Dec. 8, 1925. 1,564,990

R. W. WITTEMANN

HEDGE CUTTER

Filed Sept. 27, 1921 3 Sheets-Sheet 1

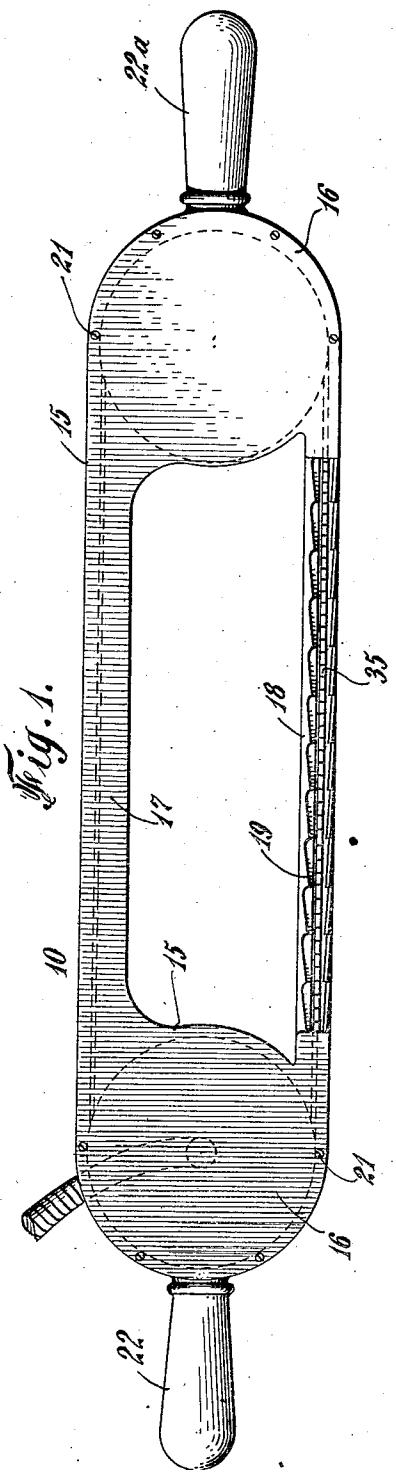


Fig. 1.

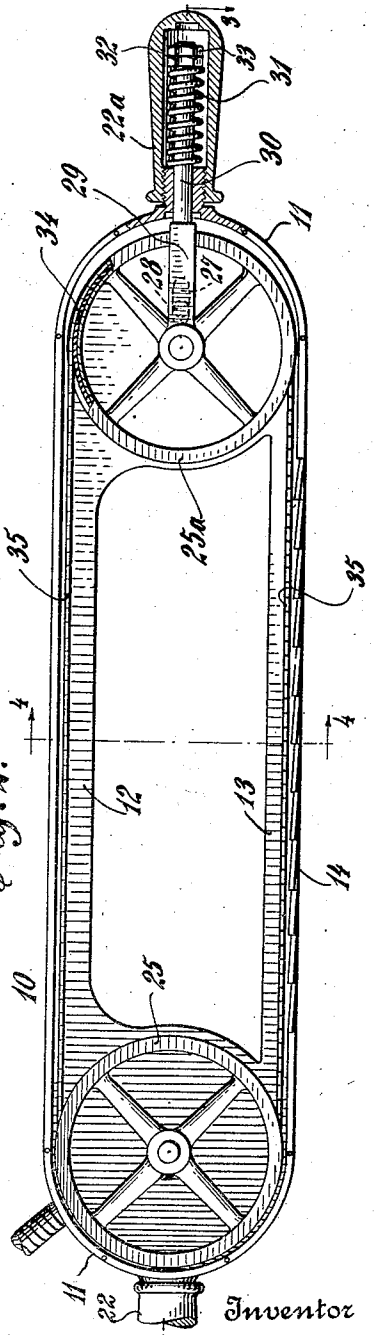


Fig. 2.

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HEDGE CUTTER

Filed Sept. 27, 1921 3 Sheets-Sheet 2

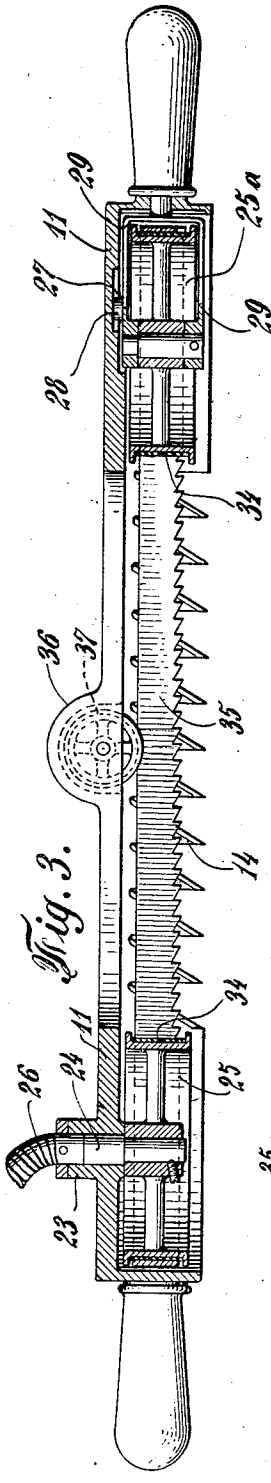


Fig. 3.

