

2 Sheets—Sheet 1.

LATHE FOR TURNING POLYGONAL FORMS.

Patented Sept. 23, 1884.

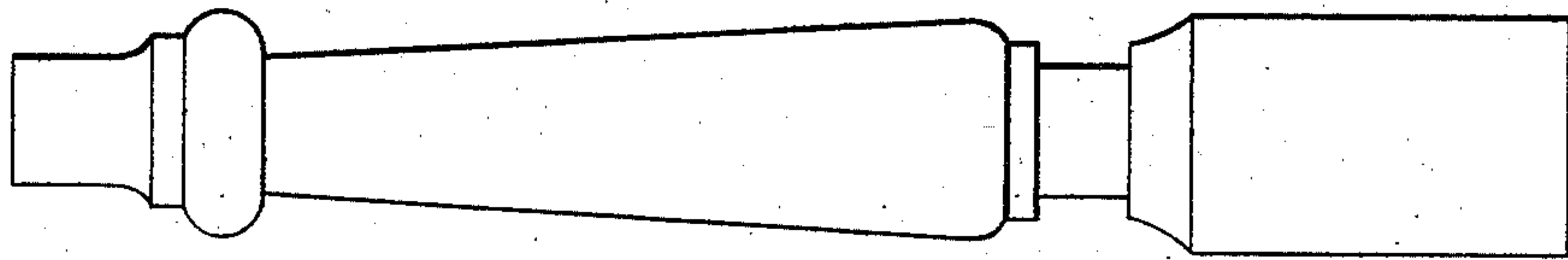
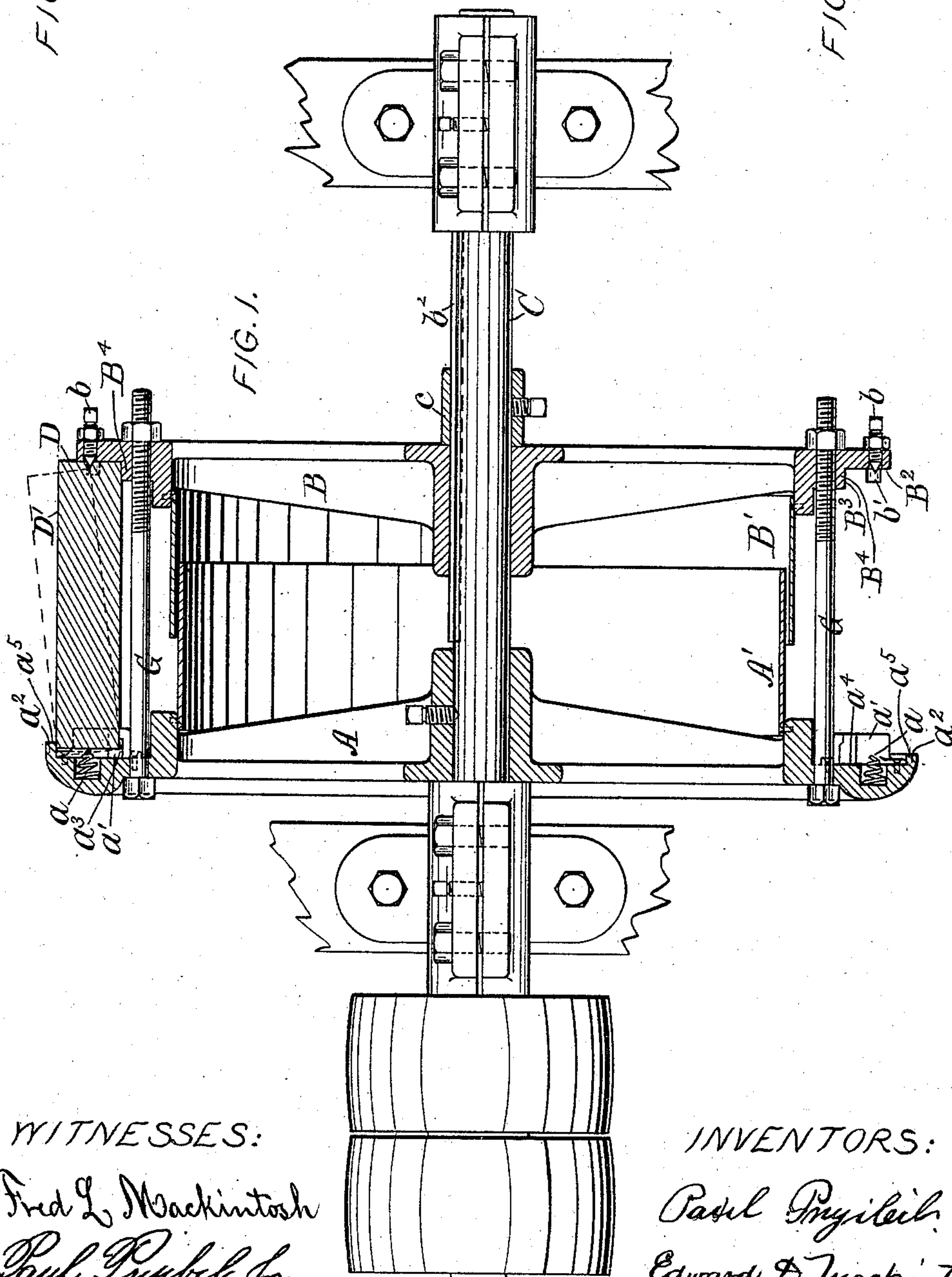


