

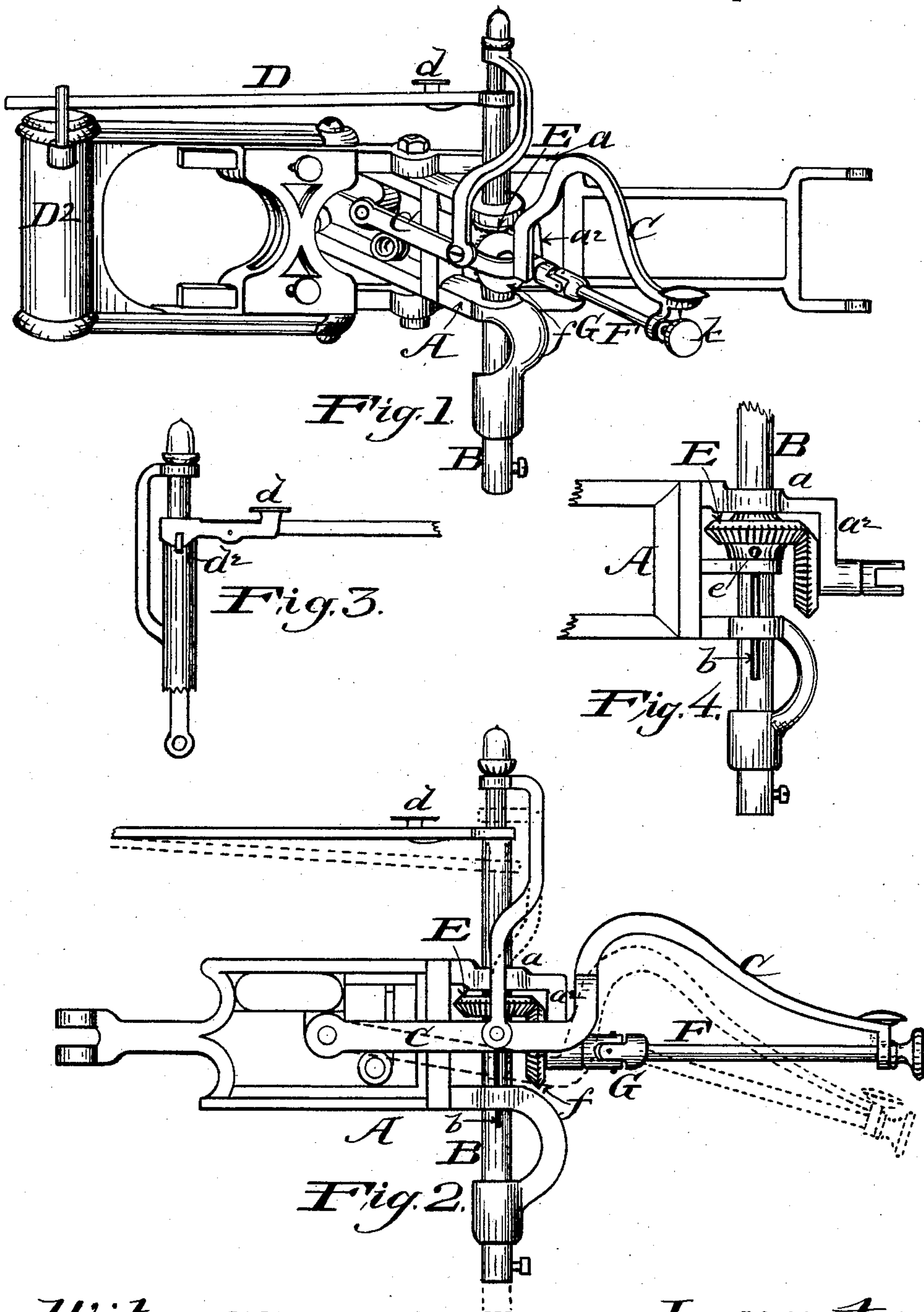
(No Model.)

A. E. FRANCIS.

TURNING POINT ATTACHMENT FOR ENGRAVING MACHINES.

No. 437,137

Patented Sept. 23, 1890.



Witness,
Abner Slutz;
Vernon H. Burke

Inventor,
Allan E. Francis.
By Geo. W. Tibbitts atty.

UNITED STATES PATENT OFFICE.

ALLAN E. FRANCIS, OF CLEVELAND, OHIO.

TURNING-POINT ATTACHMENT FOR ENGRAVING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 437,137, dated September 23, 1890.

Application filed January 24, 1890. Serial No. 338,031. (No model.)

To all whom it may concern:

Be it known that I, ALLAN E. FRANCIS, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Turning-Point Attachments for Engraving-Machines, of which the following is a specification.

This invention relates to an attachment to engraving-machines for which a patent, No. 238,882, was granted to me March 15, 1881, and has for its object to provide a quick and ready means of revolving the graver-stock, whereby dots or circles may be cut; and the invention consists in the combination, with the graver-stock, of gear-wheels and a shaft in connection with the manipulating hand-lever of the machine, substantially as hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in perspective of a part of the pantograph of my said engraving-machine having my said improvement attached. Fig. 2 is a side elevation of part of the same. Fig. 3 is a view of the top end of graver-stock, showing a latch for securing the graver-stock from turning when not required for rotative use. Fig. 4 is a view of the lower portion of graver-stock, showing the gear attachment.

A, Figs. 1 and 2, represents the tool-holding arm of the pantograph of my said engraving-machine. B is the graver-stock, supported by said arm. C is the pivoted hand-lever, connected with said graver-stock, by which the same is raised and lowered. D is a rod connecting the upper end of the graver-stock with the sleeve D² of the pantograph. These constitute some parts of my aforesaid patented engraving-machine.

To make the graver-stock rotatable, I combine with it the following mechanism: In the graver-stock is made a longitudinal groove *b*, and upon the stock is loosely put a bevel gear-wheel E, supported between the bearings *a* *a* of the arm A. In a bracket *a*², attached to or formed on the end of arm A, is provided a

bearing for a counter-shaft F, carrying a bevel gear-wheel *f*, meshing with the gear E. In the hub of the gear-wheel E is fixed a pin or screw *e*, which reaches into the groove *b* in graver-stock B, forming a feather by which the graver-stock may have vertical play through the gear. In the shaft F is provided a universal joint G, and the outer end of said shaft is supported in a bearing on the outer end of lever C, and on the end of the shaft, outside of said bearing, is fixed a knob *k*, by which the shaft may be rotated. On the rod D is provided a latch *d*, engaging with a lug *d*² on the graver-stock B, designed to hold the stock from turning, except at such times as when required for using the stock rotatively, then the latch is raised.

From the foregoing the use of this attachment is seen to be as follows: The raising of the latch gives freedom to the graver-stock to be rotated. The stock is depressed by bearing on outer end of lever C, the joint G also allowing the outer end of shaft F to be depressed. Then the graver-stock may be rotated by means of said shaft F, for the purposes before mentioned.

Having described my invention, what I claim is—

1. The combination, with graver-stock B, having the groove *b* and the lever C, both supported by arm A of the pantograph, of the loose bevel gear-wheel E, provided with pin or screw *e*, sliding in groove *b* of stock B, counter-shaft F, provided with universal joint G, and supported in bracket *a*², and a bearing on the outer end of lever C, and carrying bevel-gear *f*, arranged for operating the graver-stock, substantially as and for the purpose specified.

2. The combination, with graver-stock B, having the lug *d*² and the rod D, of the latch *d*, substantially as and for the purpose specified.

ALLAN E. FRANCIS.

Witnesses:

GEO. W. TIBBITTS,
ABNER SLUTZ.