructed that when it is collapsed said members will project adjacent its outer end and cut into or grip the wall of the cavity in which it is placed so as to hold said outer portion or head from rotating when the opposite end is relatively turned to cause other portions of said members to also be brought into holding engagement with the cavity walls.

These objects and other advantageous ends I secure as hereinafter set forth, reference being had to the accompanying drawings in which,—

Figure 1 is a side elevation of a wall anchor constructed according to my invention and illustrating it as ready for use;

Fig. 2 is an elevation of the wall anchor shown in Fig. 1, illustrating its parts in the position occupied when they have been collapsed;

Fig. 3 is a plan of the blank from which is made the wall anchor shown in Fig. 1;

Fig. 4 is a side elevation of a slightly modified form of wall anchor;

Fig. 5 is a plan of a blank for making the anchor shown in Fig. 4; and

Figs. 6 and 7 are respectively a plan and a section on the line *a*—*a* Fig. 1 further illustrating the construction of the wall anchor.

In the above drawings I have illustrated the wall anchor as made from a blank having substantially rectangular top and bottom portions 1 and 2 connected by laterally weak members 3 which are curved so as to have an undulating outline which as shown in Fig. 5 at 3^a may be angular or zig-zag, the construction being such that each one of said members possesses projecting portions 4 or in the case of Fig. 5, pointed portions 4^a. In addition the bottom member 2 has projecting from its lower edge a ring 5 having a central opening 6 provided with a lateral extension 7, and the top member 1 likewise has in one side a cut or slot 8.

When a blank of the shape shown in Fig. 3 is formed into a finished wall anchor, both the top and bottom members are approximately cylindrical and its laterally weak connecting members 3 are outwardly bowed adjacent said top member though as shown in Fig. 7, they project tangentially from or immediately adjacent the cylindrical surface defined by said top and bottom members. The bottom ring 5 is bent through an angle of about 90° so that it lies immediately adjacent the otherwise open end of the member 2 and is given a helical form so that it will serve as a nut to fit into the thread of a suitable screw with which the anchor is designed to be used. The tongue 9 at the top of the member 1 is caused to project tangentially of the same.

Under conditions of use the wall anchor is introduced into an approximately cylindrical cavity of suitable depth and diameter formed in a solid wall or other structure in which it is desired to provide a threaded socket. By means of a suitable collapsing tool threaded into the annular member 5, the inner cylindrical member 2 is forcibly drawn toward the head provided by the member 1, thus causing the outwardly bowed laterally weak connecting members 3 to bulge outwardly. As a result the projecting parts 4 immediately adjacent the head member 1 are brought into holding engagement with the walls of the cavity in which the anchor is placed and the subsequent revolution of the collapsing tool causes a greater or less turning of the inner member 2, at the same time that said member 2 is still further drawn toward the head member 1. Others of the projections 4 of the anchor are thus brought into biting or holding engagement with the adjacent walls of the cavity and as a result of this operation the anchor has an appearance similar to that shown in Fig 2.

The collapsing tool is now removed and a suitable screw is entered and set up in the socket thus provided.

Owing to the large number of points or projections which have cut into or gripped the wall of the cavity in which the anchor is mounted it has a relatively great holding power. Obviously the pointed portions 4^a shown in Fig. 5 act in a manner substantially similar to that of the portions 4 and it is noted that the anchor may be made with any desired number of these curved or angular projections on its connecting members 3, that form of the invention shown in Fig. 4 having two to each of said members and that shown in Fig. 1 having three. If it be desired to still further increase the number of wall engaging points or projections, I may form the connecting members 3 with any desired number of tongues 10 projecting in lines substantially at right angles to the general lines of said members, forming them so that they are arranged as indicated at 10^a or so that they are in line with each other as shown at 10. When the wall anchor is collapsed these projections for the most part are caused to project outside of the lines of the sides of the wall anchor and cut into or frictionally engage the walls of the cavity to still further increase the holding power of the same.

By constructing the wall anchors as above described it is possible to load them much more heavily than would otherwise be safe since their projecting edges or tongues so strongly hold to the walls of the cavity that the material of the screws threaded into them will usually fail before they disengage or cut into the material in which said cavity is formed.

I claim:—

1. A wall anchor of sheet metal consisting of a tubular structure including two elongated substantially cylindrical end members; with laterally weak collapsible elements connecting said members and having a zig zag outline substantially within the cylindrical surface defined by the end members.

2. A wall anchor of sheet metal consisting of a tubular structure including two elongated substantially cylindrical end members; with laterally weak collapsible elements connecting said members and having a zig zag outline substantially within the cylindrical surface defined by said end members, said collapsible elements being provided with laterally projecting tongues.

3. A wall anchor made of relatively thin metal and consisting of hollow top and bottom members; with laterally weak side members connecting the same and having outwardly extending portions projecting alternately in opposite directions.

4. A wall anchor made of relatively thin metal and consisting of substantially cylindrical top and bottom members; with laterally weak side members connecting the same and having projecting portions lying substantially tangent to the cylindrical surface including the top and bottom members.

5. A wall anchor made of relatively thin metal and consisting of substantially cylindrical top and bottom members; laterally weak side members connecting said first members; and tongues projecting laterally from said side members adjacent the cylindrical surface defined by the top and bottom members.

6. A wall anchor consisting of a sheet metal stamping in the form of substantially cylindrical top and bottom members; with elongated relatively narrow strips connecting said top and bottom members and formed to alternately project on opposite sides of their axial lines.

IRA B. MALABY.