(No Model.)

C. LEWIS.

CHUCK.

No. 300,272. Patented June 10, 1884.

Fig. 1.

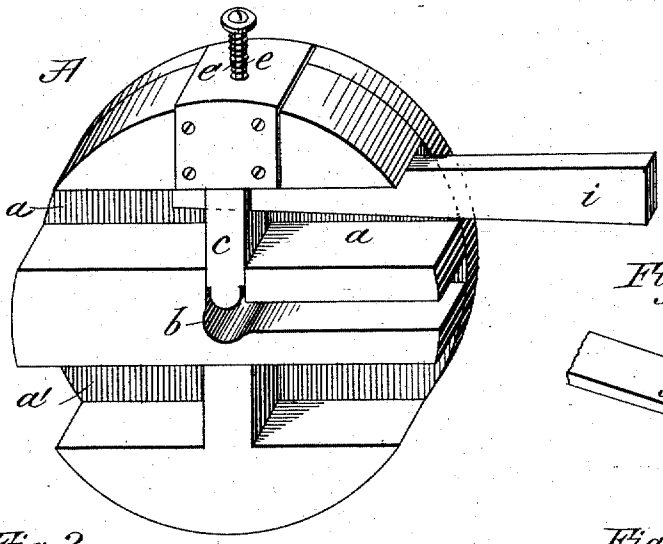


Fig. 6.

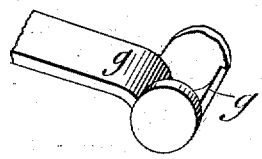


Fig. 2.

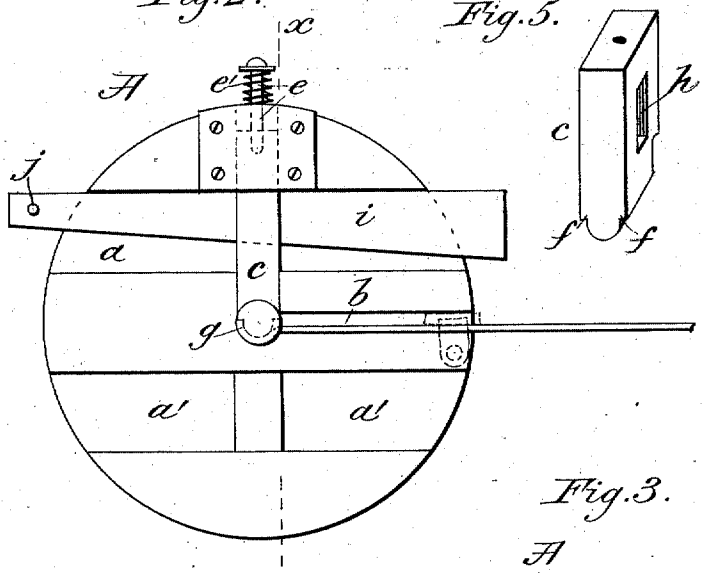


Fig. 5.

Fig. 4.

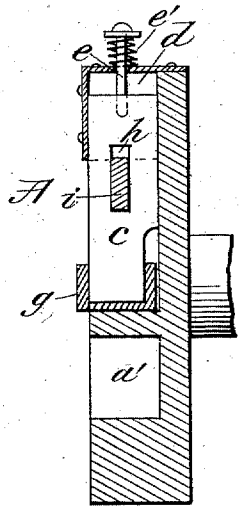
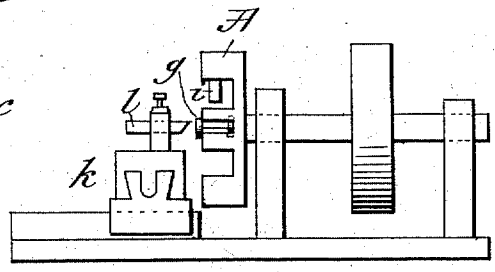


Fig. 3.



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UNITED STATES PATENT OFFICE.

CHARLES LEWIS, OF AMSTERDAM, NEW YORK, ASSIGNOR TO DAVIS W. SHEELER, OF SAME PLACE.

CHUCK.

SPECIFICATION forming part of Letters Patent No. 300,272, dated June 10, 1884.

Application filed January 15, 1884. (No model.)

To all whom it may concern:

Be it known that I, CHARLES LEWIS, a citizen of the United States, residing at Amsterdam, in the county of Montgomery and State of New York, have invented certain new and useful Improvements in Machines for Turning Spring-Heads; and I do 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to an improved chuck adapted to be used for holding the heads of flat or semi-elliptic metal springs while being turned in a lathe or other suitable machine; and it consists in the peculiar construction and arrangement of the parts of the chuck, as will be hereinafter more fully described, and then specifically pointed out in the claims.

