

No. 649,907.

Patented May 22, 1900.

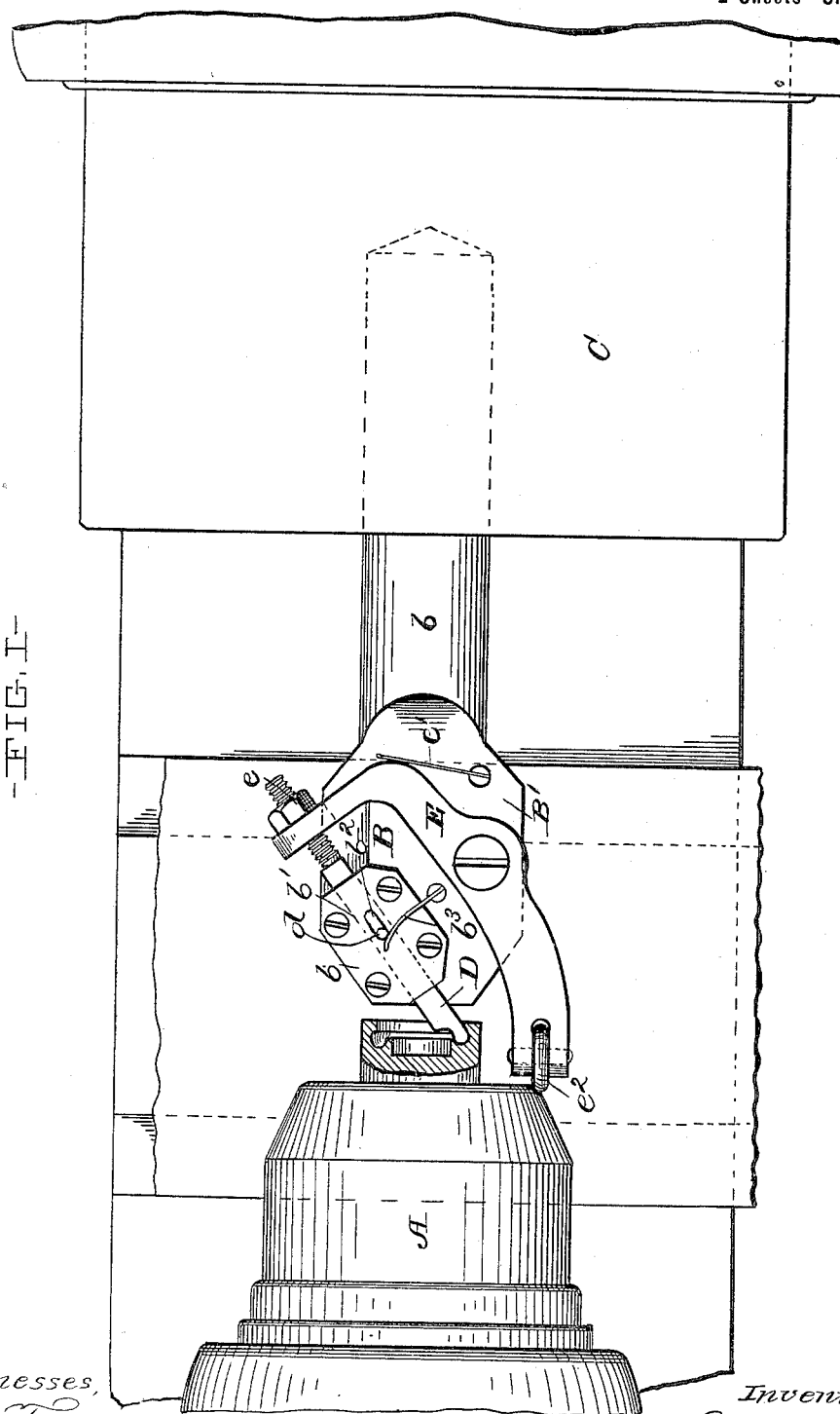
J. P. BROPHY,
AUTOMATIC LATHE ATTACHMENT.

(No Model.)

(Application filed July 17, 1899.)

2 Sheets—Sheet 1

FIG. 1—



Witnesses,
J. B. Turner
A. E. Merkel

Inventor,
J. P. Brophy
By *J. D. Gay* Atty.

