

No. 815,567.

PATENTED MAR. 20, 1906.

H. K. STOCKWELL.

MACHINE FOR TURNING AND BORING ARTICLES, SUCH AS SPOOLS, &c.

APPLICATION FILED FEB. 21, 1905.

4 SHEETS—SHEET 1.

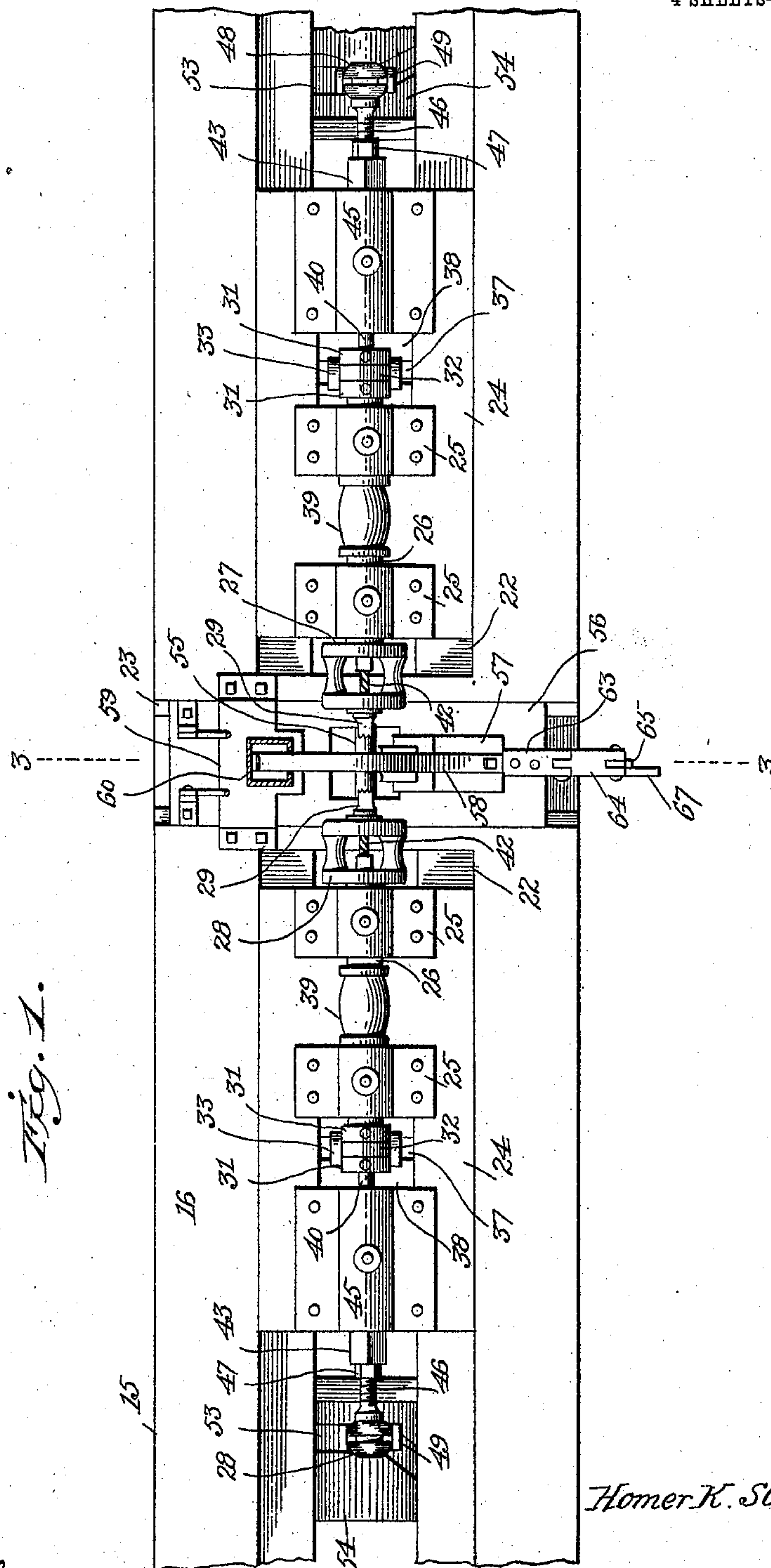


Fig. 1.

