

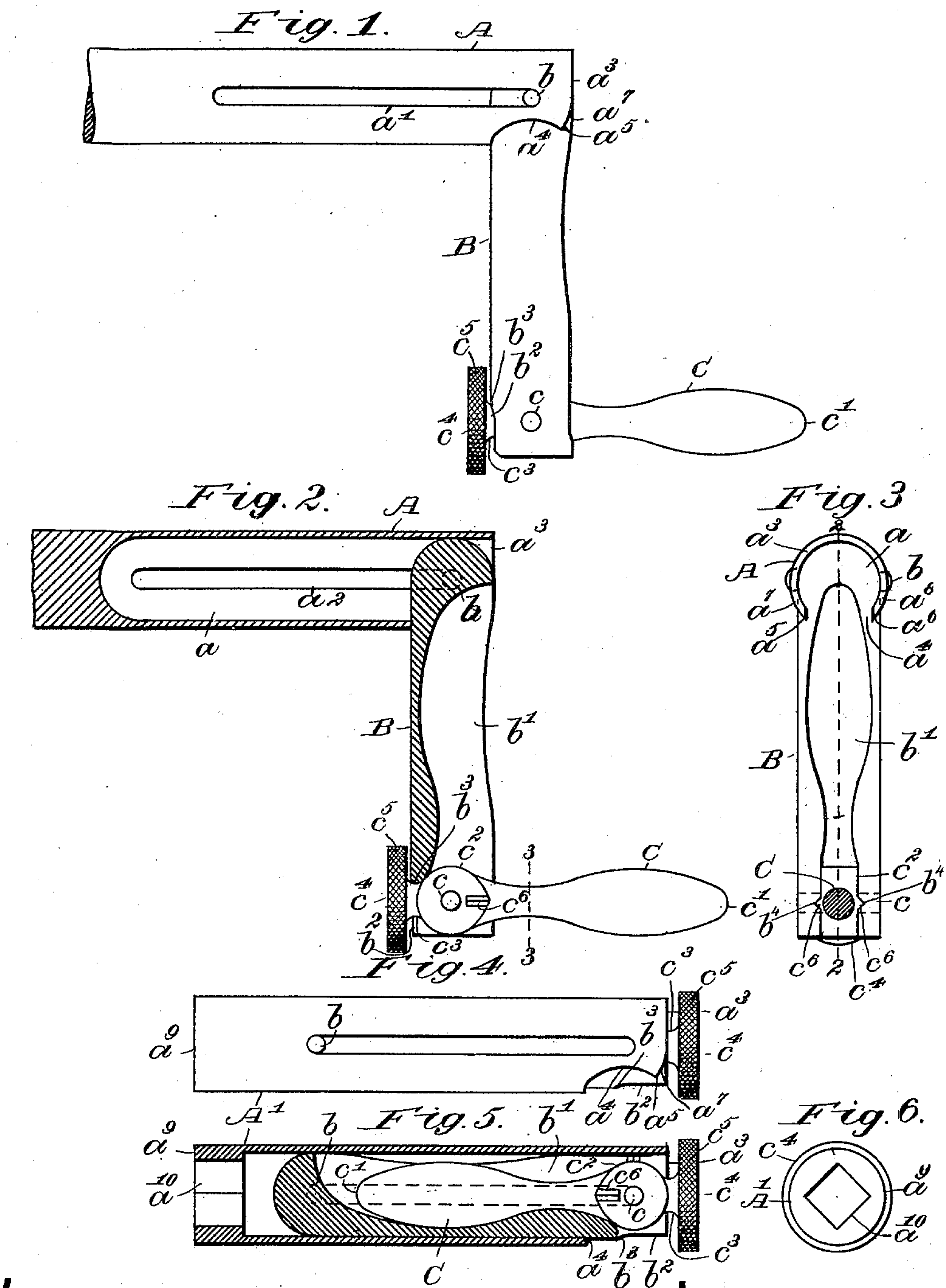
No. 652,414.

Patented June 26, 1900.

J. H. WILSON.
CRANK AND LEVER.

(Application filed Nov. 19, 1898.)

(No Model.)



WITNESSES.

Kirkley Hyde.
Grace E. Libbert.

INVENTOR

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CRANK AND LEVER.

SPECIFICATION forming part of Letters Patent No. 652,414, dated June 26, 1900.

Application filed November 19, 1898. Serial No. 696,862. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. WILSON, a citizen of the United States, and a resident of Lowell, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Cranks and Levers, of which the following is a specification.

My invention relates to cranks and levers; and it consists in the devices and combinations hereinafter described and claimed.

