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[54] **ARBOR ADJUSTMENT FOR TWIN-DISC ROTARY STRIP-EDGE TRIMMER**
 4 Claims, 2 Drawing Figs.

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 83/700
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 504, 507, 699, 700

ABSTRACT: The knife-arbor quill slidable in the housing of a strip-edge trimmer of the rotary twin-disc type is anchored against the housing at the end adjacent the knife disc on the arbor, leaving the opposite end free to go and come on thermal expansion and contraction, without disturbing the cooperative relation between the two knife discs. The anchorage includes a screw adjustment for initially bringing the knives into such relation. A spring-holding disc at the other end of the arbor maintains the setting when once achieved and a locking nut thereon engages the housing to secure the arbor in position.

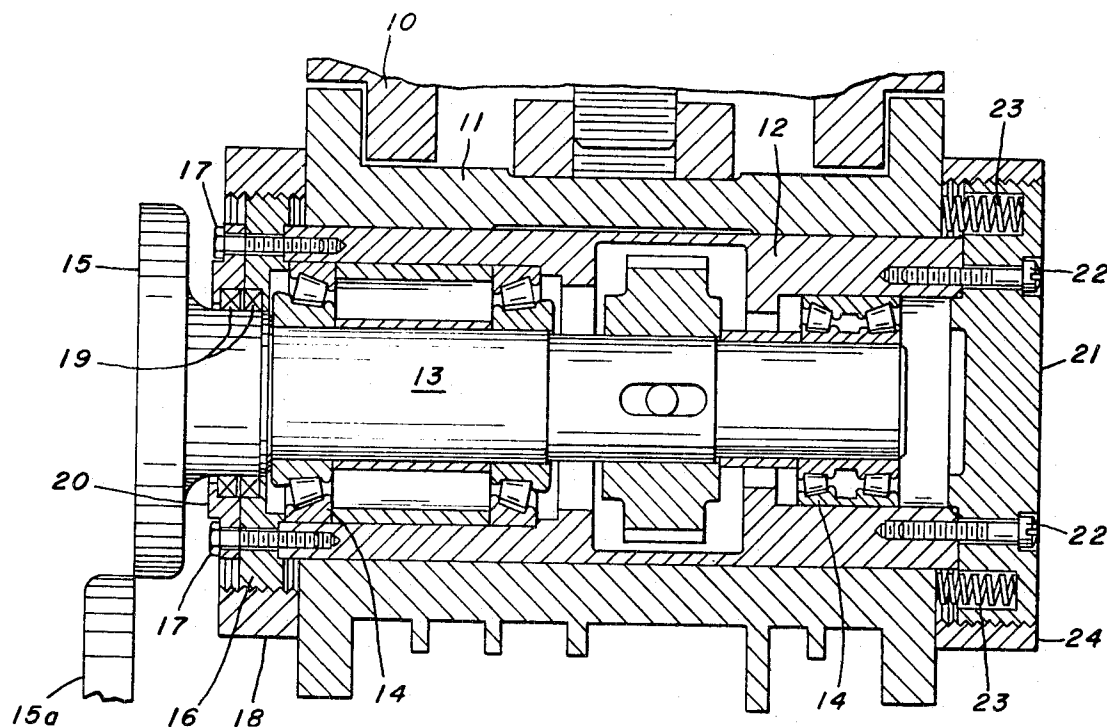


FIG. 1.

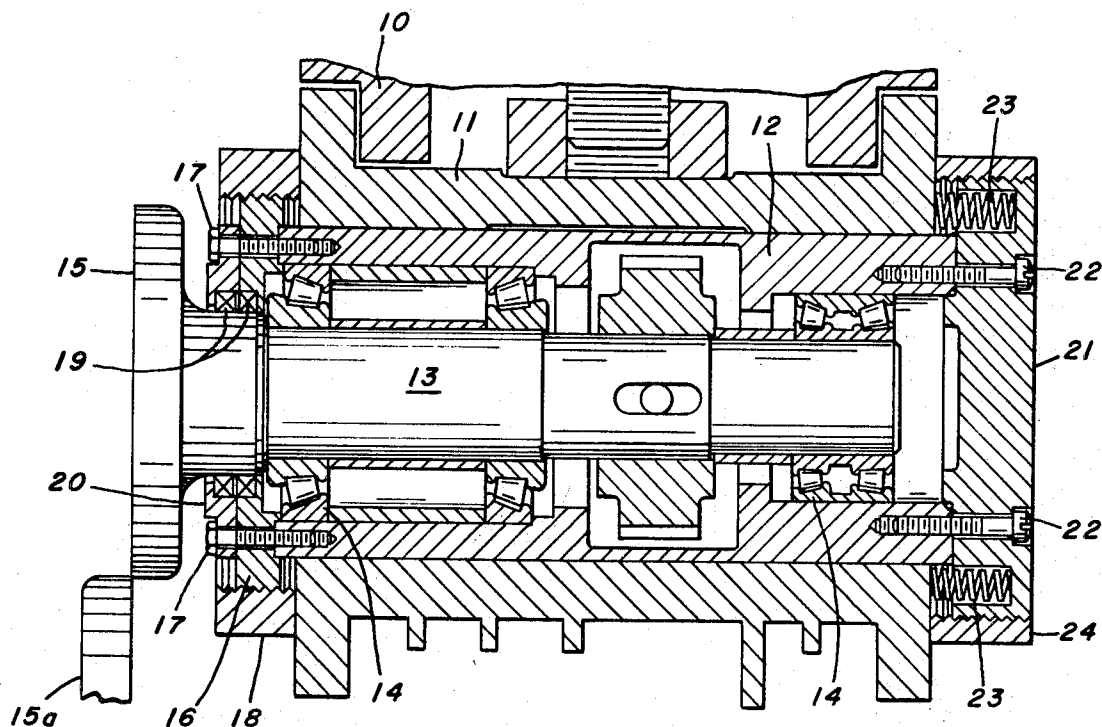
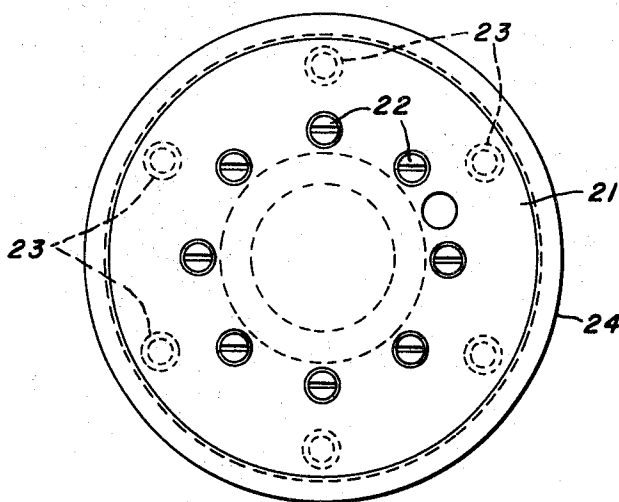