FIG. 7.

F/G.8.



WITNESSES:

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Paul Rybel Jr

INVENTORS:

Basil Pryor
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(No Model.)

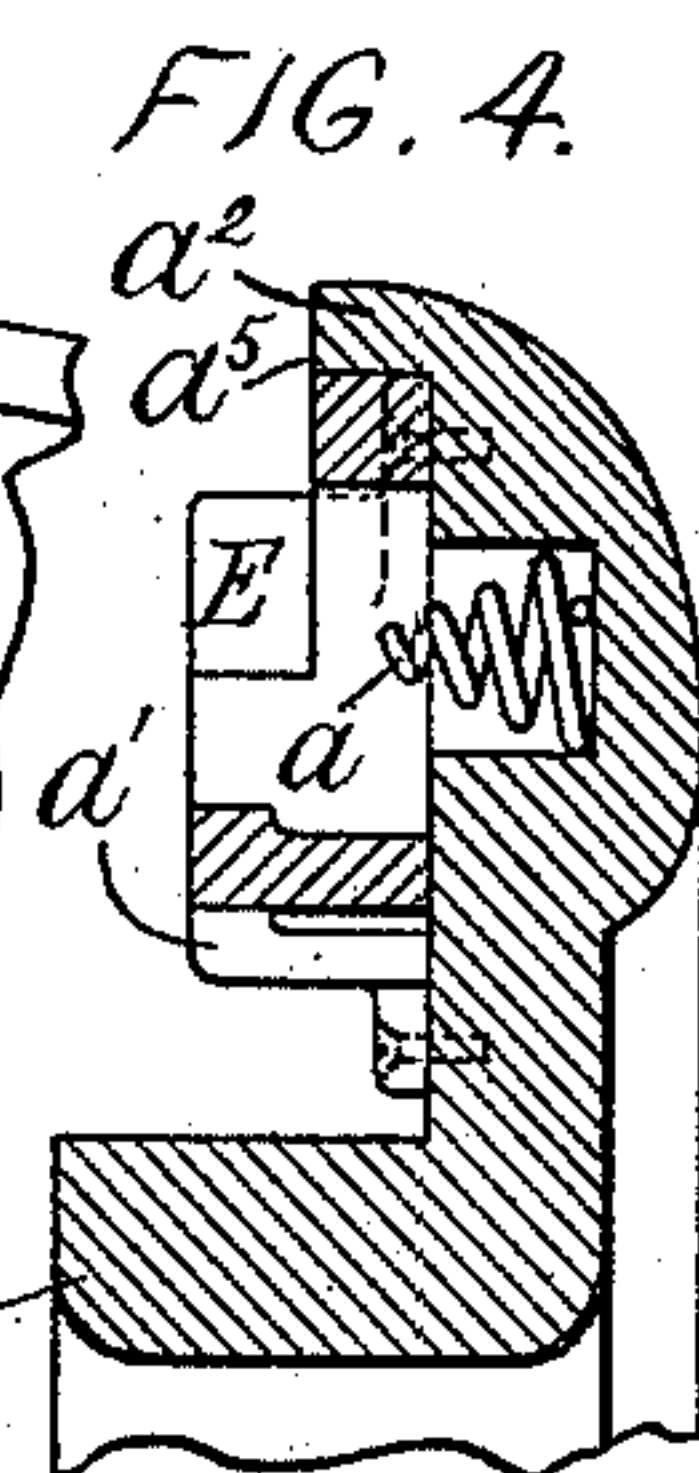
