

C. R. ANDERSON.
BRACE.

APPLICATION FILED JAN. 29, 1910.

980,733.

Patented Jan. 3, 1911.

FIG. 1.

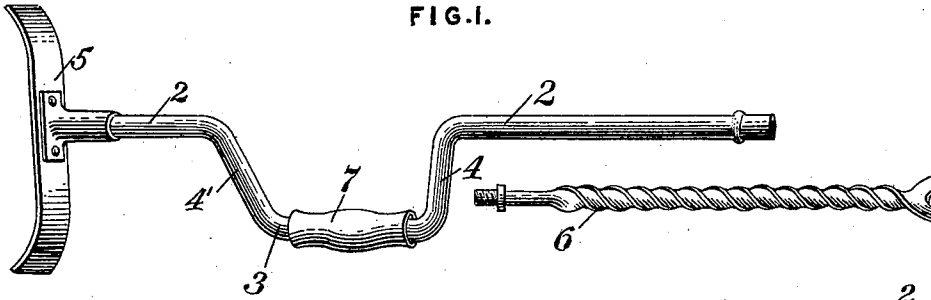


FIG. 2.

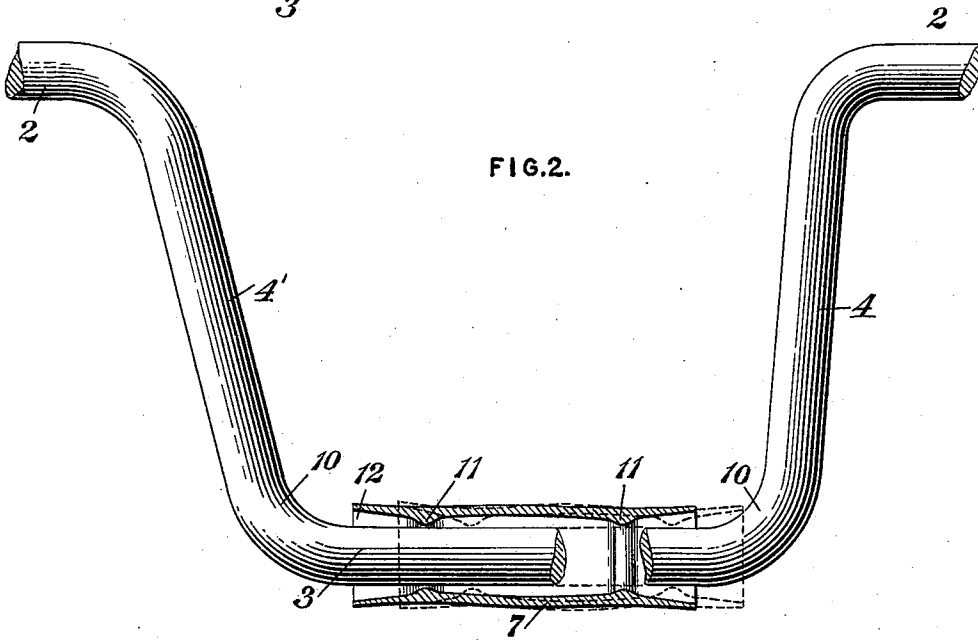
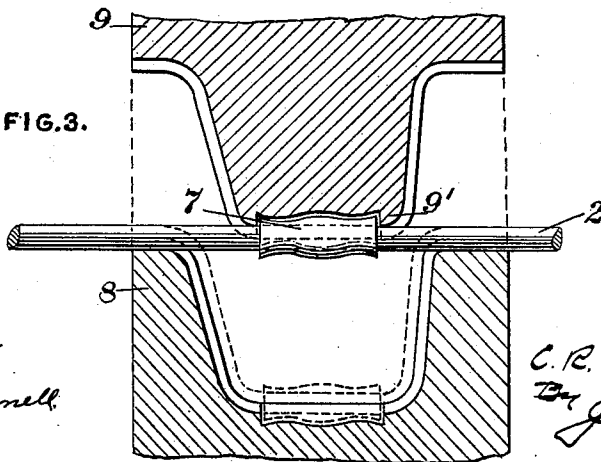


FIG. 3.



WITNESSES,
F. E. Gaither,
E. M. Cornell.

INVENTOR,
C. R. Anderson,
By J. H. Herbert
Att'y

UNITED STATES PATENT OFFICE.

CECIL R. ANDERSON, OF BELLEVUE, PENNSYLVANIA.

BRACE.

980,733.

Specification of Letters Patent.

Patented Jan. 3, 1911.

Application filed January 29, 1910. Serial No. 540,777.

To all whom it may concern:

Be it known that I, CECIL R. ANDERSON, a resident of Bellevue, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Braces, of which the following is a specification.

The object of this invention is to provide a hand-hold for the crank of a coal auger or other brace that will not stick or bind, an objection to hand-holds now generally used, particularly those for cranks which are bent after the hand-hold is placed in position.

