2 Sheets—Sheet 1.

J. N. SKINNER.

Lathe-Chuck.

No. 216,766. Patented June 24, 1879.

Fig. 1

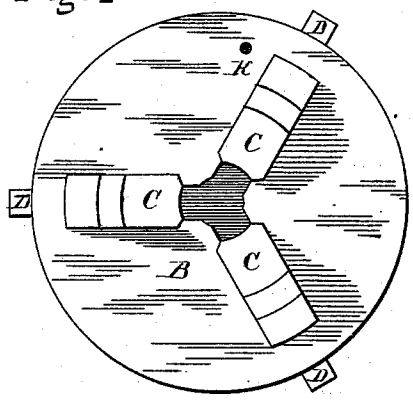


Fig. 2

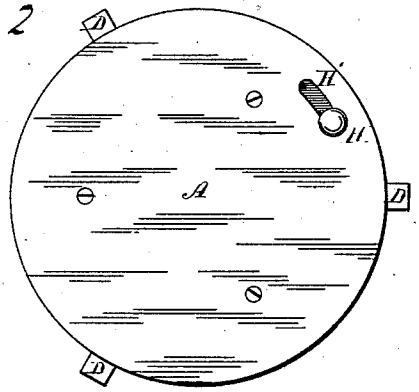
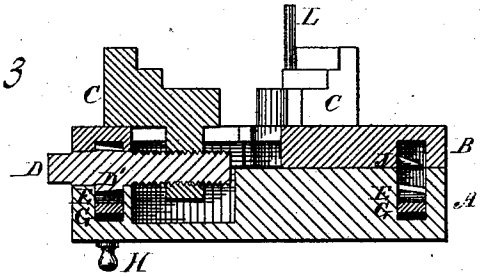


Fig. 3



Witnesses.

Wilmot Horton

H. B. Patten

Inventor.

James N. Skinner.

by Theo. G. Ellis attorney

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

J. N. SKINNER.

Lathe-Chuck.

No. 216,766. Patented June 24, 1879.

Fig. 4.

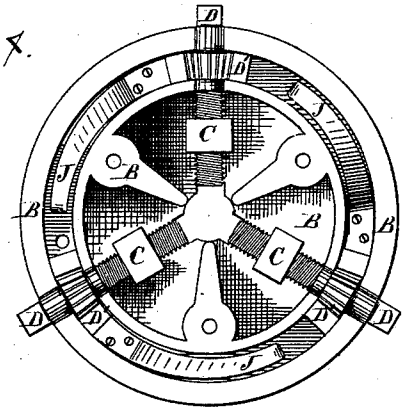


Fig. 5

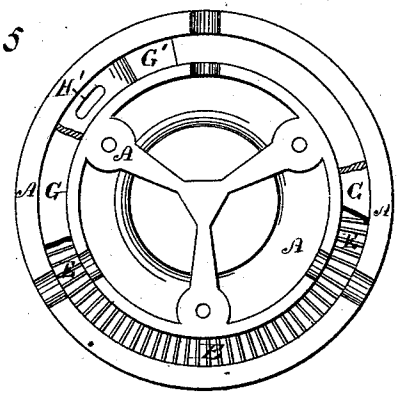
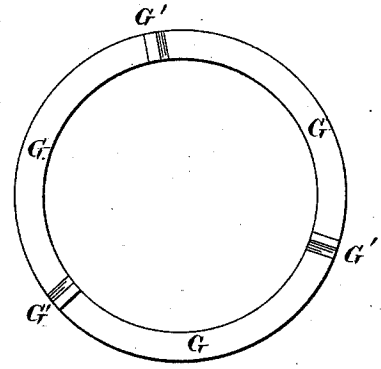


Fig. 6



Witnesses.

Wilmot Horton

H. B. Patten

Inventor.

James N. Skinner

by Theo. G. Ellis, attorney

N. PETERS. PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JAMES N. SKINNER, OF WINDSOR LOCKS, CONNECTICUT.

IMPROVEMENT IN LATHE-CHUCKS.

