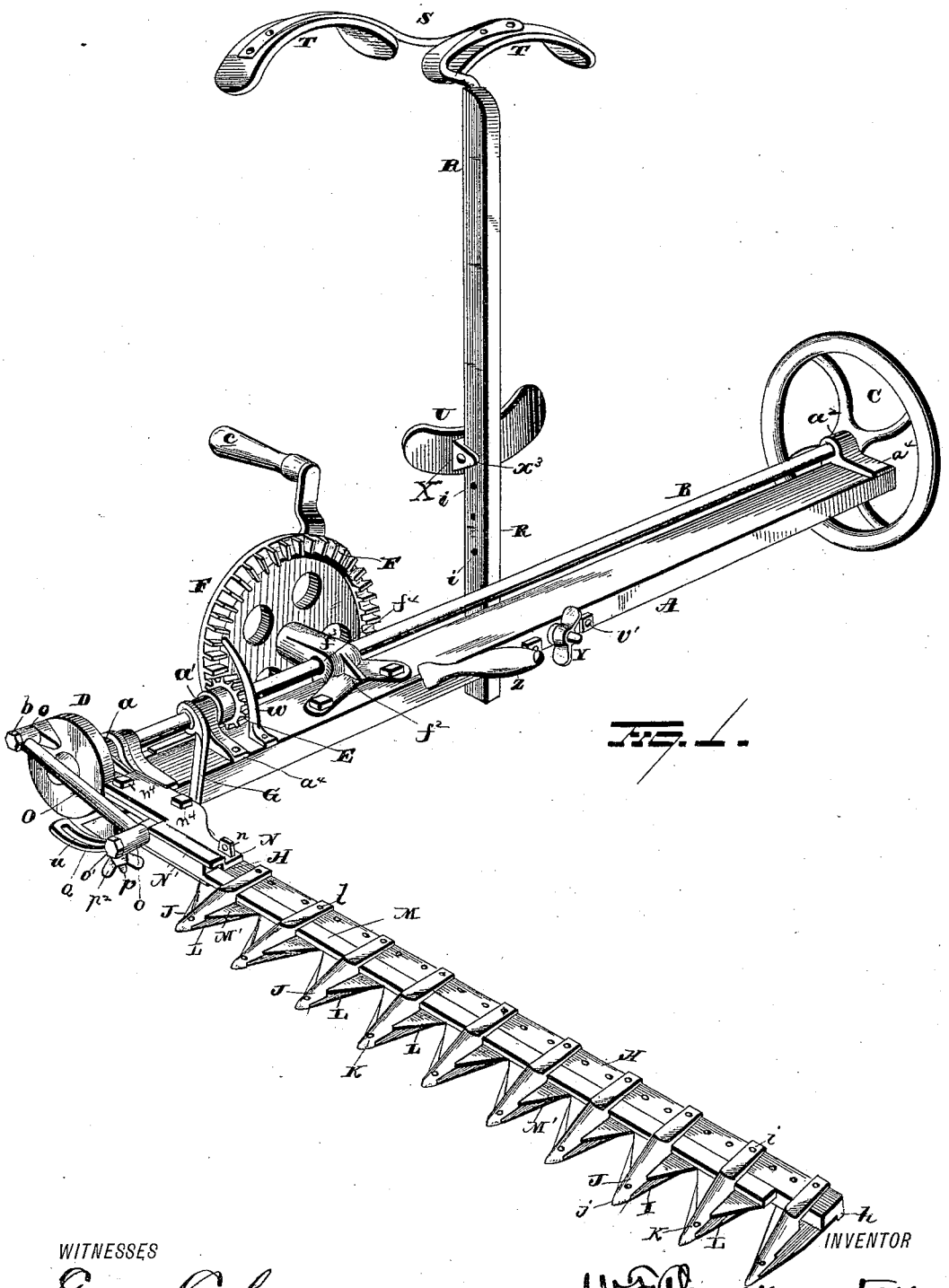
(No Model.) 4 Sheets—Sheet 1.

W. F. THROCKMORTON.

HEDGE TRIMMER.

No. 304,375. Patented Sept. 2, 1884.



WITNESSES

George Cook

G. F. Downing.

INVENTOR

W. F. Throckmorton.

By H. A. Seymour.

