

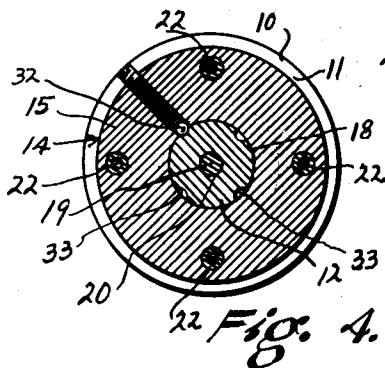
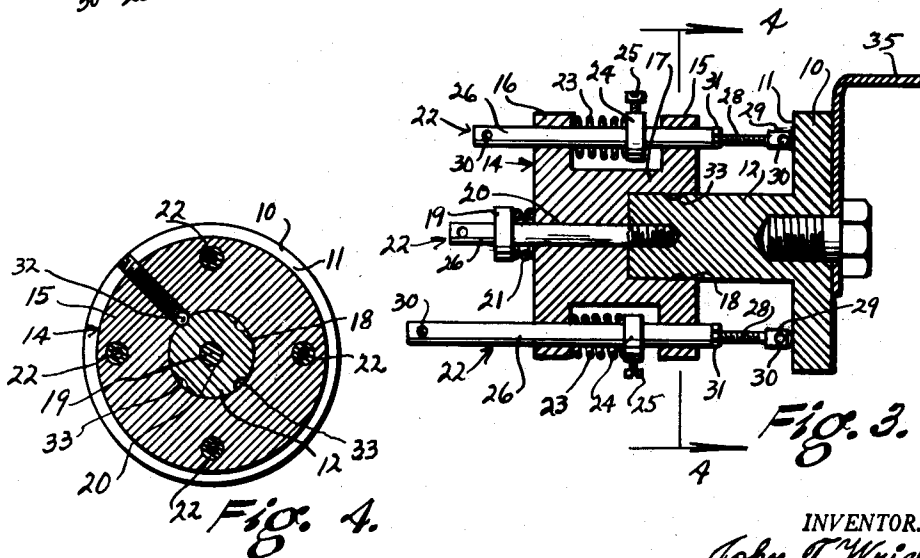
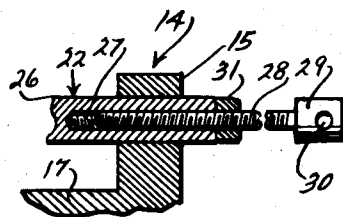
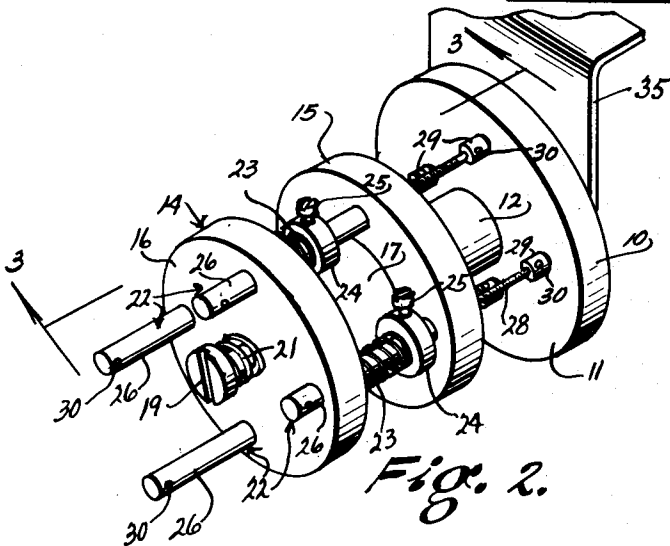
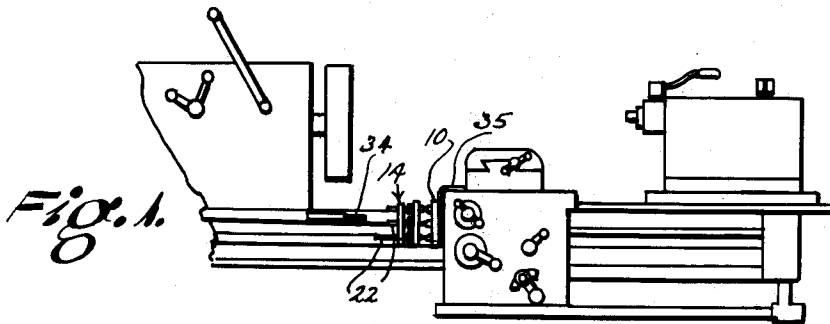
July 5, 1955

