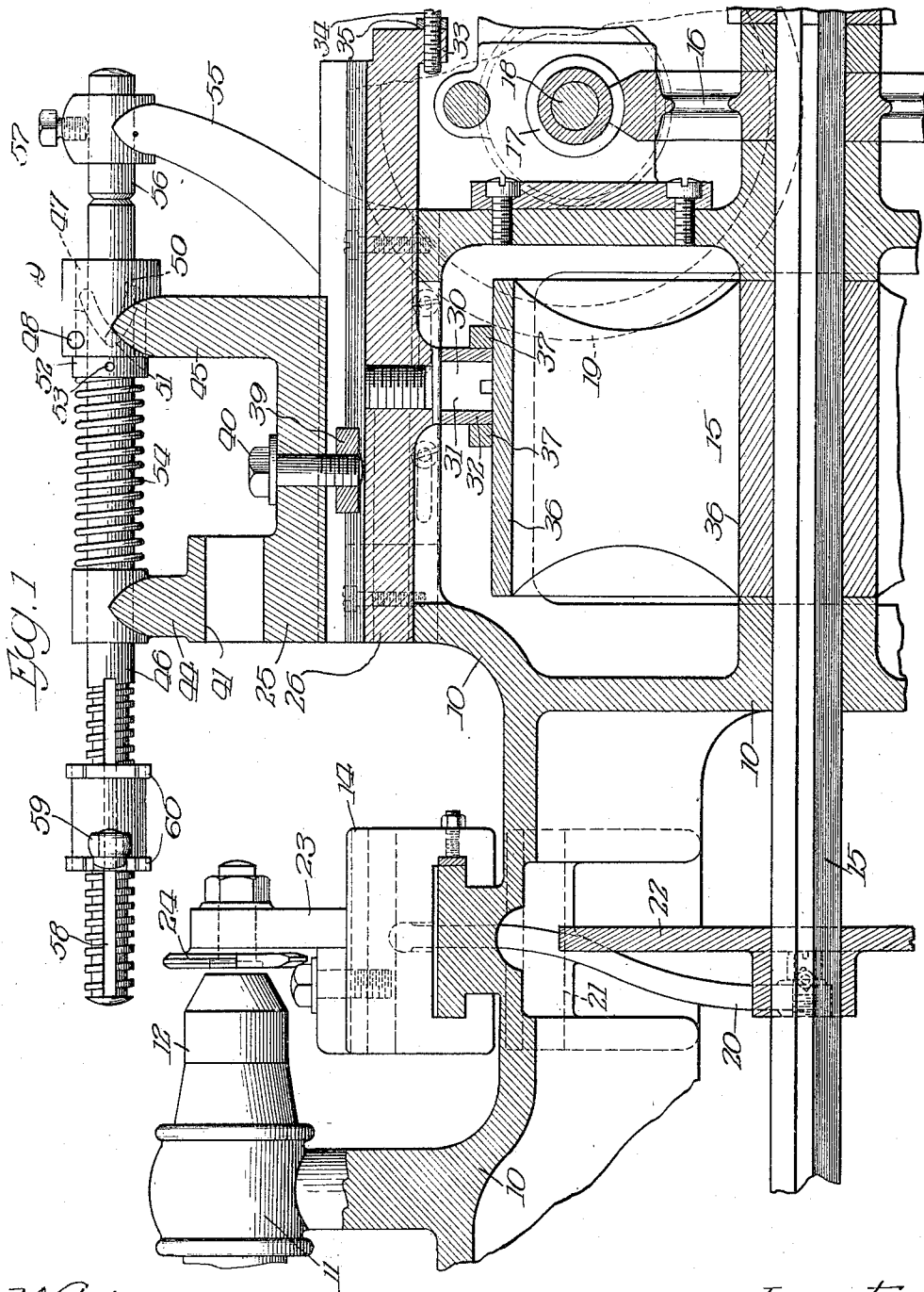


R. R. BROWN.
 STOCK STOP FOR SCREW MACHINES.
 APPLICATION FILED APR. 6, 1914.

Patented May 18, 1915.

