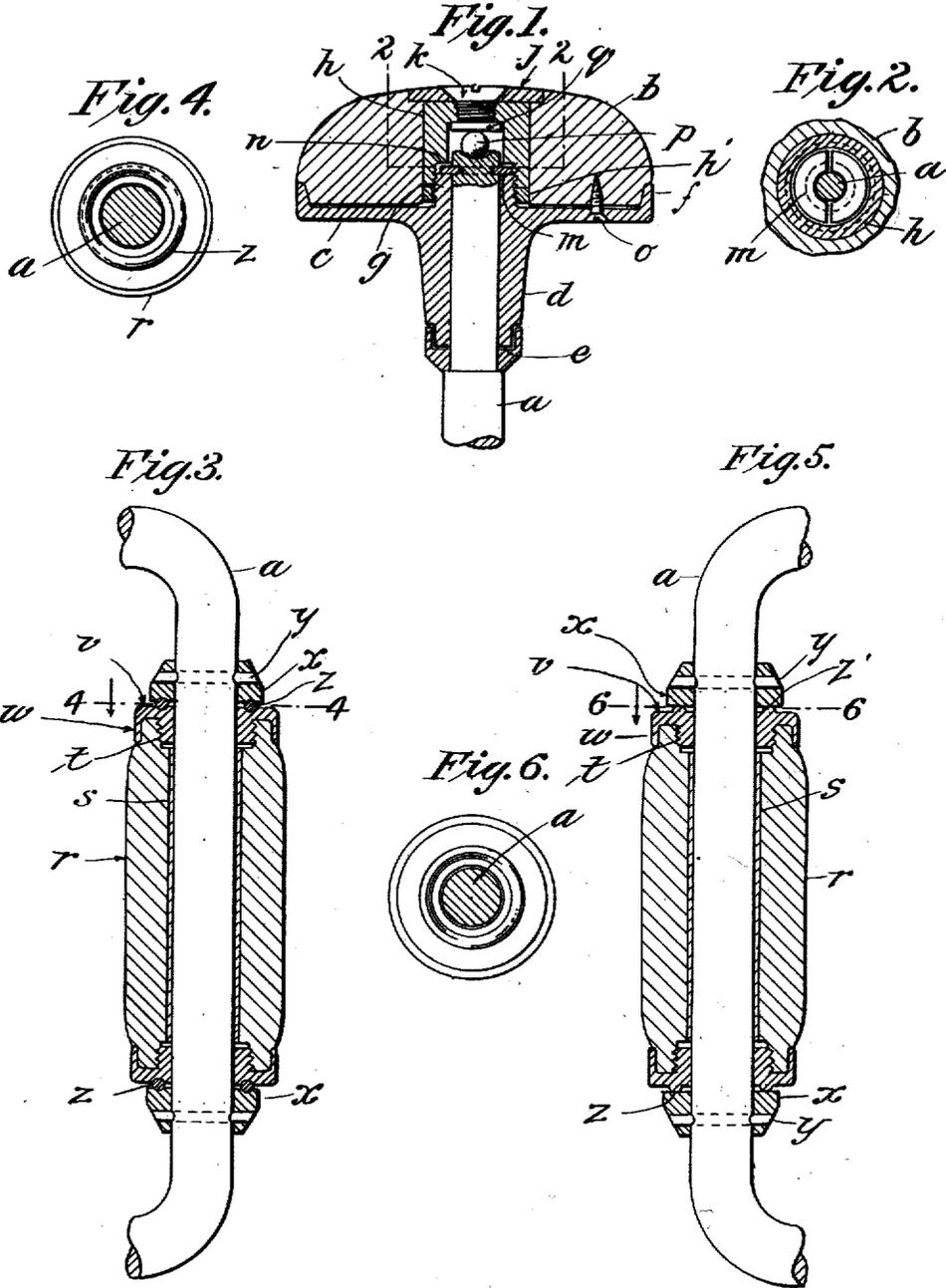


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HEAD FOR BIT STOCKS.
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UNITED STATES PATENT OFFICE.

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HEAD FOR BIT-STOCKS.