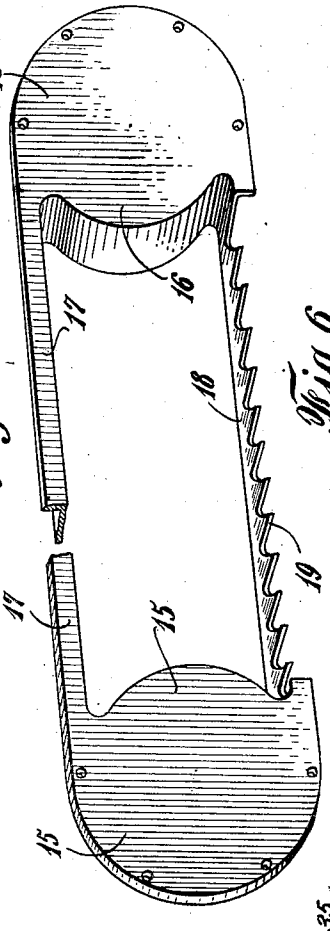


Fig. 5.

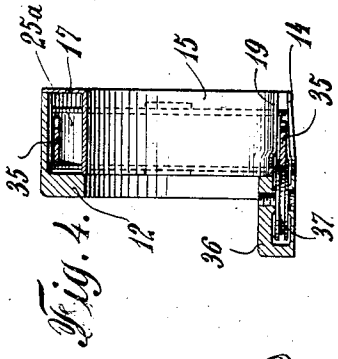


Fig. 4.

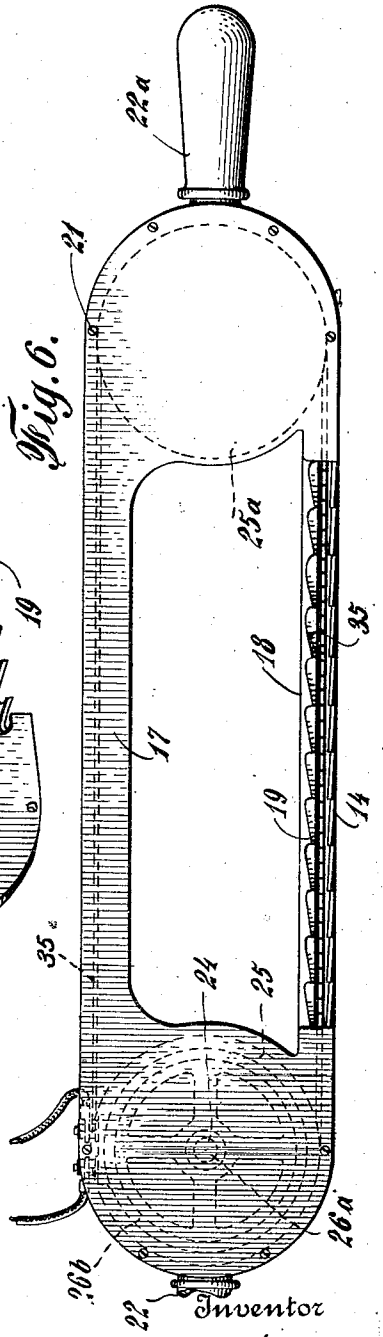


Fig. 6.

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HEDGE CUTTER

Filed Sept. 27, 1921 3 Sheets-Sheet 3

Fig. 7.

