G. FARNSWORTH.
SHARPENER FOR LAWN MOWER KNIVES.
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INVENTOR-
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Witnesses-
Sydney S. Loft
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By the Attorney, Nathan C. Conkey
To all whom it may concern:

Be it known that, GEORGE FARNsworth, a citizen of the United States, residing at East Pepperell, in the county of Middlesex and State of Massachusetts, have invented new and useful Improvements in Sharpeners for Lawn-Mower Knives, of which the following is a specification.

The object of this invention is to provide a sharpener for lawn-mower knives which is simple and durable in its construction and which may be easily attached to the handle of any of the lawn-mowers now in use, and, further, which may be adjusted tangentially and radially with relation to the blades of said lawn-mower in order that the sharpener-board may be brought to bear against the cutting edges of the knives of said lawn-mower with more or less pressure, and, further, may be adjusted tangentially, so that the entire sharpening-surface of said sharpener-board may be brought to bear against the cutting edges of said knives, and thus utilize all of said surface.

The invention consists in a sharpener for lawn-mower knives comprising a sharpener-board, a holder upon which said sharpener-board is supported, springs interposed between said sharpener-board and holder, and means to fasten said holder to the handle of a lawn-mower, all constructed and arranged in such a manner as to be supported upon said handle and adjustable lengthwise thereof.

The invention again consists in the instrumentality hereinbefore set forth, together with means for adjusting said sharpener-board and holder tangentially and radially with relation to said lawn-mower-knives, said means consisting of an angle-piece, one arm of which is fast to said holder and the other adapted to be fastened to the handle of a lawn-mower in such a manner as to be supported upon said handle and adjustable lengthwise thereof.

The invention finally consists in the combination and arrangement of parts set forth in the following specification, and particularly pointed out in the claims thereof.

Referring to the drawings, Figure 1 is a central vertical longitudinal section, partly in elevation, of a lawn-mower of well-known construction, the handle of said lawn-mower being broken off to save space in the drawings. Fig. 2 is a perspective view of my improved sharpener-board, the holder thereof, and the means by which said sharpener-board and holder are adjustably fastened to the handle of a lawn-mower. Fig. 3 is a transverse section, taken on line 3 of Fig. 2, illustrating the manner in which the sharpener-board is attached to the holder. Fig. 4 is a transverse section taken on line 4 of Fig. 1, illustrating the manner of attaching the sharpener-board and holder to the angle-iron by which said sharpener-board and holder are attached to the handle of a lawn-mower.

Like numerals refer to like parts throughout the several views of the drawings.

In the drawings, 7, 7, 7 are rotary lawn-mower knives fast to a rotary frame 8, said frame being fast to the shaft 9, rotated by mechanism contained within the casing 10. The handle 11 of the lawn-mower is provided with side pieces 12, pivoted at 13 to the casing 10, all in a manner well known to those skilled in the art. The sharpener-board 14 extends transversely of the lawn-mower and is provided with a sharpening-surface of emory or other desirable sharpening material 80. Said sharpener-board has rigidly fastened thereto two bolts 16, 16, said bolts extending vertically from the sharpening-surface thereof through holes provided in the sharpener-board holder 17. Between the sharpener-board 14 and the holder 17 and encircling each of the bolts 16 are spiral compression-springs 18. Said springs tend to push the sharpener-board away from the holder 17 and against the cutting edges of the knives 7.

Upon the bolts 16 and upon the opposite side of the sharpener-board holder 17, which bear against washers 20. Said washers lie against the face of the sharpener-board holder 17. The object of the nuts 19 is to adjust the sharpener-board 14 toward and away from the cutting edges of the knives 7. By turning the adjusting-nuts toward the right the bolts 16...
and the sharpener-board 14, to which said bolts are fastened, will be drawn away from the knives 7, and by turning the said nuts to the left the said sharpener-board will be carried toward the knives 7 by the springs 18.

It will be seen that by means of the adjusting-nuts 19 and bolts 16, hereinbefore described, one end of the sharpener-board 14 may be brought nearer to the holder 17 than the other end thereof, so that if, when the device is fastened to the handle of a lawn-mower, one end of the sharpener-board touches the knives and the other end does not the latter end may be adjusted by screwing the nut 19 in the proper direction at the end of the board which does not touch the knives until the sharpener-board 14 comes in contact with said knives.

The holder 17 is fastened to an angle-piece 21 by a bolt 22, fast to said sharpener-board holder and extending through a slot 23, formed in the arm 24 of said angle-piece 21, and having a lock-nut 25 and washer 26 thereon, by means of which the sharpener-board holder 17 is clamped to the slotted arm 24 of the angle-piece 21. The portion of the bolt 22 which passes through the slot 23 and holder 17 is square in cross-section to prevent said holder from turning upon said bolt and also to prevent said bolt from turning in the slot 23. The arm 27 of the angle-piece 21 is fastened by bolts 28 to a wooden clamp-piece 29, and the said wooden clamp-piece is provided with pointed brads 30, which project downwardly into the upper face of the handle 11, when said clamp-piece is clamped against the upper surface of said handle by means of the screw-clamps 31.