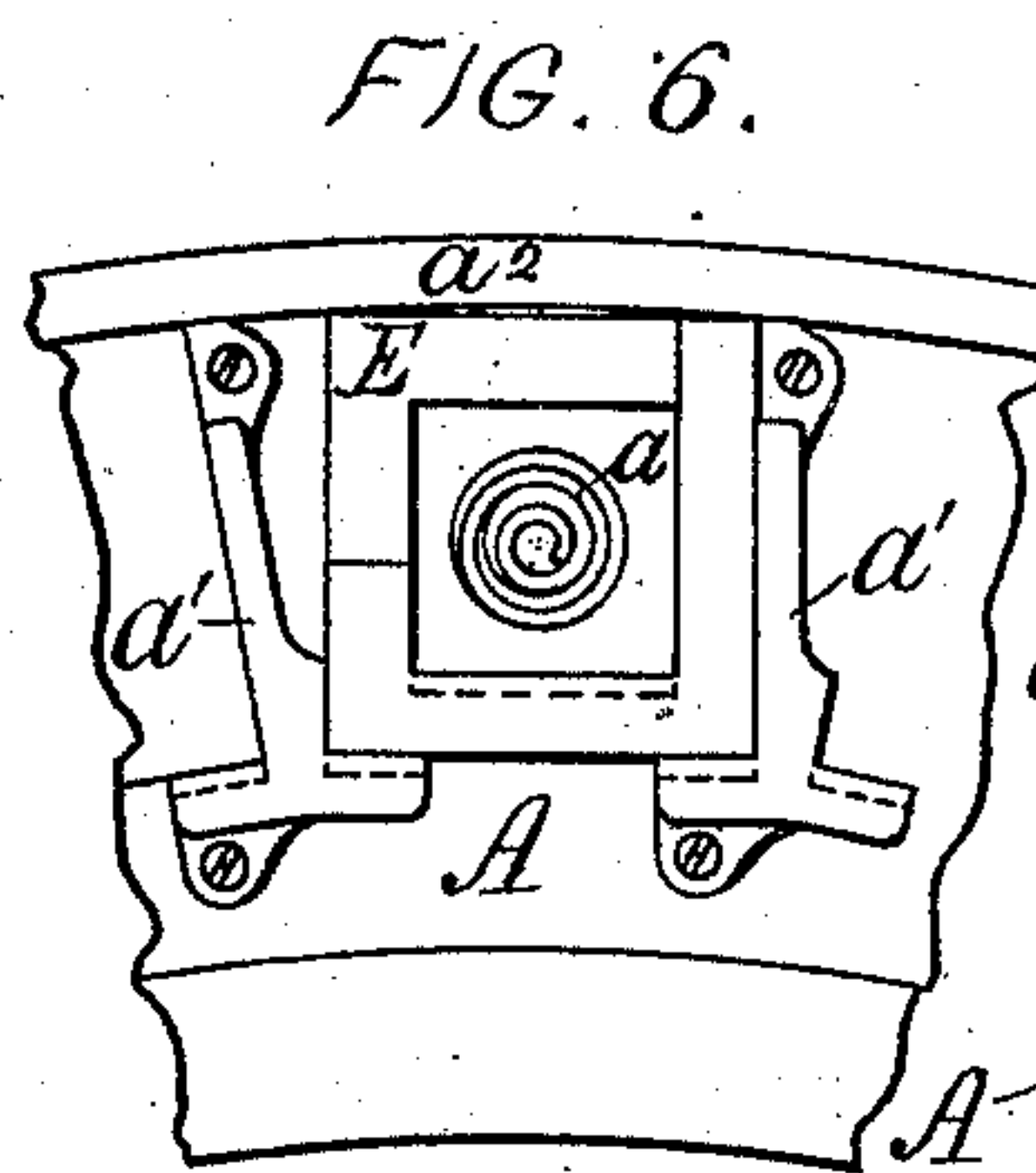
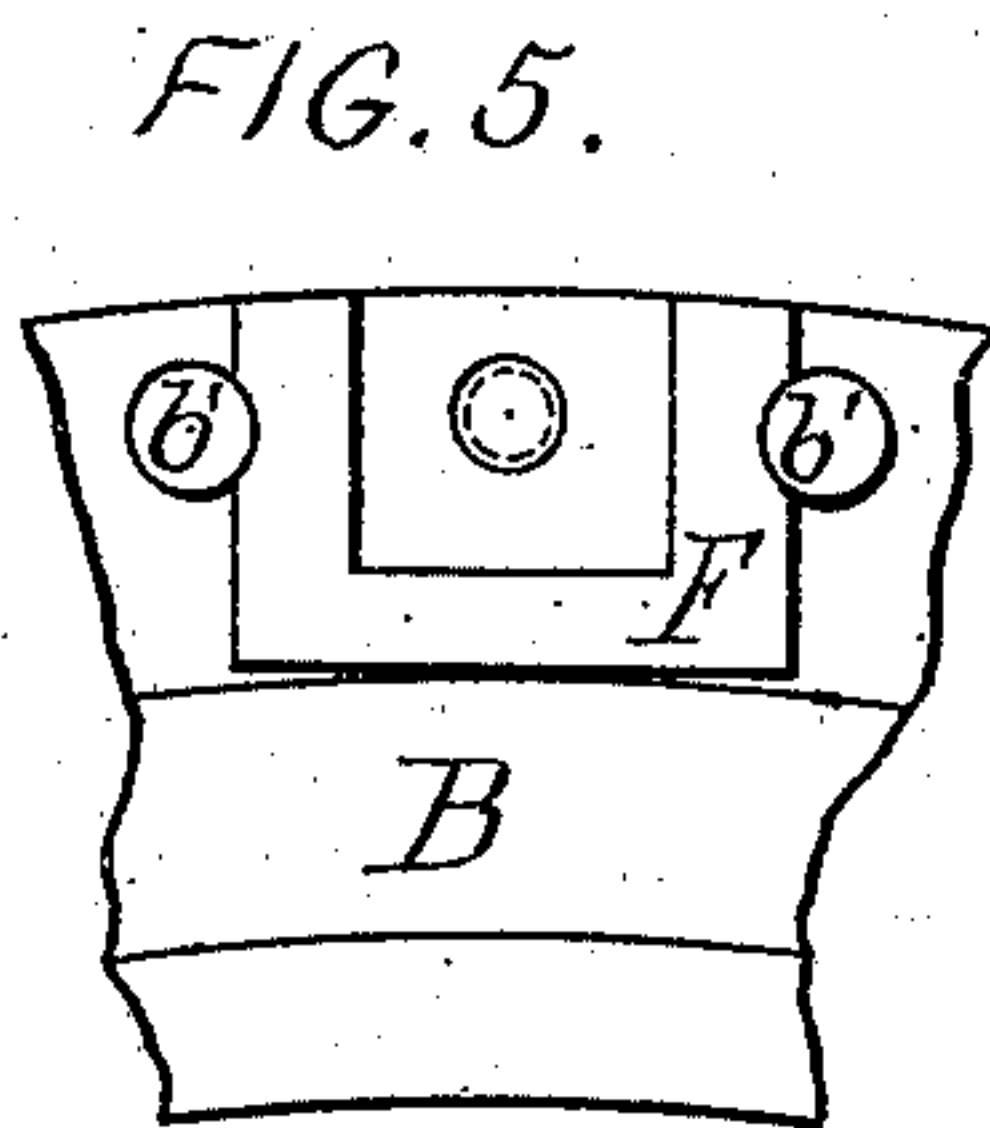
