

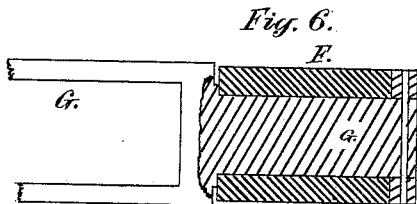
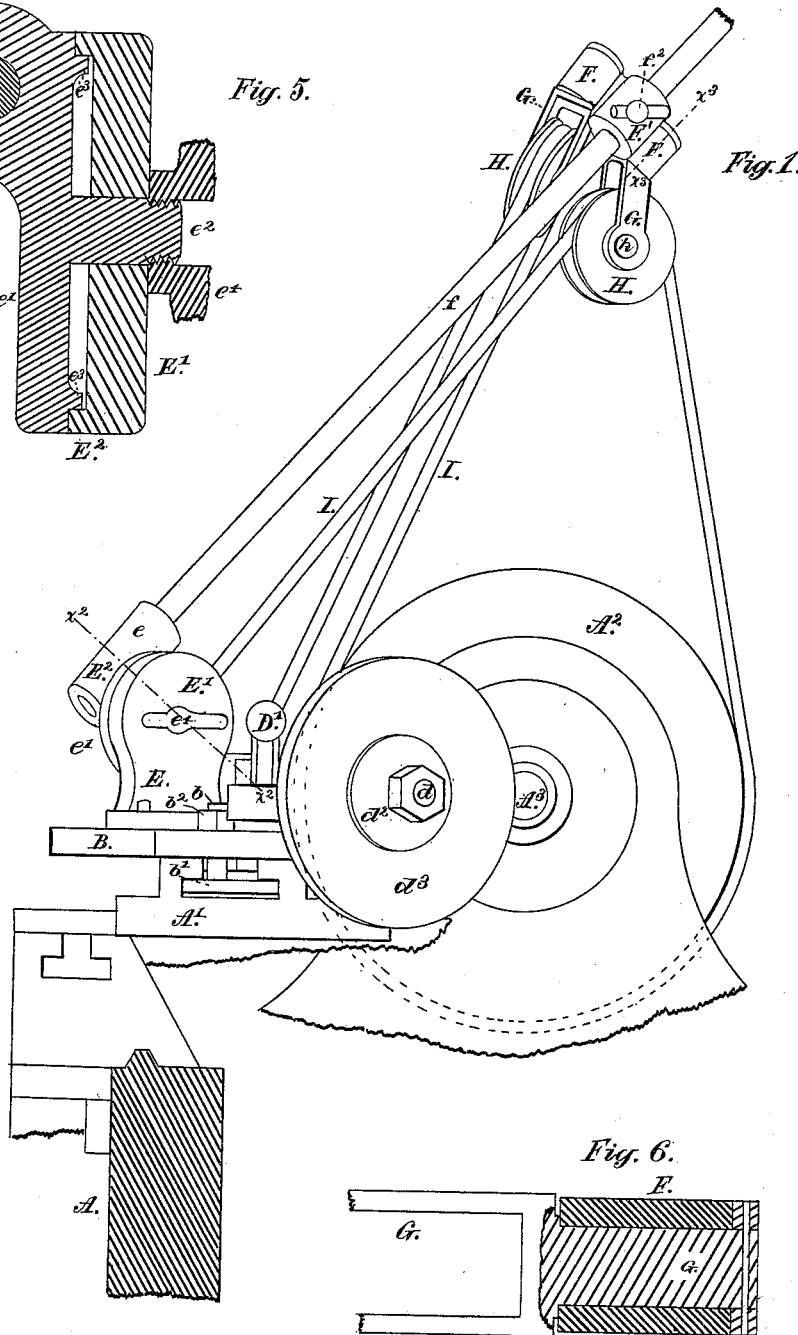
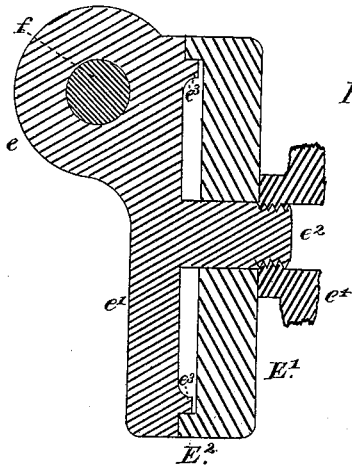
(No Model.)

