Aug. 28, 1962 E. W. BACH 3,050,733

TOOL

Filed Feb. 8, 1961 2 Sheets-Sheet 1

Fig. 1

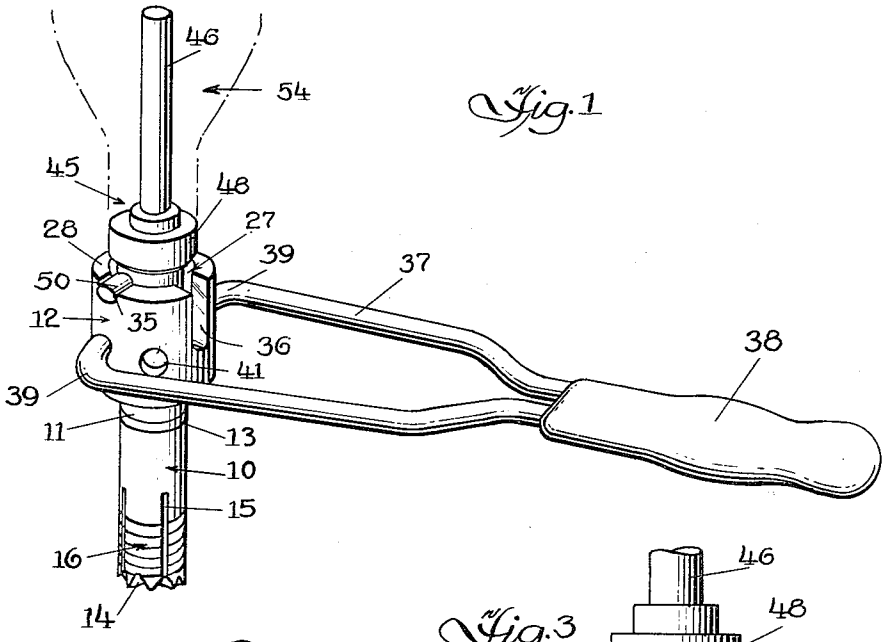



Fig. 2

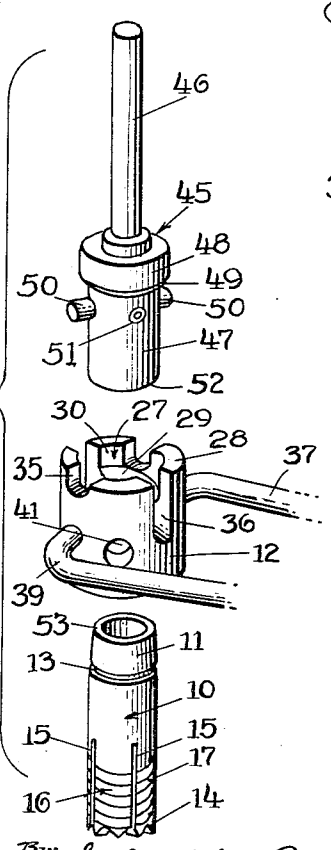
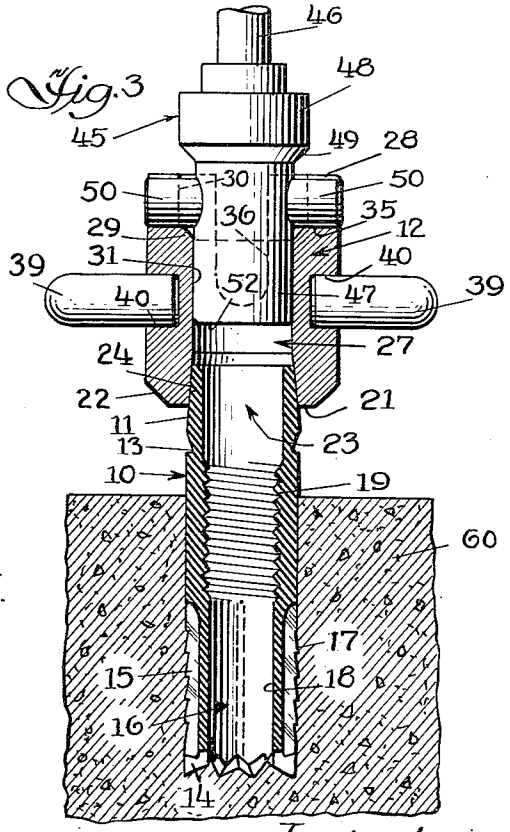