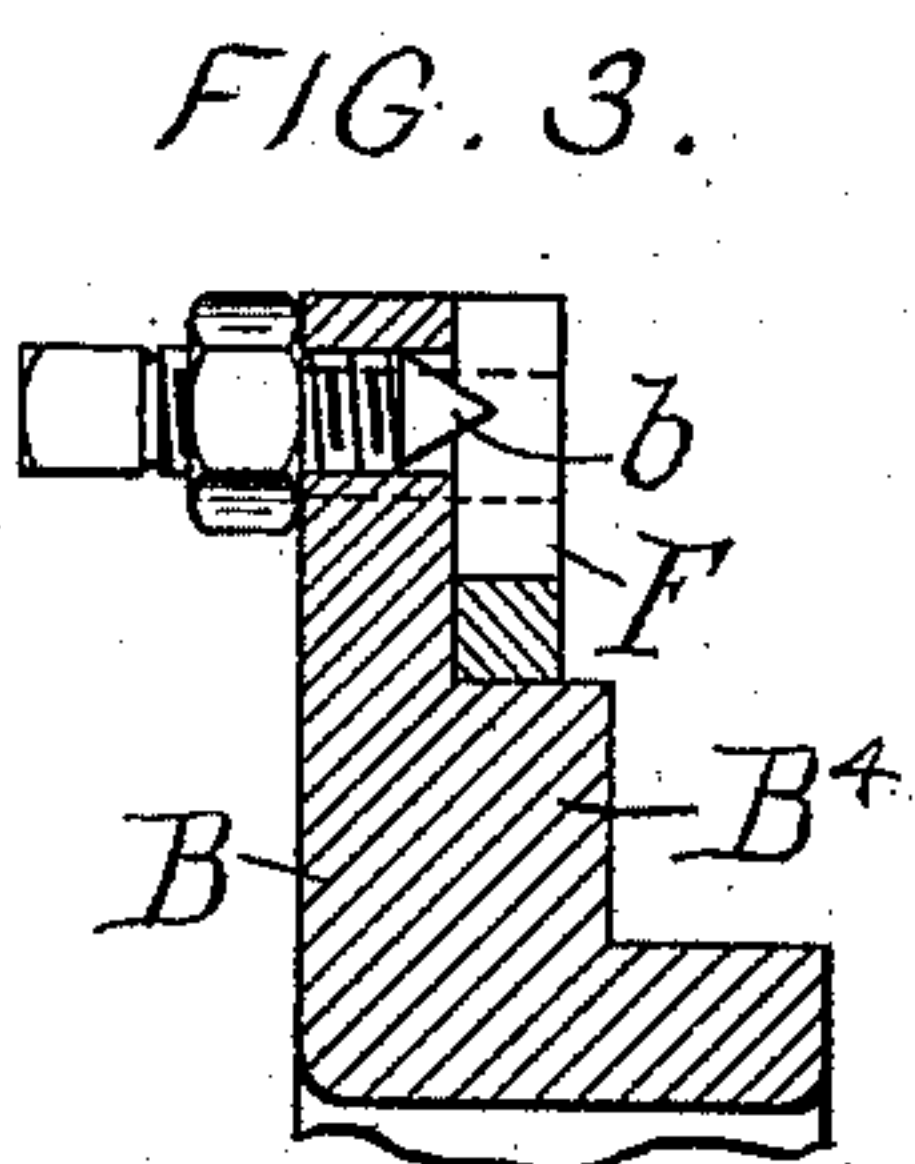
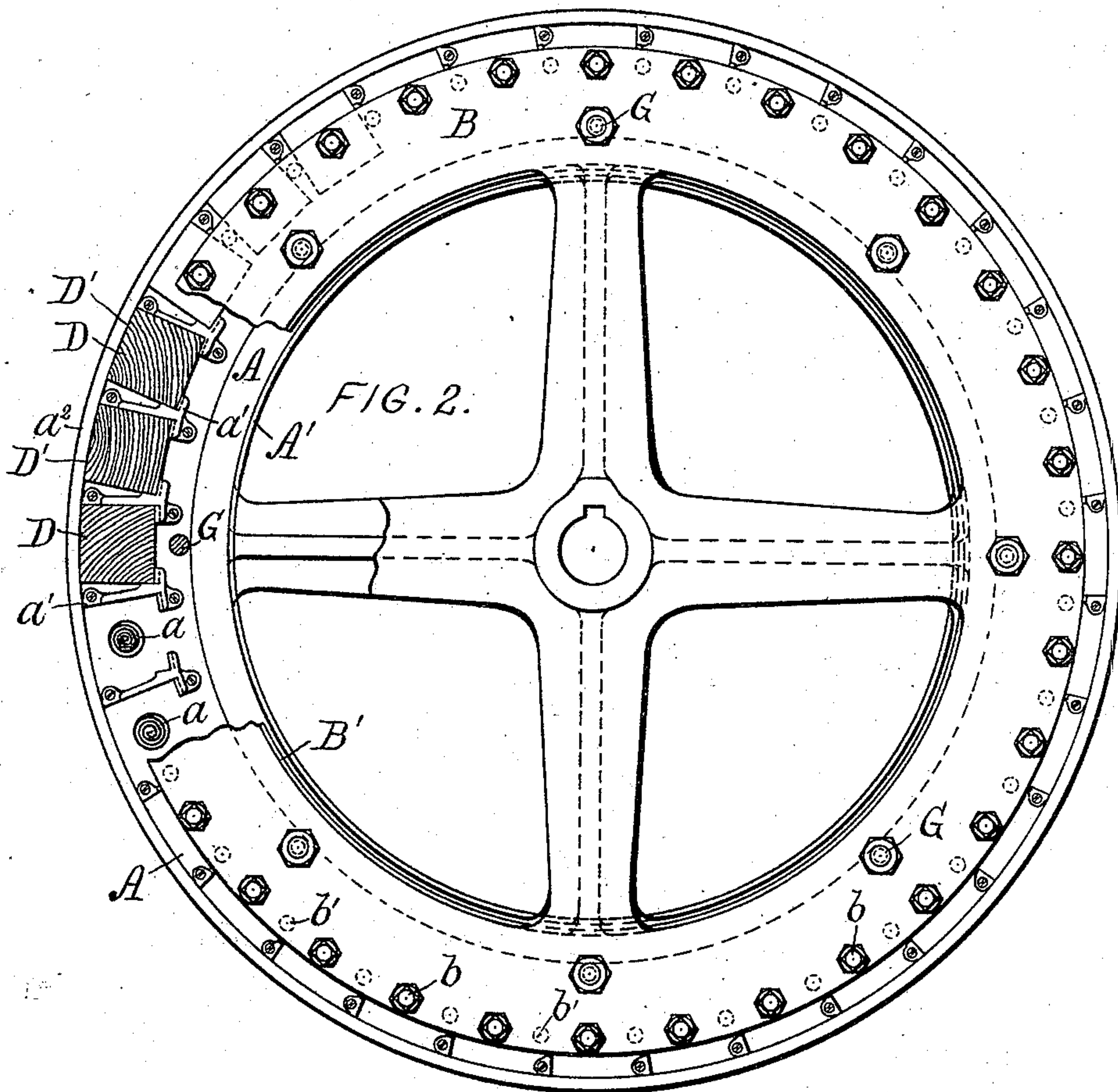
2 Sheets—Sheet 2.