FIG. 2.



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ARBOR ADJUSTMENT FOR TWIN-DISC ROTARY STRIP-EDGE TRIMMER

This invention relates to means for adjusting and securing the arbor in which the upper knife disc of a twin-disc rotary strip-edge trimmer is journaled.

BACKGROUND OF THE INVENTION

In a twin-disc rotary strip-edge trimmer of one type the arbor quill, in which the upper knife disc is journaled, is slidable through the housing and is anchored at the end remote from the knife disc. The temperature rise incident to normal operation causes sufficient thermal expansion to move the upper knife into too close relation to the lower knife which is in overlapping relation thereto. As a result, dulling of the disc edges occurs rapidly, necessitating frequent changes of knives.

SUMMARY OF THE INVENTION

I provide screw adjusting means on the inner end of the upper arbor quill effective to move it axially until the two knife discs are in proper cooperative relation. At the other end of the quill, I mount a spring-supporting-plate having compression springs bearing on the housing in which the arbor slides. A lock nut threaded on the plate is adapted to bear on the housing. The screw-adjusting means may conveniently be a nut screwed on a threaded ring secured to the quill.

BRIEF DESCRIPTION OF THE DRAWINGS

A complete understanding of the invention may be obtained from the following detailed description and explanation which refer to the accompanying drawings illustrating the present preferred embodiment. In the drawings:

FIG. 1 is a partial vertical section through the edge-trimmer housing taken through the axis of the upper knife disc; and

FIG. 2 is an end elevation of the spring-supporting-plate and the nut threaded thereon.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now in detail to the drawings, one of the two spaced housings of a shear for trimming the edges of a traveling strip is shown at 10. Housing 10 has a horizontal sleeve 11 therein in which is slidably received a quill 12. An arbor 13 journaled in bearings 14 in quill 12 has a knife disc 15 thereon cooperating with a lower knife 15a similarly mounted in housing 10.

A retaining ring 16 is secured to the inner end of quill 12 (i.e., nearer the center line of the shear) by screws 17. The outer periphery of the ring is threaded to receive thereon an adjusting ring nut 18, the outer radial face of which is adapted to abut housing 10. Oil-sealing rings 19 engaging the hub of

knife disc 15 are seated between ring 16 and a clamping ring 20 secured thereto.

A spring-supporting-plate 21 is attached by screws 22 to the outer end of quill 12. Compression springs 23 are seated in sockets drilled at circumferentially spaced points about the edge of plate 21 and bear on the outer face of housing 10. These springs function to hold nut 18 against the inner face of housing 10. The latter is thus the fixed plane determining the position of knife disc 15. On longitudinal thermal expansion or contraction of the quill, the entire length to the right of the fixed plane may come and go and springs 23 freely permit such motion.

A locking ring nut 24 threaded on plate 21 is adapted to abut the outer face of housing 10 to fix the initial adjustment of knife disc 15 relative to disc 16. Thermal expansion of quill 12 is still permitted, however, since, if ring nut 24 moves away from the housing, springs 23 continue to hold the quill to the extreme rightward position permitted by the engagement of nut 16 with the housing.

It will be evident that my invention obviates the difficulty which has been experienced with interference between the two knife discs as a result of thermal expansion since the upper quill is anchored at a plane close to that at which the lower quill is secured. Excessive frequency of changes in knife discs (which have been necessary from twice to five or six times per turn) has been greatly reduced. The service life of the knife discs between redressings has been increased by a factor of 3 or 4 times.

Although I have disclosed herein the preferred embodiment of my invention, I intend to cover as well any change or modification therein which may be made without departing from the spirit and scope of the invention as set forth in the claims.

We claim:

1. In a twin-disc rotary strip-edge trimmer including a housing, an arbor quill extending through said housing and slidable axially therein, and a knife arbor journaled in said quill having a knife disc thereon, the combination therewith of screw means on the end of the quill adjacent the said knife disc effective to shift the quill axially in said housing and yieldable means constantly urging said quill toward its limiting retracted position.

2. Apparatus as defined in claim 1, characterized by said screw means including a threaded ring secured coaxially to the quill and nut screwed onto said ring adapted to engage said housing.

3. Apparatus as defined in claim 1, characterized by said yieldable means including a spring-holding disc secured to the other end of said quill having springs therein engaging said housing.

4. Apparatus as defined in claim 3, characterized by a locking nut threaded onto said disc and engageable with said housing.

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