(No Model.)

E. PEMENT.

LATHE CHUCK.

No. 335,619. Patented Feb. 9, 1886.

Fig. 1.

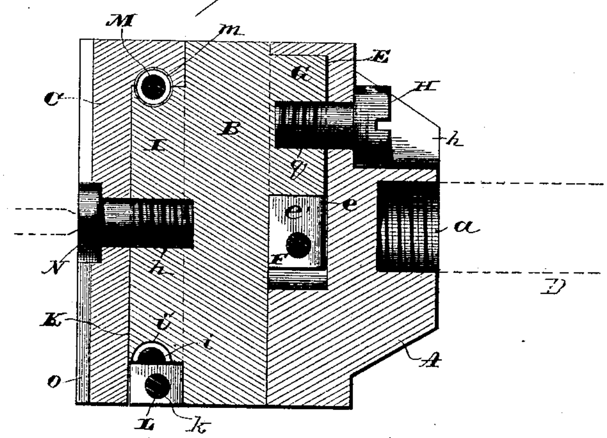


Fig. 2.

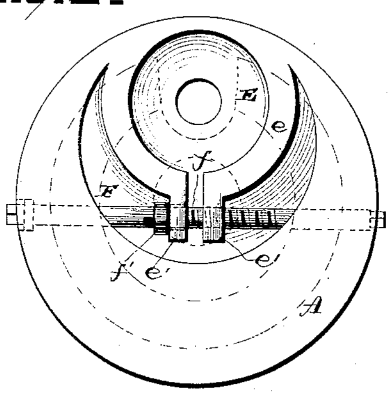


Fig. 3.

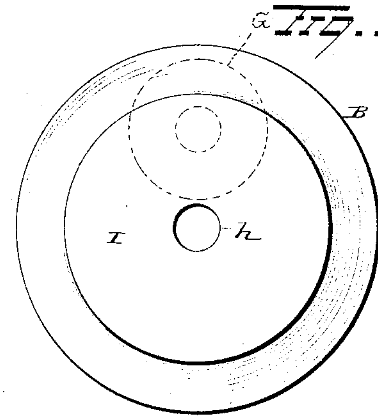
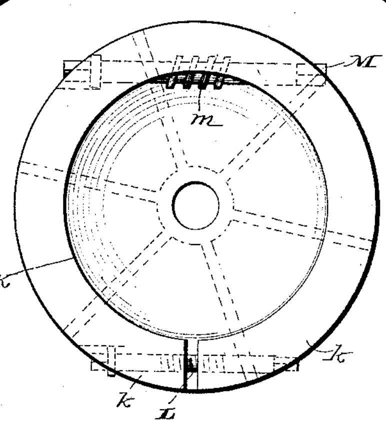


Fig. 4.



WITNESSES
C. J. Nottingham.
J. E. Jones.

Edward Pement INVENTOR
By H. A. Seymour Attorney

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

EDWARD PEMENT, OF ESMOND, DAKOTA TERRITORY.

LATHE-CHUCK.

SPECIFICATION forming part of Letters Patent No. 335,619, dated February 9, 1886.

Application filed October 30, 1885. Serial No. 181,406. (No model.)

To all whom it may concern:

Be it known that I, EDWARD PEMENT, of Esmond, in the county of Kingsbury and Territory of Dakota, have invented certain new and useful Improvements in Lathe-Chucks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in lathe-chucks, and more particularly to the improvement shown and described in my application, Serial No. 181,156, filed October 28, 1885.

The object is to provide a chuck and face-plate by means of which the work secured thereto may be raised, lowered, swung to the right or left, and centered without separating the different sections one from another, and in a quick and effective manner.

With these ends in view my invention consists in certain features of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view of the face-plate and chuck in longitudinal section. Fig. 2 is a front end elevation of the rear section. Fig. 3 is a front end elevation of the middle section, and Fig. 4 is a back end elevation of the front section.

The device consists of three sections—the rear section, A, the middle section, B, and the front section, C. The three sections, when connected and adjusted on the same axis, have the appearance of a short regular cylinder. Their cylindrical form, however, is not absolutely essential, but is the form which is found most convenient and economical in their construction. The back or inner end of the section A is provided with a central female-threaded socket, *a*, adapted to receive the threaded end of a spindle, D. The front end of the section A is provided with a recess, E, preferably circular, or nearly so, and located eccentrically therein.