In the annexed drawings, which illustrate the invention, Figure 1 is a perspective view of my improved chuck. Fig. 2 is a side view of the same, showing a spring-head in place for turning. Fig. 3 is an elevation showing the chuck mounted in a lathe, with the cutting or finishing tool in position for turning the roughened head of a spring held in the chuck. Fig. 4 is a vertical section of the chuck on the line *x x* of Fig. 2. Fig. 5 is a perspective view of the steel-faced sliding plug used for holding the head of the spring in place, and Fig. 6 is a perspective view of one end of a vehicle or other flat or semi-elliptic spring, showing one of the ears turned, and the other unturned or rough, as it appears after forging.

The letter A represents the chuck, which may be made of cast metal or other suitable material, and is formed with transverse grooves or recesses *a a'*—one on each side of the center—as shown in Fig. 1.

b is a radial groove or recess, enlarged and circular in shape, at the center of the chuck, and adapted to receive one end of the spring to be turned. The spring-head is held firmly in the groove *b* by means of a steel-faced sliding plug, *c*, which plays vertically in a groove that forms a right-angled continuation of the groove *b*. The plug *c* extends across the groove *a*, and enters a groove or recess, *d*, in the chuck, as shown in Fig. 4. Into the upper end of the plug is screwed a bolt or rod, *e*, which extends through an aperture in the recess *d* to the outside of the chuck, and is surrounded with a spiral spring, *e'*, that is held between the chuck and a head or pin on the end of the rod *e*. The other end of this plug *c* is semicircular in shape, and is provided with two shoulders, *f f*, adapted to rest on or press against the end *g* of the spring between the ears of the head. The plug *c* is also provided with a slot, *h*, Fig. 5, through which is passed a wedge or key, *i*, by means of which the plug is lowered or pressed down. This wedge *i* slides in the slot *h*, constantly bearing against the upper face of the groove *a* in the chuck. A pin, *j*, passed through the narrow end of the wedge serves as a stop, and prevents the wedge from slipping out of the slot *h* when the plug is raised or withdrawn from the center. It will be observed that when the key or wedge *i* is withdrawn the tension of the spring *e'* raises the plug *c*, so as to enable the work to be removed and another piece inserted. The groove *a'* in the face of the chuck is merely designed to balance the chuck and distribute its weight uniformly.

The operation of turning a roughened spring-head is as follows: The head is inserted in the groove *b*, the plug *c* being first raised by the action of the spring *e'*, which comes into play on the withdrawal of the wedge *i*. The spring-head thus rests in the circular part of the groove, with the leaf or spring proper resting in the groove *b*, as shown in Fig. 2. The wedge *i* is next driven up, so as to force the plug *c* down against the spring-head, with its semicircular end fitting between the ears, and the shoulders *f f* resting on the end *g* of the leaf. In this way the spring-head is rigidly secured in the chuck. The leaf of the spring may be further secured in the chuck, if desired, by a wedge and guard secured to the outer end of the groove *b*, as shown in dotted lines in Fig. 2. The tool rest or stand *k* (see Fig. 3) is then moved up to the head, the tool *l* having been adjusted in its standard, and the chuck is then revolved by means of pulleys or other suitable

means, the head of the spring of course revolving with the chuck, while the tool operating on the head turns it smooth and true. By means of this chuck all spring-heads are turned uniform and require no centering before being put into the machine.

Heretofore the head has been turned by extra finishing, as by emery-wheels, filing, and the like, or by milling-tools; but this is expensive, and when milling-tools are used they are liable to easily get out of repair, and it is also necessary that each head should be centered before being milled.

By means of my invention the centering of the heads is done away with, each head fitting in the same place and being operated upon by the tool evenly and uniformly, as before described.

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

1. In a machine for turning spring-heads, a rotary chuck provided with grooves *a b*, recess *d*, sliding plug *c*, and key *i*, substantially as described.

2. The combination, with the chuck A, provided with a transverse groove, *a*, radial groove *b*, having a circular enlargement at the end coinciding with the center of the chuck, and the recess *d*, of the sliding plug *c*, having slot *h*, the rod *e*, spring *e'*, and key or wedge *i*, substantially as described.

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

CHARLES LEWIS.

Witnesses:
T. E. ALLEN,
M. L. STOVER.