Specification forming part of Letters Patent No. **216,766**, dated June 24, 1879; application filed March 20, 1879.

To all whom it may concern:

Be it known that I, JAMES N. SKINNER, of Windsor Locks, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Lathe-Chucks; and I do hereby declare that the following is a full, clear, and exact description thereof, whereby a person skilled in the art can make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Like letters in the figures indicate the same parts.

My improvement relates to that class of chucks in which the jaws are moved out or in by means of screw-threads which are simultaneously operated by means of pinions upon the ends of the screws, which gear into a circular rack, and thereby have their motion communicated from one to the other, so that when one screw is moved they all move together. It is sometimes convenient, however, to have the jaws move independently of each other; and my improvement has for its object an easy and simple mechanism by which a universal chuck, or one having its jaws all move together out or in, can be readily converted at will into an independent jaw-chuck, or one in which either of the jaws can be moved separately.

My invention consists in the mechanism which will be hereinafter described.

In the accompanying drawings, on two sheets, Figure 1 shows a front view of a chuck having my improvements. Fig. 2 is a back view of the same. Fig. 3 is a horizontal section through the middle of the chuck. Fig. 4 is an interior view of the face portion of the chuck, it being divided so as to leave the rack in the rear part and the pinions which gear into it in the front part. Fig. 5 is an interior view of the rear portion of the chuck, divided, as before named. In this figure a part of the circular rack and also a part of the ring below it are cut away to show the concealed portion. Fig. 6 is a view of the under side of the ring which lies under the circular rack, as shown in Fig. 5.

A is the case or shell of the rear part of the chuck, and B that of the front part. These parts are attached together by screws or bolts in the usual manner and form the frame for the working parts.

C C C are the jaws, which move out or in with regard to the axis when their corresponding screws are turned. D D D are the screws which operate the jaws. They turn in fixed bearings in the frame and pass through a nut upon the back of the jaws. At their outer ends they are provided with squares, to which a key or wrench can be applied to turn them. Inside the case they are provided with pinions which gear into a circular rack connecting them, so that they can turn together. These pinions are shown in Figs. 3 and 4 at D′.

E is a circular rack formed upon a plain ring, which fits into a groove in the part A of the frame, and in which it can turn freely. G is a ring fitting into the same groove as the rack E, and lying directly under it. Upon the under side of this ring are the projections or cams G′, which, in one position of the ring, lie in depressions in the case A, but when the ring is slightly turned rise up out of the depressions or sockets and raise the ring and the rack above it. The position of the rack E and the ring G in the groove is such that when the cams G′ are in the sockets in the case the rack does not come in gear with the pinions D′; but when the ring G is turned so as to lift the cams out of their sockets the rack is raised so as to engage the pinions.

H is a pin passing through a slot in the back of the case A, (shown at H′ in Figs. 2 and 5,) by which the ring G is turned to throw the cams G′ in or out of their sockets. J J J are springs fixed to the part B of the case, and pressing against the face of the circular rack E with their free ends, so as to hold the rack closely in contact with the ring G, and press both the rack and ring back against the case of the chuck, and forcing the cams G′ into their sockets when they are in proper position. K is an aperture in the face of the chuck, exactly opposite the gearing of the rack, into which the tool or key L is inserted, so as to enter between two of the teeth and bring the rack to the exact position to receive the teeth of the pinions when the rack is thrown into gear by turning the ring G. The tool L is a

round bar with a wedge-shaped end to fit between the teeth of the rack.

The teeth of the pinions are placed in such relative position to the square heads of the screws that they can readily be placed properly to receive the teeth of the rack. By this arrangement the rack enters the pinions without any trouble, so that the chuck has the three jaws exactly set to operate as a universal chuck.

What I claim as my invention is—

The combination of the locking and unlocking rack E, the pinions D′, and the case B, provided with the aperture K, whereby said rack and pinions can be set by means of a key in an exact position for interlocking, substantially as described.

JAMES N. SKINNER.

Witnesses:
THEO. G. ELLIS,
H. B. PATTEN.