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To all whom it may concern:

Be it known that I, WILLIAM ALLEN PECK, a citizen of the United States of America, residing at Jersey City, in the county of Hudson and State of New Jersey, have invented new and useful Improvements in Heads for Bit-Stocks, of which the following is a specification.

This invention relates to bit-braces or the like, and resides particularly in certain improvements in the construction of the knob or head whereby the latter may take the thrust of the tool when in use and also in the construction of the center grip or handle located on the crank-arm, whereby the latter is rotated.

The objects of the invention are, first, to provide a knob construction which may be rotatively secured on the end of the crank-arm in a strong and simple manner and which may be readily removed therefrom and which permits an accurate and close adjustment of the parts without binding, and, secondly, to provide a construction of a center grip or handle in which the friction is reduced to a great degree and whereby provision is made against injury of the handle by the splitting of the latter or which, if desired, permits the grip or handle to be made in two longitudinally-disposed parts.

The invention is clearly illustrated in the accompanying drawings, in which—

Figure 1 is sectional elevation of the improved knob construction, the end of the crank-arm being shown in full lines. Fig. 2 is a cross-section on line 2 2 of Fig. 1. Fig. 3 is a sectional elevation of the center grip or handle, the crank-arm being in full lines. Fig. 4 is a cross-section on line 4 4 of Fig. 3. Fig. 5 is a similar view to Fig. 3 and illustrates a slight modification in the construction shown in that figure, and Fig. 6 is a cross-section on line 6 6 of Fig. 5.

Referring to the drawings, *a* indicates portions of the crank-arm of a bit-brace on which are fitted the knob and the center grip in their usual positions, and the novel position of the knob will first be described.

The body of the knob is indicated by *b* and preferably is made of wood and is, like all structures of this character, substantially semispherical and is mounted on a circular plate *c*, having a long hub *d*, which fits rotatably the upper end of the crank-arm *a*, the lower end of the hub *d* being supported on a shoulder *e*. The circular plate *c* preferably

has an upturned peripheral flange *f* to stiffen it and to receive within its borders the lower portion of a head *b*, the latter being secured to said plate in the usual manner. Centrally of the plate, extending a short distance above it, is a hub *g*, which is screw-threaded exteriorly to receive the nut *h*, which is inserted centrally of the knob *b*, as shown in Fig. 1, and screwed down over this threaded hub *g*. The upper end of the nut *h* is sunk somewhat below the surface of the knob, and the plate *j* of larger diameter than the nut is placed over the latter and is also let into the surface of the knob. The upper end of the nut is bored out and screw-threaded to receive a screw *k*, the head of which has a bearing in the plate *j*, as shown in the drawings. Beyond the screw-threaded lower portion of the nut *h* the latter is counterbored to receive the upper extremity of the crank-arm *a*, and an annular groove is turned in the end of the latter to receive the two-part washer *m*. (Shown in section in Fig. 1 and in plan view in Fig. 2.) The plane of the groove which receives this washer is so located relative to the upper end of the hub *g* that when the circular plate *c* is in position on the end of the crank-arm and the washer *m* in its place in said groove the plate *c* will be secured rotatably on the end of said arm, and when the nut *h* is screwed down onto the hub *g* it may be adjusted relative to said washer *m*, so as to leave as much or as little play between the shoulder *n* on said nut and said washer as desired.

The screw *k* may be turned up to lock the nut *h* relative to the body *b* of the knob and the latter secured to the plate *c* by the screws *o* or otherwise, whereby the parts will be securely retained in their adjusted position.

The washer *m* is a retaining-washer only, and the entire thrust of the crank-arm is received by the nut *h*, preferably by interposing between the end of the crank-arm and the upper end of the chamber in the nut in which the arm enters a ball *p*, the upper end of the arm being chambered out, as shown, to constitute a seat for said ball axially of the end of the arm, and preferably, also, a hardened bearing-plate *q* is located in the upper end of said chambered-out portion of the nut, the parts being all so proportioned that when the nut is screwed down onto the hub *g* to a proper bearing on the ball the shoulder *n* of the nut will occupy a proper relative position to the washer *m*. If desired, the nut *h* may

be used on the threaded hub *g*, against which the nut *h* may be screwed to lock the latter.

