

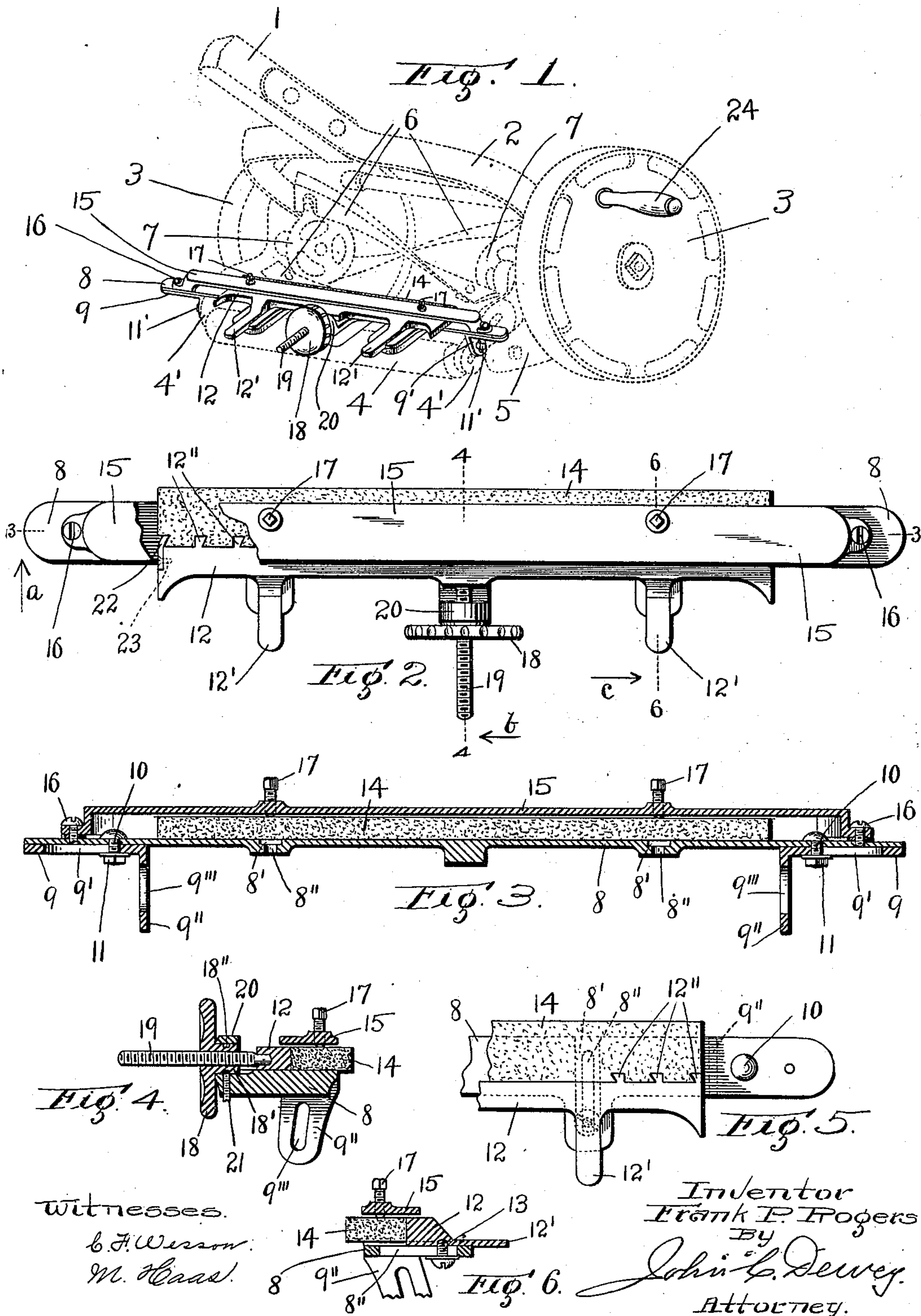
No. 686,955.

Patented Nov. 19, 1901.

F. P. ROGERS.
SHARPENER FOR LAWN MOWERS.

(Application filed June 29, 1901.)

(No Model.)



UNITED STATES PATENT OFFICE.

FRANK P. ROGERS, OF WORCESTER, MASSACHUSETTS.