The operation of my improved device for sharpening lawn-mower knives is as follows: Assuming the knives 7 to be rotating in the direction of the arrow, Fig. 1, the cutting edges of said knives pass across the sharpening-surface 15 upon the sharpener-board 14 and are sharpened thereby. The sharpener-board 14 may yield to varying inequalities in the knife-blade by means of the springs 18 yielding and allowing said sharpener-board to move toward or away from the knives. If it is desired to adjust the sharpener-board tangentially with relation to the knives in order that all portions of the surface 15 may eventually be brought into contact with the cutting edges of said knives, the sharpener-board and its holder may be so adjusted simultaneously by means of the bolt 22 and nut 25—viz., by loosening the nut 25 and moving the bolt 22 up or down, as desired, in the slot 23 in the angle-iron 21—and after having moved said sharpener-board to the desired location the holder is clamped to the arm 24 by means of the nut 25 and bolt 22.

A still further means of varying the pressure of the sharpener-board against the knives consists in pressing downwardly upon the handle 11 of the lawn-mower, and as said handle is pivoted through the side pieces 12 at 13 upon the casing 10 it will be seen that by moving the handle 11 downwardly the sharpening-surface 15 will be brought nearer to the cutting edges of the knives, and by moving upwardly on said handle 11 said sharpening-surface will be moved away from said knives. If desirable, a still greater resiliency may be given to the device by making the angle-piece 21 of spring metal, so that the arm 24 can yield to a greater or less extent.

After the sharpener-board 14 has been adjusted by means of the nuts 19 and bolts 16 to a correct position touching the cutting edges of the knives, if it is desired to move said sharpener-board and holder bodily away from said knives without changing the relation of the sharpener-board to the holder it may be done by loosening the clamp 31 and moving the clamp-piece 29 and angle-piece 21 lengthwise of the handle 11 of the lawn-mower. This adjustment lengthwise of the handle of the lawn-mower will move the sharpener-board and its holder bodily away from said knives, and this movement may be of sufficient extent to move the sharpener-board entirely out of contact with the knives when it is not desired to use the same and still keep the relative position of the sharpener-board to the holder remain the same. When it is desired to again place the sharpener-board in contact with the knives, it may be done by moving the clamp-piece 29 and angle-piece 21, attached thereto, lengthwise of the handle 11. It will be seen that the sharpener-board 14 and the holder 17 will thus be moved bodily away from the knives or toward them in a radial direction and also that said sharpener-board and holder may be moved tangentially to said knives without having the relative position of said boards to each other changed by means of the lock-nut 25 and bolt 22, as hereinbefore described. It will thus be seen that the operation of adjusting the sharpener-board tangentially or radially with relation to the knives is very simple and easily accomplished.

Having thus described my invention, what I claim, and desire by Letters Patent to secure, is—

1. A sharpener for lawn-mower knives comprising a sharpener-board, a holder upon which said sharpener-board is supported, and means to fasten said holder to the handle of a lawn-mower in such a manner as to be supported upon said handle and adjustable lengthwise thereof and radially with relation to said knives.

2. A sharpener for lawn-mower knives comprising a sharpener-board, a holder-board, a bolt fast to said sharpener-board at each end thereof and extending through said holder-board, nuts upon said bolts by means of which one end of said sharpener-board may be
brought nearer to said holder than the other end thereof for the purpose specified, and a spiral spring encircling each of said bolts between said holder and sharpener boards.

3. A sharpener for lawn-mower knives comprising a sharpener-board, a holder upon which said sharpener-board is supported, and an angle-piece, one arm adapted to be fastened to the handle of a lawn-mower and adjustable lengthwise of said handle and the other arm adjustable fastened to said holder.

4. A sharpener for lawn-mower knives comprising a sharpener-board, a holder upon which said sharpener-board is supported, springs interposed between said sharpener-board and holder, and an angle-piece, one arm adapted to be fastened to the handle of a lawn-mower and adjustable lengthwise of said handle, and the other arm fast to said holder.

5. A sharpener for lawn-mower knives comprising a sharpener-board, a holder upon which said sharpener-board is supported, springs interposed between said sharpener-board and holder, a clamp-piece adapted to be clamped to the handle of a lawn-mower and adjustable lengthwise of said handle, an angle-piece, one arm fastened to said clamp-piece, the other arm provided with a slot extending lengthwise thereof, a bolt fast to said holder extending through said slot, and a clamp-nut upon said bolt for the purpose specified.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

GEORGE FARNsworth.

Witnesses:

William H. Mullin,
Nelson Carter.