2 Sheets—Sheet 1.

E. E. WOODWARD.
LATHE CENTER GRINDER.

No. 438,876.

Patented Oct. 21, 1890.



Witnesses
H. A. Stoddard,
J. A. Kinans.

Inventor.
Elmer E. Woodward,
 per *L. L. Morrison,*
 Attorney.

(No Model.)

2 Sheets—Sheet 2.

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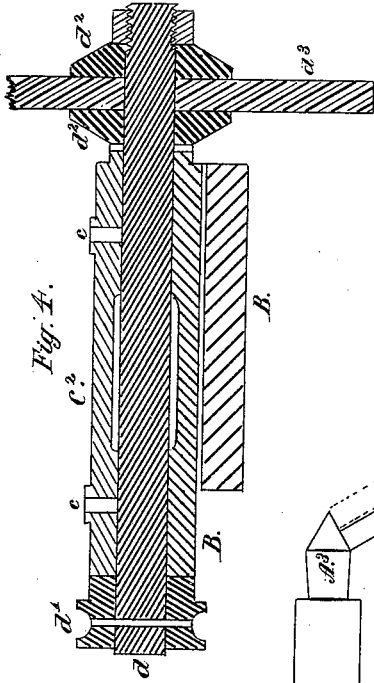


Fig. 1.

Fig. 2.

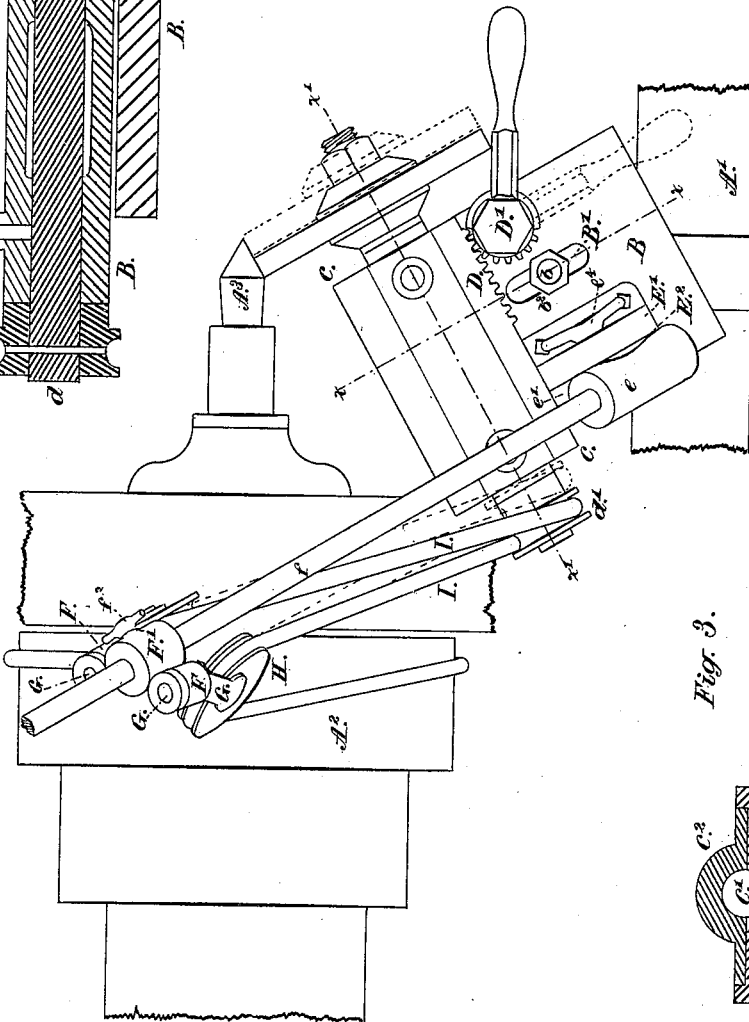
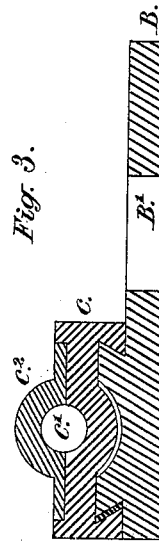


Fig. 3.



