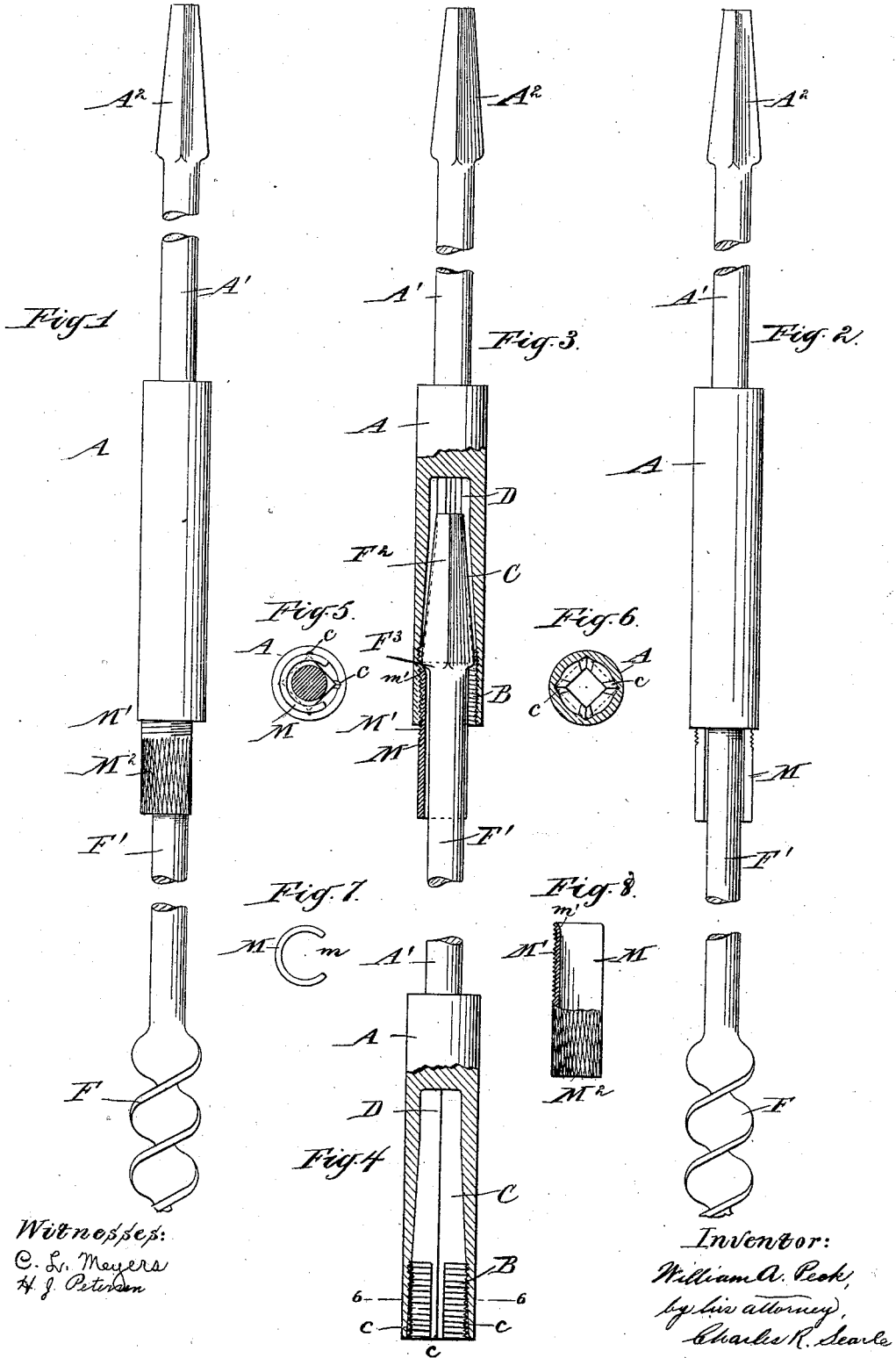


W. A. PECK.
EXTENSION BIT HOLDER.
APPLICATION FILED MAY 10, 1909.

954,046.

Patented Apr. 5, 1910.



UNITED STATES PATENT OFFICE

WILLIAM A. PECK, OF JERSEY CITY, NEW JERSEY.

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Specification of Letters Patent.

Patented Apr. 5, 1910.

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To all whom it may concern:

Be it known that I, WILLIAM A. PECK, a citizen of the United States, residing at Jersey City, in the county of Hudson and State of New Jersey, have invented a certain new and useful Improvement in Extension Bit-Holders, of which the following is a specification.

The invention relates to holders for auger-bits by which the bit-shaft may be extended, and the object of the invention is to provide a simple and economical construction by which the diameter of the chuck or body may be greatly reduced without impairing strength, and in which the bit-shank may be held reliably for service and positively locked against accidental withdrawal.

The invention consists in certain novel features and details of construction by which the above objects are attained, to be hereinafter described.

