(No Model.)

L. E. WHITON.

CHUCK.

No. 422,480. Patented Mar. 4, 1890.

Fig. 1

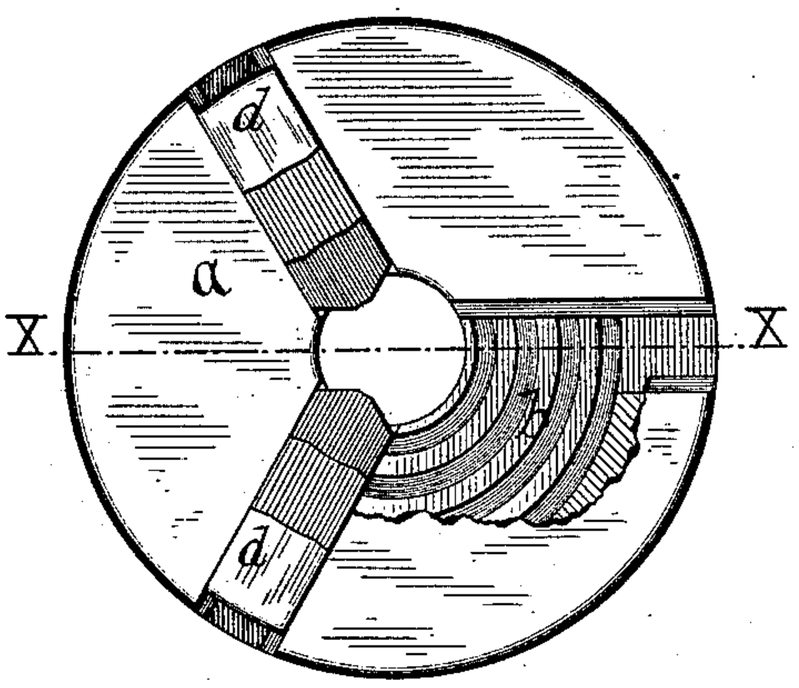


Fig. 2

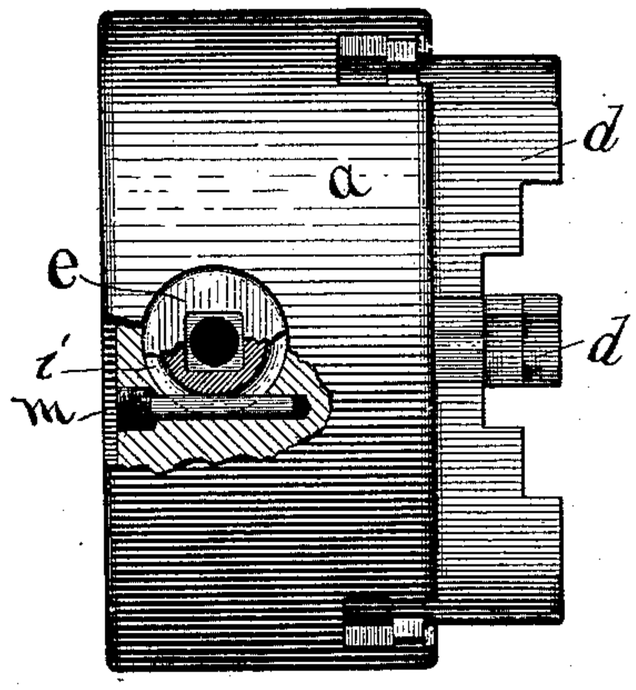


Fig. 3

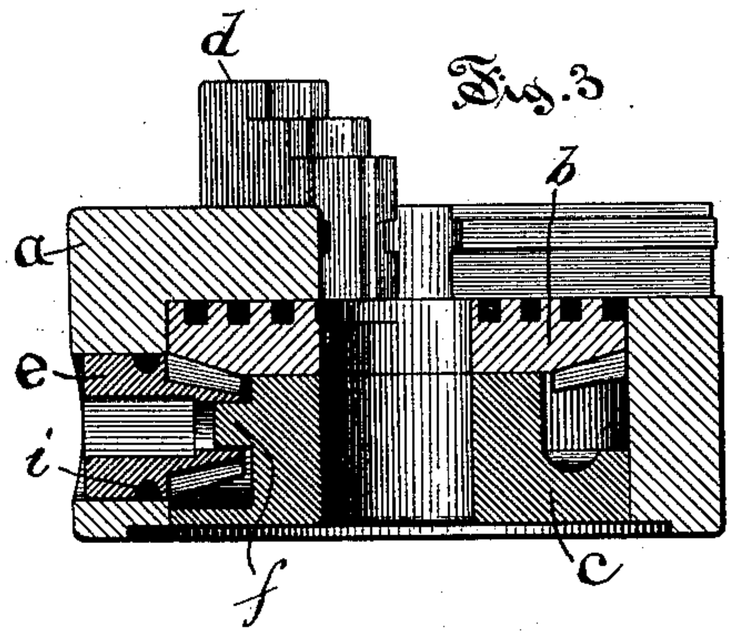


Fig. 4

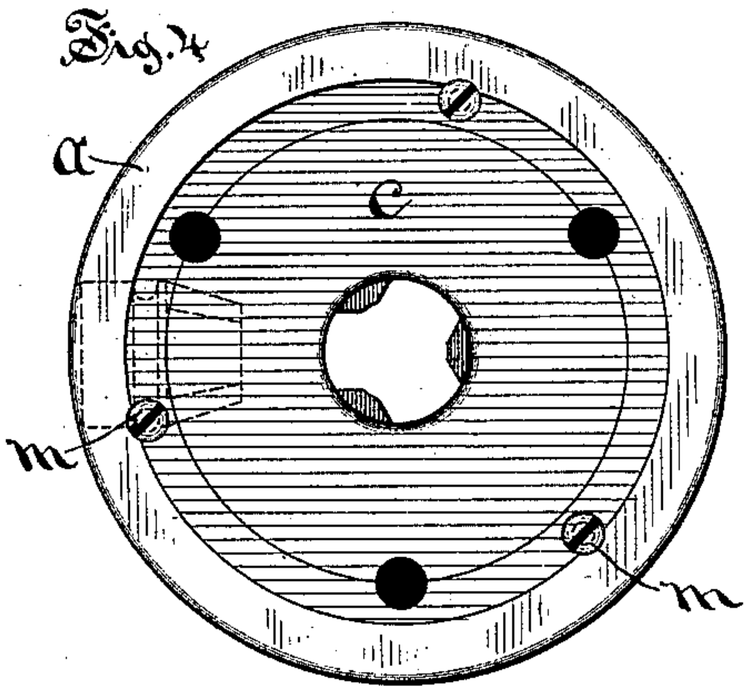


Fig. 5

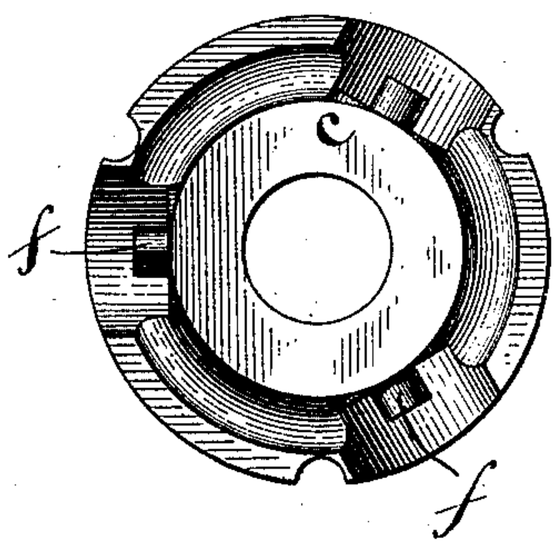


