

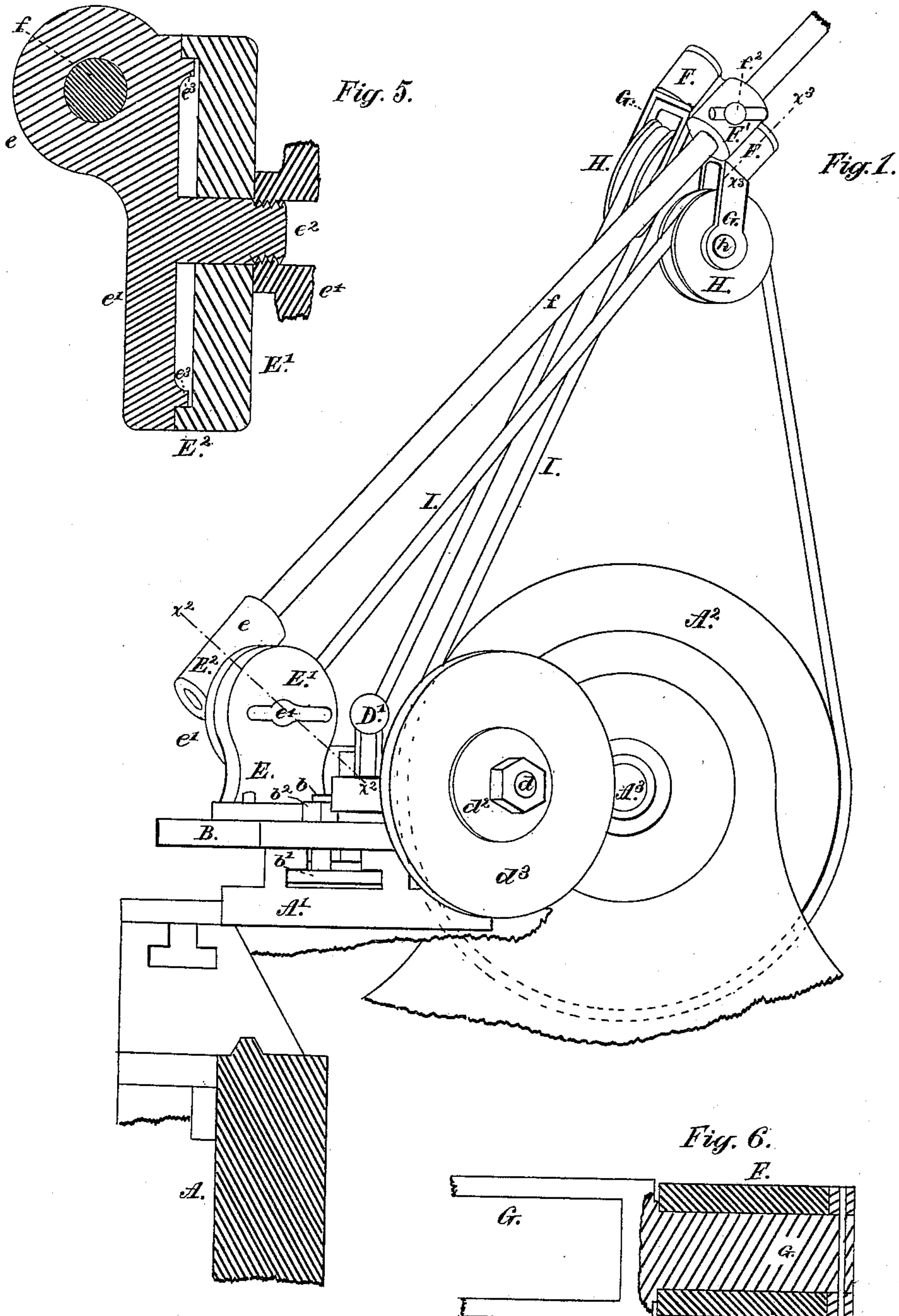
(No Model.)

2 Sheets—Sheet 1.

E. E. WOODWARD.
LATHE CENTER GRINDER.

No. 438,876.

Patented Oct. 21, 1890.



Witnesses,

H. A. Stoddard!
J. W. Kinans.

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

(No Model.)

2 Sheets—Sheet 2.

E. E. WOODWARD.
LATHE CENTER GRINDER.

No. 438,876.

Patented Oct. 21, 1890.