Fig. 3




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TOOL

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Fig. 4

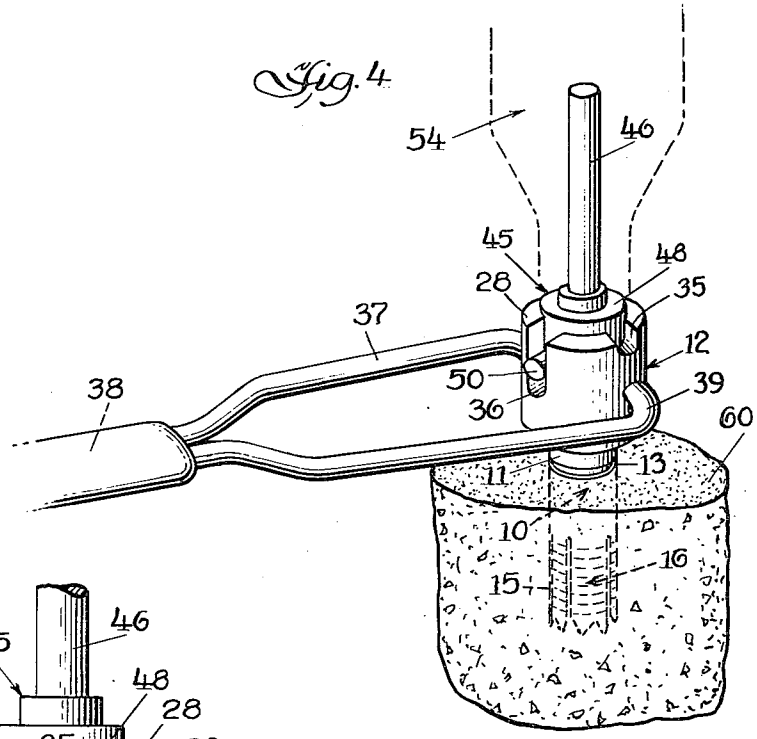



Fig. 5

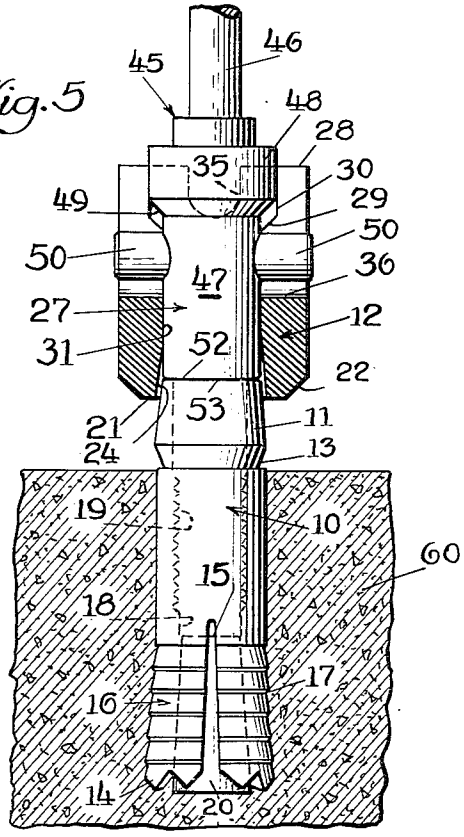
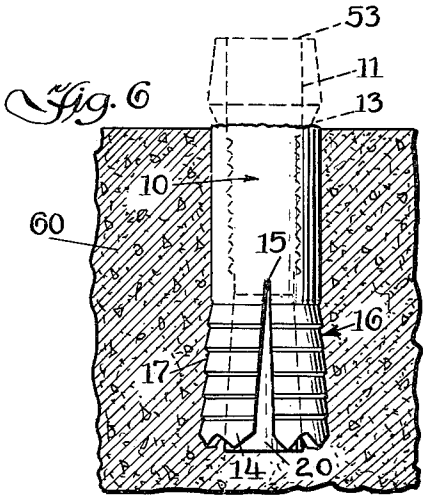



Fig. 6




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United States Patent Office

3,050,733
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3,050,733

# TOOL

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10 Claims. (Cl. 1—49.8)

This invention relates to a tool for holding an object securely while it is being driven into another body, and for readily releasing the objects from its holding engagement with the tool after the object has been driven into the other body.

A tool of this type is used for holding a metal shell while it is being driven into a material such as concrete, steel-hardened concrete, stone, masonry, or the like. The upper end of such a metal shell may have its interior surface threaded for the attachment of a threaded eye for a guide wire, a threaded bolt, or the like. Such shells are widely used in construction work.

When used in construction work, a great number of metal shells which are to be used as anchor members may be required to be installed in a concrete surface, for example, during the course of a given day. The device of this invention greatly speeds up the installing of such anchor members, and thus would produce a considerable saving in labor costs.

The tool of this invention provides a secure, convenient hold upon the shell anchor member as it is being hammered into the concrete or other surface, and at the same time provides a means of removing the shell member quickly and easily from the tool after the anchor has been driven into place. It will be seen that the hammering of the holding tool upon the shell anchor member will drive the tool down around the shell very tightly. Not unexpectedly, therefore, the shell anchor member sometimes becomes jammed in the holding tool. Since a single worker can drive one or two metal shells into a concrete surface during a minute's time, it is seen that any such jamming of the shell holder will create quite a setback in the progress of the work if the shell cannot be promptly disengaged.