2 SHEETS—SHEET 1.

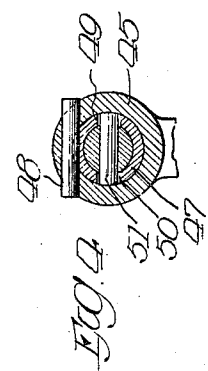
1,139,752.



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UNITED STATES PATENT OFFICE.

RICHARD R. BROWN, OF BELVIDERE, ILLINOIS, ASSIGNOR TO BELVIDERE SCREW & MACHINE COMPANY, OF BELVIDERE, ILLINOIS, A CORPORATION OF ILLINOIS.

STOCK-STOP FOR SCREW-MACHINES.

1,139,752.

Specification of Letters Patent.

Patented May 18, 1915.

Application filed April 6, 1914. Serial No. 829,731.

To all whom it may concern:

Be it known that I, RICHARD R. BROWN, a citizen of the United States, residing at Belvidere, in the county of Boone and State of Illinois, have invented certain new and useful Improvements in Stock-Stops for Screw-Machines, of which the following is a specification.

This invention relates to stock stops for lathes, automatic screw making machines, and the like, and the principal object of the invention is to provide an improved, simple and cheap device of the class described, which may be used in connection with automatic machines of the class described, and which is effective and efficient in operation.

For the attainment of these ends and the accomplishment of other new and useful objects, as will appear, this invention consists in the features of novelty in the construction, combination and arrangement of the several parts which constitute my invention, generally shown in the accompanying drawings and described in the specification, but more particularly pointed out in the appended claims.

In the drawings Figure 1 is an illustration of a stock stop constructed in accordance with the principles of my invention as applied to a lathe, some of the parts being shown in sectional elevation; Fig. 2 is a detail side elevation partly in section of the stock stop; Fig. 3 is an end elevation of the stock stop; Fig. 4 is a detail sectional view through one of the bearing mounts.

In lathes, automatic screw machines, and other similar machines, it is desirable to provide means for receiving and fixing the length of the stock to be cut and machined. This invention has for its object to provide adjustable means for varying the length of stock to be cut and for moving the stock stop rapidly and positively into and out of engaging position.

Referring more particularly to the drawings and in the present exemplification of the invention, a lathe frame 10 is provided with a bearing mount 11 for a rotatable stock holder 12, and with a transverse guide 13, which is adapted to position a slide 14.

A shaft 15 is rotatably mounted in the frame and is provided with a gear 16 which is adapted to mesh with a worm 17 mounted upon the shaft 18. This shaft 18 may be employed as a drive shaft by means of the

pulley 19. To move the slide 14 a lever 20 is pivotally mounted at 21, having suitable connections with the slide 14 and suitable engagement with a disk 22 mounted in a shaft 15 to effect the transverse reciprocating movement of the slide 14 as the shaft 15 rotates. Mounted upon the slide 14 is a standard 23, which is adapted to hold a cutter 24, and the movement of the slide 14 is such that the stock projecting from the stock head 12 will be cut off as it rotates when the slide 14 is moved toward it by means of the lever 20.

Slidable in the frame 10, in line with the stock head 12, is a tool block 25. This tool block is mounted in the frame by means of a slidable base 26 with grooves in the sides which are adapted to position it in guides 27, which are secured to the frame 10 by means of the threaded bolts 28. Depending from this base member 26 and extending through a slot 29 in the frame is a lug or projection 30. This lug or projection preferably comprises a screw 31 with an anti-friction roller 32 positioned around the head of the screw. At one end of the base member 26 is a depending lug 33 in which is positioned an adjusting screw 34, provided with a lock nut 35. The object of this adjusting screw 34 is to limit the movement of the base member 26 in one direction.

A cam drum 36 is mounted upon the shaft 15, and is provided adjacent its outer surface with a box cam 37, which is adapted to engage the projection 30 which extends through the opening 29 in the frame. This box cam 37 is so disposed upon the surface of the bar drum that as the shaft 15, and consequently the drum 36, is rotated, the base member 26 will be reciprocated to and fro in the guides 27. The tool block 25 is secured to the base member 26 in any desired or suitable manner. Preferably the base member is provided with a slotted groove 38 which is adapted to receive a nut 39. A bolt 40 passes through the tool block 25 and into the nut 39. As the nut 39 is slidable in the groove 38, it will be evident that the position of the tool block 25 may be adjusted in any desired position with respect to the base member 26.

