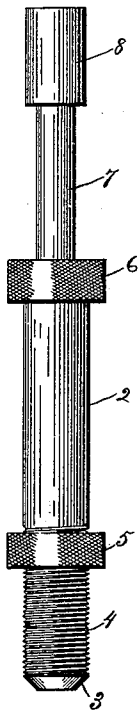
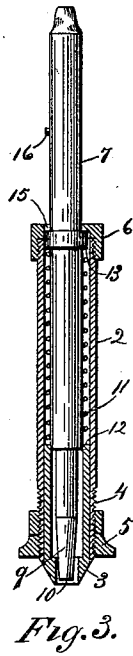
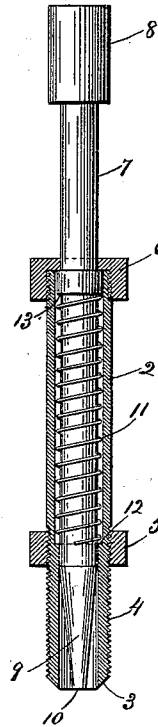
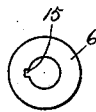


No. 722,559.

PATENTED MAR. 10, 1903.

N. BOND.
SCREW CENTER PUNCH AND NAIL SET.
APPLICATION FILED OCT. 24, 1902.

NO MODEL.



WITNESSES:

W. H. Cotton
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NELS BOND, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO FRANK I. ABBOTT, OF CHICAGO, ILLINOIS.

SCREW CENTER-PUNCH AND NAIL-SET.

SPECIFICATION forming part of Letters Patent No. 722,559, dated March 10, 1903.

Application filed October 24, 1902. Serial No. 128,587. (No model.)

To all whom it may concern:

Be it known that I, NELS BOND, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Screw Center-Punches and Nail-Sets, of which the following is a specification.

This invention relates to carpenters' and joiners' tools, and has in view the construction of a simple and convenient implement for properly locating, directing, and punching holes into which screws are to be inserted.

My device is particularly serviceable in connection with the attachment of hinges of doors and swinging lids to the frames, casings, or other supports therefor.

As is well known, strap-hinges of various kinds are provided with countersunk apertures for the screws, and the operation of hanging a door so that all the supporting-screws shall be properly located and centered to bring their heads within the countersinks flush with the surface of the hinge involves no little time and labor.

The primary object of my invention is to facilitate this operation by providing a time-saving device which shall properly locate and center and under the blow of a hammer or similar tool punch a hole for each screw.

Another object of the invention is to provide a novel nail-set which guides the set on the head of the nail to prevent the latter from slipping off the nail-head and marring the structure into which the nail is driven, and the device may also be employed for a number of other similar purposes.

Generally speaking, the invention consists of a tube or casing containing a spring-pressed plunger having a tapered end normally held within said tube or casing and a blunt end projecting from one end of said tube, said blunt end being adapted to be operated upon by a striking-tool, whereby said plunger, being adapted for a limited longitudinal movement within said tube, will project its tapered end outwardly toward and beyond the mouth thereof; and my invention further consists in the various details of construction and in combinations of parts, all as hereinafter de-

scribed, and particularly pointed out in the 50 claims.

My invention will be more readily understood by reference to the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a side elevation of my device with the plunger in its normal position and the adjusting thimble or collar turned back away from the mouth of the tube. Fig. 2 is a view similar to Fig. 1, showing the tube and its collar in section; and Fig. 3 is a modification of Fig. 1 with the adjusting thimble or collar turned down to a point near the mouth of the tube and illustrating a modification of the head of the plunger and a plunger-retaining lug or pin for holding the plunger in its projected position when used as a nail-set. Fig. 4 is a top plan view of the casing shown in Fig. 3.

In the drawings, 2 is a guide-tube provided with a tapered or truncated cone-shaped extremity 3, designed to fit the depression or countersink with which the screw-apertures in strap-hinges and all similar apertures are provided. The lower end or mouth of said tube is further provided with the exterior threads 4, upon which a thumb-operated collar or thimble may be screwed. The tube 2 is also threaded at its other extremity to provide means for attaching the apertured nut or flanged collar 6. Extending longitudinally within said tube is a spring-pressed plunger 7, preferably provided with a head 8, adapted to receive the blow from a hammer or other suitable driving-tool or to be operated by hand. In Fig. 3 this head is shown with the usual tapered end of nail-sets best adapted for hammer-blows. The plunger 7 is provided with a tapered end 9 of suitable configuration to provide when driven into the wood a cavity adapted to receive a screw of the desired size, or when used for other purposes, such as a nail-set, a point or contact-surface of the proper angle plain or recessed. While I have shown the plunger 7 as provided with a flat end face 10, which adapts it to be used as a hole punch or marker, it is obvious that it may be made in the form of a drill center-

punch and modified for the various purposes for which it may be adapted.