Attorney

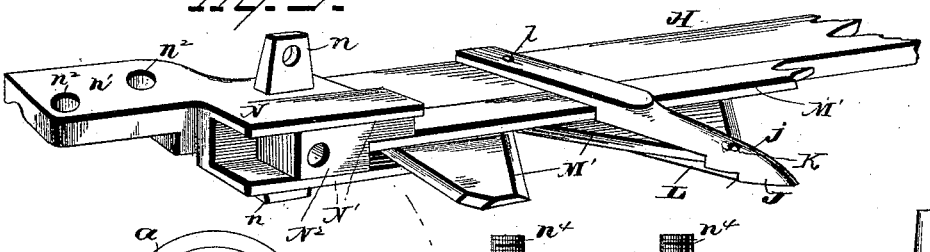
(No Model.) 4 Sheets—Sheet 2.

W. F. THROCKMORTON.

HEDGE TRIMMER.

No. 304,375. Patented Sept. 2, 1884.

Fig. 3.



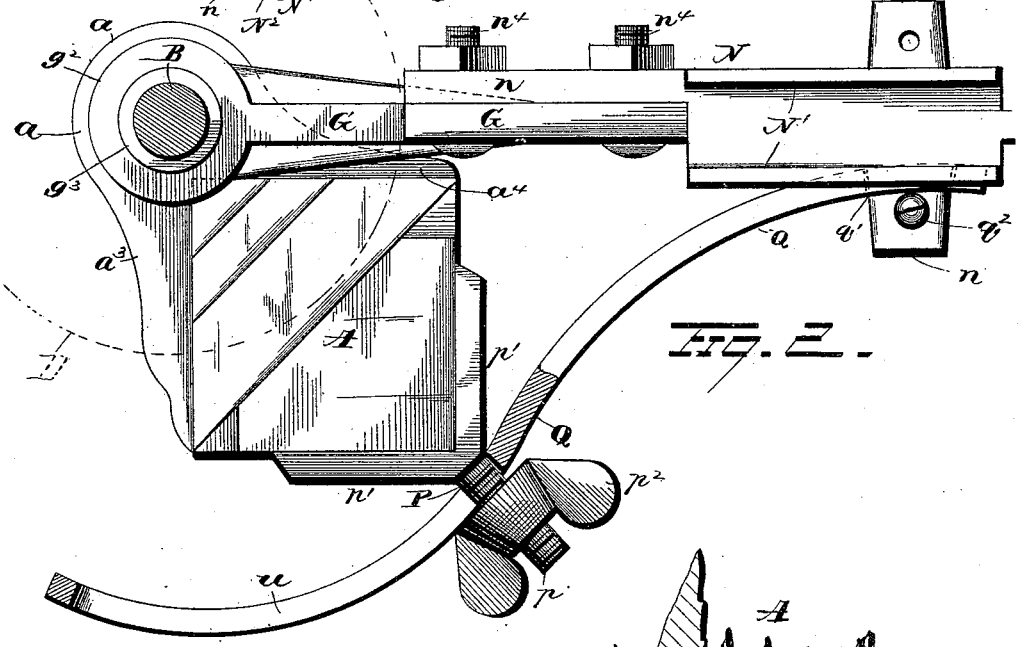


Fig. 2.

Fig. 4.

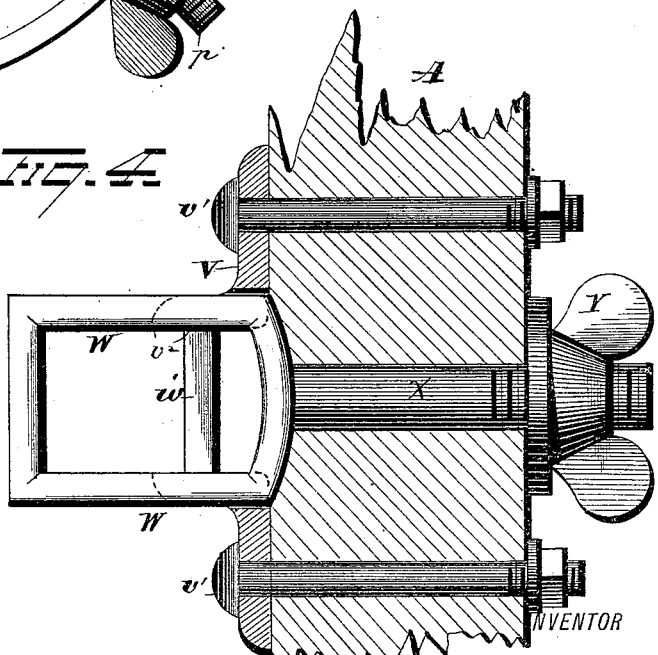
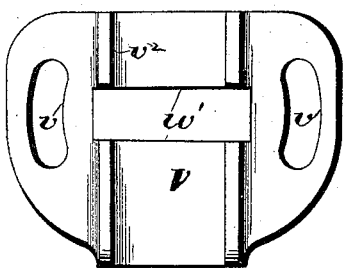