In the tool block is a tool holder opening 41 provided with an adjustable locking device consisting of a bolt 42 threaded in the block 25, and a clamping block 43 disposed

in an opening adjacent the tool holder opening 41. When the block 43 is passed downwardly by the bolt 42 the tool is firmly locked in the tool holder opening 41. The block 25 is also provided with bearing supports 44 and 45 spaced apart and adapted to receive and rotatably support a shaft or bar 46. One of the supports, as 45, is provided with a sleeve 47 which fits within the support and inside of which the bar 46 is rotatable. This sleeve 47 is secured to the bearing support 45 in any suitable manner, such, for example, as by means of a pin 48, and is provided with slots 49 and 50, which are disposed on opposite sides of the sleeve, and extend in spiral directions oppositely from diametrically opposite points. Extending through the bearing 46, with its ends projecting into the slots 49 and 50 is a pin 51. Disposed between the bearing members 44 and 45, and surrounding the bar 46, preferably adjacent the bearing support 45, is a collar 52 secured to the bar by means of a pin 53, or any other suitable means. Disposed between the collar 52 and the other bearing support 44 is a coil spring 54 which tends to press the collar against the opposite bearing support.

Adjustably secured to the frame 10, preferably at the side thereof, and extending upwardly, is a bracket 55 having an opening substantially in line with the bar 46. Disposed in the opening in the bracket is a stop pin 56, which is adjusted in the opening and is held at any desired position by means of a screw 57. This pin 56 constitutes a stop for the bar 46, and is adjusted so that the point at which the bar 46 is stopped may be varied as desired.

The end of the bar 46 remote from the stop pin 56 is threaded and provided with a slotted key way 58. An arm 59 is splined on this end of the bar, and is provided with lock nuts 60 positioned on the bar 46, and adapted to hold the arm in any desired adjustable position. It will be evident that the arm 59 is not rotatable upon the bar 46, but that it may be adjusted in any desired position. However, when the bar 46 is rotated the arm 59 is also rotated, and the end of the arm is then moved to a position directly in line with the center of the stock head 12. If at the time that the arm 59 is in a rotated position, as shown in dotted outline in Fig. 3, the stock to be cut in the lathe or machine is advanced through the head 12, which will strike the end of the arm 59 and be stopped thereby. It will be seen that by varying the position of the arm upon the bar 46 the length of the stock which protrudes through the head 12 may be varied as desired.

In operation, and assuming that the parts are in the position shown by Fig. 1, the base member 26, together with the tool block 25

and the bar 46 are moved by means of the engagement of the projection 30 with the box cam 37 until the bar 46 engages with the stop pin 56, which is in the position as shown in Fig. 1. The further movement of the tool block 25 will cause the spring 54 to be compressed and will cause the bar 46 to be rotated by reason of the engagement of the pin 51 with the slots 49 and 50 on the sleeve 47. This will cause the rotation of the arm 59 to a position where the end of the arm is substantially in line with the center of the stock head 12, or with the stock as it projects from the stock head 12. As the stock is advanced through the head 12 it is stopped by the arm 59 which determines the length of the stock to be cut. The tool block 25 is then returned by means of the cam 37 effecting thereby the rotation of the bar 46 and of the arm 59 to the position shown by Fig. 1. The return of the bar to this position is avoided by the spring 25 which tends normally to press the collar of the bar against the support 45. This action will clear the end of the stock which protrudes from the stock head 12, which may then be acted upon by the tool secured in the tool holder 41 of the tool block. When the operation of the tool upon the stock is completed the cutting off device may be operated by means of the lever 20 and the machine is in position for the operation to be repeated.

It is evident that the entire operation above described may be entirely automatic and continuous, and that no attention is necessary in order to effect the positive operation of each and all of the parts. When the stock stop is once adjusted it will continue to operate and to fix the length of the stock to be cut, as long as the stock lasts and the lathe or automatic machine is kept in motion by the driving means.

What I claim is:

1. In a device of the class described, the combination with a frame and a tool block slidable on the latter, of a bar rotatably mounted in the tool block, an arm adjustable upon the bar, an adjustable stop for the bar and mounted on the frame, and means in connection with the tool block to rotate the bar and the arm when the block is moved to contact the bar with the stop.