The holder of this invention makes available a simple, automatic method of disengagement of the holder and the jammed metal shell.

*Summary of the invention.*—The device of this invention includes (1) holding means for snugly holding the object to be driven into another body, and to transmit to that object hammering blows applied to the holding means, (2) hammer means associated with the holding means, (3) inter-engaging means for the hammer and holder which will transmit blows from the former to the latter wtihout applying any blows directly to the object being driven, and (4) guide means for directing the hammer against the object held by the holding member, when that is desired, thereby pounding the object loose from the holder.

The embodiment disclosed in this specification is adapted for holding metal shells which are to be driven into a body formed of concrete, steel-hardened concrete, stone, masonry, or the like. The tool disclosed includes (1) a holding member having (*a*) an opening in its bottom wall formed to receive snugly the object to be driven, (*b*) a passageway extending from that opening through the holding member to the top wall thereof, (*c*) one or more (preferably two) shallow driving slots at the top of the holding member and (*d*) one or more (preferably two) deeper disengaging slots at the top of the holding member spaced radially from the driving slots, and (2) a hammer member which cooperates with the holding member carrying one or more (preferably two) laterally extending lugs, and having an upwardly extending shank and a hammer head extending downwardly from the shank into the passageway through the center of the holding member.



When the object being held by the tool as disclosed is to be driven into the desired material, the laterally extending lugs of the hammer member are seated in the shallow driving slots of the holding member, thereby transmitting applied hammering blows from the hammer member through the holding member to the object. When the object is to be removed from the holding member, the laterally extending lugs are placed in the deeper disengaging slots, which then simply act as guides for the hammer, since the hammer head is permitted by these deeper slots to extend far enough into the holding member that it teaches the object to be disengaged and applies hammering blows directly to it.

In this way, the tool provides a firm holding contact while the object is being driven into the material in question, and yet it can be quickly disengaged when it is desired to remove the tool from the object.

*Description of specific embodiment.*—The invention will now be further explained by reference to the embodiment described in the specification and shown in the drawing, in which:

FIGURE 1 is a perspective view of one embodiment of the tool of this invention and a metal shell with which the tool may be used, in assembled condition;

FIGURE 2 is an exploded, perspective view of the same tool and metal shell;

FIGURE 3 is a side elevation, partly in section, showing a metal shell held by the tool of this invention as it is driven into a body formed, for example, of concrete;

FIGURE 4 is a perspective view of the same holder, metal shell, and concrete body as are shown in FIGURE 3, but with the metal shell driven farther into the concrete body;

FIGURE 5 is a side elevation, partly in section, showing how the holding member of the tool may be easily and conveniently removed from the metal shell after the shell has been driven as far as is desired into the concrete body; and

FIGURE 6 shows the metal shell in final position, with the top portion of the shell drawn in phantom only, to indicate that it has been removed from the body of the shell.

*Anchor member.*—As is seen from FIGURE 2, anchor member **10** is a hollow, cylindrical metal shell having an upper portion **11** which can be grasped firmly by holding member **12**. Upper portion **11** is in the shape of a truncated cone, with its lower end defined by groove **13** extending around the entire periphery of shell **10**.

The lower end of the anchor member contains serrations which assist in driving the anchor member into the concrete or other material. The lower half or so of the side wall of anchor member **10** is also provided with grooves **15** which make it possible to split the lower portion of the anchor member into, for example, four outwardly flared fingers, as shown in FIGURES 5 and 6. To assist in making the gripping action of the lower end of anchor member **10** more positive, ridges **17** are provided in those portions of the metal shell which will be converted into flared fingers when the shell is finally installed in place.

As seen in FIGURES 5 and 6, fingers **16** are forced outward when anchor member **10** is driven down over wedge **20**. As shown, wedge **20** is preferably a truncated cone in shape. The upper cross-sectional dimensions of the wedge are somewhat less than the cross-sectional dimensions of passageway **18** through anchor member **10**, and the lower cross-sectional dimensions are larger than the dimensions of passageway **18**.

As best seen in FIGURE 3, the interior surface **18** of anchor member **10** is, if desired, threaded at upper

portion 19. This threading makes it possible to attach any similarly threaded objects to the anchor member after it has been installed in place.

Anchor member 10 can be seen in various perspective views in FIGURES 1, 2 and 4. It can be seen in side elevation in FIGURES 3, 5, and 6, in successive stages of installation in, for example, concrete surface 60.

For use in concrete, anchor member 10 is formed of very hard metal, preferably steel. Conical wedge 20 is also formed of very hard metal, preferably steel.

*Holding means.*—Holding means 12 can also be seen in perspective in FIGURES 1, 2, and 4. It is shown in side elevation in FIGURES 3 and 5.

As will be seen, in the embodiment disclosed holding member 12 has a generally cylindrical shape. It is formed of hardened steel.