Fig. 4a



WITNESSES

George Cook.

G. F. Downing.

INVENTOR

W. F. Throckmorton.

By F. A. Seymour Attorney

(No Model.) 4 Sheets—Sheet 3.

W. F. THROCKMORTON.

HEDGE TRIMMER.

No. 304,375. Patented Sept. 2, 1884.

Fig. 5

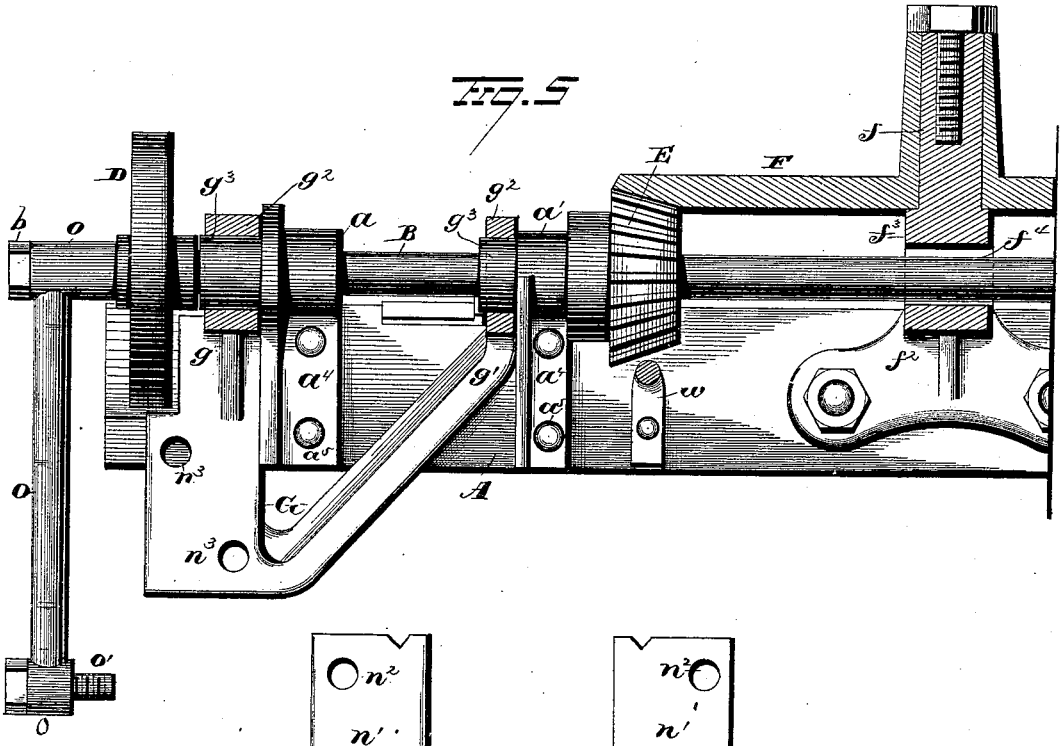


Fig. 6.

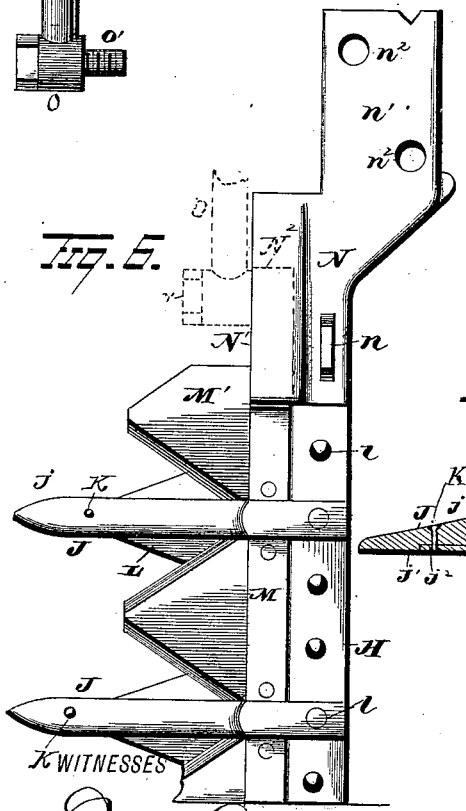


Fig. 8.