P. PRYIBIL & E. D. MACKINTOSH.

LATHE FOR TURNING POLYGONAL FORMS.

No. 305,712.

Patented Sept. 23, 1884.



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UNITED STATES PATENT OFFICE.

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LATHE FOR TURNING POLYGONAL FORMS.

SPECIFICATION forming part of Letters Patent No. 305,712, dated September 23, 1884.

Application filed May 7, 1884. (No model.)

To all whom it may concern:

Be it known that we, PAUL PRYIBIL and EDWARD D. MACKINTOSH, citizens of the United States, and residents, respectively, of New York, in the county and State of New York, and of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Lathes for Turning Polygonal Forms, of which the following is a specification.

Our invention relates to improvements in that class of lathes in which several bars of wood or other suitable material are arranged in the approximate form of a cylinder, the outer surface of which is then acted upon by a cutting-tool; and the objects of our invention are, first, to facilitate the operation of placing the bars and securing them firmly in place; second, to provide means for holding different sizes in the same machine; and, third, to prevent the light from shining through the spaces between the bars into the operator's eyes. We attain these objects by novel combinations of parts hereinafter particularly described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a vertical section of our lathe, the supporting-bearings, &c., being shown in elevation; Fig. 2, an end elevation of the same removed from the shaft and partly broken away. Figs. 3 and 4 are enlarged sections of portions of the heads A and B with attachments in place. Figs. 5 and 6 are elevations of the same; and Figs. 7 and 8 are enlarged end and side elevations, respectively, of a piece turned in our lathe.

The same letters refer to like parts throughout the several views.

C is a shaft mounted in suitable bearings, and provided with tight and loose pulleys or other suitable means for revolving the same. Upon this shaft are mounted two heads, A and B, the former being fixed thereon by a set-screw or other suitable means, and the latter being prevented from turning independently of the shaft C by a feather, b^2 , but capable of axial motion, limited in one direction by the loose collar c , which can be secured by its set-screw in any suitable position on the

shaft. Through the two heads A and B extend several bolts, by which the heads may be forcibly drawn together, and in the head A are several holes, in which are placed the springs a , held therein by the expansion of their large ends. These springs, when in their normal condition, extend beyond the holes, but are capable of being compressed wholly within the latter. Between these holes, and secured to the head A by screws or other suitable means, are partition-pieces a' , of such shape that they, in combination with the rim a^2 of the head A, form sockets which fit the square bars, D, that are to be operated upon. The part of these partitions which is toward the shaft is recessed at a^3 , to enable the bar D to be inclined, as shown by the dotted lines of Fig. 1, for purposes to be more fully hereinafter described.

In the head B, and directly opposite to the described sockets, are screw-centers b , which can be adjusted to project to any suitable distance through the head B, and be secured in such position by their jam-nuts. Midway between these centers are pins b' or spacing projections, the clear space between each pair of which is equal to the full thickness of the square bar to be operated upon, while the distance from the center line of centers b to outer face, B^3 , of ring B^1 is equal to one-half such thickness. Thus the pins b' and the ring B^1 form supports, which hold one end of the bar D in position, and prevent it from moving except in the direction of the position shown by dotted lines in Fig. 1.

E is a removable reducing-piece fitted within the socket formed by the partition-pieces a' and the rim a^2 , for the purpose of reducing the size of socket to adapt it to a bar of smaller section.

F is a removable reducing-piece notched to fit the pins b' , and used for the same purpose as the piece E.

A' and B' are drums, preferably of sheet metal, and secured to the heads A and B, respectively.

Such being the construction, the operation is as follows: The head B is placed upon the shaft C in such a position that the distance be-