In manufacturing braces for various hand tool operations, and particularly those used in mining coal, it is the usual practice to form the brace from a bar of round section, the sleeve forming the hand-hold being slipped thereon and held in position on the portion of the bar which is bent to form the crank. The bar is not always perfectly true or straight throughout its handle portion, particularly after the bending operation which often causes irregularities or slight bends to form, so that if the sleeve forming the hand-hold fits reasonably close it is liable to stick and not freely swivel. Furthermore, in thus bending the crank with the sleeve in position it is necessary to form the handle portion of the crank longer than the sleeve to accommodate the appliances generally employed for the bending operation. The bends or angles at the ends of the handle are usually curved, so that even though a sleeve may freely turn on the intermediate part of the handle it will stick or bind when moved toward either end thereof.

With the improvement proposed a hand-hold sleeve is provided which is so spaced from the crank bar as to freely turn irrespective of irregularities in the latter. To hold the sleeve with the crank reasonably centered therein bearings are provided, in the present embodiment the same being in the form of annular ridges on the interior of the sleeve at points inwardly from the extremities of the latter, so that the whole length of the sleeve bore is prevented from bearing or grinding on the crank, and with the bearings spaced inwardly from the sleeve ends, the sleeve may move longitudinally in either direction until stopped by the crank bends without causing the sleeve to bind.

In the accompanying drawings, Figure 1 is a view in perspective of a usual form of

breast auger brace and drill used in mining coal, the brace crank being provided with the improved sleeve or hand grip. Fig. 2 is a view on a larger scale of the brace crank, the sleeve being in section. Fig. 3 is a view illustrating a common mode of forming the crank in a bar from which the brace is constructed.

Referring to the drawings, 2 designates the brace stem which is bent to form crank 3, 4 and 4' indicating the arms which offset the crank. The invention is here shown embodied in a breast auger for mining coal, 5 being the breast plate at one end of the brace, with the opposite end adapted to receive drill or auger 6. 7 is the sleeve on the crank which forms the swiveled hand grip.

It is usual practice to form stem 2 of a bar of metal of round section. The grip forming sleeve is slipped thereon and held in place while the bar is being bent to form the crank, as by dies 8 and 9, Fig. 3, the die parts being recessed as shown to embrace and protect the sleeve. Hence, the crank is made necessarily somewhat longer than the sleeve to afford room for the extremities 9' of the die at either end of the sleeve. When the crank is thus bent, the turns or bends at the ends of crank portion 3 are of curved form as shown.

The bore of sleeve 7 is considerably larger than the cross section of crank 3 to provide space therebetween for any irregularities that may occur in the latter, particularly such as may result from the bending operation.

To maintain the crank centered within the sleeve and prevent excessive play and wobbling, it is desirable to provide bearing means which, in the present embodiment, consists of annular ridges 11 on the interior of the sleeve. Two such ridges are shown, though the invention is not restricted to any particular number. The bearing ridges are spaced inwardly from the extremities of the sleeve so that the latter, already materially larger than the section of crank 3, may move to one end or the other of the crank and in engagement with one or the other of bends 10 without causing the sleeve to bind, and hence without interfering with the swivel action thereof. The extremities of the bore are preferably belled slightly, as indicated at 12, to facilitate the free turning of the sleeve when in either extreme position.

From the foregoing it will be seen that while the crank is centered in the sleeve with reasonable accuracy, its free turning thereon is not interfered with by any slight irregularity in the crank, such as would cause the sleeve to stick when fitting the crank reasonably close, as in present constructions. Also, the bends at the ends of the handle portion of the crank do not tend to bind the sleeve, as heretofore. And by reducing the area of the contacting surfaces by interposing the ridges or other bearing means, much of the friction and grinding heretofore experienced is eliminated. Though designed primarily for coal augers, obviously the invention may be applied to other crank tools.

While the improved grip is here shown in position on a brace crank, it comprises an article of manufacture, hand grips being largely sold apart from the tools on which they are to be used.

I claim:

1. A brace-crank having curved bends at the ends of the handle portion thereof with said portion of round section, in combination with a sleeve revoluble and movable longitudinally on the handle portion, the bore of the sleeve formed with annular ridges having a turning fit on the handle portion, the ends of the sleeve bore out-

wardly from the ridges being enlarged for the purpose described.

2. A brace-crank having curved bends at the ends of the handle portion thereof, in combination with a sleeve revoluble and movable longitudinally on the handle portion with the extremities of the sleeve bore larger than the handle portion to prevent binding on the said curved bends.

3. A brace-crank having curved bends at the ends of the handle portion thereof, in combination with a sleeve revoluble and movable longitudinally on the handle portion, the sleeve bearing on the handle portion at points inwardly from the sleeve ends with the extremities of the sleeve bore belled to prevent binding on said curved bends.

4. A hand grip comprising a tubular sleeve formed with interior bearing ridges spaced inwardly from the sleeve ends.

5. A hand grip comprising a tubular sleeve having belled ends and interior bearing ridges at the inner ends of the belled portions.

In testimony whereof I affix my signature in presence of two witnesses.

CECIL R. ANDERSON.

Witnesses:

J. M. NESBIT,

F. E. GAITHER.