SHARPENER FOR LAWN-MOWERS.

SPECIFICATION forming part of Letters Patent No. 686,955, dated November 19, 1901.

Application filed June 29, 1901. Serial No. 66,459. (No model.)

To all whom it may concern:

Be it known that I, FRANK P. ROGERS, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Sharpeners for Lawn-Mowers, of which the following is a specification.

My invention relates to mowing-machines, and to that class of mowing-machines termed "lawn-mowers," and particularly to a detachable sharpening device to be attached to the mower to sharpen the knife-blades without removing the same.

The object of my invention is to provide a sharpener for lawn-mowers of simple construction and operation, and which may be adjusted for different widths of mowers and be readily attached to the mower without removing any of its parts and be used to sharpen the knife-blades by simply turning the wheels of the mower to cause the knife-blades to be brought into contact with the sharpening-stone or abrading-surface, which is securely held in position, but may be adjusted or moved toward the blades as it becomes worn during the operation of sharpening.

My invention consists in certain novel features of construction of my improvements in a sharpening device for lawn-mowers, as will be hereinafter fully described.

Referring to the drawings, Figure 1 is a rear view of a lawn-mower, shown by broken lines with my sharpening device combined therewith and shown by full lines. Fig. 2 is a plan view of my sharpening device. A portion at the left is broken away to show the construction. Fig. 3 is a cross-section on line 3 3, Fig. 2, looking in the direction of arrow *a*, same figure. Fig. 4 is a cross-section on line 4 4, Fig. 2, looking in the direction of arrow *b*, same figure. Fig. 5 is a plan view of one end of the sharpening device shown in Fig. 2 with the top plate removed; and Fig. 6 is a cross-section on line 6 6, Fig. 2, looking in the direction of arrow *c*, same figure.

In the accompanying drawings, in Fig. 1, is shown by broken lines portions of a lawn-mower of ordinary construction having a handle portion 1 attached to the swivel-yoke portion 2, two wheels 3 3, the roller 4, adjust-

ably mounted in the side brackets 5, and the three knife-blades 6, secured at their ends on the circular disks 7, which revolve with the wheels 3 3 to cause the knife-blades 6 to have a rotary motion, all in the ordinary way.

I will now describe my sharpening device, which consists, preferably, of the base-plate 8, to each end of which upon the under side is secured an angle-iron 9, which is adjustable on the base-plate 8 by means of a bolt 10 and nut 11, the bolt 10 extending through a slot 9' in the angle-iron 9, as shown in Fig. 3. By means of adjustability of the angle-irons 9 the distances between the vertical arms 9'' of the angle-iron 9 may be varied according to the width of the machine on which the sharpener is to be used. Each vertical arm of the angle-iron 9 has a slot 9''' therein, which is adapted to receive the end of a bolt 11', which secures the slotted brackets 4' on each end of the roller 4 to the stands 5 on the mower, as shown in Fig. 1. The vertical portions 9'' of the angle-irons 9 extend upon the outside of the brackets 4' and stand 5, as shown in Fig. 1, and by means of the angle-irons 9 the sharpening device is secured in place on the mower, as above described.

The base-plate 8 has thereon two grooved ways 8', which are slotted longitudinally and adapted to receive the two tongues 12' on the adjusting-plate 12, which tongues 12' are held in the grooved portions 8' to move back and forth therein by means of a screw 13, screwed into the plate 12 and having a washer under its head which extends over the sides of the slot 8'' in the ways 8, as shown in Fig. 6. The adjusting-plate 12 has the projections 12'' on its inner surface, which are adapted to extend into corresponding-shaped recesses in the inner surface of the sharpening-stone or abrading-surface 14, as shown in Figs. 2 and 5, to connect the stone to the adjusting-plate 12 and cause it to move therewith. In case of a narrow mower the stone 14 will be made shorter and connected with the adjusting-plate 12 by only one or two of the projections 12'' at each end instead of by three, as shown in Fig. 5. In this way I can use the same sharpening device for three sizes or widths of mowers. A top plate 15 extends over the inner portion of the adjusting-plate 12 and the inner portion of the sharpening-

stone 14 and is secured at its ends to the base-plate 8 by screws 16, as shown in Figs. 2 and 3. Two screws 17 extend through threaded holes in the top plate 15 and are adapted to bear at their inner ends on the upper surface of the sharpening-stone 14, as shown in Figs. 3 and 4, to hold the stone 14 down at its sharpening edge.

