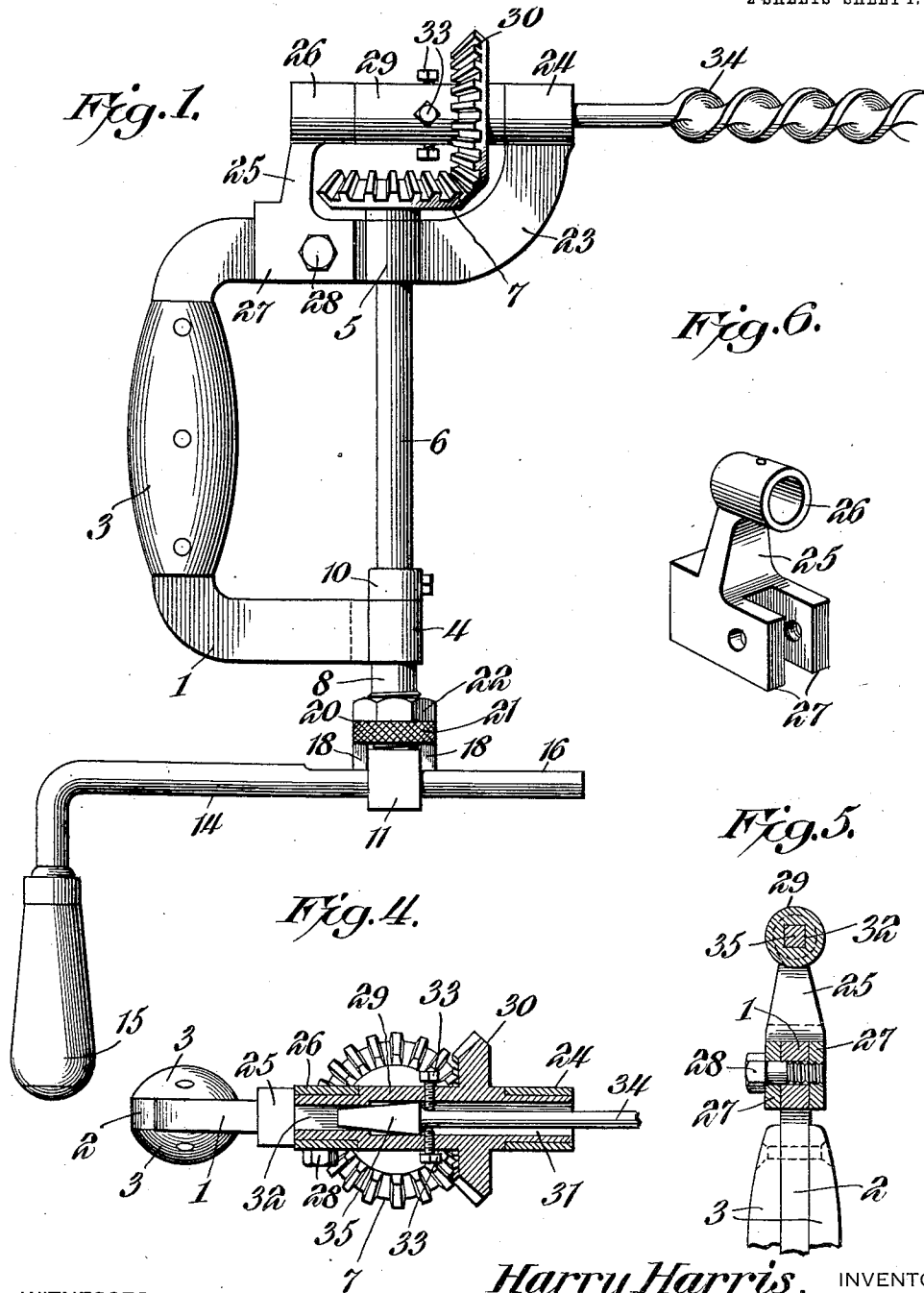


1,065,360.

Patented June 24, 1913.

2 SHEETS—SHEET 1.



WITNESSES

Howard D. Orr.
H. T. Chapman.