Witnesses

W. C. Isel

Geo. M. Copenhagen

Inventor

Homer K. Stockwell

By

Edwin L. Jewell

his Attorney

No. 815,567.

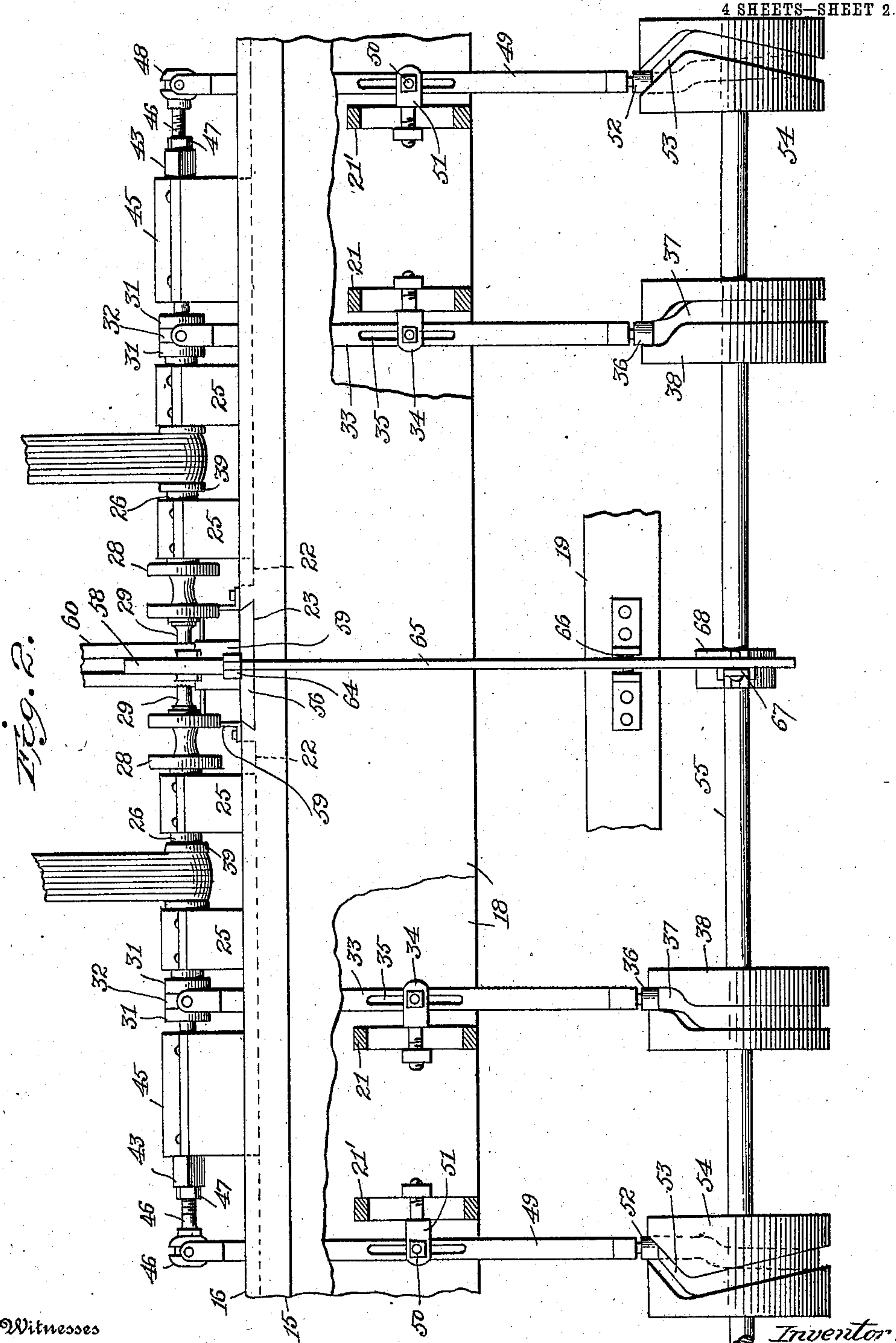
PATENTED MAR. 20, 1906.

H. K. STOCKWELL.

MACHINE FOR TURNING AND BORING ARTICLES, SUCH AS SPOOLS, &c.

APPLICATION FILED FEB. 21, 1905.

