C. H. PARKS.

MAGNETIC BRAD SET.

APPLICATION FILED JAN. 15, 1914.

1,141,073. Patented May 25, 1915.

Fig. 1

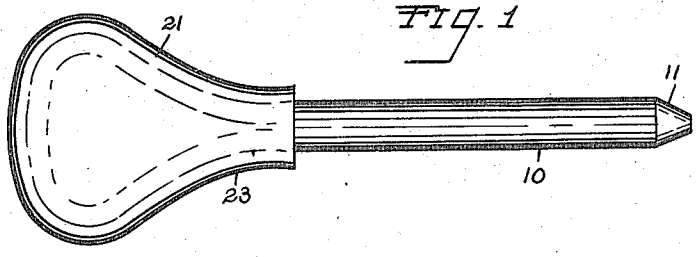


Fig. 2

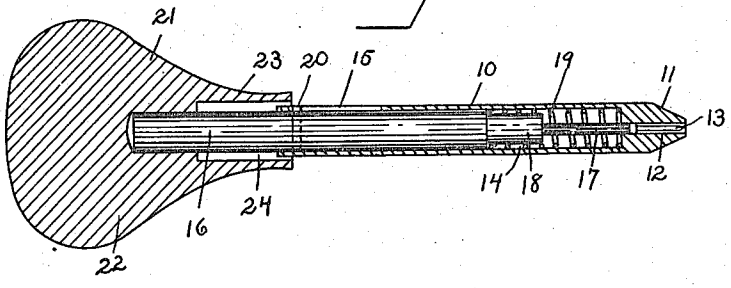
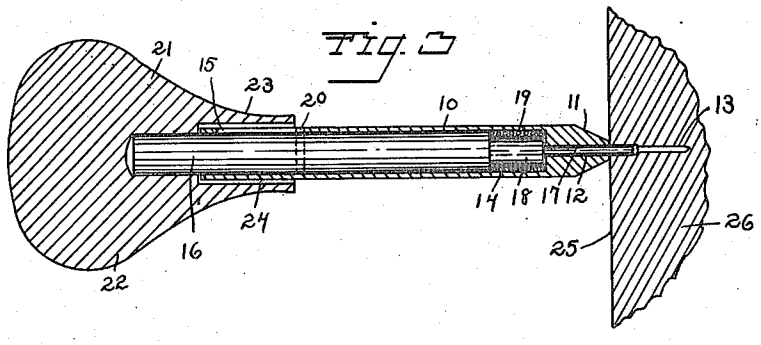


Fig. 3



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UNITED STATES PATENT OFFICE.

CHARLES H. PARKS, OF WATERBURY, CONNECTICUT, ASSIGNOR OF ONE-HALF TO DWIGHT S. GOODWIN, OF WATERBURY, CONNECTICUT.

MAGNETIC BRAD-SET.

1,141,073. Specification of Letters Patent. Patented May 25, 1915.

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To all whom it may concern:

Be it known that I, CHARLES H. PARKS, a citizen of the United States, residing at Waterbury, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Magnetic Brad-Sets, of which the following is a specification.

My invention relates to improvements in magnetic brad-sets, and the object of my improvement is to produce a tool of the magnetic type that is suitable for driving brads or nails of small diameter and for setting the same below the surface of the wood and which is at the same time relatively small and compact in size and which is efficient and reliable in use.

In the accompanying drawing, Figure 1 is a side elevation of my improved magnetic brad-set. Fig. 2 is a longitudinal section of the same, the brad being shown in side elevation. Fig. 3 is a similar view of the same with the parts moved from the position shown in Fig. 2, the wood or board being also in section.

My magnetic brad-set comprises a shell-like body 10 which is an elongated cylindrical structure, the outer end 11 of which may be tapered, and having a bore extending throughout the length, the portion 12 of the said bore at the said outer end 11 being of quite small diameter such as to be a sliding fit for the brad 13 or nail to be operated on and the portion 14 of the said bore extending along the remainder and major part of the length being of considerably greater diameter. The side wall is provided with a longitudinal slot 15.

A ram is operatively housed in the body 10 and comprises a main body 16 at the inner end that is of a diameter such as to be a sliding fit for the inner and larger portion 14 of the bore and which at the outer end 17 is of a diameter such as to be a sliding fit for the outer and smaller portion 12 of the bore and which intermediate the said ends comprises a body extension 18 which is of slightly reduced diameter relatively to the main body 16 so as to accommodate or house a spring 19 between the same and the opposed wall of the larger portion 14 of the bore. A radial pin 20 is provided in the main body 16 which engages with the slot 15.

A recessed handle 21 is provided on the extreme inner end of the main body 16 comprising a handle body 22 that is engaged with the said extreme end and an annular extension 23 which is formed by and incloses the axial recess 24 and which overhangs the inner end of the shell-like body 10.