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2,712,260

ROLL STOP GAGE PIN HOLDER

Filed Aug. 7, 1953



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2,712,260

ROLL STOP GAGE PIN HOLDER

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Application August 7, 1953, Serial No. 372,838

6 Claims. (Cl. 82—21)

My invention relates to a new and useful roll stop gage pin holder and positioner and has for one of its objects to provide an exceedingly simple, compact and efficient article of this character which may readily be attached to a lathe carriage or similar movable parts of other machines to readily gage or determine facing, grooving, spotting or other cutting operations on a piece of work.

Another object of the invention is to provide a device of the character mentioned having a rotatable gage pin holder or carrier whereby a plurality of pins of varying lengths may expeditiously and selectively be positioned for coaction with a stop indicator or other means to limit the movements of the machine element to which the device is attached.

A further object of this invention is to produce an apparatus to function as an adjustable carriage positioner and consisting primarily of a base plate providing a smooth and relatively hard working face on which ride the inner ends of adjustable gage pins longitudinally slidable on a rotatable holder whereby said gage pins may be selectively positioned for cooperation with a stop indicator to determine, fix, restrict or indicate the limit of an operation on a piece of work.

A still further object of the present invention is to construct, as an article of manufacture, a roll stop gage pin holder and positioner consisting of a base plate to be removably attached by an appropriate bracket to a movable element of a machine, such as the carriage of a lathe, said base plate providing a working face and having a trunnion projecting therefrom on which a gage pin holder is rotatably mounted and indexed for a plurality of adjustable spring pressed gage pins slidably mounted on said holder and having the inner ends thereof coacting with the working face of said base plate.

With the above and other objects in view this invention consists of the details of construction and combination of elements hereinafter set forth and then designated by the claims.

In order that those skilled in the art to which this invention appertains may understand how to make and use the same I will describe its construction in detail referring by numerals to the accompanying drawing forming a part hereof, in which:

Fig. 1 is a fragmentary side view of an engine lathe showing my roll stop gage pin holder and positioner attached thereto to illustrate one application and the operation of the device.

Fig. 2 is an enlarged perspective view of the apparatus removed from the machine.

Fig. 3 is a longitudinal sectional view thereof on the line 3—3 of Fig. 2.

Fig. 4 is a cross sectional view on the line 4—4 of Fig. 3, and

Fig. 5 is a further enlarged fragmentary sectional view similar to that in Fig. 3 to illustrate the adjustability of the gage pins.

In carrying out my invention as herein embodied 10 represents a base plate having a smooth finished working

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or front face 11. The base plate, preferably, is disc shaped and from the front face thereof projects a trunnion 12 in the axial center of the same.

A gage pin holder 14 is of the general form of a spool and includes inner and outer flanges 15 and 16, respectively, at opposite ends of a hub 17. The inner end of this holder is provided with a socket 18 which snugly receives the outer end portion of the trunnion with a bearing or running fit and the terminal end of said trunnion is adapted to contact the bottom wall of said socket.

The gage pin holder 14 is rotatable on the trunnion 12 and is held in place by an appropriate bolt or machine screw 19 projected through an axial hole 20 and screw threaded into the outer end portion of the trunnion 12 with a strong spring 21 between the head of the bolt and the adjacent or outer end face of the holder to constantly urge said holder into contact with the terminal end of said trunnion.

In the companion flanges of the gage pin holder are slidably mounted a plurality of gage pins 22 preferably adjustable and of identical construction but can be of one-piece form of different lengths and interchangeable for one another. Said gage pins are equally spaced circumferentially and are parallel with the axis of the holder 25 14. Each gage pin is resiliently urged longitudinally towards the base plate 10 by a coil spring 23 surrounding its respective gage pin and in endwise engagement with the back surface of the outer flange 16 of the holder and a collar 24 adjustably mounted on the pin within the space between the two flanges of said holder and held in place by a set screw 25.

As mentioned above the gage pins, preferably, are adjustable and therefore each pin includes a barrel 26 having a restricted, limited or relatively short threaded bore 27, Fig. 5, to receive the similarly threaded extensible rod 28 provided at its outer end with foot 29 having a rounded terminal end for contact with the working face of the base plate 10. Both the rod and the barrel may have transverse holes 30 for the reception of an appropriate wrench, such as a wire, to turn the parts for adjustment purposes and after adjustment the gage pin members are held in position by a lock or jamb nut 31 on the rod and engaging the contiguous end of the barrel. The barrels of all of the gage pins may be of substantially the same length when the different operations on a work piece include only small variations but said barrels may be of different lengths where the operations to be gaged are appreciably greater than one another.