4 SHEETS—SHEET 2.



Witnesses

W. C. Jael.  
Geo. M. Copeland.

334

Inventor:

Homer K. Stockwell

Edwin L. Jewell  
his Attorney

No. 815,567.

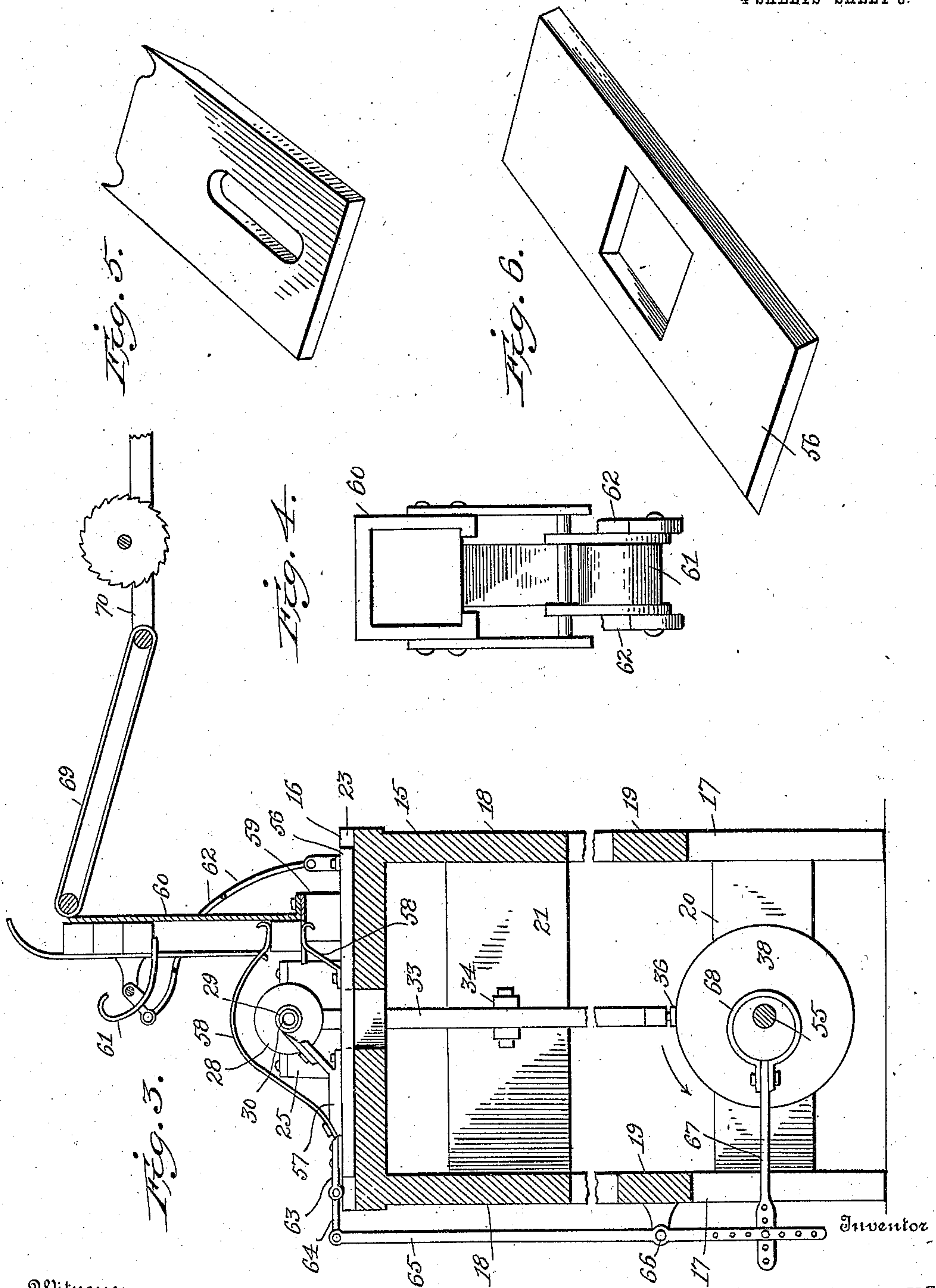
PATENTED MAR. 20, 1906.

H. K. STOCKWELL.

MACHINE FOR TURNING AND BORING ARTICLES, SUCH AS SPOOLS, &c.

APPLICATION FILED FEB. 21, 1905.

