

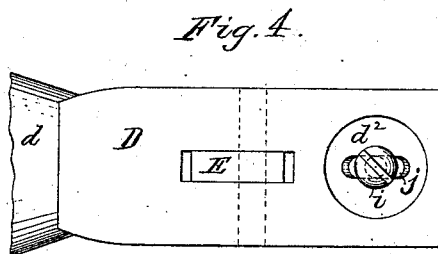
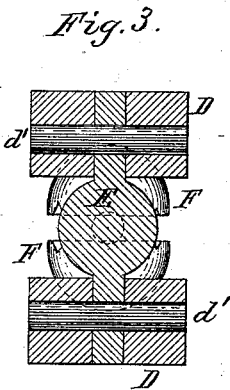
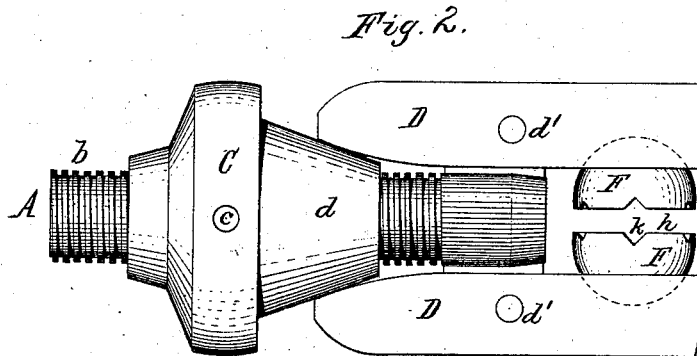
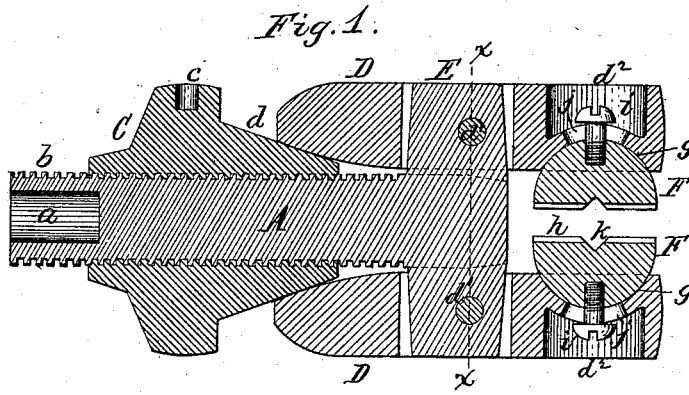
(No Model.)

C. H. AMIDON.

CHUCK.

No. 305,263.

Patented Sept. 16, 1884.



Edw. J. Conroy.  
Theo. L. Popp.  
Witnesses.

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# UNITED STATES PATENT OFFICE.

CHARLES H. AMIDON, OF BUFFALO, NEW YORK.

## CHUCK.

SPECIFICATION forming part of Letters Patent No. 305,263, dated September 16, 1884.

Application filed August 12, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES H. AMIDON, of the city of Buffalo, in the county of Erie and State of New York, have invented a new and useful Improvement in Chucks, of which the following is a specification.

This invention relates to an improvement in chucks, whereby the jaws which clamp the shank of the drill-bit or other tool are made adjustable, so that the jaws can grasp straight and tapering shanks with equal facility and security, and so that the tool can be easily centered.

My invention consists of the peculiar construction of the clamping-jaws of the chuck, as will be hereinafter fully set forth.

In the accompanying drawings, Figure 1 is a longitudinal section of my improved chuck. Fig. 2 is a side elevation thereof. Fig. 3 is a cross-section in line *x x*, Fig. 1. Fig. 4 is a view of one of the clamping-levers at right angles to Fig. 2. Fig. 5 is a face view of one of the grasping-jaws which are attached to the clamping-levers.

Like letters of reference refer to like parts in the several figures.

A represents the cylindrical stem or body of the chuck, provided at one end with a socket, *a*, or some other suitable means, whereby it can be attached to the mandrel of a lathe or some other rotating part. The outer surface of the cylindrical stem A is provided with a screw-thread, *b*, upon which works a movable screw-nut, C, which is provided with openings *c*, in which a wrench or bolt can be inserted, or with some other suitable means whereby it can be turned.

*d* represents a conical extension, with which the nut C is provided, and which engages between the inner or rear ends of two clamping-levers, D. The latter are pivoted at *d'*, diametrically opposite each other, to a head, E, secured to or formed at the outer end of the stem A of the chuck. The inner ends of the levers D are made diverging, to correspond with the conical portion *d* of the nut against which they bear.

F F represent the jaws which grasp the shank of the bit or other tool, and which are attached to the outer ends of the levers D.

The jaws F have the form of hemispheres, and are seated with their spherical surfaces in correspondingly-shaped sockets, *g*, formed in the levers D, near their outer ends, while they turn their flat sides *h* toward each other. Each jaw F is held in its socket by a screw, *i*, and the outer side of the socket, against which the head of the screw *i* bears, is curved concentric with the inner spherical side thereof. The levers D are provided with recesses or cavities *d''*, which expose the outer convex walls of the sockets *g*, and through which access is had to the heads of the screws. The screws *i* pass through curved slots *j*, extending through the walls of the sockets *g*, lengthwise of the levers D, and the screws are so tightened as to hold the jaws F snugly in their sockets, and at the same time permit the jaws to adjust themselves in their sockets. The plane faces *h* of the jaws F are provided with a number of V-shaped or other grooves, K, of different sizes, corresponding with the size and form of the shanks of the tools which are desired to be clamped between the jaws. Upon adjusting the jaws F so that their plane faces stand parallel to each other, as shown in Fig. 1, the jaws are adapted to receive and hold tools having a straight shank, and by turning the jaws on their pivots *i* the particular grooves *k* which correspond with the size of the shank are readily placed in line therewith. If the point of the tool does not run true, a simple adjustment of the jaws F in their sockets or on their pivots, or both, will enable the operator to readily center the tool. By placing the plane faces *h* of the jaws at an angle to each other the jaws are adjusted to receive and hold tapering shanks. Upon spreading the rear ends of the levers D by means of the screw-nut C and cone *d*, the jaws are firmly clamped against the shank of the tool. As the jaws F are capable of a limited adjustment in the planes of the slots *j*, and at right angles to said planes on their pivots *i*, the tool clamped between the jaws can be adjusted to any desired position within these limits.

I claim as my invention—

1. In a chuck, the combination, with the clamping-levers D, provided with spherical

sockets *g*, of the grasping-jaws F, constructed with spherical backs seated in the sockets *g* and made adjustable therein, substantially as set forth.

5 2. In a chuck, the combination, with the clamping-levers D, provided with spherical sockets *g*, having slots *j*, of the grasping-jaws F, constructed with spherical backs and seated

in said sockets, and secured to the levers D by screws *i*, passing through the slots *j*, substantially as set forth. 10

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Witnesses:

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