To that portion of the wall of the recess E which lies farthest from the center of the section A, a split collar, *e*, is secured, its ends approaching each other at a point nearly or quite in line with the axis of the section A, leaving sufficient space between the ends of the collar and the wall of the recess E to allow the said ends and portions of the collar adjacent thereto to separate from and approach toward each other. The ends of the collar are provided with perforated flanges *e'*, the perforation in one of the flanges being threaded and in the other smooth. A rod or bolt, F, provided along its middle portion with a male thread, *f*, adapted to engage the threaded perforation in one of the flanges *e'*, extends diametrically, or nearly so, through the section A and the two flanges *e'*. The ends of the rod or bolt F are squared to receive a crank or wrench, and preferably project beyond the face of the section far enough to afford a convenient hold for said crank or wrench. The middle portion is further provided with a collar or shoulder, *f'*, adapted to engage the outer face of one of the flanges *e'*, in which the screw rotates loosely, and thus serves, when turned in one direction, to draw the ends of the split collar toward each other, and when turned in the opposite direction to cause them to separate. The back end of the section B is provided with a circular projection, G, eccentrically located thereon, and adapted to enter the portion of the recess E surrounded by the split collar *e* when the latter is in open adjustment, and further adapted to be firmly clamped by the said collar *e*, and thereby lock the section B in the desired swinging adjustment. The projection G is provided with a female-threaded socket, *q*, centrally located therein, and adapted to receive a screw, H, extending through a countersunk perforation, *h*, in the section A. The object of the screw H is to hold the back end of the section B snugly in contact with the front of the section A. The front end of the section B is provided with a circular projection, I, located on the same axis therewith, and provided with a concave face, *i*. The concave face *i* is provided with a thread, *i'*, adapted to engage a worm, as will hereinafter appear. The back end of the section C is provided with a circular recess, K, concentric therewith, and adapted to receive the projection I. A split collar, *k*, surrounds the recess K, its ends being forced toward and away from each other in a manner quite similar to that hereinbefore described in connection with collar *e* by means of a bolt, L, the ends of which are squared to receive a crank or

wrench for turning it. The section C is further provided with a rod or shaft, M, which extends transversely through the section, its middle portion projecting within the recess K a distance equal to the depth of the groove on the face of the projection I. The middle portion of the rod or shaft M is provided with a worm, *m*, which registers with the thread *i'*. The rod or shaft is secured in its bearings against a longitudinal movement, but is allowed a free rotary motion, and its ends are squared to receive a crank or wrench for turning it. The rotation of the said rod or shaft thus causes the section C to rotate on the projection I as an axis, and it may be locked in any desired rotary adjustment thereon by drawing the ends of the collar *k* together. The section C is held in snug contact with the section B by means of a screw, N, which extends through the center of the section C and engages a female-threaded socket, *n*, in the center of the projection I. The head of the screw N is made hollow to receive a centering teat or point whenever desired. The front end of the section C is provided with radial grooves O, adapted to receive chuck-jaws or bolts for holding the work.

The advantages and use of the device may be briefly stated as follows: By loosening the screw H and the split collar *e* the work may be raised, lowered, or moved to the right or left by swinging the coupled sections B and C on the eccentric projection G, and is secured in the desired adjustment by tightening the said screw and collar. The work may then be centered by loosening the screw N and collar *k* and rotating the section C by means of the worm *m* on the rod or shaft M.

It will be observed that the adjustments are simple and precise, and may be made from the outside while the sections are secured in their several positions against all liability of displacement.

It is evident that slight changes might be resorted to in the form and arrangement of the several parts described without departing from the spirit and scope of my invention; hence I do not wish to limit myself strictly to the construction herein set forth; but,

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the rear section, and the middle section adjustably secured thereto and provided on its front face with a circular projection having worm-teeth on the periphery thereof, of the front section having a split collar on its rear face, a screw-bolt for adjusting the split collar, and worm-shaft journaled in the front section and engaging the teeth on the circular projection of the middle section.

2. The combination, with the front section, the rear section having an eccentric recess therein, and the middle section having an eccentric projection constructed to rest within the recess of the rear section, of the screw passing through the rear section into the eccentric projection of the middle section.

3. The combination, with the front section, the rear section having an eccentric recess in the front face thereof, a split collar located within said recess, and a bolt for adjusting said collar, of the middle section having an eccentric projection on its rear face, and a screw passing through the recess in the rear section into the eccentric projection of the middle section.

4. The combination of the rear section having an eccentric recess therein, a split collar located within the recess, a screw for adjusting the split collar, the middle section having an eccentric projection on its rear face and a concentric projection on its front face, the latter having screw-threads in the periphery thereof, a screw passing through the rear section into the eccentric projection of middle section, the front section having a split collar adapted to embrace the projection on the front face of the middle section, a screw for adjusting the split collar, and a worm passing through the front section and engaging the teeth on the projection of the middle section, substantially as set forth.

5. The combination, with one section provided with a recess eccentrically located thereon, another section provided with a projection located eccentrically thereon, and a front section, of a threaded rod or bolt adapted to engage the free ends of a split collar located within the said recess, and a screw adapted to extend longitudinally through the recessed section into engagement with the said projection, substantially as set forth.

6. The combined face-plate and chuck, consisting, essentially, of the rear section with its eccentrically-located split collar, the middle section with its eccentrically-located projection adapted to be clamped by the said collar, the outer section adapted to be secured to the middle section in rotary adjustment, and the longitudinal screws for locking the sections against separation, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

EDWARD PEMENT.

Witnesses:
C. W. GRANNIS,
J. F. HALLADAY.