Sept. 20, 1960 H. G. McCARTY 2,953,402

ADJUSTABLE MOWER YOKE

Filed Feb. 18, 1957

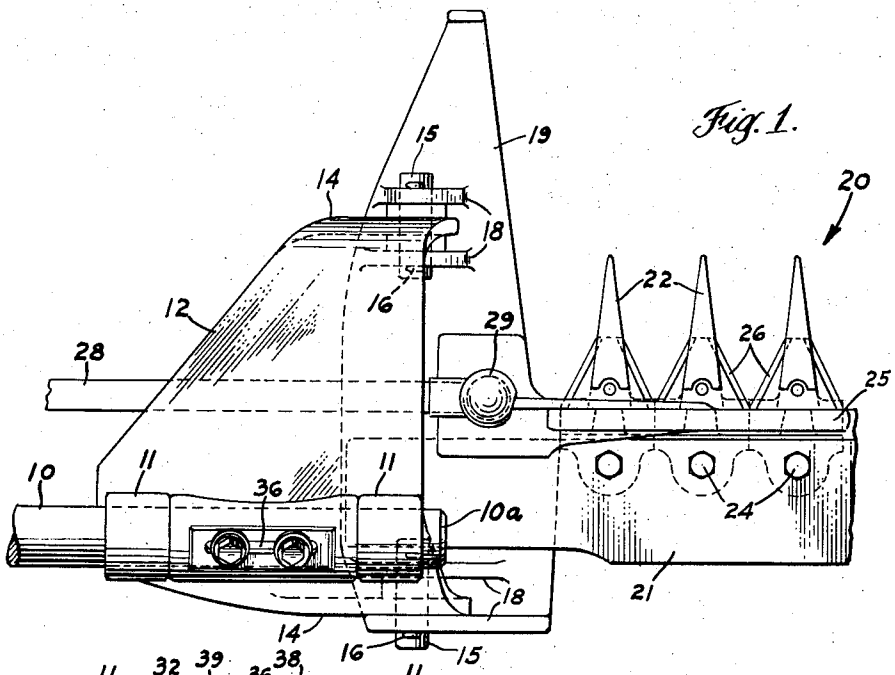

Fig. 1.

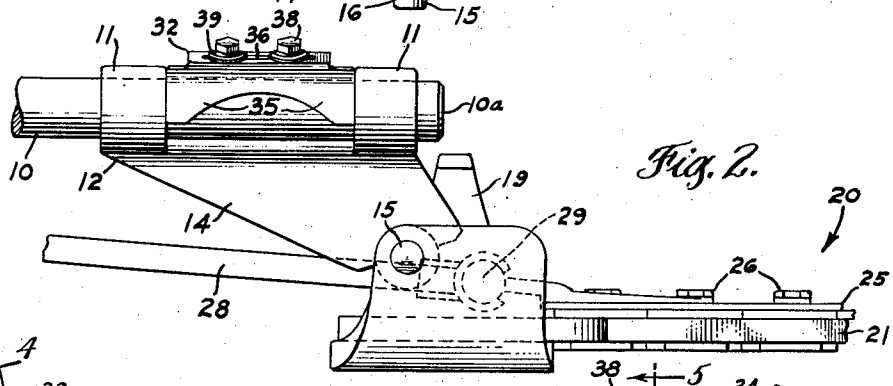

Fig. 2.

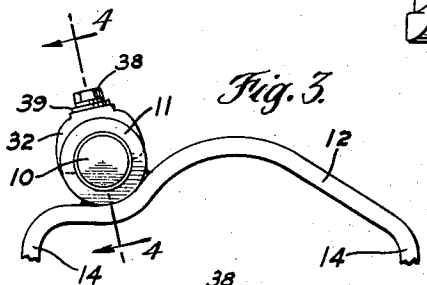

Fig. 3.

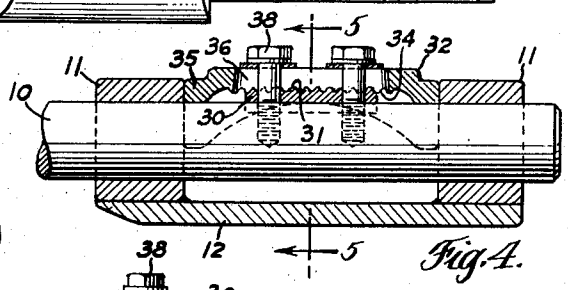

Fig. 4.

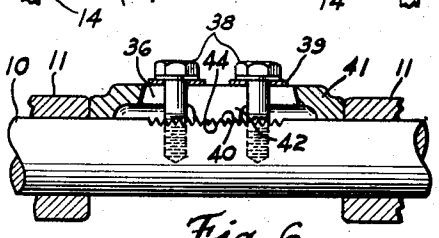

Fig. 6

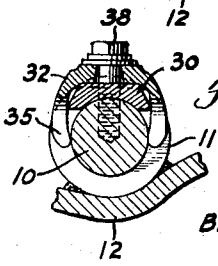

Fig. 5.