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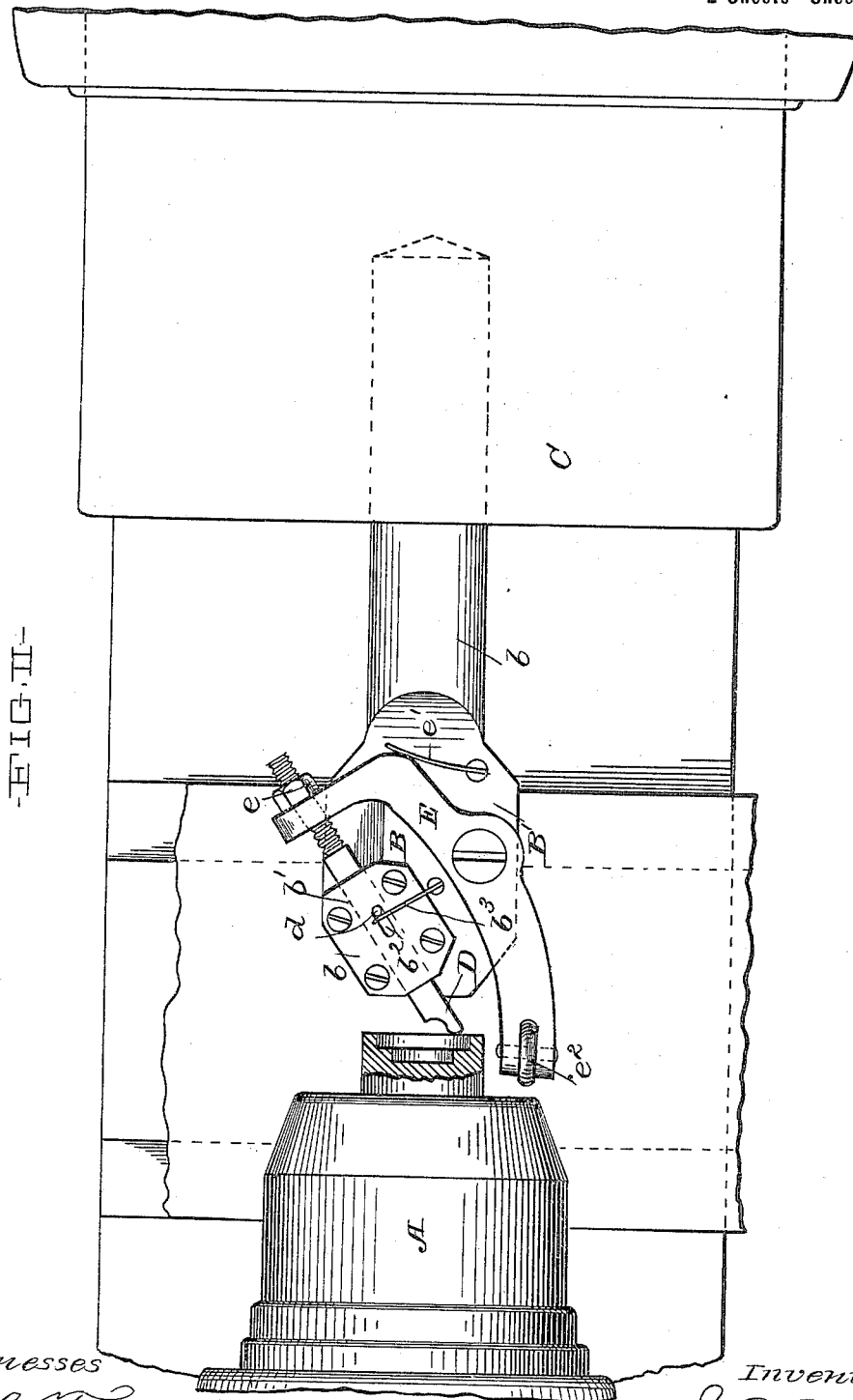
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(No Model.)

2 Sheets—Sheet 2.



Witnesses

J. C. Turney
A. C. Merkel.

Inventor

By _____

J. P. Prophe
J. P. Gay Alley.

UNITED STATES PATENT OFFICE.

JOHN P. BROPHY, OF CLEVELAND, OHIO, ASSIGNOR TO THE CLEVELAND
MACHINE SCREW COMPANY, OF SAME PLACE.