Bottom wall 21 of holding member 12 has its outer edge beveled at 22. Bottom wall 21 has at its center an opening 23, formed by slanting side walls 24, which is complementary in shape to truncated cone 11 at the top of anchor member 10. Opening 23 is adapted to receive snugly top portion 11 of anchor 10.

Holding member 12 is also provided with passageway 27 extending from opening 23 through the holding member to top wall 28 thereof. As is best seen from FIGURES 3 and 5, the side walls of passageway 27 flare outwardly near the top of holding member 12, as for example at bevel 29 in the embodiment shown. In the embodiment shown, passageway 27 is defined in part by cylindrical side walls 30 extending above bevel 29. The lower portions 31 of the side walls of passageway 27 are also cylindrical in shape.

As best seen in FIGURE 2, holding member 12 is provided at its top with a pair of driving slots 35. Slots 35 are relatively shallow and are located on opposite sides of passageway 27 extending through holding member 12.

Spaced about 90° around holding member 12 from shallow driving slots 35 are disengaging slots 36. As is seen, disengaging slots 36 are substantially deeper than driving slots 35. They are also formed at the top of holding member 12 in top wall 28 thereof, on opposite sides of passageway 27.

As shown in various views of FIGURES 1 through 4, handle 37, formed in this embodiment of heavy wire and equipped with a convenient gripping piece 38, terminates in inwardly directed elbows 39, the ends of which are pivotally journalled in depressions 40 in the side walls of holding member 12.

Waste port 41, located near the lower end of holding member 12, communicates with passageway 27 in the interior of the holding member. Through passageway 27, waste port 41 communicates with opening 23 in the bottom of holding member 12, for a purpose to be explained below. A similar port 41 is provided on the opposite side of holding member 12.

*Hammer means.*—FIGURES 1 through 5 show various views of hammer means 45.

Hammer member 45 is comprised of shank 46 and hammer head 47 extending downwardly from the shank. Shoulder 48, terminating at its lower end in bevel 49, is positioned between shank 46 and hammer head 47.

As seen in FIGURES 1 and 3 through 5, hammer member 45 is adapted to nest in holding member 12 by sliding into passageway 27. Hammer head 47 is smaller in outer dimensions than the portion of passageway 27 defined by upper side walls 30. However, hammer head 47 is of such outer dimensions that it forms a "slip fit" with lower side walls 31 of the passageway. Likewise, shoulder 48 may form a "slip fit" with upper side walls 30 of the passageway.

*Driving and guide means.*—Lugs 50 extend laterally from opposite sides of hammer head 47. In the embodiment shown, these lugs are formed by a rod member which passes through an opening bored in hammer head 47, with the rod held in position by set screw 51.



As is seen from the drawings, when hammer head 47 is nested in holding member 12, laterally extending lugs 50 may be seated either in shallow driving slots 35 or disengaging slots 36. Which slots are employed determines whether the laterally extending lugs and the slots cooperate to act as driving means for transmitting hammering blows between hammer means 45 and metal shell 10, or whether the lugs and slots cooperate to act merely as guide means for hammer means 45.

This result follows from the fact that the choice of the slots in which lugs 50 are to be seated determines how far into passageway 27 bottom wall 52 of hammer head 45 can extend. As shown in FIGURE 3, shallow driving slots 35 are formed of such a depth that when lugs 50 are seated therein, bottom wall 52 of hammer head 47 will not come into contact with top wall 53 of upper portion 11 of anchor member 10. As shown in FIGURE 5, deeper disengaging slots 36 are formed so that when laterally extending lugs 50 are seated therein, bottom wall 52 of hammer head 47 strikes top wall 53 of upper portion 11 of anchor member 10.

In other words, in the construction of the tool of this invention three relationships should be followed. First, the distance from the bottom of disengaging slots 36 to bottom wall 21 of holding member 12 must be less than the distance from the bottom of driving slots 35 to bottom wall 21. Second, the sum of the distance which bottom wall 52 of hammer head 47 extends below the bottom of laterally extending lugs 50 plus the distance that top wall 53 of anchor member 10 extends upwardly into opening 23 from bottom wall 21 of holding member 12 must be less than the distance between bottom wall 21 and the bottom of driving slots 35. Third, the sum just described must be greater than the distance between bottom wall 21 of holding member 12 and the bottom of disengaging slots 36.

Because different sizes of metal shells will extend upward through opening 23 a different distance with a given holding tool, it is seen that in order to maintain the relationships just described a particular tool may be used only with a certain range of sizes of shells. If a particular metal shell is too large to fit snugly into hole 23, another holding tool with a larger opening in its bottom wall must be employed. On the other hand, if a particular metal shell is so small that it extends too far upward into opening 23 and passageway 27 of holding member 12, then another holding tool with a smaller opening 23 in its bottom wall 21 must be used.

*Use of holding tool.*—The holding tool of this invention will ordinarily be employed with an automatic hammer such as a pneumatically or electrically operated hammer. Shank 46 of hammer member 45 should thus be designed to be gripped by the chuck member of any automatic hammer with which the tool is likely to be employed. In FIGURES 1 and 4, such a chuck is shown diagrammatically and in phantom at 54.