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ADJUSTABLE MOWER YOKE

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6 Claims. (Cl. 287—92)

The present invention relates generally to mowers of the type having reciprocable cutting means, and more particularly to improved register adjustment means.

Conventional reciprocable type mowers have a cutter bar provided with stationary guard-knife elements. Cooperative with such elements is a reciprocable sickle. To obtain maximum efficiency of the mower, it is necessary that a proper relationship or register be maintained between the sickle and the guard-knife elements. Whenever cutter bar lead is changed, component parts of the cutting mechanism replaced, or when wear has occurred, it is necessary that an adjustment be made to keep proper register between the cutter bar and sickle. Register adjustment is obtained by adjusting the cutter bar and its guard-knife elements relative to the sickle.

In addition to register adjustment, it is necessary that the tilt or angle of attack of the cutter bar be adjustable and it is desirable that both tilt and register adjustments be adapted to be made relative to a single support, and further, that the register adjusting operation in no way interfere with the tilt adjustment operation, and vice versa.

The primary object of this invention is to provide improved, simplified register adjustment means in a mower of the character described.

Another object of this invention is to provide register adjustment means which, when utilized, in no way interferes with the tilt adjustment of the mower.

Still another object of this invention is to provide means whereby register adjustment may be quickly and conveniently obtained.

A further object of this invention is to provide register adjustment means having few parts and adapted to be manufactured at low cost.

Other objects of this invention will be apparent hereinafter from the specification and from the recital in the appended claims.

In the drawing:

Fig. 1 is a fragmentary plan view of support means for a reciprocable cutting mechanism, such support means incorporating my improved register adjustment means;

Fig. 2 is a rear elevation of Fig. 1;

Fig. 3 is a fragmentary side elevation of Fig. 1 looking from the cutting means towards its supporting means;

Fig. 4 is a section taken on the line 4—4 of Fig. 3 looking in the direction of the arrows;

Fig. 5 is a section taken on the line 5—5 of Fig. 4 looking in the direction of the arrows; and,

Fig. 6 is a fragmentary view similar to Fig. 4 showing another embodiment of applicant's invention.

This invention is primarily adapted for use in the mower structure shown and described in detail in Happe et al., U.S. Patent No. 2,786,319, issued March 26, 1957. However, as will subsequently be seen, the invention is adaptable for use in other mowers.

Referring now to the drawing by numerals of reference, and particularly to Figs. 1–5, inclusive, **10** denotes a push or support rod having a free end **10***a* and an end opposite

the free end supported as shown, for example, in the Happe patent. Mounted on rod **10** by means of axially spaced bearings **11** is a member or yoke **12** having depending legs **14**. Each leg is connected by means of a pivot pin **15** and cotter pins **16** to ears or tabs **18** on an inner support shoe **19** of reciprocable cutting means **20**.

Cutting means **20** is conventional, comprising a cutter bar **21** having guard-knife elements **22** affixed to it by bolts **24**. Cooperative with the cutter bar and reciprocable thereon is a sickle **25** having triangular-shaped knife elements **26**. Sickle **25** is reciprocated by pitman **28** universally connected to the sickle at **29**. The pitman may be driven through the means shown in the Happe et al. patent or by other means.

To vary the angle of attack or tilt of cutting means **20**, yoke **12** is pivotally adjusted about the longitudinal axis of support rod **10**, the bearings **11** being slidable on the periphery of the rod. The means for affixing the cutting means in desired tilted position is not shown. To achieve register adjustment, cutter bar **21** is adjusted relative to sickle **25**, this being accomplished by adjusting yoke **12** along the axis of rod **10** and utilizing the improvement of this invention which will now be described.

Mounted on rod **10** between bearings **11** is an adjustment plate **30** having a serrated outer face **31**. The length of plate **30** is less than the space between bearings **11** thereby allowing a range of axial movement of the bearings on the rod before one of the bearings comes into engagement with the plate. Over-lying plate **30** is an arched adjustment clamp element **32** which spans the entire space between bearings **11**. Plate **30** and clamp element **32** provide a means for releaseably locking the yoke member in axial adjusted position on rod **10**. Clamp **32** has a medial inner serrated face **34**, cooperative with face **31** on plate **30**, and end portions **35** which seat on the support rod **10**. Clamp **32** has an elongate slot **36** through which a pair of cap-screws **38** project. Cap-screws **38** extend through suitable bores in plate **30** and thread into rod **10**, there being provided washers **39** between the heads of the cap-screws and the outer face of clamp **32**. Cap-screws **38** and their respective washers **39** constitute releaseable fastening means for clamp member **32**.

It will be readily apparent that when the cap-screws are loosened and clamp **32** moved from engagement with plate **30**, yoke **12** may be adjusted along rod **10**. When a desired adjustment is obtained, clamp **32** is re-engaged with plate **30** and the cap-screws tightened to lock the yoke in adjusted position. Further, it will be clear that the adjustment of the yoke **12** on rod **10** adjusts the cutter bar relative to sickle **25** thereby providing the desired register adjustment.

The adjustment of yoke **12** axially on rod **10** in no way affects the freedom of yoke **12** to be pivoted on rod **10**.