Fig. 6

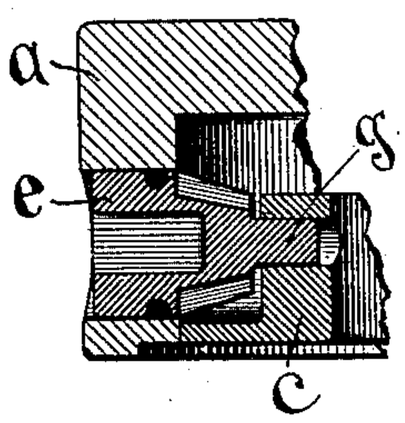
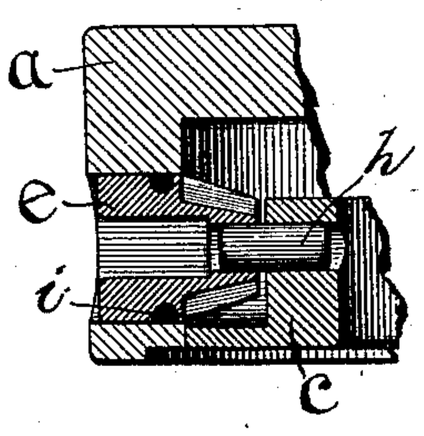


Fig. 7



Witnesses:

Wm. Byerkman.

Alonzo M. Luther.

Inventor:

Lucius E. Whiton

By his Attorney

Frank H. Allen.

UNITED STATES PATENT OFFICE.

LUCIUS E. WHITON, OF NEW LONDON, CONNECTICUT.