Witnesses.

H. S. Soddard,
J. A. Winans,

Inventor.

E. E. Woodward,
per: *L. L. Morrison,*
Attorney.

UNITED STATES PATENT OFFICE.

ELMER E. WOODWARD, OF ROCKFORD, ILLINOIS.

LATHE-CENTER GRINDER.

SPECIFICATION forming part of Letters Patent No. 438,876, dated October 21, 1890.

Application filed May 23, 1887. Serial No. 239,143. (No model.)

To all whom it may concern:

Be it known that I, ELMER E. WOODWARD, of Rockford, in the county of Winnebago and State of Illinois, have invented certain new and useful Improvements in Lathe-Center Grinders, of which the following is a specification.

The design of this invention is, first, to furnish machinists with a center-grinder of simple construction that can be quickly attached to and detached from a lathe; second, that receives its motive power directly from the lathe speed-pulley or face-plate by being belted thereto; third, that will expeditiously and perfectly true up and point a hardened line-center without the temper thereof being first drawn. I attain these objects by means of the mechanism illustrated in the accompanying drawings, in which—

Figure 1 represents a diagonal view of my invention attached to a lathe and ready for use. Fig. 2 represents a plan view of the same. Fig. 3 represents a view of a transverse vertical section of portions of Fig. 2 through the line xx . Fig. 4 represents a view of a longitudinal vertical section of parts of Fig. 2 through the lines $x'x'$. Fig. 5 represents a view of a transverse section of portions of Fig. 1 through the lines x^2x^2 . Fig. 6 represents a view of a longitudinal section of parts of Fig. 1 through the lines x^3x^3 .

Similar letters refer to similar parts throughout the several views.

A A' A² A³ represent, respectively, a bed, carriage, speed-pulley, and line center of a lathe.

B represents the bed-piece of my invention; B', a slot therein.

b represents a bolt having a T-head b' and nut b^2 for securing the center grinder to the lathe-carriage A'.

C represents a carriage having a journal-bearing C'; C², a bearing-cap. $c c$ represent oil-cups.

D D' represent, respectively, a rack and a

combined semi-pinion and handle for adjusting the carriage C and giving it a reciprocating motion.

d represents a shaft; d' , the driving-pulley thereof; $d^2 d^2$, clamping-disks for holding the emery-wheel d^3 in position.

E E' represent a combined standard and disk, the former bolted to the bed-piece B, the latter provided with the annular flange E².

$e e'$ represent a combined socket and disk, the latter having the bolt e^2 and annular flange e^3 concentric with the annular flange E².

e^4 represents a bar-nut for drawing the disks E' e' together.

F F' represent combined open sockets, supported by the rod f , the lower end of the latter being fitted securely into the socket e .

G G represent shanks forked at their lower ends to receive the idlers H H and axes $h h$, and projecting upward through the open sockets F F' and forming with the latter swivel-joints.

I represents a belt passing from the lathe speed-pulley A² over the idlers H H and connecting with the driving-pulley d' of the center grinder.

The socket F' can be secured to any desired point along the rod f by means of the screw f^2 .

By loosening the bar-nut e^4 the combined socket and disk $e e'$ can be rocked in the plane of the face of the latter and the upper end of the rod f and its attachments elevated or depressed at pleasure.

I claim—

The combination, with the bed-piece B, of the carriage C, cap C², shaft d , driving-pulley d' , emery-wheel d^3 , combined standard and disk E E', combined socket and disk $e e'$, rod f , combined sockets F F', shanks G G, idlers H H, axes $h h$, and belt I, substantially as described.

ELMER E. WOODWARD.

Witnesses:

JOHN GIBSON,
L. L. MORRISON.