The accompanying drawings form a part of this specification and show the invention as it has been carried out in practice.

Figure 1 is an elevation of the improved holder with a bit therein. Fig. 2 is a similar view at a right angle to Fig. 1. Fig. 3 is a vertical axial section, partly in elevation, corresponding to Fig. 1. Fig. 4 is a similar sectional view showing the body of the holder alone. Fig. 5 is an end view of the holder with a bit therein, the shaft of the latter being shown in cross-section. Fig. 6 is a transverse section taken on the line 6—6 in Fig. 4, and partly in plan or end view. Fig. 7 is an end view of the segmental retainer. Fig. 8 is a corresponding side view partly in longitudinal section.

Similar letters of reference indicate the same parts in all the figures.

A is the body or chuck of the holder, A¹ the shaft, and A² the squared tapered shank by which it is secured in the chuck of a bit-brace or other turning means. The body A is cylindrical and bored and tapped interiorly at the outer end for a short distance as at B, and the cavity thus formed continued axially as a rectangular tapered socket C terminating in a square hole D serving with the tapered portion C to receive the shank F² of a bit F and compel it to rotate with the holder.

M is the retainer consisting of a tube exteriorly threaded at one end, as at M¹, and having a portion of one side removed throughout its length to form a longitudinal

slit or opening *m*, the whole being in effect a segmental screw-plug matching the internal threads B of the holder, and turned by the knurled or otherwise roughened portion M² beyond the screw threads M¹. In end view the retainer shows a curve somewhat more than a semicircle, and the opening *m* is of sufficient width to admit the shaft F¹ of the auger F, up to the capacity of the holder.

In inserting the bit, its shank F² is set in the socket C, the retainer is then applied to the shaft F¹ to inclose the latter, its threads engaged with the internal threads of the body A, and it is turned firmly home with its inner end in strong contact with the shoulder F³ at the junction of the shaft F¹ and shank F² of the auger-bit. Thus positioned the bit is locked in the socket and cannot be withdrawn without removing the retainer.

Preferably the angles of the tapered socket C are continued as grooves *c* across the screw-threaded portion B of the body, as shown in Figs. 4, 5 and 6, and these grooves are preferably of greater angular opening than the 90° of the socket, so that when serving with a bit of large size such grooves in addition to the socket itself, but with the side faces of the shank are out of contact with the adjacent side faces of the groove, thus avoiding distortion or other injury to the threads due to torsional strains. The inner edge of the retainer is rounded as at *m*¹ the better to match the corresponding shoulder F³ and insure rigidity.

It will be noted that the body A may be as small in diameter as is compatible with strength and range of shank sizes, and by inserting the retainer on the inside of the body, permitted by the relatively small diameter of bit-shaft, the bit is securely locked in place with no portion of the chuck or locking means extending beyond the circumference of the body; thus constructed the body may follow in the cut of a much smaller bit than is usual in devices of this character. In electric installations a 5/8 inch hole is very desirable for certain fixtures, the improved holder may be made to follow a bit of that or even smaller size without sacrificing strength.

The holder may be of any desired length, or two or more may be coupled to produce extreme lengths if necessary. The longitudinal edges of the cut or opening *m* offer

additional gripping surfaces for the fingers in removing or inserting the retainer and also provide a flat face for the application of a wrench if desired.

- 5 Modifications may made in the forms and proportions within wide limits, and the chuck composed of the body and retainer may be made part of a brace or similar tool. The grooves *c* may be omitted, depending
10 on the tapered socket-portion of the body alone for engagement with the bit-shank.

I claim:—

1. In a tool of the character set forth, a body portion screw-threaded internally and
15 having a rectangular tapered socket with the angles of such socket continued as grooves across such screw-threads, of greater angular opening than the 90° of the socket in combination with a segmental cylindrical
20 retainer, greater than a semi-circle screw-threaded externally to engage the threads of said body and extended beyond the end of the body portion, and adapted to serve with the latter and with the shaft and
25 shank of an auger-bit inserted in said socket, substantially as and for the purposes specified.

2. In a tool of the character set forth, a

body portion screw-threaded internally and having a rectangular tapered socket with
30 the angles of such socket continued as angular grooves across such screw-threads, the angles of the side faces of such grooves being greater than those of the socket to receive the bit-shank, in combination with
35 a segmental cylindrical retainer, screw-threaded externally to engage the threads of said body, and adapted to serve with the latter and with the shaft and shank of an auger-bit inserted in said body, substantially
40 as and for the purposes herein specified.

3. In a tool of the character set forth, the combination of a body portion screw-threaded internally and having a rectangular tapered socket with the angles of such
45 socket continued as grooves across the screw-threads to receive the bit shank, and a retainer co-acting with the screw threads.

In testimony that I claim the invention above set forth I affix my signature, in
50 presence of two witnesses.

WILLIAM A. PECK.

Witnesses:

CHARLES R. SEARLE,
RUSSELL CROMBIE.