(No Model.)

C. BEYER.

GRINDING ATTACHMENT FOR MOWING MACHINES.

No. 432,660. Patented July 22, 1890.

Fig-1-

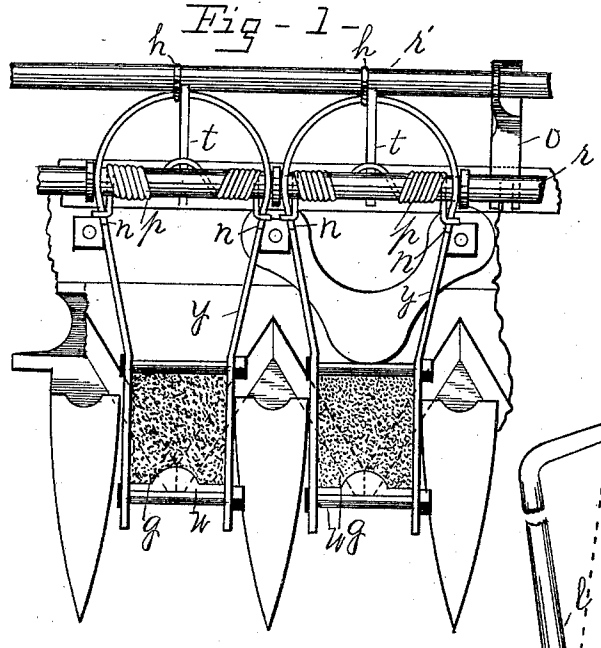
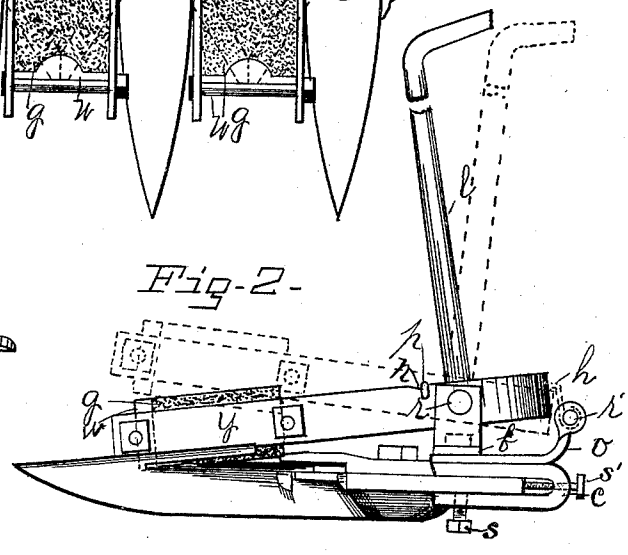


Fig-4-



Fig-2-



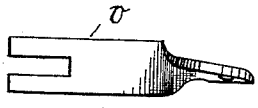


Fig 3

WITNESSES,

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GRINDING ATTACHMENT FOR MOWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 432,660, dated July 22, 1890.

Application filed May 8, 1890. Serial No. 351,061. (No model.)

To all whom it may concern:

Be it known that I, CHARLES BEYER, a citizen of the United States, residing at East Palestine, in the county of Columbiana and State of Ohio, have invented certain new and useful Improvements in Grinding Attachments for Mowing-Machines; and I do hereby declare the following to be a full, clear, and exact description of my invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to that class of grinding attachments for mowing-machines which hold a series of grinding-stones against the angle of the knives in place in the machine, so that the motion of the machine, as in cutting, is reciprocated by the knives thereunder, grinding them. The defect in such attachments as known and used until my present invention consists in the fact that no means is provided whereby the grinding-stones separately may be readily and conveniently thrown out of operation, so that such knife or knives as are dull may be ground without effect upon the others.

The object of my invention is to provide a remedy for this defect, and this I do by the mechanism hereinafter described and claimed.

In the drawings, in which I illustrate, as I shall hereinafter briefly describe, a grinding attachment for mowing-machines, so as to better exhibit and explain the part thereof that is my invention, Figure 1 is a plan view of a section of the cutter-bar with the grinding attachment in place. Fig. 2 is an end view of the cutter-bar and grinding attachment, showing also the hand-lever *l*. Fig. 3 is a side view of the removable bearing-lug *o*, and Fig. 4 is a side view of the hook *h*.

The several parts are indicated by letters, and similar letters refer to similar parts throughout.

