

ANCHOR.

1,120,412.

Patented Dec. 8, 1914.

Fig:3.

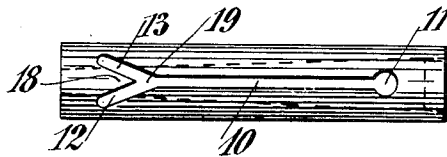
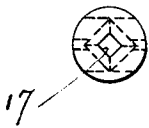


Fig:4.

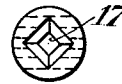


Fig: 9

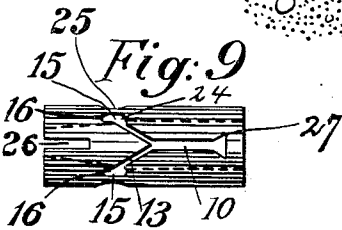


Fig:5.

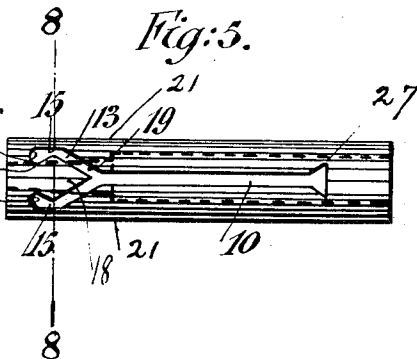


Fig: 6

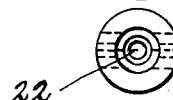
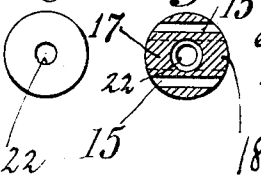


Fig: 7 Fig: 8



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ANCHOR.

1,120,412.

Specification of Letters Patent.

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Application filed October 11, 1912, Serial No. 725,123. Renewed October 27, 1914. Serial No. 868,900.

To all whom it may concern:

Be it known that I, GABRIEL E. ROHMER, a citizen of the United States of America, residing in Woodside, in the county of Queens and State of New York, have invented certain new and useful Improvements in Anchors, of which the following is a specification.

This invention relates to anchors for wood screws and the like, and the object of the invention is to provide an improved anchor by the use of which a full surface contact and very efficient anchoring effect is obtained.

For this purpose my invention consists of a wedge-shaped portion joined with a spreading device of moldable material, but capable of entering the spreading device to force it with full surface contact against the walls of the hole into which the anchor is inserted. The joining member is so arranged as to permit the ready entrance of the wedge into the spreading members.

In the accompanying drawing, Figure 1 represents a side-elevation of my improved screw-anchor, Fig. 2 is a similar side-elevation, showing the screw-anchor and screw inserted into the wall, Figs. 3 and 4 are end-views of the anchor shown from opposite sides, Fig. 5 is a side-elevation of another embodiment of my invention, Fig. 6 is a view of one end of the same, Fig. 7 is an end view of the other end of the same, Fig. 8 is a section through line 8, 8, in Fig. 5 and Fig. 9 is another embodiment of my invention.

Similar characters indicate corresponding parts throughout the different figures of the drawing.

Referring to the drawing, the anchor is preferably made of cylindrical shape and tubular throughout, the inner wall of one embodiment of the hollow anchor tapering from the ingoing end toward the outgoing end, as shown in dotted lines in Fig. 1. The interior tapering portion of the anchor is made of square cross-section, as shown clearly in Fig. 4, so as to offer sufficient material or stock to the threaded shank of the screw when the same is inserted into the anchor.

The anchor is provided at diametrically opposite sides with longitudinal main-slots 10, which are preferably rounded off at one end 11 or of other shape, and provided at

the opposite end with diverging extensions 12 and 13.

In the embodiment shown in Fig. 5, which shows a cylindrical bore, instead of the gradually narrowing bore, the diverging extensions 12 and 13 of the longitudinal main-slots 10 are preferably flattened at their outer edge so as to be substantially parallel with the outer circumference of the anchor, as shown at 15, the ends of the extensions adjacent to the flat portions being made of circular shape, as at 16, enlarging slightly to form a constricted neck portion 61, to shape the wedge 18 somewhat spear shaped.