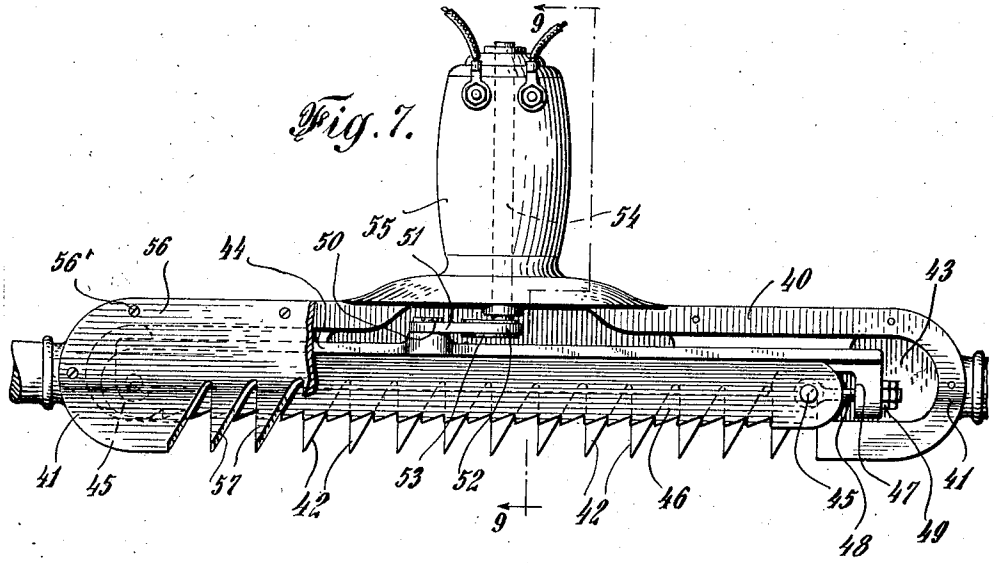


Fig. 8.

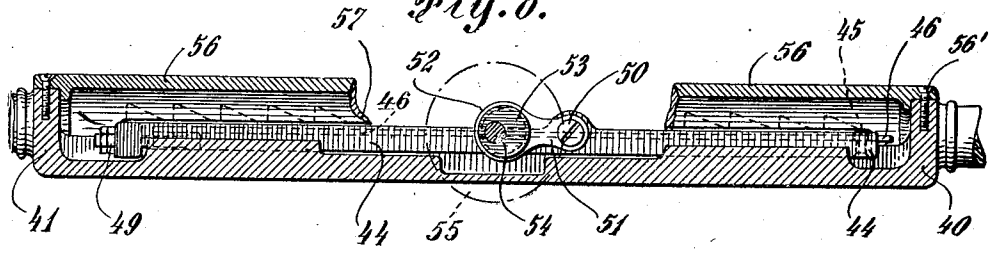
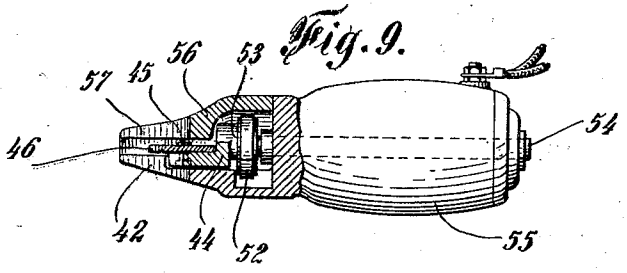


Fig. 9.



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Patented Dec. 8, 1925. 1,564,990

UNITED STATES PATENT OFFICE.

RUDOLPH WENDELIN WITTEMANN, OF BROOKLYN, NEW YORK.

HEDGE CUTTER.

Application filed September 27, 1921. Serial No. 503,555.

To all whom it may concern:

Be it known that I, RUDOLPH WENDELIN WITTEMANN, a citizen of the United States, residing in the borough of Brooklyn, Kings County, in the State of New York, have invented certain new and useful Improvements in Hedge Cutters, of which the following is a full, clear, and exact specification.

My invention relates to improvements in cutting apparatus, and the same has for its object more particularly to provide a simple, efficient and convenient apparatus for trimming hedges and the like.

Further, said invention has for its object to provide an apparatus of the character specified by means of which a hedge or the like may be quickly trimmed, and in a more even and regular way than is possible with the shears usually employed.

Further, said invention has for its abject to provide an apparatus of the character specified in which the cutting member may be positively driven from a suitable source of power either carried directly by the machine or arranged independently thereof and connected therewith by flexible shafting.

Further, said invention has for its object to provide an apparatus of the character specified which is comparatively small in size, readily portable, and in which the parts which are subject to wear may be easily removed for sharpening or replacement.

Other objects will in part be obvious and in part be pointed out hereinafter.

To the attainment of the aforesaid objects and ends my invention consists in the novel details of construction, and in the combination, connection and arrangement of parts hereinafter more fully described and then pointed out in the claims.

In the accompanying drawings forming part of this specification, wherein like numerals of reference indicate like parts—

Figure 1 is a front view showing one form of apparatus constructed according to, and embodying my said invention;

Fig. 2 is a similar view with the front plate or cover removed to show the interior mechanism;

Fig. 3 is a longitudinal section taken on the line 3—3 of Fig. 2;

Fig. 4 is a transverse vertical section taken on the line 4—4 of Fig. 2;

Fig. 5 is a detail perspective view of the front plate or cover of the apparatus;

Fig. 6 is a front view showing a modified construction in which the apparatus is driven by an electric motor secured directly thereto;

Fig. 7 is a longitudinal section showing a modified form of cutting mechanism and means for actuating the same,

Fig. 8 is a back view thereof, partly broken away, and

Fig. 9 is a vertical transverse section on the line 8—8 of Fig. 7.