The grinding attachment consists of a series of yokes *y*, formed by bending thin bar iron or steel (the series of yokes extending the length of the cutter-bar,) having through their sides a short distance forward of the neck or rear part openings through which pass the rod *r*, solidly holding the yokes *y* thereon. The rod *r* has bearings near each end of the cutter-bar in parts that project upward from the bar *b*, which extends the length of the cutter-bar immediately above it, being held by screws to the clamps *c c*, one only of which is shown in the drawings, across the upper forks or branches of which it rests. The clamps *c c*, one only of which is shown in the drawings, are two similar bifurcated pieces of metal in the usual form of clamps for similar purposes to fasten the grinding attachment to the machine by clasp of the rear edge of the cutter-bar, one near each end. They are provided for a means of fastening, each with the vertical set-screw *s* penetrating through its lower fork or branch, and with the horizontal set-screw *s'* through the extreme rear of the neck for a means of adjustment. The grinding-stones *g* are each clasped and firmly held by means of bolts between the sides of the yokes at the forward part, and are held in contact with the opposite edges of the knives immediately below by the force of the spiral spring *p*, which is coiled around the rod *r* between the sides of the yoke, the free ends of the spring being secured to the sides of the yoke in the notches *n n* therein, and bent downward, while midway between the sides of the yoke the wire of the spring is looped over the spur *t*, which, resting one end upon the neck of the yoke, passes to and penetrates the rod *r*. The grinding-stones *g* are made of emery or other suitable material, rectangular upon the sides and beveled on the working-surface to conform to the angle of the cutting-edges of the knives. The ridges or upper surfaces of the knives between the angles of the cutting-edges are protected from the action of the grinding-stones by the block of wood or other non-grinding material *w*, placed at the forward end of each stone, a vertical swell in the rear of its breadth center being indented into the stone, while its lower surface, which corresponds to the form of the working-surface of the stone, projects slightly below it, so that in the motion of the knives thereunder it is the part *w* only that comes into contact with the ridges.

The defect in the above-described mechanism, mentioned in the beginning of this specification, will now be clearly seen, and my in-

vention to remedy it will now, upon description, be readily understood. The rod r' is an iron or steel rod of suitable diameter placed immediately in rear of the lower edges of the yokes, parallel with and extending the length of the cutter-bar, supported by bearings in the removable bearing-lugs *o o*—one near each end—and having thereon for each yoke a wire hook *h*, at one end of which hook is a ring encircling the rod r', while at the other end is a hook suitable to catch over the edge of the yoke at the neck. The removable bearing-lugs *o o* are similar parts, each being a piece of flat metal of suitable size having a slot cut into the forward end for a means of securing the same in place between the bar *b* and the clamps *c c* by the use of a set-screw, while the opposite or rear end is curved upward, presenting an opening transverse to its length for a bearing for the rod r'. The hand-lever *l* is a rod extending upward from the rod *r*, and at a proper height bent toward the machine-seat, terminating in a handle. The operator desiring to grind one or more knives without grinding the others throws the hooks over the necks of the yokes, the forward parts of which cover the knives not to be ground, thus tilting upward the forward part of the yoke, the length of the hook being such as to produce that effect, as shown by the dotted lines in Fig. 2, lifting the grinding-stones above the knives, so that in the movement of the machine it is only the grinding-stones not thus lifted that act upon the knives. By pressing the hand-lever forward or backward the operator from his place on the seat of the machine may increase or diminish the pressure of the grinding-stones upon the knives at pleasure, although it is intended that the force of the spiral spring shall be sufficient for proper grinding.

What I claim is—

In grinding attachments for mowing-machines that are provided with a series of vertically-swinging yokes, each carrying a grinding-stone at the forward part mounted upon a rod secured to the finger-bar above and extending the entire length of the cutter-bar, the mechanism for tilting and holding upward the forward parts of the yokes, separately or together, as may be desired, consisting, in combination, of the rod r', extending the length of the cutter-bar immediately in rear of the lower edges of the yokes, the removable bearing-lugs *o o*, that support the rod r' near each end, being each a bar of metal having a longitudinal slot in the forward end and curved upward in rear, presenting a transverse opening for the rod-bearing, and the hooks *h*, connecting, when in use, the rod r' and the necks of the yokes, each being a wire bent to a ring at one end and a hook at the other end, all substantially as described in the foregoing specification and for the purpose therein expressed.

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

CHAS. BEYER.

Witnesses:
HORACE SMITH,
EDWARD E. MOREMAN.