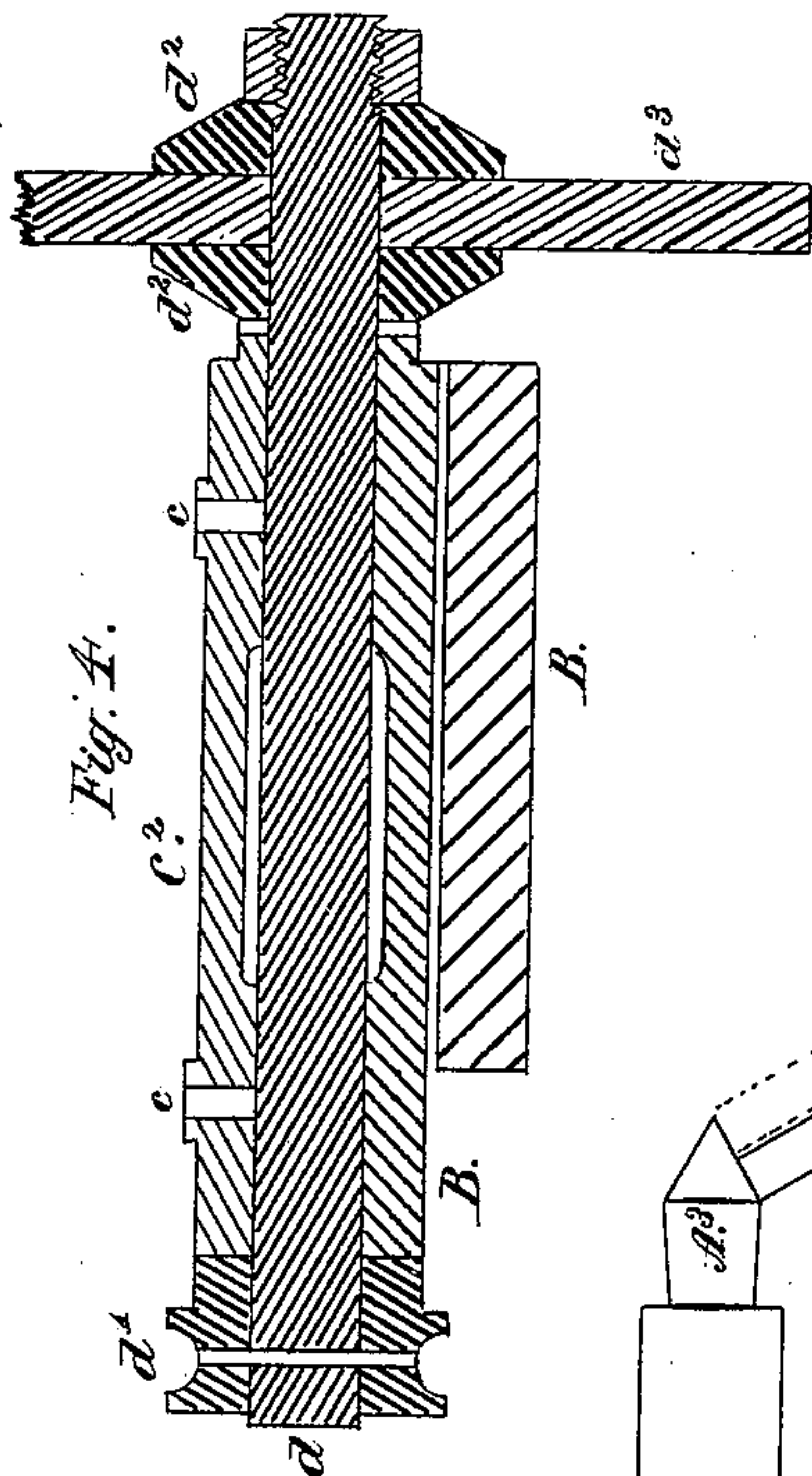


Fig. 4.

Fig. 2.