Harry Harris, INVENTOR,

BY

C. G. Siggers.

ATTORNEY

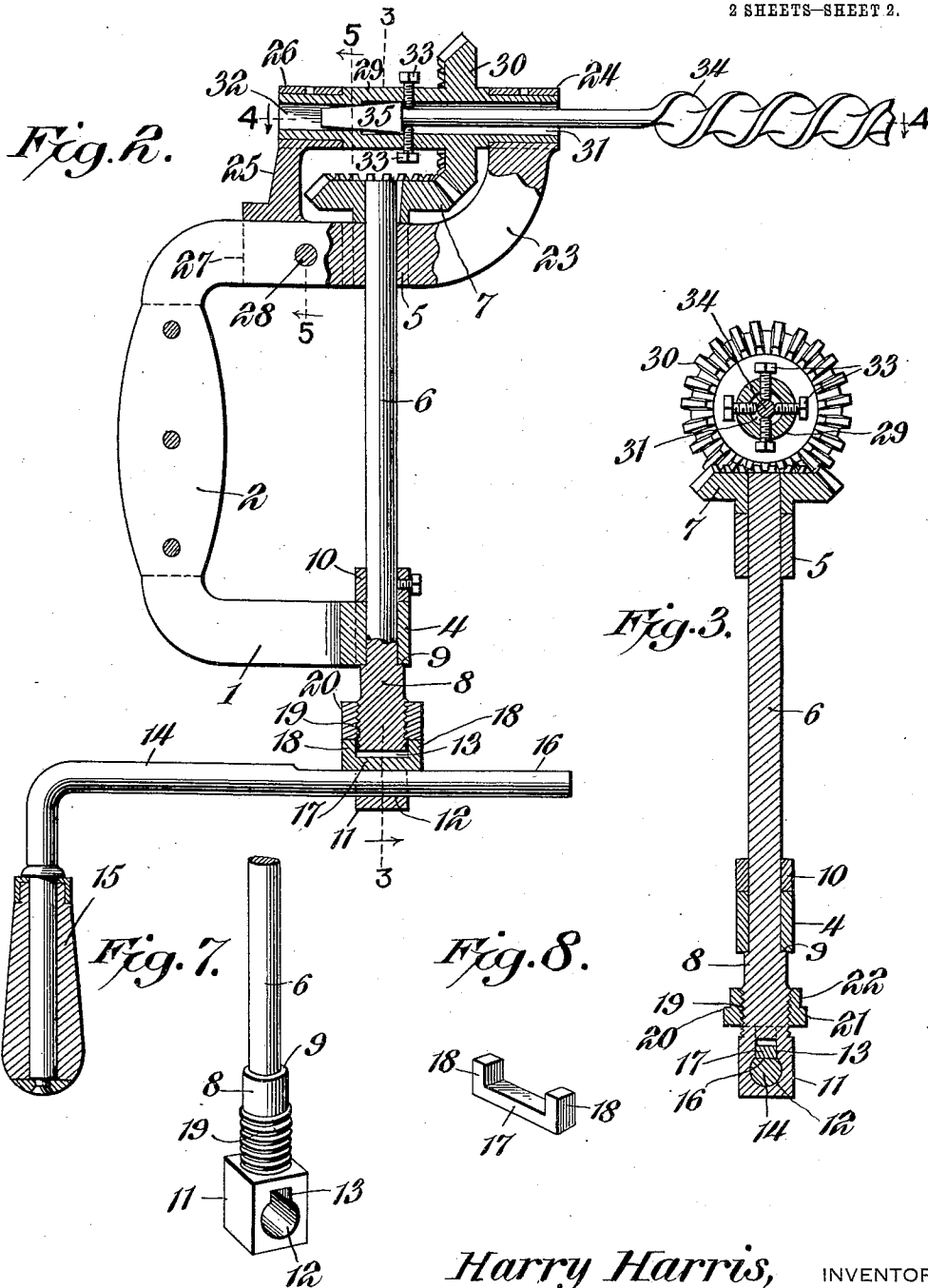
H. HARRIS.
BIT STOCK.

APPLICATION FILED AUG. 13, 1912.

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UNITED STATES PATENT OFFICE.

HARRY HARRIS, OF TYRONE, PENNSYLVANIA.

BIT-STOCK.

1,065,360.

Specification of Letters Patent.

Patented June 24, 1913.

Application filed August 13, 1912. Serial No. 714,869.

To all whom it may concern:

Be it known that I, HARRY HARRIS, a citizen of the United States, residing at Tyrone, in the county of Blair and State of Pennsylvania, have invented a new and useful Bit-Stock, of which the following is a specification.

This invention has reference to improvements in bit stocks, and its object is to provide a device for carrying a bit, which device is particularly adapted for use by car builders, whereby holes may be bored in positions otherwise impossible or very difficult of access.