2. In a device of the class described, the combination with a tool block slidable in the lathe, of a bar rotatably mounted in the tool block, a stop for the bar comprising the bracket and a pin adjustable in the bracket, and means to rotate the bar when it is in contact with the pin.

3. The combination with a lathe, of a stock stop comprising a slidable tool block having bearing mountings, a sleeve secured in one of said bearings and having oppositely extending cam slots, a bar mounted in said bearings and extending through said

sleeve, a pin extending through said sleeve, a pin extending through said bar and into the slots in the sleeve, a stop for the bar, an arm secured to the bar, and means to effect the movement of the tool block, said movement being effective to cause the rotation of the bar in the bearings when it is in contact with the stop.

4. In a device of the class described, the combination with a slidable tool block having bearing mounts spaced apart, of a bar rotatably mounted therein having an arm secured thereto, a stop for the bar, means tending to press the bar against the stop, and means to effect the rotation of the bar when the tool block is moved in one direction, the said pressing means being operative with the other to rotate the bar in the other direction.

5. In a device of the class described, the combination with a slidable tool block having bearing mounts spaced apart, of a bar rotatably mounted therein having an arm secured thereto, a stop for the bar, a collar secured to the bar and positioned between the bearing mounts, a spring positioned between the collar and the bearing mount remote from the said stop, said spring tending to press the bar against the said stop, and means to effect the rotation of the bar in accordance with the movement of the block.

6. The combination with a lathe having a base member slidable in guide ways secured thereto, of a tool block adjustably secured thereto, the said tool block being provided with a tool fastening opening, tool clamping devices, and with bearing mounts a shell mounted in one of said bearing mounts having oppositely disposed spiral slots, a bar provided with a pin which engages in said slots and mounted in the bearing mounts, an adjustable stop for the bar at one end of the bar, an adjustable stop to limit the movement of the base member in a return direction, an arm secured to the other end of the bar, means to press the bar normally in the direction of the stop, and means to move the tool block toward and from the stop, the said movement being operative to rotate the bar and the arm into and out of the stock engaging position.

7. In a stock stop for lathes and the like, the combination of a slidable tool block having bearing members thereon with cam slots in one of the bearing members, of a shaft mounted in said bearing members, and a pin in said shaft and extending into

said slots causing longitudinal movement of the shaft to move the latter rotatably.

8. In a stock stop for lathes and the like, the combination of a slidable tool block having bearing members thereon, a sleeve secured in one of said bearing members and having diametrically opposed cam slots therein, a shaft slidably and rotatably mounted in one of the bearing members and said sleeve, a pin in said shaft with its ends disposed in said slots, and a spring engaging one of the bearing members and said shaft normally holding the pin ends at adjacent ends of the slots.

9. In a stock stop for lathes and the like, the combination of a slidable tool block having bearing members thereon, a sleeve secured in one of said bearing members and having diametrically opposed cam slots therein, a shaft slidably and rotatably mounted in one of the bearing members and said sleeve, a pin in said shaft with its ends disposed in said slots, a spring engaging one of the bearing members and said shaft normally holding the pin ends at adjacent ends of the slots, a rigidly mounted bracket, and a stop mounted in said bracket in alinement with said shaft and adapted to engage the latter to limit longitudinal movement of the shaft in one direction.

10. In a stock stop for lathes and the like, the combination with a slidable tool bracket having bearing members thereon, a sleeve secured in one of said bearing members and having cam slots therein, a shaft slidably and rotatably mounted in one of the bearing members and said sleeve, a pin in said shaft with its ends disposed in said slots, a spring engaging one of the bearing members and said shaft normally holding the shaft at one terminal of its longitudinal movement relative to the tool block, a rigidly mounted bracket, and a stop mounted in said bracket in alinement with said shaft and adapted to engage the latter and cause relative movement of the shaft and tool block during a part of the sliding movement of the latter.

In testimony whereof I have signed my name to this specification, in the presence of the subscribing witnesses, on this 1st day of April A. D. 1914.

RICHARD R. BROWN.

Witnesses:

CHARLES DAWSON,
L. K. FRANTZ,
HILTON W. JONES.