The smaller portion 12 of the bore constitutes the loading chamber, and the same is of a diameter as already mentioned to slidably receive the brad 13 and is of a length to house the brad and also to receive and house the extreme outer end of the reduced portion 17 of the ram, and which latter is positioned therein when the ram is at the initial or normal position. The outer end 17 of the ram serves as the hammer head and is of sufficient length to extend through the loading chamber 12 when the ram is moved forwardly to the driving position to the extreme amount permissible and to extend beyond the said loading chamber 12 and the end 11 of the body 10 by an amount to correspond to the amount it is desired to set the brad 13 below the surface 25 of the wood or board 26. The movement of the ram is limited by the pin 20 engaged with the slot 15.

The larger portion 14 of the bore serves as an operating cylinder for the ram body composed of the main body 16 and the body extension 18 and the spring 19 which is mounted on the ram and positioned between the main body 16 and the outer end of the cylinder 14.

The reduced portion of the ram body or body extension 18 is of such reduced diameter and length as is necessary to provide a housing for the spring 19 when the ram is moved to the limit to the driving position, as shown in Fig. 3, and in this position the ram is essentially in abutment with the end of the cylinder 14. Accordingly, as described, the ram body substantially fills the cylinder 14 and extends sufficiently beyond the same at the inner end to be embedded in the handle 21.

The handle extension 23 covers the extreme inner end of the cylinder body 10 in the initial position, as shown in Fig. 2, and as the ram is moved from the said position the said extreme end enters the recess 24 correspondingly.

The ram is magnetized so that the brad 13 is held engaged with the hammer 17 by magnetic attraction.

I am aware of the fact that magnetic de-

vices have been made for driving nails or carpet tacks and which have relatively large heads. Such devices do not involve the difficulties of a device, such as described, for successfully driving such small bodies as brads. I have succeeded in producing a device that is operative for the purpose mentioned and which will have long life, from a magnetic standpoint, by providing a magnet body of the maximum dimensions or of any dimensions that may be deemed desirable from a magnetic standpoint, and then have provided as an extension from the magnet proper a hammer proper that is of a size to conform to the brad to be operated upon, and which however diminutive in size is ample to conduct the magnetic lines of force from the magnet body proper to the brad.

The recessed handle feature described permits of making the device of compact form and at the same time provides a handle of convenient size for handling the device.

I prefer to make the shell body 10 and the nose 11 at the outer end of brass or other suitable non-magnetic material.

This construction serves to maintain the magnetism in the driver or ram indefinitely and also enables the operator to lay down the instrument when not in use, without the annoyance of the instrument picking up stray pieces of steel, nails or other loose material in which it may have been placed, as the device will not attract objects unless the ram is in forward position, which can never be except when being operated.

It will be noted that the casing 10 is a unitary structure and has a bore composed of two portions, one of these, 14, being in the form of a cylinder that is appreciably elongated and of relatively large diameter, and the other, 12, being quite small in diameter. The smaller bore portion, 12, is of proper length and diameter to house the brad, 13, which latter is as usual of small diameter and has a small head, and has additional length sufficient to house the free end of the hammer with the parts in the normal position, as shown in Fig. 2. In this position the major or body portion of the hammer 17 it will be noted is housed in the main cylinder 14.

The ram is composed of the hammer 17 at one end, which fits the loading chamber 12 as described, and the main body portion 16 at the other end, which fits the main cylinder 14 and intermediate the said ends has the body extension 18. The said body extension 18 is reduced relatively to the main body portion 16 and is of proper length to form with the opposed wall of the cylinder 14 a housing for the spring 19 with the parts at the position of the extreme outward movement of the ram, as shown in Fig. 3.

The magnetic body consists of the main body portion 16 and the extension 18. That is to say that these are the parts relied upon to retain the magnetism, the hammer 17 serving virtually as a conductor of the magnetic lines of force to the brad. It will accordingly be noted that the said magnetic body is a maximum possible in bulk or mass, and this feature has an important bearing on the life of the same as regards the retention of the magnetism, and is particularly desirable in a percussion device, it being understood that such a device is particularly susceptible to loss of its magnetism.

I claim as my invention:—

In combination in a magnetic brad-set, a casing having a bore composed of a main portion in the form of a cylinder, relatively elongated and of relatively large diameter, and a reduced portion that is a fit for a brad of relatively small diameter, a ram of magnetic material, comprising a main body portion at one end that is also elongated and is a fit for the said cylinder, a hammer at the other end that is a fit for the said reduced portion of the bore, and a body extension intermediate the said ends, a spring housed between the said extension and the walls of the said cylinder, means for limiting the relative movement of the said casing and ram, the outer end of the said ram overhanging the outer end of the said casing, and a handle mounted on the said outer end of the ram, the said handle comprising a body portion engaged with and inclosing the said outer end of the ram and an extension that fits over and incloses the side walls of the said outer end of the casing, whereby the said main body portion of the ram is at all times inclosed and protected, and a handle is provided suitable for permitting manipulating the said brad-set conveniently with one hand.

CHARLES H. PARKS.

Witnesses:
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