To employ the holding tool of this invention, upper portion 11 of anchor member 10 is nested in opening 23 in bottom wall 21 of holding member 12. Anchor member 10 is then placed in the desired location for installation, with serrations 14 bearinng against the surface of the material (seen as 60 in FIGURES 3 through 6) into which anchor 10 is to be driven. The operator of the tool holds grip 38 in either hand, as convenient.

Hammer member 45 (the shank of which hammer is securely fixed in the chuck of a pneumatic hammer, for example) is then inserted in passageway 27 of holding member 12, and laterally extending lugs 50 are seated in driving slots 35. When the hammer member is inserted in holding member 12, proper seating of hammer head 45 in passageway 27 is facilitated by the outward flare at bevel 29. Since the upper portion of passageway 27 is larger than the outer dimensions of hammer head 47, the hammer head can be easily inserted into that portion of passageway 27.. The flaring side walls at bevel 29 then

guide hammer head 47 easily and automatically into the desired slip fit between the hammer head and the lower portion of passageway 27, formed by side walls 31.

When the automatic hammer is operated with lugs 50 thus seated in driving slots 35, hammering blows are transmitted through shank 46, hammer head 47, lugs 50, and holding member 12 to anchor member 10. The first result of these hammer blows is to seat tapered upper portion 11 of anchor 10 firmly against similarly tapered side walls 24 of holding member 12. The second result is, of course, to transmit the hammer blows through the serrated bottom of anchor 10 against the body into which the anchor is to be driven.

While the hammer blows are thus being applied, the operator manually twists the holding tool, and this causes anchor member 10 to produce a drilling or grinding action, on the body into which it is being driven, because of the presence of serrations 14. As will be seen, the pivoting of handle 37 on holding member 12 makes it easier for the operator to manuever the tool conveniently and effectively.

As serrations 14 grind their way into concrete material 60, the resulting ground concrete particles tend to rise through passageway 18 in anchor member 10. After they fill passageway 18 to its top, they will then spill out through waste ports 41 on either side of holding member 12.

When anchor member 10 has been driven into concrete body 60 to the desired depth, it is removed from the concrete and the hole resulting from the operation is cleaned out.

(The desired depth will depend, of course, upon the purpose for which anchor member 10 is being installed. Ordinarily it will be approximately as shown in FIGURES 4 through 6, where anchor 10 is indicated as having been driven into concrete material 60 until groove 13 is just about flush with the outer surface of the concrete. In FIGURE 3, anchor 10 is shown driven almost to this desired depth.)

Conical wedge 20 is then placed in the hole and anchor member 10 is pushed into the hole on top of the wedge, with the wedge extending into passageway 18 within the anchor member.

The automatic hammer is again operated, and anchor 10 is driven down upon conical wedge 20. The flared walls of wedge 20 cause the side walls of the anchor member to split at grooves 15, and cause fingers 16 to spread open as shown in FIGURE 5 to wedge them tightly into the surrounding material. This secures anchor member 10 in concrete body 60.

After anchor member 10 is secured in the concrete or other material, upper portion 11 of member 10 is knocked off by laterally applied blows which take effect at the weakened walls of groove 13, with the result indicated in FIGURE 6.

Upper portion 11 may be knocked off the main body of anchor member 10 by manually applied blows, or by tipping or rocking the automatic hammer and the holding tool while the hammer is operated. If the holding tool is tipped or rocked in this way, the beveling at 22 of bottom wall 21 of the holding member increases the ease with which the holding tool may be maneuvered. As will be seen, the same result would be achieved if bottom wall 21 were a spherical section, or any other design in which the center portion of the bottom wall extends lower than the outer portions thereof.

FIGURE 4 shows the holding tool of this invention in operative position after anchor member 10 has been driven into concrete material 60, but before upper portion 11 of anchor 10 has been knocked off. FIGURE 5 discloses how holding member 12 can be easily and quickly removed from upper portion 11 while anchor member 10 remains in place. This disengaging step is the same whether upper portion 11 is still connected with the remainder of anchor 10, as illustrated in FIGURE 5, or has already been knocked off.

As has been pointed out above, a major defect of the holding tool previously used in this field is that when it is desired to remove the tool from upper portion 11 of anchor member 10, it is very often difficult to effect the desired disengagement. The holding contact between member 12 and upper portion 11 is made very tight by reason of the repeated blows of the automatic hammer, and often becomes so secure that, as mentioned above, one-half hour, an hour, or even more can be expended in an attempt to loosen the contact.

The tool of the present invention provides a firm holding contact while anchor member 10 is being driven into the concrete or other material and thereafter is being firmly seated down around conical wedge 20, and yet the tool can be quickly disengaged from portion 11 of anchor 10 when this is desired. It is estimated that the saving in time resulting from this quick and sure removal will enable a given team of workers to increase by 50% or more the number of anchor members which they can install during any given period of time.