The gage pins are indexed on the rotary holder and said gage pins temporarily held in the different rotatably adjusted positions by a spring actuated ball latch 32 adapted to selectively register with any one of a plurality of recesses 33 in the trunnion 12 and equal in number to said gage pins. The recesses are in the same relative angular positions as the gage pins whereby when each pin is adjusted to a working location, as at the top of the apparatus, the then positioned pin will be in line for engagement with a stop or limiting means 34. By preference, the stop means is a conventional indicator including a spring actuated pointer and a stem to be engaged by the aligned gage pin.

In actual practice the apparatus described herein is removably attached in an appropriate location to the carriage of a lathe, for example, by a suitable bracket 35 and the stop means or indicator 34 is attached in a temporarily fixed location on a stationary part of the same machine, for instance the lathe bed, in the path of travel of the apparatus. It is understood that said stop means or indicator 34 can be arranged for adjustment longitudinally of the lathe bed whereby said indicator can be located at different positions relative to the lathe carriage when the latter is in a retracted location.

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During machining operations on a work piece, the gage pin to determine the amount of the first operation is positioned to strike the stem of the indicator 34 when the operation is completed in some instances while in other cases, as in making a facing cut, the gaging device positions the lathe carriage before the work operation is started. Thereafter the other gage pins are successively brought into position by bodily rotating the pin holder a portion of a revolution, say ninety degrees each time, to set the different pins in line with the stop or indicator means and the successive operations are carried out and the start or completion of each operation indicated by contact of the various gage pins with the stop means.

It is to be particularly noted that the cooperation of the gage pins with the base plate provides an accurate and constant positioning of the plurality of gage pins since the latter are always in contact with said base plate even when the pins are rotated from one location to another.

Of course I do not wish to be limited to the exact details of construction herein shown and described as these may be varied within the scope of the appended claims without departing from the spirit of my invention.

Having described my invention what I claim as new and useful is:

1. A roll stop gage pin holder and positioner comprising a base plate having a smooth and even working face, a gage pin holder rotatably mounted in front of said base plate, and gage pins slidably mounted on the holder for longitudinal movements parallel to the axis of said holder with the inner ends of said pins in contact with the working face of the base plate and the outer ends thereof projecting beyond the outer portion of the holder.

2. The structure of claim 1 wherein the gage pins are of different lengths, and means to constantly urge the individual pins rearwardly.

3. In a device of the kind described, a base plate having a smooth and even forward working face, a trunnion projecting forwardly from said base plate, a gage pin holder rotatably mounted on said trunnion, a plurality of gage pins slidably mounted on said holder in evenly spaced angular relation with the rear ends positioned for contact with the working face of said base plate and the forward end projecting beyond the forward portion of

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said holder, and means to constantly urge said pins into engagement with the working face of the base plate.

4. The structure according to claim 3 wherein the means to urge the pins towards the base plate includes collars adjustably mounted on said pins intermediate the ends thereof and coil springs positioned between the respective collars and a relatively stationary part of the holder, and wherein said pins are individually adjustable for length.

5. The structure according to claim 3, in combination with means to index the various gage pins.

6. In a gaging device, a base plate having a smooth and even forward working face, a trunnion on said base plate projecting forwardly from the working face of the latter, a gage pin holder rotatably mounted on the outer portion of said trunnion, said holder including a hub with forward and rear flanges at opposite ends of said hub and providing an intervening space, means to retain said holder on said trunnion under endwise applied resilient pressure, a plurality of gage pins slidably mounted in the flanges of said holder parallel to the axis of the latter and evenly spaced circumferentially, the rear ends of said gage pins being positioned for contact with the working face of said base plate and the forward ends projecting beyond the forward flange of the pin holder, said pins being individually adjustable for length, collars adjustably mounted on said pins within the space between the holder flanges, springs in engagement with the collars and the back of the forward flange of the holder, and means to temporarily retain said holder in various predetermined locations to hold the pins in different pre-selected angular positions, said gaging device adapted to be attached to a reciprocating part of a machine with a pin position in alignment with a stop indicator means on a stationary part of the same machine.

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