Within the guide-tube 2 is a spiral spring 11, one end of which bears against the annular ring, ridge, or shoulder 12, with which the interior of the tube is provided, and the other end of said spring is compressed against and bears upon an annular shoulder or ring 13, which may be either an integral part of the plunger or a ring secured thereto. The spring 11 tends to hold the plunger in the retracted position illustrated in the drawings to permit of the adjustment of the tapered end 3 within a countersink over the head of the nail. As illustrated in Fig. 2, the point of the plunger 7 extends to the tapered end of the tube; but this may be adjusted, by means of the flanged collar or nut 6, so that said point will not reach quite to the end of the tube. Such adjustment would be desirable when using the device as a nail-head guide and nail-set. The collar or thimble 5 also provides a means for increasing the size of the nail-head guide when it is to be used upon nails having heads slightly larger than can be accommodated within the tube 2 by simply turning said collar forward to project beyond the tapered end 3 of the tube. Said thimble or collar also serves as a guide to regulate the depth of insertion in countersinks of varying width and depth. The spring 11 keeps the point of the plunger out of the way while adjusting the tool and returns the plunger to its position after it has been struck by a hammer or otherwise operated upon.

In Fig. 3 the collar 6 and the plunger 7 are shown with modifications adapting them peculiarly to constitute my device a center-punch or nail-set. As shown, the collar 6 is provided with an aperture or hole 15 and the plunger 7 with a projecting pin or lug 16, adapted to pass through the opening 15. When said lug or pin 16 has been brought within the tube 2 through said hole 15 by slightly rotating the plunger, said lug or pin will bear against the inner face of the collar 6 and prevent the plunger from being forced back by the spring 11 and will keep the point of the plunger projected. The point end of the plunger is also shown with the modification of being reduced to permit the insertion thereof into the smallest-size countersink or hole consistent with affording the proper strength for said end.

In operation my device may, among other things, be utilized as follows: Instead of temporarily setting the door in position in order that the loose wings of the hinges attached thereto may be used as gages to mark the points for the proper insertion of the screws in the casing and then either remove the door to bore or punch the holes, &c., the tapered end 3 of my device may be inserted into the proper depression or countersink and held perpendicularly to the face of the surface in which it is desired to insert the screw, the hammer punch or plunger 7 being struck with

any suitable tool to drive the tapering extremity 9 into the wood to provide the necessary cavity, the resistance of the spring being relied upon to return said hammer-punch to its normal position after withdrawal.

I have referred to my device as adapted for use as a nail-set. As is customary, the nail is partially driven into the material and then the nail-set employed to drive the nail home, the purpose being to avoid making hammer-marks in the structure; but the nail-set often slips, making ugly indentations, and thus defeating its object. By employing my device, however, and placing the tube end 3 over the head of the nail there is no danger of the set slipping off or misdirecting the blow.

From the foregoing illustrations of the uses to which my invention may be put it will be evident that its range of utility is not confined thereto. It is further obvious that many modifications may be made in the minor details of construction which will readily suggest themselves to one skilled in the art without departing from the spirit of this invention, which I therefore do not desire to limit to the specific construction herein shown and described.

Having described my invention, I claim as new and desire to secure by Letters Patent—

1. In a screw center-punch and nail-set, the combination, of a casing, a plunger slidable and freely revoluble therein, the latter being provided with a center-punch portion and a striking-head, means holding the center-punch portion normally retracted within the casing and means non-resistant to impact upon the head of the plunger for locking said plunger upon the casing when the center-punch portion is projected therefrom.

2. In a screw center-punch and nail-set, the outer casing, the plunger, freely movable within said casing, provided with a head extending out of said casing and a striking or indenting point normally held within said casing, means upon said plunger and casing for adjusting the indenting-point in variable retracted positions, and means non-resistant to impact upon the head of the plunger, for holding the indenting-point projected out of the casing.

3. In a screw center-punch and nail-set, the combination, of a casing, a free rotating and reciprocating plunger therein provided with a normally projected striking-head and a normally retracted center-punch spindle, means upon the plunger which yield in the direction of said spindle for holding the latter normally retracted within the casing, adjustable holding means for varying the position of the spindle within the casing, and means, non-resistant to impact upon the head of said spindle, for holding said spindle projected from the casing at substantially the limit of its outward movement.

4. In a screw center-punch and nail-set, the combination, of an outer casing, a plunger freely rotatable and longitudinally movable

therein, said plunger being provided with a striking-head and a center-punch, adjustable means limiting only the retractile movement of the spindle, for normally holding its point
5 near the open end of and within the casing, a gage upon the open end of said casing which coöperates with said last-mentioned adjusting means, whereby the head of a nail, screw or the like is held against lateral movement
10 with relation to said adjusted point, and said gage being also adapted to limit the depth of

insertion of the casing in a countersink or depression.

In testimony of the foregoing I have hereunto set my hand, this 18th day of September, 1902, in the presence of two subscribing
15 witnesses.

NELS BOND.

In presence of—

W. P. OWENS,
F. P. BLACKMAN.