To disengage holding member 12 from portion 11 of anchor member 10, laterally extending lugs 50 are removed from driving slots 35 and hammer member 45 and holding member 12 are rotated approximately 90° with respect to each other. This brings lugs 50 into alignment with deeper disengaging slots 36.

As explained above, slots 36 are deep enough that downwardly extending hammer head 47 is free to descend—with lugs 50 being guided by the side walls of slots 36—to a position where bottom wall 52 of the hammer head strikes top wall 53 of upper portion 11 of the anchor member. The hammer blows from the automatic hammer are under this circumstance applied directly to upper portion 11 without any blows being applied directly to holding means 12.

The result of this application of intermittent hammering blows is to vibrate upper portion 11 of anchor 10 until it is loosened from holding member 12. It appears that the inertia of holding member 12 tends to hold it stationary so that upper portion 11 of anchor member 10 will slide out of opening 23 in holding member 12 under the repeated vibratory blows from the hammer head.

When upper portion 11 remains attached to that part of anchor member 10 which is secured to the concrete or other material, the operator may, if he desires, pull upward upon handle 37—and thus upon holding member 12—at the same time that anchor head 47 is striking downward against upper portion 11 of anchor 10. This will assist in procuring the desired disengagement.

The holding tool of this invention is shown in FIGURE 5 just after the repeated blows of hammer head 47 against top wall 53 of anchor member 10 have disengaged portion 11 of anchor member 10 from holding member 12. It will be understood that the operator retains his hold on grip 38 of handle 37 of the tool (not seen in FIGURE 5), so that he can lift the holding means and the hammer means away together, and prepare the tool for further use in installing another anchor member.

The above detailed disclosure of this invention has been given for clearness of understanding only. No unnecessary limitations should be understood therefrom, since modifications of the invention as disclosed will be obvious to persons skilled in the art.

I claim:

1. A tool for holding an object securely while it is being driven into another object which comprises: means for holding the object to be driven and to transmit thereto hammering blows applied to the holding means, said holding means being adapted to receive said object snugly; hammer means associated with said holding means; means carried by said hammer means and said holding means for selectively engaging said hammer means with said holding means to transmit hammering blows from the former to the latter and thence, without any direct mechanical connection between the hammer

means and the object to be driven which is held by the holding means, to said object; and guide means carried by said hammer means and said holding means for selectively directing said hammer means against said object held by said holding member, so as to apply hammering blows from said hammer means directly to said object without applying any hammering blows directly from said hammer means to said holding means, thereby disengaging said object from said holding means.

2. A tool for holding an object securely while it is being driven into another object which comprises: a holding member having a bottom wall and a top wall, said holding member having an opening in its bottom wall adapted to receive snugly the object to be driven, said holding member also having a passageway extending from said opening through the holding member to the top wall thereof, and said holding member further having at the top thereof at least one shallow driving slot and at least one deeper disengaging slot, said disengaging slot being spaced from said driving slot around the perimeter of said holding member; a hammer member nested with said holding member, said hammer member having a shank and a head, said shank being adapted to be gripped by an automatic hammer, said head extending downwardly from said shank into the aforesaid passageway through the holding member; and at least one lug extending laterally from said hammer member, said lug being adapted to be received selectively by said shallow driving slot and by said deeper disengaging slot, so that when said laterally extending lug is seated in the shallow driving slot of the holding member hammering blows applied to the shank of the hammer member will be transmitted therefrom through the holding member to the object to be driven, and when said laterally extending lug is seated in the deeper disengaging slot the latter will guide the hammer member to cause the hammer head to strike directly against the object which has been driven and thereby disengage the object from the holding member through the application of hammering blows from the hammer head.

3. A tool for holding an object securely while it is being driven into another object which comprises: a holding member having a bottom wall and a top wall, said holding member having an opening in its bottom wall adapted to receive snugly the object to be driven, with the object extending a distance into said opening, said holding member also having a passageway extending from said opening through the holding member to the top wall thereof, and said holding member further having at the top thereof at least one shallow driving slot and at least one deeper disengaging slot, said disengaging slot being spaced from said driving slot around the perimeter of said holding member, the distance from the bottom of said disengaging slot to the bottom wall of said holding member being less than the corresponding distance for the driving slot; a hammer member nested with said holding member, said hammer member having a shank and a head, said shank being adapted to be gripped by an automatic hammer, said head extending downwardly from said shank a distance into the aforesaid passageway through the holding member; and at least one lug extending laterally from said hammer member, said lug being adapted to be received selectively by said shallow driving slot and by said deeper disengaging slot, the sum of the distance said hammer head extends below said lug into said passageway plus the distance said object extends upwardly into said opening in the bottom wall of the holding member being less than the distance between said bottom wall and the bottom of said driving slot but greater than the distance between said bottom wall and the bottom of said disengaging slot, so that when said laterally extending lug is seated in the shallow driving slot of the holding member hammering blows applied to the shank of the hammer member will be transmitted therefrom through the holding member to the object to be driven, and when said laterally extending lug is seated in the deeper disengaging slot the latter will guide the hammer member and cause the hammer head to strike directly against the object which has been driven and thereby disengage the object from the holding member through the application of hammering blows from the hammer head.