In accordance with the present invention there is provided a U-frame having a yoke portion constituting a handle, while in the legs of the frame there is journaled a shaft at one end of which provision is made for the attachment of a crank handle, while at that portion of the frame corresponding to the other end of the shaft there is mounted a bit holder connected to the shaft by gearing, and this bit holder is provided with means for holding bits of different sizes in a manner permitting the working portion of the bit to be brought close to the boring device to permit the use of the device in cramped places where but little room is available.

The invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawings forming a part of this specification, with the further understanding that while the drawings show a practical form of the invention the latter is by no means confined to the exact conformity with the showing of the drawings, but may be changed and modified so long as such changes and modifications mark no material departure from the salient features of the invention.

In the drawings: Figure 1 is an elevation of the improved device. Fig. 2 is a similar view with parts in longitudinal section. Fig. 3 is a section on the line 3—3 of Fig. 2. Fig. 4 is a section on the line 4—4 of Fig. 2. Fig. 5 is a section on the line 5—5 of Fig. 2. Fig. 6 is a perspective view of one of the bearings for the bit holder. Fig. 7 is a perspective view of the handle end of the power transmitting shaft. Fig. 8 is a perspective view of a clamp member or follower for the handle attaching means of the power shaft.

Referring to the drawings, there is shown

a U-shaped frame 1 which may consist of a single forging or casting of suitable material, such as steel, and the intermediate or yoke portion 2 of this U shaped frame may be widened, and to the widened portion plates 3 are secured, these plates being of any appropriate material, such, for instance, as wood, to provide a hand grip, or this hand grip may be formed in any other suitable manner. The forging 1 may be of general flat construction with one leg longer than the other, and at the end of the shorter leg there is formed an enlargement 4 constituting a bearing, while at a corresponding portion of the other leg there is formed an enlargement 5 constituting a bearing; the two enlargements being in alinement and suitably bored for the passage of a shaft 6 substantially parallel with the handle or yoke portion of the frame 1. At one end the shaft 6 carries a bevel gear wheel 7, and at the other end the shaft 6 is formed with an enlargement 8 having at the junction with the shaft a shoulder 9 which may engage against one end of the bearing 4, while applied to the shaft at the other end of the bearing is a set collar 10, so that the shaft may be held in proper relation to the frame without dependence upon the bevel gear 7, which latter is, of course, made fast to the shaft to rotate therewith by a key or otherwise. The enlargement 8 of the shaft 6 terminates in a yoke 11 of general rectangular cross section, and through this yoke, in a direction perpendicular to the longitudinal axis of the shaft 6, is formed a passage 12 with an offset portion 13 on that side of the yoke toward the main body of the shaft 6, the offset 13 being generally rectangular in cross section, although not necessarily so. The passage 12 is designed to receive the shank portion of a crank 14 terminating at one end in an angle extension provided with a handle 15 by which the crank may be readily grasped. That end of the shank portion of the crank remote from the handle 15 is flattened, as indicated at 16, and this flattened portion of the shank is designed to traverse the passage 12, while seated in the offset 13 is the intermediate portion of a follower 17 having angle extensions 18 at the ends, which extensions will straddle the corresponding portions of the yoke 11. Immediately adjacent the yoke 11 the enlargement 8 has exterior screw threads 19 to which a nut 20 is adapted, this nut having a

milled portion 21 and a polygonal portion 22, so that the nut may be operated by hand or by a tool, as desired. When the nut is screwed toward the yoke 11 it engages the extensions 18 and forces the follower 17

against the flat portion 16 of the crank 14, thus clamping it in any desired position of radial projection with relation to the shaft 6.

The longer leg of the U-frame 1 terminates in an extension 23 preferably, though not necessarily, curved and at the free end of the extension 23 there is formed a bearing 24 extending at right angles to the longitudinal axis of the shaft 6. Attached to the longer leg of the frame 1 on the side of the shaft 6 remote from the extension 23 is a block 25 having at one end a bearing 26 like the bearing 24. This block is formed with two parallel legs 27 adapted to straddle the corresponding portion of the longer leg of the U frame 1 and a single screw 28 traversing the several legs by appropriate holes therein, with one of the holes in the appropriate one of the legs 27 threaded. Mounted in the bearings 24 and 26 are the reduced ends of a tubular shaft 29 having formed on or attached thereto a bevel gear 30 in position to mesh with the bevel gear 7.

