G. F. GRAHAM AND W. J. BUNYAN.

CRANK HANDLE.

APPLICATION FILED APR. 28, 1919.

1,330,260. Patented Feb. 10, 1920.

Fig-1

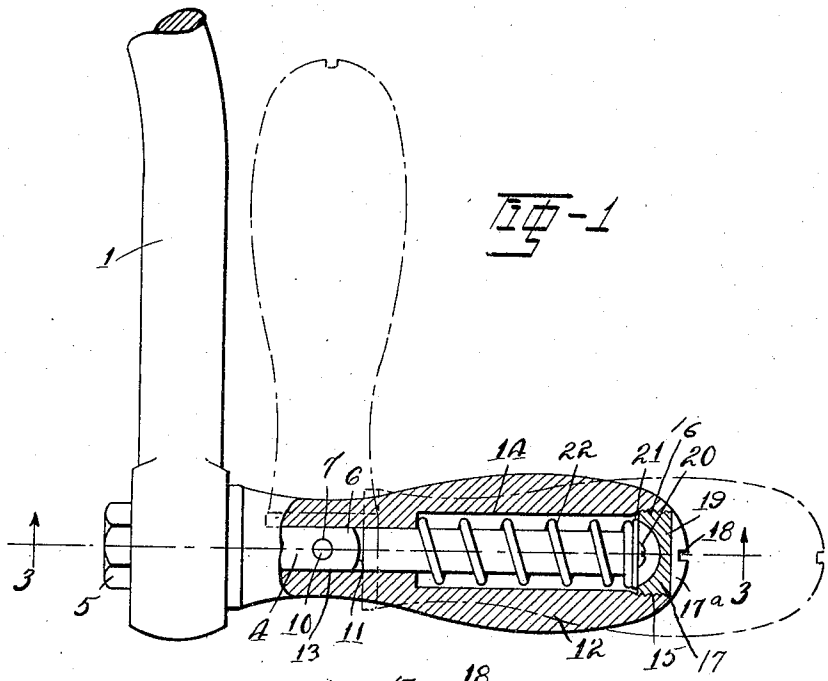


Fig-2

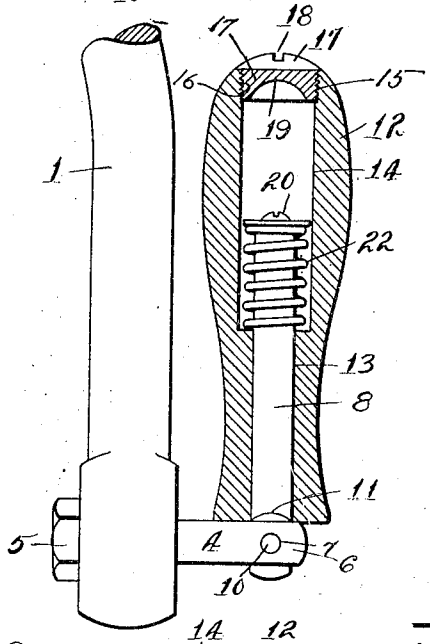
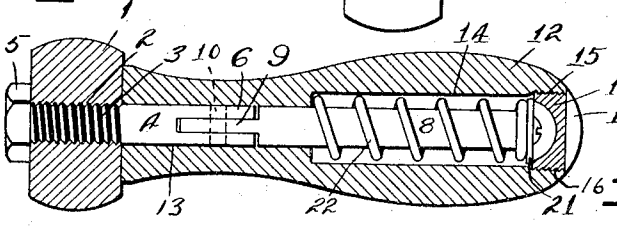


Fig-3



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UNITED STATES PATENT OFFICE.

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CRANK-HANDLE.

1,330,260. Specification of Letters Patent. Patented Feb. 10, 1920.

Application filed April 28, 1919. Serial No. 293,107.

To all whom it may concern:

Be it known that we, GEORGE F. GRAHAM and WILLIAM J. BUNYAN, citizens of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Crank-Handles, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

This invention relates to foldable handles, and has for its general object to provide a simple and efficient form of the same. A further object of this invention is to provide a handle of this character which will possess sufficient rigidity when in its unfolded or operative condition to enable it to perform its functions with satisfaction and which, when not in use, may be put into a position substantially parallel with the arm or other object with which it is associated, whereby a saving in space is accomplished and liability to injury is avoided.

We accomplish the foregoing objects in and through the construction and arrangement of parts shown in the drawings forming part hereof, wherein Figure 1 represents a view, partly in section and partly in elevation, of a handle constructed in accordance with our invention, the arm with which the handle coöperates being shown in elevation; Fig. 2, a view similar to Fig. 1 showing the handle in its folded position; and Fig. 3, a sectional view corresponding to the line 3—3 of Fig. 1.