4. A tool for holding an object securely while it is being driven into another object which comprises: a holding member having a bottom wall and a top wall, said holding member having an opening in its bottom wall adapted to receive snugly the object to be driven, said holding member also having a passageway extending from said opening through the holding member to the top wall thereof, and said holding member further having at the top thereof a pair of shallow driving slots and a pair of deeper disengaging slots, said disengaging slots being spaced from said driving slots around the perimeter of said holding member; a hammer member nested in said passageway in the holding member, said hammer member having a shank and a head, said shank being adapted to be gripped by an automatic hammer, said head extending downwardly from said shank into the aforesaid passageway; and a pair of lugs extending laterally from said hammer member, said lugs being adapted to be received selectively by said shallow driving slots and by said deeper disengaging slots, so that when said laterally extending lugs are seated in the shallow driving slots of the holding member hammering blows applied to the shank of the hammer member will be transmitted therefrom through the holding member to the object to be driven, and when said laterally extending lugs are seated in the deeper disengaging slots the latter will guide the hammer member and cause the hammer head to strike directly against the object which has been driven, and thereby disengage the object from the holding member through the application of hammering blows from the hammer head.

5. A tool for holding an object securely while it is being driven into another object which comprises: a holding member having a bottom wall and a top wall, said holding member having an opening in its bottom wall adapted to receive snugly the object to be driven, said holding member also having a passageway extending from said opening through the holding member to the top wall thereof, and said holding member further having at the top thereof a pair of shallow driving slots and a pair of deeper disengaging slots, said disengaging slots being spaced from said driving slots around the perimeter of said holding member; a handle pivotally attached to said holding means; a hammer member nested in said passageway in the holding member, said hammer member having a shank and a head, said shank being adapted to be gripped by an automatic hammer, said head extending downwardly from said shank into the aforesaid passageway; and a pair of lugs extending laterally from said hammer member, said lugs being adapted to be received selectively by said shallow driving slots and by said deeper disengaging slots, so that when said laterally extending lugs are seated in the shallow driving slots of the holding member hammering blows applied to the shank of the hammer member will be transmitted therefrom through the holding member to the object to be driven, and when said laterally extending lugs are seated in the deeper disengaging slots the latter will guide the hammer member and cause the hammer head to strike directly against the object which has been driven, and thereby disengage the object from the holding member through the application of hammering blows from the hammer head.

6. A tool for holding an object securely while it is being driven into another object which comprises: a holding member having a bottom wall, side walls, and a top wall, said holding member having an opening in its bottom wall adapted to receive snugly the object to be driven, said holding member also having a passageway extending from

said opening through the holding member to the top wall thereof and a waste port in its side walls communicating with said passageway, said holding member further having at the top thereof a pair of shallow driving slots and a pair of deeper disengaging slots, said disengaging slots being spaced from said driving slots around the perimeter of said holding member; a hammer member nested in said passageway in the holding member, said hammer member having a shank and a head, said shank being adapted to be gripped by an automatic hammer, said head extending downwardly from said shank into the aforesaid passageway; and a pair of lugs extending laterally from said hammer member, said lugs being adapted to be received selectively by said shallow driving slots and by said deeper disengaging slots, so that when said laterally extending lugs are seated in the shallow driving slots of the holding member hammering blows applied to the shank of the hammer member will be transmitted therefrom through the holding member to the object to be driven, and when said laterally extending lugs are seated in the deeper disengaging slots the latter will guide the hammer member and cause the hammer head to strike directly against the object which has been driven, and thereby disengage the object from the holding member through the application of hammering blows from the hammer head.

7. A tool for holding an object securely while it is being driven into another object which comprises: a holding member having a bottom wall and a top wall, said holding member having an opening in its bottom wall adapted to receive snugly the object to be driven, said holding member also having a passageway extending from said opening through the holding member to the top wall thereof, the upper portion of the side walls of said passageway flaring outward, said holding member further having at the top thereof a pair of shallow driving slots and a pair of deeper disengaging slots, said disengaging slots being spaced from said driving slots around the perimeter of said holding member; a hammer member nested in said passageway in the holding member, said hammer member having a shank and a head, said shank being adapted to be gripped by an automatic hammer, said head extending downwardly from said shank into the aforesaid passageway and having a slip fit with the side walls of the lower portion of said passageway; and a pair of lugs extending laterally from said hammer member, said lugs being adapted to be received selectively by said shallow driving slots and by said deeper disengaging slots, so that when said laterally extending lugs are seated in the shallow driving slots of the holding member hammering blows applied to the shank of the hammer member will be transmitted therefrom through the holding member to the object to be driven, and when said laterally extending lugs are seated in the deeper disengaging slots the latter will guide the hammer member and cause the hammer head to strike directly against the object which has been driven, and thereby disengage the object from the holding member through the application of hammering blows from the hammer head.