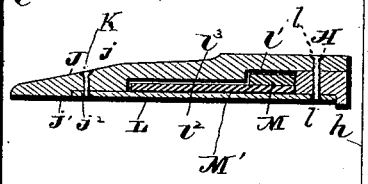
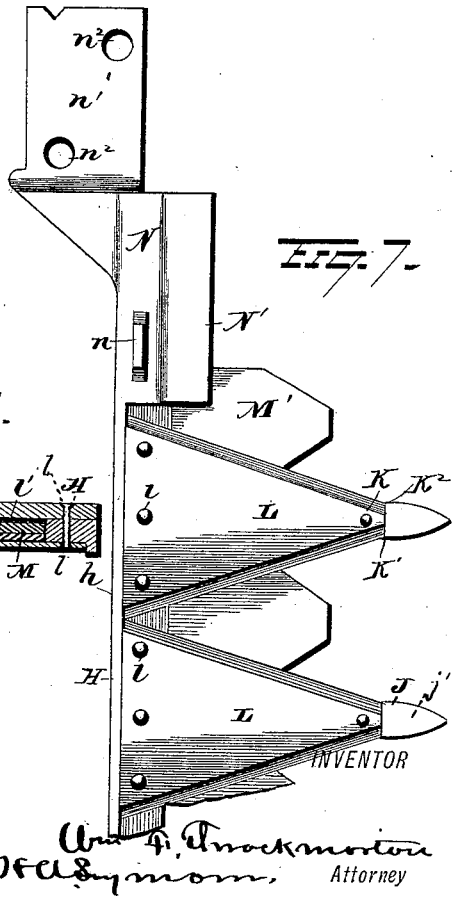


Fig. 7.



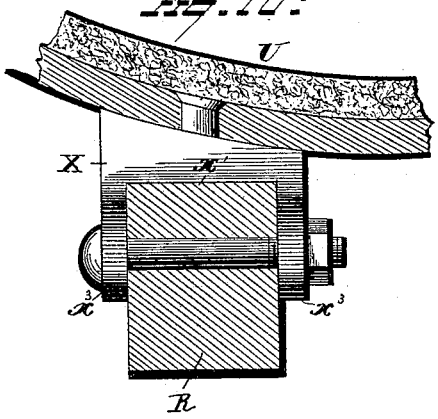
(No Model.) 4 Sheets—Sheet 4.

W. F. THROCKMORTON.

HEDGE TRIMMER.

No. 304,375. Patented Sept. 2, 1884.

FIG. 10.



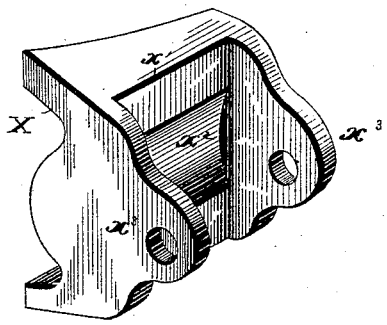


FIG. 9.

WITNESSES

George Cook.

G. F. Downing.

INVENTOR

Wm. F. Throckmorton

By P. A. Simmons,

Attorney

UNITED STATES PATENT OFFICE.

WILLIAM F. THROCKMORTON, OF ADAIR, ILLINOIS.

HEDGE-TRIMMER.

SPECIFICATION forming part of Letters Patent No. 304,375, dated September 2, 1884.

Application filed July 21, 1883. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. THROCKMORTON, of Adair, in the county of McDonough and State of Illinois, have invented certain new and useful Improvements in Hedge-Trimmers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in hedge-trimmers, the object being to provide a trimmer of the type adapted to trim either the tops or sides of hedges with a cutter that shall be simple and durable in its construction, and of very light weight, to enable it to be easily manipulated by the operator. A further object is to provide improved features of construction for connecting the cutter to its supporting-frame, and enabling it to be readily removed and disconnected therefrom for repairs or replacement. A further object is to provide improved means for the adjustable attachment of the supporting attachment.