4 SHEETS—SHEET 3.



Witnesses

W. B. Isel  
Geo. M. Copehaver.

By

Homer K. Stockwell  
Edwin L. Jewell  
his Attorney



No. 815,567.

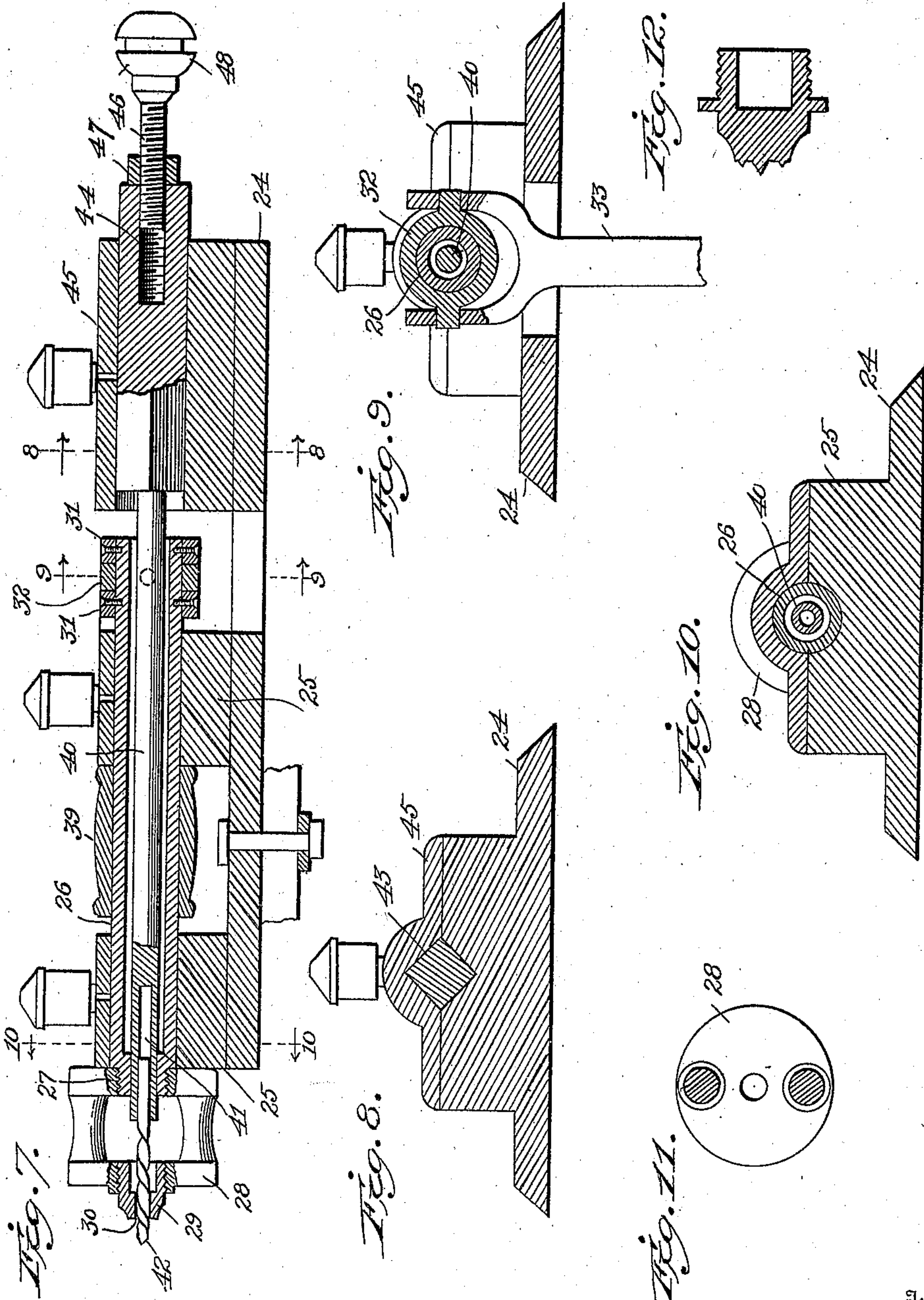
PATENTED MAR. 20, 1906.

H. K. STOCKWELL.

MACHINE FOR TURNING AND BORING ARTICLES, SUCH AS SPOOLS, &c.

APPLICATION FILED FEB. 21, 1905.