The screw engages the inner crosspiece 17 and draws it inwardly so that the wedge portions 18 lateral thereof are forced against the walls 19 of the sides 21 of the anchor forming the extension slots 12 and 13. The continued inward pull of the screw causes the wedges to force themselves into the slots 10 and against the walls 19 and causes the wedge portions to press the sides 21 of the anchor against the wall of the socket as shown at 20 in Fig. 2. The material between the walls 19 and the socket being thinned out by the diverging slots permits the ready inward movement of the wedges and consequent outward movement of the sides 21. The thinner the remaining material after the slots are cut out within mechanical limits of strength, the more readily the bending thereof, so that the parallel arranged walls of the slots with their enlarged openings give a quick action, and prompt entrance of the wedge portions. Thus the wedge-shaped portions are enlarged to force out the material forming the spreading portions against the walls of the holes, so as to cause its outward bulging whereby a full surface contact is effected as is shown by the curved portions 20 in Fig. 2. The constricted portions of the material resulting from the cut out slots gives great yieldability and offers no resistance to the movement of the sides which act in the manner of jaws. Thus, the wedge or wedges move on the ways to spread the sides or jaws, the thinned out portions to render the material pliable and give least resistance, so as to give a quick buckling action and an outward bulging against the walls of the holes to provide a full surface contact.

In the embodiment shown in Fig. 1, both ends of the anchor act in the nature of

screw-nuts, when the threaded shank of the screw is screwed into the same; they therefore not only expand the anchor in lateral direction, but also produce a contraction of the same in longitudinal direction, toward the center-portion of the anchor, so as to exert thereby a double pressure on the walls of the socket into which the screw is to be anchored, first, by the expansion and, secondly, by the longitudinal contraction exerted by the anchor, whereby the hold of the anchor in the socket is greatly increased by the increase of pressure exerted by the screw on the surrounding walls of the anchor, so that a superior hugging effect of the anchor on the socket is obtained. In the embodiment shown in Fig. 5 the wedge-shaped end of the anchor alone acts in the nature of a screw-nut when the threaded shank of the screw is screwed into the same. The cylindrical opening 22 acts as a sleeve for the free running of the screw into that part of the anchor thus facilitating the wedging action of the wedge portions between the sides or jaws formed by the main and divergent slots. In the embodiment of Fig. 9 the curved ends 16 of the diverging slots are still further enlarged as shown by the curved portion 24, the material between the curved end portion of the diverging slots being thinned out still further by reducing the exterior somewhat so as to form constrictions as shown at 25 in Fig. 9. To facilitate still further the entrance of the wedge portions into the main-slot and end-slot 26 is provided. When the wedge-portion enters the main-slot, this end-slot prevents any resistance which would otherwise result from the cohesion of the molecules of the material at this end-portion. In Figs. 5 and 9 the enlarged end of the main-slot is shown V-shaped to permit quick movement of the sides or jaws around the points 27 which act in the nature of pivots.

Slight modifications could be made to the shape of inside bore and of wedge portions without departing from the spirit of this invention as set forth in the claims annexed.

I claim:

1. An anchor for wood and other screws, having a slitted main portion, and a wedge-shaped portion connected to said slitted portion by a weak buckling part, said wedge-shaped portion having its greatest diameter

greater than the width of the slit, whereby the turning of the screw drives said wedge shaped portion into said slit and forces the slitted main portion outwardly.

2. An anchor for wood and other screws, consisting of a wedge-shaped portion, spreading portions, partially separated by a main slot from each other and by diverging slots from the wedge-shaped portion, and a joining portion connecting the wedge-shaped portion with the spreading portions.

3. An anchor for wood and other screws, comprising spreading portions partially separated from each other by a main slot, and joined at one end, which is provided with an opening for the entrance of the screw, a wedge-shaped portion partially separated from the spreading portions by diverging slots, forming a continuation of the main slot, and joined to the spreading portions by a collapsing portion.

4. An anchor for wood and other screws, consisting of a cylindrical body portion provided with longitudinal slots, enlarged ends adjacent to the outer edges, V-shaped extensions at the opposite end, said V-shaped extensions being provided with straight outer edges parallel with the outer surface of the body, and enlarged ends adjacent to the outer edges.

5. An anchor for wood and other screws, consisting of a body portion engaged by an entering screw, a cylindrical body portion with main slots having enlargements at one end, and diverging extensions at the other end, and contractions in the exterior of the body at that end.

6. An anchor for wood and other screws, consisting of a body portion having spreading portions partially separated from each other by a main slot, and a wedge-shaped portion connected with the spreading portions by a constricted portion of the body portion, and separated from the spreading portions by diverging slots, the wedge-shaped portion having a slot at the end opposite to the wedge end.

In testimony, that I claim the foregoing as my invention, I have signed my name in presence of two subscribing witnesses.

GABRIEL E. ROHMER.

Witnesses:

PAUL GOEPFEL,
JOHN MURTAGH.