The stone 14 and adjusting-plate 12 are moved to carry the sharpening edge of the stone toward the knife-blades 6 or away from said knife-blades in this instance by means of a hand-wheel 18, mounted and turning on a threaded pin 19, which is secured at its inner end to the central portion of the adjusting-plate 12, as shown in Fig. 4. The hand-wheel 18 has a hub 18' thereon which extends into and turns in a bearing 20 on the rear central portion of the base-plate 8. A small screw 21 extends through a threaded hole in the base-plate 8, with its inner end extending into an annular groove 18'' in the hub 18' of the hand-wheel 18, as shown in Fig. 4. The hand-wheel 18 being held by the screw 21 to prevent its moving lengthwise on the screw 19 will act as it is turned in one direction or the other on the threaded pin 19 to move the adjusting-plate 12 and the sharpening-stone 14.

At one end of the adjusting-plate 12 I preferably have a detachable holding-lip 22, which extends in a recess in the end of the plate 12 and is secured thereto by a screw 23, and has its projecting end extending into a recess in the inner edge of the stone 14, as shown at the left in Fig. 2. By screwing up the screw 23 I can tighten the lip 22 to bind and hold the sharpening-stone 14 more rigidly.

A handle 24 of any ordinary construction is screwed into a threaded hole in one of the wheels 3 or attached thereto in any ordinary way and is used to turn the wheels and rotate the knife-blades 6 and cause them to come in contact with the inner edge of the sharpening-stone 14 to be sharpened.

The operation of my sharpening device will be readily understood by those skilled in the art. The attaching angle-irons 9 are adjusted on the base-plate 8 according to the width of the mower and are then attached to the brackets 5, which support the roller 4, as above described, and the hand-wheel 18 turned in or out to move the adjusting-plate 12 and the sharpening-stone 14 and bring the edge of the sharpening-stone 14 in position to be engaged by the knife-blades 6 as they are rotated by turning one of the wheels by the handle 24. As the stone 14 becomes worn from the sharpening operation, it may be moved nearer the knife-blades 6 by turning the hand-wheel 18.

The advantages of my improvements in

sharpeners for lawn-mowers will be readily appreciated by those skilled in the art. It is of very simple construction and operation and can be used on different sizes of lawn-mowers and is readily attached to the mower and detached therefrom without removing any of the parts.

It will be understood that the details of construction of certain parts of my sharpening device may be varied if desired.

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

1. In a lawn-mower sharpener, the combination with a base-plate adapted to be secured to the mower, and a top plate, of a sharpening-stone and an adjusting-plate held between said base and top plates, and means for holding and adjusting said adjusting-plate and sharpening-stone, substantially as shown and described.

2. In a lawn-mower sharpener, the combination with the base-plate, and an angle-iron or attaching device adjustably secured thereto at each end, and a top plate secured to the base-plate, of an adjusting-plate and a sharpening-stone or abrading-surface secured thereto, said plate and stone extending between said base and top plates, and means for moving said plate and stone to bring the edge of the stone in proper position, substantially as shown and described.

3. In a lawn-mower sharpener, the combination with the base-plate and an angle-iron or attaching device adjustably secured thereto at each end, and a top plate secured to the base-plate, of an adjusting-plate and a sharpening-stone secured thereto by projections on said adjusting-plate extending into recesses in the sharpening-stone, and means for moving said adjusting-plate and sharpening-stone to bring the edge of the stone in proper position, substantially as shown and described.

4. In a lawn-mower sharpener, the combination with the base-plate and an angle-iron or attaching device adjustably secured thereto at each end, and a top plate secured to the base-plate, of an adjusting-plate and a sharpening-stone secured thereto, said plate and stone extending between said base and top plates, and the adjusting-plate having tongues thereon to extend and travel in grooved portions in the base-plate, and means for moving said adjusting-plate and sharpening-stone to bring the edge of the stone in proper position, substantially as shown and described.

FRANK P. ROGERS.

Witnesses:

J. C. DEWEY,
M. HAAS.