tween its face B^2 and the face a^5 of the rim a^2 will be a little less than equal to the length of the bar to be operated upon. The collar C is then placed against the head B, and fixed
 5 firmly in such position by means of its set-screw, and the screw-centers b are set to project a short distance beyond the face B^2 . One end of one of the bars, D, to be operated upon is then placed in one of the sockets formed by
 10 the partition-pieces a' and the rim a^2 in the position shown by dotted lines in Fig. 1. It is then pressed down against the ring B^1 and between two of the pins b' , which accurately determine its position, where it is held on one
 15 end by the socket formed by the partition-pieces a' and rim a^2 , and on the other end by the screw-center b , against which it is forced by the spring a with sufficient force to prevent it from falling out when the heads are
 20 turned around as the successive bars are placed in position. When all the sockets have been thus filled, the heads A and B are drawn forcibly together by the bolts G and their nuts, thereby clamping the bars D firmly between
 25 the faces of the heads, the springs a being compressed into the holes, and the screw-centers b forced into the ends of the bars. The shaft C is then revolved in its bearings by any suitable means, carrying with it the heads A
 30 and B with all their attachments, and the outer faces, D' , are acted on by any suitable tool for turning them to any desired shape, the whole length, with the exception of that covered by the rim a^2 , being accessible for the
 35 purpose. When the turning of the exposed faces is completed, the nuts on the bolts G are turned back, the head B brought against the collar c , and the bars D removed from their places and reinserted, so as to expose another
 40 face.

After the screw-centers b have been once forced into the bars D, as above described, the indentation thus produced serves thereafter to center the bars in replacing them, even though
 45 their sides be turned away so that they no longer touch the supports B^1 or b' .

By employing removable reducing-pieces E and F of proper sizes, any size of bar within certain limits can be turned in the one
 50 lathe.

The drums A' and B' are employed to prevent the light from shining through the spaces between the bars D into the operator's eyes.

Although we have shown and described a
 55 lathe fitted for square bars, it is obvious that our invention may be adapted to bars of any polygonal section by constructing the sockets, &c., to fit.

Having now described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a lathe for turning polygonal forms, the device herein described for holding blanks, consisting of a rotary shaft, two heads
 65 mounted thereon capable of longitudinal move-

ment relatively to each other, one head having on its inner face a circular series of sockets adapted to receive the ends of the blanks and to hold them against turning, and the other head being provided with a circular
 70 series of centers, b , projecting beyond its inner face and arranged opposite the said sockets, and with spacing projections b' between said centers, all combined and organized for operation substantially as herein described. 75

2. In a lathe for turning polygonal forms, the device herein described for holding the blanks, consisting of a rotary shaft, two heads mounted thereon and capable of longitudinal
 80 movement relatively to each other, one head having on its inner face a circular series of sockets adapted to receive the ends of the blanks and to hold them against turning, and the other head being provided with a circular
 85 series of centers, b , projecting beyond its inner face and arranged opposite to said sockets, and with spacing projections b' between said centers, and a circular series of bolts, G, extending between said heads for bringing
 90 them nearer together, all combined and organized for operation substantially as herein described.

3. In a lathe for turning polygonal forms, the device herein described for temporarily sustaining and holding the blanks, consisting
 95 of a rotary shaft, two heads mounted thereon and capable of longitudinal movement relatively to each other, one head having on its inner face a circular series of sockets adapted to receive the ends of the blanks, and severally
 100 provided with recesses containing springs which project beyond the bottoms of the recesses, but are capable of compression therein, whereby the blanks are held against turning and have pressure exerted upon their ends by
 105 the said springs, and the other head being provided with a circular series of centers, b , projecting beyond its inner face and arranged opposite the several sockets, all combined and organized for operation substantially as herein
 110 described.

4. In a lathe for turning polygonal forms, and consisting, essentially, of a shaft carrying two heads, between which the blanks are held, and one of which is movable upon the shaft
 115 in the direction of its axis, the device for preventing the light from shining through the spaces between the blanks, consisting of two drums fixed, respectively, to the two heads, and arranged to telescope one within the other,
 120 substantially as described, and for the purpose specified.

5. In a lathe for turning polygonal forms, the device for holding the blanks, consisting, essentially, of two circular heads mounted on
 125 a shaft, one of which is movable thereon in the direction of its axis, the first being provided near its periphery with centers projecting beyond its face toward the second, and of such form as can be easily pressed
 130

into the blanks, and also with removable pockets fitting the ends of the blanks sufficiently to prevent lateral motion thereof, except in the direction from the shaft, the inner side
5 of the second being provided with an equal number of opposed removable sockets fitting the ends of the blanks sufficiently to pre-

vent them from turning, substantially as described

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