Referring now to Fig. 6, there is shown another embodiment of applicant's invention, parts similar to those shown in Figs. 1–5 bearing like numerals. As shown, plate **30** is eliminated, there being provided serrations **40** directly on rod **10** intermediate bearings **11**. The serrated space is less than the space between the bearings. An arched clamp **41** spans the space between the bearings having ends which seat on rod **10** and a central depending portion **42**. Portion **42** has a serrated face **44** cooperative with the serrations **40** on the rod. The adjustability of the yoke **12** is achieved in the same manner as previously described.

In each of the embodiments illustrated, fairly coarse serrations are shown to provide a clear illustration of the principle of applicant's invention. In practice, much finer serrations are provided so that the cutter bar may be adjusted in uniform small increments.

While the invention has been described in connection with two embodiments thereof, it will be understood that it is capable of further modification, and this application

is intended to cover any variations, uses, or adaptations of the invention following, in general, the principles of the invention and including such departures from the present disclosure as come within known or customary practice in the art to which the invention pertains and as fall within the scope of the invention or the limits of the appended claims.

Having thus described my invention, what I claim is:

1. In a reciprocating mower of the character described, a support rod, a member mounted on said rod for adjustment along the axis of the rod and angular adjustment about said axis, said member having a pair of relatively spaced bearings slidable on said rod and means for regulating the axial adjustment of said member without interfering with the angular adjustability thereof comprising an adjustment plate disposed between said bearings on said rod, a serrated face on said plate, said plate having a length less than the space between said bearings, a clamp spanning the space between said bearings wherein the ends of the clamp abut against the bearings, said clamp being movable toward and away from said rod and said adjustment plate thereon, a serrated face on said clamp member meshing with said serrated face of said plate, said clamp having an elongate slot generally parallel to said axis, means extending through said slot, through said plate, and threaded into said rod for affixing said plate to said rod and for locking said clamp relative to said plate, said member being adjustable on said rod when said threaded means is loosened and said clamp moved out of engagement with said plate and prevented from axial adjustment when said threaded means is tightened.

2. In a reciprocating mower of the character described, a support rod, a member mounted on said rod for adjustment along the axis of the rod and angular adjustment about said axis, said member having a pair of relatively spaced bearings slidable on said rod, and means for regulating the axial adjustment of said member without interfering with the angular adjustability thereof comprising an adjustment plate disposed between said bearings on said rod, a serrated face on said plate, said plate having a length less than the space between said bearings, an arched clamp spanning the space between said bearings wherein the ends of the clamp abut against the bearings, said clamp being movable toward and away from said rod and said adjustment plate thereon and having a portion at each end adapted to seat on said rod, a serrated face on said clamp between said end portions and meshing with said serrated face on said plate, a pair of members extending through said clamp and plate and threaded into said rod for affixing said plate relative to said rod and locking said clamp relative to said plate, said clamp having an elongate slot through which said threaded members extend, said slot enabling movement of said clamp relative to said rod, plate and threaded members when the threaded members are loosened and said clamp moved out of engagement with said plate.

3. In a reciprocating mower of the character described, a support rod, a member mounted on said rod for adjustment along the axis of the rod and angular adjustment about said axis, said member having a pair of relatively spaced bearings slidable on said rod, and means for regulating the axial adjustment of said member on said rod comprising an adjustment plate disposed between said bearings and fixed to said rod, a serrated face on said plate, said plate having a length less than the space between said bearings, a clamp element spanning the space between said bearings wherein the ends of the element abut against said bearings, releasable fastening means connecting said clamp element to said rod, said clamp element being movable outwardly from said rod from a position abutting against said adjustment plate upon release of said fastening means, a serrated face on said clamp element meshing with said serrated face on said plate when said clamp member is abutting against said plate, said member being axially adjustable on said rod when said clamp element is removed from abutting relationship with said plate and locked against axial adjustment when said element is engaged with the plate.

4. In a reciprocating mower of the character described, a support rod, a member mounted on said rod for adjustment along the axis of the rod and angularly around said axis, said member having a pair of relatively spaced bearings slidable on said rod, and means for regulating the axial adjustment of said member without interfering with the angular adjustability thereof, said means comprising an arcuate clamp element surrounding a limited portion of said rod and spanning the space between the bearings with the ends of the element engaging the bearings, said clamp element being movable from a first position proximate to said rod to a second position more remote therefrom in a radial direction, means releasably locking said clamp element to said rod against movement along the axis of the rod when said clamp element is in said first position, and said releasable locking means including fastening means releasably connecting said clamp element to said rod in said first position, said clamp element being movable to said second position upon release of said fastening means to disengage said locking means.

5. A reciprocating mower as recited in claim 4 wherein said locking means comprises a plurality of serrations on said clamp member, a plate overlying said rod between said bearings, said plate having a plurality of serrations mating with the serrations of said clamp member, said clamp member serrations meshing with said plate serrations when said clamp member is in said first position.

6. In a reciprocating mower as recited in claim 4, wherein said locking means comprises, a plurality of serrations on said clamp member, and a plurality of mating serrations on said rod, said clamp member serrations meshing with said rod serrations when said clamp member is in its first position.

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