4 SHEETS—SHEET 4.



Witnesses

W. C. Isel.  
Geo. M. Copenhagen.

Inventor

Homer K. Stockwell

334

Edwin L. Jewell

His Attorney



# UNITED STATES PATENT OFFICE.

HOMER K. STOCKWELL, OF ONAWAY, MICHIGAN, ASSIGNOR TO LEWIS T. KLINE, OF ALPENA, MICHIGAN.

## MACHINE FOR TURNING AND BORING ARTICLES, SUCH AS SPOOLS, &c.

No. 815,567.

Specification of Letters Patent.

Patented March 20, 1906.

Application filed February 21, 1905. Serial No. 246,715.

*To all whom it may concern:*

Be it known that I, HOMER K. STOCKWELL, a citizen of Canada, residing at Onaway, in the county of Presque Isle and State of Michigan, have invented new and useful Improvements in Machines for Turning and Boring Articles, such as Spools, &c., of which the following is a specification.

This invention relates to certain improvements in machines for forming small wooden articles, such as spools, pail-handles, &c.

One object of this invention is to provide an automatic machine for producing such articles as above mentioned.

Another object is to provide a machine that will shape the periphery of an article and at the same time bore a hole there-through.

Another object is to provide a machine of simple, cheap, and substantial construction for accomplishing the above objects.

These objects I attain by the means illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of my machine, the ends being broken off. Fig. 2 is a side elevation. Fig. 3 is a cross-section on the line 3 3 of Fig. 1. Fig. 4 is a detail plan view of the feed-chute. Fig. 5 is a view of a forming-blade. Fig. 6 is a view of the feed-slide. Fig. 7 is a longitudinal section through one of the heads. Fig. 8 is a cross-section on line 8 of Fig. 7. Fig. 9 is a cross-section on line 9 of Fig. 7. Fig. 10 is a cross-section on line 10 10 of Fig. 7. Fig. 11 is a detail cross-section of one of the chucks. Fig. 12 is a supplemental chuck-nose to be used when not boring.

In the drawings, 15 designates the supporting-frame, consisting of a top 16, legs 17, sides 18, side bars 19, end bars 20, and cross-bars 21 21'. The top 16 is provided with longitudinal guideways 22 and a cross-guideway 23. In the longitudinal guideways 22 are the slides 24, same slides carrying suitable bearings 25, which support the tubular shaft 26, adapted to revolve and slide therein. The ends of the tubular shafts nearest the center of the machine are reduced in diameter and screw-threaded, as at 27, to receive the skeleton chuck-heads 28, provided with work-holding nuts or noses 29, having serrated faces and a central aperture 30. To the opposite ends of the tubular shafts are secured collars

31, between which are the loose collars 32, provided with trunnions having bearings in the upper ends of the levers 23, pivoted to the cross-bars 21 by means of the pivot-bracket 34, adjustably secured to said cross-bars. The levers 33 are slotted, as shown at 35, for the purpose of adjustment of the pivot. The lower ends of the levers 33 are provided with rollers 36, which play in cam-grooves 37 of the cam-wheels 38. By these means the tubular shafts are reciprocated back and forth. The tubular shafts are also provided with pulleys 39, whereby they are revolved through the means of a belt to a suitable power-shaft. (Not shown.)

40 designates a bit-holder provided at one end with a recess 41 for the reception of the boring-tool 42. At the other end it is provided with an enlarged section 43, square in cross-section, and a screw-threaded recess 44. The squared ends are supported by suitable bearings 45, secured to the slides 24 and adapted to reciprocate therein.

46 designates the threaded bars in the threaded recesses 44, said bars being provided with jam-nuts 47 and enlarged ends 48, provided with a groove in which engage trunnions on the upper ends of the levers 49, which are pivoted at 50 to pivoted brackets 51, adjustably secured in the cross-bars 21'. The lower ends of the levers 49 are provided with rollers 52, which play in cam-grooves 53 in the cam-wheels 54.

The cam-wheels 38 and cam-wheels 54 are secured to a counter-shaft 55, running longitudinally of the machine and adapted to be operated in any suitable manner.