The screw *k* does not bear on the plate *q*; and the thrust of the crank-arm against said plate is taken entirely by the nut. Instead of the ball *p* the upper end of the crank-arm might be stepped in the plate *q*, if desired, or some equivalent abutment should the plate *q* be omitted from the construction.

Referring now to Figs. 3 to 6, inclusive, these show the construction of the center grip in its preferred and modified forms. The grip or handle *r* is preferably made of wood in one piece and slipped on the crank-arm *a* before the latter is bent up in the form of a crank, the grip being generally provided with a bushing *s*, which does not extend quite to the ends of the grip. These ends are counterbored and internally screw-threaded to receive the externally-threaded hubs *t* of the metal caps *v*, which serve as bearings for the ends of the grip. These caps are constructed with a flanged edge *w*, whereby when they are screwed onto the ends of the grip the latter will fit tightly in the annular recess between said flange *w* and the hub *t* of the end caps, whereby should the grips be split the parts would still be bound together. Another advantage of this construction is that, if desired, the grips may be made in two parts and applied to the crank-arm after the latter is bent. This also provides means for replacing a broken grip.

The bolsters *x* are preferably made of some hard metal and are secured to the arm by pins *y*, but may be cast thereon, as generally practiced at present, if desired. The particular manner of their application is, however, immaterial, as this feature does not constitute any part of the invention, and any bolster however applied may be used.

The bolsters and caps do not quite come into contact, and a bearing-ring *z*, Fig. 3, of steel or some other suitable metal is located between the caps and bolsters to reduce the frictional contact between these parts.

Instead of the ring *z* an annular-rib *z'* (shown in Figs. 5 and 6) may be substituted therefor, this being formed, preferably, on the caps rather than the bolsters; but if the latter are made of relatively hard metal the ribs may be formed on these parts, if desired.

From the foregoing it will be observed that one of the distinctive features of the invention resides in the effective and thoroughly dust-proof assemblage of parts which provide for rotatably securing the knob on the end of the crank-arm. As pointed out, this construction permits of the ready assembling of the parts for mounting the knob in position and also for removing it, while at the same time providing for an accurate and close adjustment of parts without binding. In this connection it will be observed that the cham-

bered nut *h* subserves the dual function of an adjusting member for the bearing provided between the end of the crank-arm and the knob and also as a retaining device or holder for retaining the parts of the split washer loosely interlocked with the arm of the brace, so that upon removing the screws *o* and *k* and unscrewing the chambered nut *h* a quick and ready separation of the knob and hub member from the crank-arm may be effected. Also the construction referred to includes as an element thereof a bearing projection *P*, which may be in the form of a ball or equivalent projection located at the end of the arm *a* within the chambered nut *h* and having a centering-bearing at the head or base of the nut. Furthermore, the screw *k*, which engages the head or base of the nut *h*, constitutes a dust-proof closure for the knob, while at the same time permitting of the convenient oiling of the bearing.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. The combination with the arm of a bit-brace or the like, of a hub member fitting the arm and having a threaded end, a knob-body, a chambered nut arranged in the knob-body and adjustably engaging the threaded end of the hub member, a split washer received within the nut and held thereby loosely interlocked with the arm of the brace, and a centering-bearing projection arranged at the end of the arm in the nut and receiving the thrust from the head or base of the nut.

2. The combination with the arm of a bit-brace or the like, of a hub member fitting the arm, a knob-body provided on its outer side with a central hole, a centrally-chambered nut arranged in the knob-body and detachably engaging the hub member, said nut having a threaded opening in its head or base, a retaining device received within the nut and held thereby loosely interlocked with the arm of the brace, a bearing projection at the end of the arm within the nut, and a screw arranged through the hole in the knob and engaging the threaded opening in the head or base of the nut.

3. The combination with the crank-arm of a bit-brace or the like, of a rotatable center grip mounted on the arm comprising a sleeve of suitable material, metal caps for each end of the sleeve having hubs thereon to screw into the latter, and peripheral flanges to embrace the ends of the sleeve, bolsters located upon the arm contiguous to said caps, and a bearing-ring interposed between the caps and the bolsters.

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