The tubular shaft 29 has a passage 31 axially therethrough except that at one end this passage is reduced in diameter, as shown at 32, the main portion of the passage being cylindrical, while the reduced portion 32 is of non-cylindrical and preferably square cross section. Adjacent the bevel gear 30 the tubular shaft 29 carries an appropriate number of set screws 33 having heads accessible at the exterior of the tubular shaft, while the threaded portions of these screws extend into the shaft where they may engage the shank of a bit 34, while the tapered end 35 of the bit may seat in the squared extension 32 of the interior passage 31 through the shaft 29. The leverage of the crank handle 14 is readily adjusted to suit the character of the work to be done by loosening the nut 20 and moving the handle end 15 of the crank toward or from the shaft 6, as desired, after which the nut 20 may be tightened to clamp the handle between the follower 17 and the yoke 11. The set screws 33 having been unscrewed to a sufficient distance, an appropriate bit 34 is introduced into the hollow shaft 29 until the taper end 35 of the bit is seated in the squared portion 32 of the axial passage within the shaft 29, whereupon the set screws 33 are screwed toward the bit until engaging in front of the tapered portion 35 and bearing upon the shank of the bit, thereby centering said bit, the set screws providing a ready means of centering, while the interior of the shaft 29 in its portion of larger diameter is of ample

size to receive the taper end of the bit. By this means ordinary twist bits or any other type of bit adapted to an ordinary brace may be used in connection with the present invention without undue extension of the bit beyond the parts carrying it, since by an appropriate arrangement of the shaft 29 the twisted portion of the bit may be as close to the corresponding end of the shaft 29 as is desired.

When the device is put to use, the bit with the portion of the device carrying it is readily introducible between the floor timbers or other timbers of a car or other structure, and the device may be held steadily by grasping the handle 3 while rotative movement is imparted to the bit by means of the crank 14. A reversing of the direction of rotation in order to withdraw the bit does not result in a loosening of the bit, since it is as firmly held by the set screws 33 when rotated in the active direction as when rotated in the reverse or inactive direction.

By forming the body portion of the device of one strip of metal the alining of the bearings 4 and 5 is readily accomplished, so that the shaft 6 may turn freely in these bearings without cramping. To constitute the bearings for the shaft 29 requires but one additional piece which may be readily removed by taking out a single screw where it is desired to repair or cleanse the device, and this one screw is the only removable fastening device aside from the means for holding the bevel gear 7 on the shaft 6 and the collar 10, that need be removed in order to dismantle the whole structure.

What is claimed is:—

1. In a device for the purpose described, a U-shaped frame having the legs of unequal length and the yoke portion formed into a handle or grip, with a bearing at the end of the shorter leg and another bearing at the corresponding portion of the longer leg, said bearings being in alinement with the longer axis parallel with the yoke portion, and the longer leg having the outer end portion bent into substantial parallelism with the yoke portion and terminating in a bearing with its longitudinal axis at substantially right angles to the longitudinal axis of the first-named bearings, and spaced therefrom in a direction away from the shorter leg of the frame, a bearing removably mounted on the longer leg on the side of the first-named bearing thereon toward the handle or grip portion of the frame, said removable bearing and the second-named bearing on the longer leg being in alinement, a hollow shaft mounted in the last named alined bearings, a crank for the last-named shaft, and gearing connections between the two shafts, said hollow shaft hav-

ing means for receiving and holding the butt end of a bit.

2. In a device for the purpose described, a U-shaped frame having the legs of unequal length and the yoke portion formed into a handle or grip, with a bearing at the end of the shorter leg and another bearing at the corresponding portion of the longer leg, said bearings being in alinement with the longer axis parallel with the yoke portion, and the longer leg having the outer end portion bent into substantial parallelism with the yoke portion and terminating in a bearing with its longitudinal axis at substantially right angles to the longitudinal axis of the first-named bearings, and spaced therefrom in a direction away from the shorter leg of the frame, a bearing removably mounted on the longer leg on the side of the first-named bearing thereon toward the handle or grip portion of the frame, said removable bearing and the second-named bearing on the longer leg being in alinement, a hollow shaft

mounted in the last named alined bearings, a shaft mounted in the first named alined bearing, a crank for the last named shaft, and gearing connections between the two shafts, the hollow shaft having its bore in the main of cylindrical cross section and adjacent to the end mounted in the removable bearing having the bore of non-circular cross section and of reduced diameter, and between such reduced portion and the other bearing being provided with set screws positioned to engage the round shank of a taper-butt boring bit with the taper end seated in the non-circular portion of the bore of the shaft.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

HARRY HARRIS.

Witnesses:

JOHN H. GRAZIER,
J. C. LEITZELL.