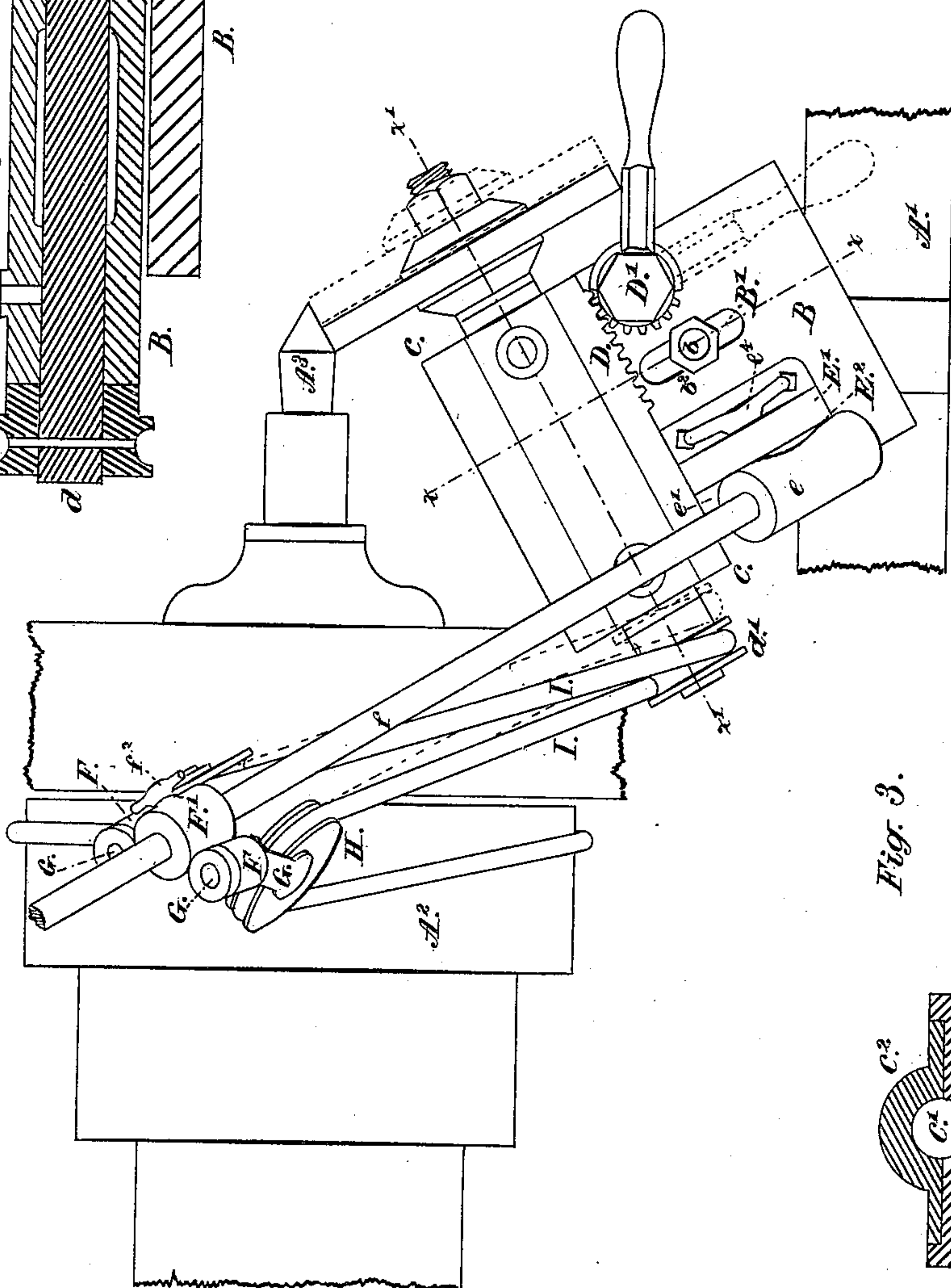
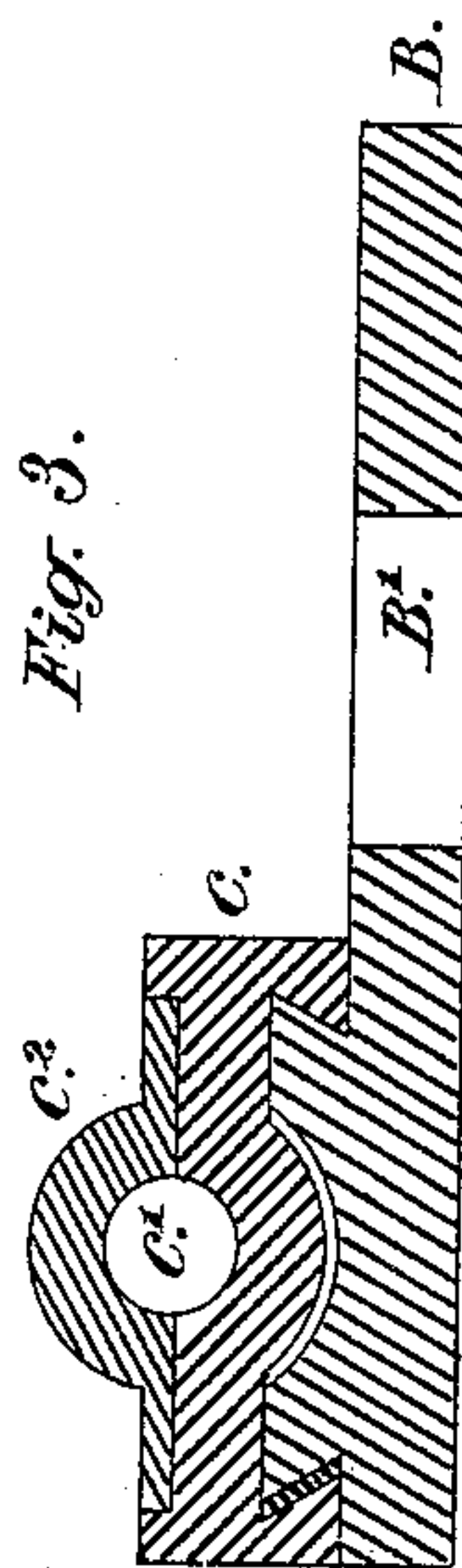


Fig. 3.



Witnesses.

H. H. Stoddard.
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.