CHUCK.

SPECIFICATION forming part of Letters Patent No. 422,480, dated March 4, 1890.

Application filed July 12, 1889. Serial No. 317,315. (No model.)

To all whom it may concern:

Be it known that I, LUCIUS E. WHITON, a citizen of the United States, residing in the city and county of New London and State of Connecticut, have invented a certain new and useful Improvement in Chucks, which improvement is fully set forth and described in the following specification, reference being had to the annexed sheet of drawings, in which—

Figure 1 is a front face view of a chuck embodying my said improvement, a portion of the case being broken away to expose the scroll that actuates the jaws. Fig. 2 is a side view of a similar chuck partially cut away to better illustrate my method of retaining the pinions in place in the chuck-case. Fig. 3 is a longitudinal sectional view on line *x x* of Fig. 1, and Fig. 4 is a rear face view of the chuck illustrated in the preceding figures. Fig. 5 is a plan view of the inner face of section *c;* and Figs. 6 and 7 show sections of the chuck-case with a single pinion seated therein, illustrating certain modifications hereinafter explained in detail.

My present invention is especially applicable to that class of chucks in which a series of holding-jaws are supported in radial guideways and actuated by a scroll or helix on a revoluble section located within the chuck-case.

The purpose of my present invention is to simplify and cheapen somewhat the manner of supporting and securing said pinion-gears. Various means have been utilized for holding said pinions in place; but some, if not all, of said means have been objectionable, in that they have been expensive to produce or difficult to assemble when so produced.

My present invention is believed to overcome the existing objections in a practicable manner.

The reference-letter *a* in the accompanying drawings denotes the chuck-case; *b*, the scroll-section rotatably seated in said case, and *c* a circular section introduced from the rear side to provide both a backing for the scroll-section and pivotal support for the inner ends of the bevel pinion-gears.

The letters *d* indicate the jaws of the chuck.

The case and scroll-sections and jaws, as here illustrated, are substantially the same as commonly used, and require no detailed description. At the point in case *a* where the pinion-gear *e* is to be inserted the perimeter of said case is bored through, as plainly shown in Figs. 3, 6, and 7, and when said pinion is seated in the opening thus provided its teeth are in operative engagement with the teeth on the rear side of the scroll-section. The body of pinion *e* is turned down to fit said opening, thus providing a long bearing; but to positively prevent any deflection of the inner end of said pinion I provide for it a journal-connection with the section *c*, above referred to. In Fig. 3 such connection is attained by milling back the section *c* and leaving integral studs *f*, over which the centrally-perforated end of the pinion may pass when the parts are assembled. In Fig. 6 the same result is attained by milling or turning down the inner end of the pinion to provide a journal *g*, which may enter a corresponding hole drilled in section *c*.

In Fig. 7 both the pinion and section *c* are drilled through, and a pivotal stud or journal *h* is driven firmly into one of said parts, the other part being reamed slightly, in order that said journal may move freely therein. The body of pinion *e* is formed with an annular groove *i*, preferably semicircular in cross-section. The case *a* is drilled and tapped from the rear side to receive a screw *m*, whose body portion, when seated in the case, is coincident with the said annular groove *i*. This means of holding the pinion in place prevents all undue thrust movement of said pinion, yet permits it to rotate freely in its seat. Said screw also forms the locking-key to the entire chuck. When it is desired to take apart the chuck, said screw is first removed, when the pinion may be withdrawn from its seat. This allows the removal of section *c* and of the scroll-section, and when these parts are removed the jaws may be drawn out of their respective ways.

The form of the finished pinion and the construction of the case to receive said pinion require no special tools or difficult manipulation to produce; yet the complete chuck

embodying the described construction is as strong and serviceable as if made under any of the various plans heretofore employed.

Having described my invention, I claim—

1. In a chuck of the class referred to, in combination with the scroll-section, a pinion engaging therewith having a straight body-section with annular groove, as set forth, and a screw seated in the chuck-case coincident with said annular groove, substantially as and for the purpose specified.

2. In combination with the scroll-section, a pinion engaging therewith having its inner end journaled substantially as set forth and its body portion grooved annularly, and a screw seated in the chuck-case coincident with said groove, all substantially as and for the objects specified.

3. In combination in and with the chuck-case, the revoluble scroll-section *b* and an annularly-grooved pinion engaging therewith, the fixed section *c*, having an integral radial stud *f*, on which the inner end of said pinion is journaled, and means, consisting of a screw engaging the annular groove in the pinion, for retaining said pinion within the chuck-case.

LUCIUS E. WHITON.

Witnesses:
FRANK H. ALLEN,
ALONZO M. LUTHER.