With these ends in view my invention consists in certain features of construction and combinations of parts, as will hereinafter be described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in perspective of my improvement, the cutter being adjusted to operate horizontally for cutting the tops of hedges. Fig. 2 is an enlarged detached view of the devices for securing the cutter in any desired position. Fig. 3 is a detached view in perspective of a portion of the finger-bar. Fig. 4 is a detached view, partly in plan and partly in section, representing the plate and the clamp for securing the supporting-standard to the frame-piece. Fig. 4ª is a side elevation of the clamping-plate. Fig. 5 is a detached view, partly in plan and partly in horizontal section, of the coupling-arm and its bearings. Fig. 6 is a plan view of the upper side of the finger-bar. Fig. 7 is a similar view of the under side. Fig. 8 is a vertical longitudinal section of one of the guard-fingers. Fig. 9 is a view in perspective of the clamp for securing the hip-pad to the standard, and Fig. 10 is another view of the clamp.

A represents the frame-piece, which is preferably made of wood, although it may be made of metal.

B is the driving-shaft supported in bearings a a' a^2, secured to the frame-piece. These bearings are each provided with two arms, a^4, fitting against the top and one side of the frame-piece, whereby they are firmly secured to the latter by means of the screws a^5.

To one end of the driving-shaft is secured the fly-wheel C, and to its opposite end is attached the crank-disk D, provided with a wrist-pin, b. To the driving-shaft is also secured a beveled pinion, E, with which meshes the beveled gear-wheel F, mounted on a spindle, f, of the bracket f^2, attached to the frame-piece. The arm f^3 of the bracket is formed with an opening, f^4, for the driving-shaft.

A crank attached to the gear-wheel F, and having a handle, c, is provided for operating the device.

A guard consisting of a bar, w, secured at one end to the frame-piece, and bent over toward the gear-wheel F, and extending in close proximity to its teeth, serves to prevent brush-wood or other material from being drawn between the teeth of the gear-wheel and pinion and obstructing the operation.

H is the finger-bar, preferably made of a single piece of cast metal. It is provided at its rear edge with a projecting flange, h, against which abut the rear edges of the stationary cutters L, which are secured to the finger-bar by the rivets l. To the opposite side of the finger-bar are secured the guard-fingers J by one of the rivets l, the latter passing through the bar, the stationary cutter, and the guard-finger. The upper portion of the end or point of the guard-finger is tapered, as at j, while the under side is flat, as at j', and is provided with a flat seat, j^2, on which rests the point of the stationary cutter L, which is secured to the finger by the rivet K. The outer end of the stationary cutter is square, as at K′, and is seated against the shoulder K^2 on the under side of the finger, and thus the finger is firmly retained against lateral displacement.

The guard-finger is constructed with a recess, l', for the admission of the cutter-bar and to serve as a guideway therefor. A recess, l^2, is also formed in the guard-finger for the reciprocating cutters or knives. This recess

is tapering, to retain the heel or base portions of the cutters in place and provide sufficient clearance-space, l^3, near the forward ends of the cutters or knives.

M represents the cutter-bar, to one side of which are secured the knives or cutters M'.

The construction of the cutting apparatus as herein shown and described possesses many valuable features. By securing the stationary knives to one side of the finger-bar and the guard-fingers to the opposite side, and securing the outer ends of the knives and fingers together in the manner described, a strong bracing is secured, which imparts stiffness and strength to the finger-bar, and effectually prevents the lateral displacement of the stationary knives and guard-fingers, prevents the knives from becoming bent, and insures a very light construction of cutter, thereby enabling it to be manipulated by a comparatively slight outlay of power. The inner end of the finger-bar is secured to the head N, which is constructed with a guideway, N', within which reciprocates the block N^2 on the inner end of the cutter-bar. This head N is provided with the perforated lugs n, for a purpose hereinafter described, and with the extension n', having holes n^2 formed therein.

G is the coupling arm or support for the finger-bar. It is constructed with two arms, g g', provided with eyes or sockets g^2, that are fitted upon sleeve-bearings g^3, made integral with the shaft-bearings a' a^2. By this construction the coupling-arm G may be freely rotated, so as to adjust the cutter to any desired angle. The arm g of the coupling-arm is provided with holes n^3, to enable the finger-bar N to be secured thereto by means of the bolts N^4.