The object of this invention is to provide means whereby the parts may when not in use occupy less space than heretofore by folding the crank-handle, if such be used, into the arm and by placing said arm containing said handle within a hollow or recess in the shaft, said arm being pivoted to said shaft and handle and said arm being adapted to be used as a lever to turn said shaft without said handle.

In the accompanying drawings, Figure 1 is a plan of a crank provided with my improvement, the parts being in position for use; Fig. 2, a horizontal central section on the line 2 2 in Fig. 3 of the shaft and arm and a plan of the handle, the parts being in the position shown in Fig. 1; Fig. 3, an end elevation of the shaft, with the arm and handle extended for use and the handle in vertical cross-section on the line 3 3 in Fig. 2; Fig. 4, a plan of the same parts folded and telescoped together; Fig. 5, a vertical central section in the same plane as that of Fig. 2, showing the parts in the same position as in Fig. 4, the shaft being provided with a socket; Fig. 6, an elevation of the socket end of the shaft shown in Fig. 5.

In Figs. 1 to 3, A denotes the driving-shaft of a machine, said shaft being tubular or provided with a hollow or central recess a , into which the arm B when not in use may be slid or telescoped, said arm having a pivot-pin b , which projects from each side thereof into or through slots $a' a^2$ in the sides of said shaft A, said slots being parallel with each other and with the axis of said shaft and extending nearly to the free outer end a^3 of said shaft. The end a^3 of the shaft A is provided in the side, at equal distances from the slots $a' a^2$, with an opening a^4 , which is large enough to extend somewhat more than half-way

around the arm B when the latter is drawn out and turned at right angles to said shaft, said opening a^4 being of suitable size to fit said arm closely and more than half surround the same, and the corners $a^5 a^6$ of said opening being rounded or beveled at $a^7 a^8$ to allow said arm to be turned into said opening a^4 , said arm while being turned into said opening forcing said corners apart and being retained in said opening by said corners subsequently approaching each other to within a distance smaller than the diameter of said arm, as shown in Figs. 1 and 3. The arm B is hollow and open at b' on the side from near the pivot b to the other end of the same, the recess b' being shown in Figs. 2 and 3, and the handle C being pivoted at c in the open end of said recess. The shape and width of the recess b' are such that the handle may be easily turned into said recess, which may be long enough to allow of the insertion of the finger between the free end c' of the handle and the adjacent end of said recess to lift said free end out of said recess. I prefer, however, to provide the handle on the opposite side of its hub c^2 from the end c' with a projection c^3 , carrying a button or head c^4 , said projection when the handle is opened, Fig. 2, lying in a slot b^2 , formed in the outer end of the arm B on the opposite side thereof from the recess b' , and the inner end b^3 of said slot b^2 serving as a stop-shoulder to limit the outward movement of the long arm of said handle. The button c^4 , when the device is closed, as shown in Fig. 4, may be grasped to draw the handle C and arm B together out of the shaft A and is preferably milled at c^5 on its periphery to prevent the thumb and finger from slipping therefrom. The hub c^2 is provided on one or both sides with lateral radial projections c^6 , which in opening the handle C out of the arm B spread apart the sides of the slotted end of said arm and when said handle is at right angles to said arm engage corresponding notches b^4 on the inner faces of said sides, which by springing back prevent the handle from being accidentally turned.

In Figs. 5 and 6 the shaft A', instead of being the shaft of a machine, is represented as the shank of a wrench, the end a^9 of which, farthest from the handle, is provided with a

square socket a^{10} , adapted to receive a corresponding shank, as will be readily understood. The other parts in these two figures are substantially similar to the parts in the other 5 figures indicated by similar letters of reference.

I claim as my invention—

1. The combination of a hollow shaft, a crank-arm, pivoted thereto and a handle, pivoted to said arm and adapted to be shut into a recess, with which said arm is provided, and said arm containing said handle being adapted to be shut into said shaft, and said handle having a projection which, when said arm and 15 handle are shut in said shaft, projects from said shaft and may be grasped to draw said arm and handle out of said shaft.

2. The combination of the shaft, having a recess or hollow, an arm, having a pivot, arranged to slide therein, there being an opening in the side of said shaft, at the end thereof,

into which said arm may be turned at right angles to said shaft, said opening being adapted to more than half surround said arm and by the elasticity of its sides, to retain said arm 25 in said opening.

3. The combination of a crank-arm, provided with a slot at one end, and a handle, having a hub, pivoted near one end thereof to said arm within said slot and provided with 30 lateral radial projections, adapted to spread apart the sides of said slot when said handle is turned on its pivot at an angle with said crank-arm, and to enter notches with which the sides of said slot are provided, to retain 35 said handle at an angle with said crank-arm.

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

JAMES H. WILSON.

Witnesses:

ALBERT M. MOORE,
KIRKLEY HYDE.