In the guideway 23 is adapted to reciprocate a slide 56, having a tool-holder 57 and a pair of grasping springs or fingers 58, secured thereon. A table 59, supporting a feed-chute 60, is secured to the main frame at each side of the guide 56. The feed-chute is slotted on the front side and near its top is pivoted an escapement 61, operated by the rods 62, pivotally secured to bearings mounted upon the slide. A plate 63 is secured to the front end of the slide 56, to which is pivotally secured one end of a bar 64, the other end thereof being pivoted to the upper end of a lever 65, pivoted at 66 to the main frame. The lower end of the lever is pivoted to an arm 67, secured to an eccentric 68, mounted upon the counter-shaft 55. The connection



between the eccentric arm and the lower end of the lever 65 can be adjusted as desired. The feed-chute is automatically fed with material by the conveyer-belt 69, leading from a saw-table 70.

The operation is as follows: Suitable strips or bars of wood are fed against the saw, the sawed blocks being pushed upon the conveyer-belt and fed to the feed-chute, one finger of the escapement holding the pile until the cross-slide moves forward. The forward movement of the slide operates the escapement, one finger thereof releasing one block and the other finger of the escapement by lateral pressure against the bottom block of the pile holding the remainder of the pile until the cross-slide returns to its initial position. At this time the grasping-fingers grasp the released block and on the forward movement of the cross-slide carry it between the centers of chucks or chuck-heads. Just as the block reaches the center of the machine the bits are advanced slightly by their cams enough to impinge the ends of the block, holding it until the grasping-fingers recede therefrom. At this time the chuck-heads advance, impinging the ends of the block, and it begins turning immediately. During these movements the forming-tool is advancing, and at the same time one of the bits is advanced by its cam until it penetrates slightly beyond the center of block and then recedes. As it recedes the other bit advances from the other side and finishes the boring. When finished, the chucks open and the finished product drops through the aperture in the center of the table and cross-slide. The reason for centering the block by the bits is to give a sufficient time for the grasping-fingers to be released; otherwise should the chuck impinge the block first it immediately commences to turn and would be likely to damage the grasping-fingers. The reason for advancing one bit before the other and only boring a little over half-way through is for the purpose of saving time, and the capacity of the machine is doubled thereby. When the boring is being done, the grasping-fingers are advancing with another block.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination with a blank-feed, of a reciprocating means for gripping a blank and conveying it to a point in line with a non-rotating boring-bit, said bit and means for advancing the same to center and then bore the blank, and rotating gripping devices concentric with said bit, and means for advancing them to grip the work, subsequently to

the boring-bit, and to rotate it during the boring advance of the bit and a reciprocating cutter, which advances to the blank during its rotation.

2. The combination with a feed-hopper and an escapement for discharging the blanks singly, of a reciprocating means for gripping a blank and conveying it to a point in line with a non-rotating boring-bit, said bit and means for advancing the same to center and then bore the blank, and rotating gripping devices concentric with said bit, and means for advancing them to grip the work, subsequently to the boring-bit, and to rotate it during the boring advance of the bit, and a reciprocating cutter which advances to the blank during its rotation.

3. The combination with a blank-feed, of a reciprocating slide having means for gripping a blank and conveying it to a point in line with a non-rotating boring-bit, said bit and means for advancing the same to center and then bore the blank and rotating gripping devices concentric with said bit, and means for advancing them to grip the work, subsequently to the boring-bit, and to rotate it during the boring advance of the bit and a reciprocating cutter which advances to the blank during its rotation.

4. The combination with a blank-feed, of a reciprocating means for gripping a blank and conveying it to a point in line with two non-rotating boring-bits, said bits and means for advancing the same to center and then bore the blank, and rotating gripping devices concentric with said bits, and means for advancing them to grip the work subsequently to the boring-bit, and to rotate it during the boring advance of the bits, and a reciprocating cutter which advances to the blank during its rotation.

5. The combination with a blank-feed, of a reciprocating means for gripping a blank and conveying it to a point in line with two non-rotating boring-bits, said bits and means for advancing the same, first simultaneously an equal distance to center the blank, and then alternately to bore the blank, and rotating gripping devices concentric with said bits, and means for advancing them to grip the work subsequently to the boring-bits and to rotate it during the boring advance of the bits, and a reciprocating cutter which advances to the blank during its rotation.

In testimony whereof I affix my signature in presence of two subscribing witnesses.

HOMER K. STOCKWELL.

Witnesses:

HERBERT C. EMERY,  
LILLIAN B. SELBY.