8. A tool for holding an object securely while it is being driven into another object which comprises: a holding member having a bottom wall and a top wall, said holding member having an opening in its bottom wall adapted to receive snugly the object to be driven, the center portion of said bottom wall being lower than the outer portions thereof, said holding member also having a passageway extending from said opening through the holding member to the top wall thereof, and said holding member further having at the top thereof a pair of shallow driving slots and a pair of deeper disengaging slots, said disengaging slots being spaced from said driving slots around the perimeter of said holding member; a hammer member nested in said passageway in the holding member, said hammer member having a shank and a head, said shank being adapted to be gripped by an automatic hammer, said head extending downwardly from said shank into the aforesaid passageway; and a pair of lugs extending laterally from said hammer member, said lugs being adapted to be received selectively by said shallow driving slots and by said deeper disengaging slots, so that when said laterally extending lugs are seated in the shallow driving slots of the holding member hammering blows applied to the shank of the hammer member will be transmitted therefrom through the holding member to the object to be driven and when said laterally extending lugs are seated in the deeper disengaging slots the latter will guide the hammer member and cause the hammer head to strike directly against the object which has been driven, and thereby disengage the object from the holding member through the application of hammering blows from the hammer head.

9. A tool for holding a metal shell securely while it is being driven into a body formed of material selected from the group consisting of concrete, steel-hardened concrete, stone, masonry, and the like, which comprises: a generally cylindrical holding member having a bottom wall and a top wall, said holding member having an opening in its bottom wall adapted to receive snugly the object to be driven, the center portion of said bottom wall being lower than the outer portions thereof, said holding member also having a passageway extending from said opening through the holding member to the top wall thereof, said holding member further having at the top thereof a pair of shallow driving slots and a pair of deeper disengaging slots, said disengaging slots being spaced from said driving slots around the perimeter of said holding member; a handle pivotally attached to said holding means; a hammer member nested in said passageway in the holding member, said hammer member having a shank and a head, said shank being adapted to be gripped by an automatic hammer, said head extending downwardly from said shank into the aforesaid passageway; and a pair of lugs extending laterally from said hammer member, said lugs being adapted to be received selectively by said shallow driving slots and by said deeper disengaging slots, so that when said laterally extending lugs are seated in the shallow driving slots of the holding member hammering blows applied to the shank of the hammer member will be transmitted therefrom through the holding member to the object to be driven, and when said laterally extending lugs are seated in the deeper disengaging slots the latter will guide the hammer member and cause the hammer head to strike directly against the object which has been driven, and thereby disengage the object from the holding member through the application of hammering blows from the hammer head.

10. A tool for holding a metal shell securely while it is being driven into a body formed of material selected from the group consisting of concrete, steel-hardened concrete, stone, masonry, and the like, which comprises: a generally cylindrical holding member having a bottom wall, side walls, and a top wall, said holding member having an opening in its bottom wall adapted to receive snugly the object to be driven, with the object extending a distance into said opening, the center portion of said bottom wall being lower than the outer portions thereof, said holding member also having a passageway extending from said opening through the holding member to the top wall thereof, the upper portion of the side walls of said passageway flaring outward, said holding member also having a waste port in its side walls communicating with said passageway, said holding member further having at the top thereof a pair of shallow driving slots and a pair of deeper disengaging slots, said disengaging slots being spaced from said driving slots around the perimeter of said holding member, the distance from the bottom of said disengaging slot to the bottom wall of said holding member being less than the corresponding distance from the driving slot; a handle pivotally attached to said holding means; a hammer member nested in said passageway in the holding member, said hammer member having

a shank and a head, said shank being adapted to be gripped by an automatic hammer, said head extending downwardly from said shank a distance into the aforesaid passageway through the holding member, said head having a slip fit with the side walls of the lower portion of said passageway; and a pair of lugs extending laterally from said hammer member, said lugs being adapted to be received selectively by said shallow driving slots and by said deeper disengaging slots, the sum of the distance said hammer head extends below said lugs into said passageway plus the distance said object extends upwardly into said opening in the bottom wall of the holding member being less than the distance between said bottom wall and the bottom of said driving slots but greater than the distance between said bottom wall and the bottom



of said disengaging slots, so that when said laterally extending lugs are seated in the shallow driving slots of the holding member hammering blows applied to the shank of the hammer member will be transmitted therefrom through the holding member to the object to be driven, and when said laterally extending lugs are seated in the deeper disengaging slots the latter will guide the hammer member and cause the hammer head to strike directly against the object which has been driven, and thereby disengage the object from the holding member through the application of hammering blows from the hammer head.

No references cited.