AUTOMATIC LATHE ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 649,907, dated May 22, 1900.

Application filed July 17, 1899. Serial No. 724,094. (No model.)

To all whom it may concern:

Be it known that I, JOHN P. BROPHY, a citizen of the United States, and a resident of Cleveland, county of Cuyahoga, and State of Ohio, have invented a new and useful Improvement in Automatic Lathe Attachments, of which the following is a specification, the principle of the invention being herein explained and the best mode in which I have contemplated applying that principle so as to distinguish it from other inventions.

My invention relates to attachments for automatic lathes, and particularly to an attachment which may be secured in the turret of such lathe and caused to cut an undercut or interior groove in a bore.

Said invention consists of means hereinafter fully described.

The annexed drawings and the following description set forth in detail certain mechanism embodying the invention, such disclosed means constituting but one of various mechanical forms in which the principle of the invention may be used.

In said annexed drawings, Figure I represents a top plan of my improved attachment mounted in a turret and showing also the head-stock and a portion of the frame of an automatic lathe and a blank in partial cross-section, and Fig. II represents a similar view illustrating the relation of the parts when not operating upon the blank.

The head-stock A is provided with suitable blank-gripping means and is rotated, as required, by suitable mechanism, as is well understood by those familiar with this class of machinery.

Upon the end of the shank of the attachment B, which is secured in one of the tool-holding apertures of the intermittently reciprocating and rotating turret C, is secured a tool holder or frame B'. Upon the outer end of this frame is secured a plate *b*, in which is formed a tool-seat *b'*, inclined to the axis of rotation of the blank gripping and rotating means—that is, the head-stock A. In said tool-seat is located a movable tool D, whose movement is limited in its backward movement by a pin *d* passing through a slot *b²*, formed in the plate *b*, said tool being actuated by a spring *b³*, which engages said pin

to move or tend to move the tool toward the turret and away from the blank to assume the position shown in Fig. II. The opposite end of said tool engages by contact the inner end of an adjustable screw *e*, secured in the end of an arm E, pivoted upon the tool-holder, contact being maintained between the two contact-surfaces, when the device is in the position shown in Fig. II, by means of a spring *e'*, arranged to exert a less amount of pressure than that exerted by spring *b³*. The opposite end of said arm E is provided with a roller *e²*, journaled so as to permit a portion of the periphery of the roller to remain free.

In operating the device the lathe mechanism is so timed that the turret rotates so as to bring the above-described attachment into a position such that upon its subsequent advance the tool in the holder will enter the blank at the proper point, clearing the metal until the cutting edge has penetrated the bore to the required distance. On reaching the desired point the roller *e²* contacts the end of the head-stock and on the continued advance of the tool-holder causes the arm E to turn upon its pivot and project the tool toward the inner surface of the bore in an angular direction, as shown in Fig. I, the cutting edge thereby forming an undercut or angular recess or groove. Such operation is continued to the required point by the further advance of the tool-holder and the tool then withdrawn, such withdrawal effecting the reverse of the above operation.

Other modes of applying the principle of my invention may be employed instead of the one explained, change being made as regards the mechanism herein disclosed, provided the means covered by either of the following claims be employed.

I therefore particularly point out and distinctly claim as my invention—

1. The combination of blank gripping and rotating means, a tool-holder, a tool mounted upon said holder and movable in a direction inclined to that of the axis of rotation of the blank, rotating means, means for moving said holder in the direction of said axis, and an arm pivoted upon said holder and adapted to engage said gripping and rotating means where-

by it may be caused to move upon its pivot, said arm having engagement with said tool, whereby on being moved upon its pivot it is capable of imparting a movement to the tool
5 in said inclined direction, substantially as set forth.

2. The combination of blank - rotating means, a tool-holder, a tool mounted upon said holder in a bearing inclined to the axis
10 of said rotating means, a spring for actuating said tool in a direction away from said rotating means, an arm pivoted upon said holder and adapted to engage said tool to ac-

tuates it in a direction opposite that of the action of said spring, means for advancing said 15 tool-holder toward the rotating means, one end of said arm so located as to engage means fixed relatively to said holder, whereby said arm is caused to engage and actuate said tool, substantially as set forth.

Signed by me this 5th day of July, 1899.

J. P. BROPHY.

Attest:

D. T. DAVIES,
A. E. MERKEL.