Describing the various parts herein by reference characters, 1 denotes the object to which the handle is attached, said object being shown as a lever arm, such as is employed for the purpose of cranking an automobile. This arm is provided with a threaded bore 2 for the reception of the threaded end 3 of the rigid shank section 4 of our handle. The threaded end of this shank section is shown as projecting beyond the arm 1 and is provided with a nut 5. The opposite end of this shank section is slotted to provide a pair of lugs or forks 6, the outer ends of these lugs being curved, preferably on the arc of a circle described from the center of a bore 7 extending transversely of said lugs or forks.

8 denotes the movable member or section of the handle shank, the section 8 having a central lug 9 projecting between the forks or lugs 6 and pivotally connected thereto, as by means of a pin or bolt 10 extending through the bore 7 and through a bore in the lug 9 registering with the bore 7. The body of the shank section 8 adjacent to the lugs or forks 6 is preferably curved complementarily to the ends of said lugs or forks, as shown at 11.

Surrounding the shank 4, 8, is the gripping member of the handle, indicated at 12. This member is of the usual shape and is provided with a central bore 13 adapted to receive the member 4 and a portion of the member 8 therewithin. This bore merges with an enlarged bore 14 in the outer portion of the member 12, the outer end of the bore being threaded, as indicated at 15, for the reception of the externally threaded portion 16 of a plug 17, the said plug being shown as provided with a head 17^a adapted to constitute the outer end of the member 12 and having a slot 18 for the application of a screw driver. The inner face of the plug 17 is concave, as shown at 19, thereby to provide a chamber for the head 20 of a screw which is threaded into the outer end of the shank member 8, thereby to clamp a washer 21 against such end. A helical spring 22 surrounds the outer shank member 8, bearing at one end against the inner end of the bore 14 and its outer end against the washer 21.

It will be noted that the rigid member 4 of the shank projects a considerable distance from the arm 1; this insures ample rigidity in the shank to enable the said arm to be turned, as in the operation of cranking an automobile. By pulling outwardly upon the gripping member 12, the latter may be moved, against the compression of the spring 22, to a position where its inner end will clear the ends of the lugs or forks 6, as indicated in dotted lines on Fig. 1. The outer shank member 8 and the handle may then be pivoted upwardly upon the shank member 4, and the spring 22 will retain the handle member 12 substantially parallel with the arm 1, its inner or bottom end then being seated upon the member 4, as also indicated by dotted lines in Fig. 1.

In the case of a crank for an automobile, the crank or lever arm 1 and the handle may then be placed in a tool box, or under the seat, and will occupy a minimum amount of room. In the case of a crank,

hand wheel, or other device for machinery, the handle in its folded position will not be liable to injure the operator, or be in the way of operating the machine.

For convenience of description, the part to which the handle is attached will be referred to hereinafter as an arm. It will be understood, however, that we do not thereby propose to limit the use of the handle to the particular shape of the article with which it is associated, it being equally well adapted for use with objects such as hand wheels and levers of various kinds.

Having thus described our invention what we claim is:—

1. The combination, with an arm, of a shank member connected thereto, a second shank member pivotally connected to the first mentioned member, a gripping member slidably mounted upon the first two members, and yielding means, tending to hold the last mentioned member upon both of the first mentioned members.

2. The combination, with an arm, of a shank member rigidly connected thereto, a second shank member pivotally connected to the first member, a gripping member mounted upon both of the first mentioned members, and a spring surrounding the second member and engaging the gripping member and the second member, thereby to force the gripping member toward said arm.

3. The combination, with an arm, of a shank member rigidly connected thereto, a second shank member pivotally connected to the first member and having an abutment adjacent to its outer end, a gripping member having a bore adapted to receive the first mentioned member and a portion of the second member, the said bore being enlarged toward the outer end of said gripping member, and a spring in the enlarged portion of said bore and bearing at one end against the inner end of said portion and at the outer end against said abutment.

4. The combination, with an arm, of a shank member rigidly connected thereto, a second shank member pivotally connected to the first member and having an abutment adjacent to its outer end, a washer on the outer end of the second member, a screw securing said washer to said second member, a gripping member having a bore the inner portion whereof is adapted to receive the first mentioned member and a portion of the second member, the said bore being enlarged toward the outer portion of the gripping member, a spring in the enlarged portion of said bore and surrounding the second member and bearing at one end against said washer and at its other end against the inner end of the enlarged portion of the bore, and a plug closing the outer end of said gripping member and having a chamber for the reception of said screw.

In testimony whereof, we hereunto affix our signatures.

GEORGE F. GRAHAM.
WILLIAM J. BUNYAN.