By constructing the parts in the manner described the cutter may be readily removed for sharpening the knives or other repairs by simply removing the bolts.

O is a pitman having sleeve-bearings o at its opposite ends, one bearing being supported on the wrist-pin b of the crank-disk, while the other is supported on a pin, o', secured to the block N^2 on the inner end of the cutter-bar.

To the frame-piece, near the crank-disk, is secured the set-screw P. It is composed of the screw-threaded portion p, provided with two diverging arms, p', which are screwed to the side or bottom of the frame-piece, and thus firmly hold the screw in position.

p^2 is the thumb-nut on the screw.

Q is a curved brace furnished with a slot, u, through which passes the screw P, while its opposite or outer end is formed with an opening, q'. This outer end is removably secured to either one of the lugs n on the head N of the finger-bar by means of a pin, or by other equivalent device. The finger-bar can thus be adjusted to any desired angle and retained in such adjustment by tightening the thumb-nut p^2, it being necessary to adjust the cutter to operate horizontally to cut the top of the hedges, or vertically to cut the sides, or at other angles to impart the desired form to the hedges.

The devices shown and described are important features of my improvement, as the cutter may be turned completely over and the end of the brace quickly secured to the lug on the opposite side of the finger-bar.

R is a standard, to which is adjustably secured the frame-piece in the following manner:

V is a plate, provided on opposite sides with the arc-shaped slots v, through which are inserted bolts v', for securing the plate to the frame-piece. By means of the arc-shaped slots the plate and the standard may be arranged at desired angle, within a limited extent relative to the frame-piece to suit the operator. The plate V has a raised central portion, and is furnished with the flanges v^2, forming a recess between them for the standard R of the plate; is also constructed with a transverse slot, w', through which projects the clamping-stirrup W, adapted to receive the standard R, and provided at one side with a screw-threaded stem, x, which projects through a hole in the frame-piece, and is secured by means of a thumb-nut, Y.

When it is desired to adjust the height of the frame-piece on the standard to suit the height of the operator or the hedge, the thumb-nut Y is loosened and the frame pushed up or down, and then the nut is again tightened and the standard is firmly clamped and held against displacement. To the upper end of the standard is secured the curved yoke S, provided with the shoulder-pads T, whereby the weight of the device is supported by the shoulders of the operator.

U represents a hip-pad. To its outer side is secured a standard-seat, X, which is provided with a curved surface to fit the outer surface of the pad, and with perforated ears x^3 and flat seat x' for the standard R. The seat x' is recessed at x^2, to enable the fastening-rivet to be headed below the surface of the standard. The standard is furnished with a series of holes, i. By passing a pin through the ears x^3 and one of the holes in the standard, the hip-pad may be secured in any desired vertical adjustment. The handle Z is secured to the frame-piece to enable the operator to properly guide and govern the machine.

It is evident that slight changes in the construction and relative arrangement of the parts of my improvement might be resorted to without departing from the spirit of my invention, and hence I would have it understood that I do not restrict myself to the exact construction and arrangement of parts shown and described; but,

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

1. The combination, with the finger-bar provided with a flange on its rear edge, of knives

or cutters secured to the finger-bar, with their rear edges fitting against said flange, and guard-fingers secured to the opposite side of the finger-bar, said knives and fingers being secured together near their outer ends, substantially as set forth.

2. In a hedge-trimmer, the combination, with the finger-bar having a head provided with a perforated lug on each side thereof, of a slotted brace and a set-screw, substantially as set forth.

3. The combination, with the driving-shaft and gears, of the curved guard secured at its lower end to the frame and extending over the pinion on the driving-shaft, the end of the arm being located in close proximity to the teeth of the gear-wheel F, substantially as set forth.

4. The combination, with the frame-piece and the standard, of the plate provided with arc-shaped slots, the straight slot and a seat for the standard, bolts extending through said curved slots and frame-piece, a clamping-stirrup provided with a screw-threaded stem that extends through the frame-piece, and a set-nut, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

WILLIAM F. THROCKMORTON.

Witnesses:
BENJ. MCCARTNEY,
LYMAN F. PONTIOUS.