In the main construction illustrated at Figs. 1 to 5 inclusive, 10 designates an open frame or casing comprising rounded end portions 11, and longitudinal connecting members 12, 13, of which the member 13 is provided with a series of forwardly extending teeth 14.

15 denotes a cover or front plate comprising circular end members 16, registering with the rounded end portions 11 of the frame 10. The end members 16 are connected together at their upper portions by an L-shaped longitudinal member 17 registering with the longitudinal connecting member 12 of the frame or casing 10. The lower portions of said circular end members 16 are connected by a flat longitudinal member 18 which is also provided with forwardly extending teeth 19 registering with the teeth 14 of the frame or casing member 13.

The cover plate 15 is secured at its circular end members 16 to the rounded end portions 11 of the frame 10 by screws 21.

To the outer sides of the casings formed by the rounded end portions 11 and the circular end members 16 are secured handles 22, 22ª.

One of said rounded end portions 11 is provided at its rear with a bearing 23 in which is mounted a shaft 24 having its reduced inner end provided with a pulley 25, and its other end adapted for securement to one end of a flexible shaft 26 extending from a suitable motor.

The inner wall of the other end portion 11 is provided with a horizontal recess 27 in which is guided a stud 28 arranged at one side of a forked bearing member 29 in which is mounted a pulley 25ª corresponding to the pulley 25. The forked bearing member 29 is provided with a stem 30 which extends through the side of the casing and

into the handle 22ª, which is hollow, and upon said stem is disposed a spring 31 and adjusting nuts 32, 33, in order to yieldably support the pulley 25ª, and to permit of the adjustment therefor in consequence of wear.

The outer grooved surfaces of the pulleys 25, 25ª are provided with facings of rubber or analogous material 34 whereby to increase the friction between said pulleys and an endless saw 35 which passes over the same, and through the hollow upper longitudinal casing part formed by the longitudinal members 12, 17, and intermediate the lower toothed connecting members 13, 18.

In order to prevent the lateral displacement of the endless saw 35, and in order to reinforce the same, the lower longitudinal connecting members 13 of the casing 10 is provided with a recessed offset 36 within which is mounted a grooved roller 37 to receive the rear edge of said endless saw 35.

In the modification illustrated at Fig. 6, the apparatus proper is constructed as hereinabove described, except that the flexible shaft 26 is dispensed with and in place thereof the shaft 26ª of an electric motor 26ᵇ is connected directly to the shaft 24 upon which the pulley 25 is fixed.

In the construction illustrated at Figs. 7, 8 and 9, the apparatus comprises a base frame or member 40 having recessed ends 41, and forwardly projecting teeth 42 intermediate said ends. The base member 40 is provided with a longitudinal recess 43 in its upper side within which is disposed a carriage 44, at one end of which is provided a stud 45 to receive one end of a saw blade 46, and at its other end said carriage is provided with a lug 47 in which works a hook member 48 whose inner end is adapted to engage with the other end of said saw blade 46. The outer end of said hook member 48 is screw threaded to receive the adjusting nuts 49 whereby to secure said saw blade under proper tension upon the carriage 44.

The back of the base member 40 is suitably recessed to accommodate a stud 50 extending rearwardly from the carriage 44. 51 denotes a link which is pivotally secured at one end to said stud 50, and is provided at its other end with a strap 52 embracing an eccentric 53 fixed upon the shaft 54 of an electric motor 55 secured centrally to the back of the base frame 40.

56 denotes a cover plate which is secured by screws 56′ to the base frame or member 40, and provided at its front edge with forwardly projecting teeth 57 registering with the teeth 42 of the base frame. Between the teeth of the base frame and the cover plate, the saw blade 46 is adapted to be reciprocated by the motor 55 through the interposed eccentric 53 and link 52.

The operation of the apparatus will be largely obvious from the foregoing description. It need only be noted that when power is applied to the endless saw blades in either case actuated, it merely becomes necessary to grasp the apparatus by the handles 22, 22ª, and move the same horizontally into engagement with the hedge or other plant to be cut. As the branches or stems pass between the upper and lower sets of teeth, the saw blade, owing to the rapidity of its movement, will instantly sever the portions of said branches or stems projecting above the sets of teeth between which the saw blade travels or reciprocates.

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

1. An apparatus of the character described, comprising a casing including a frame portion and a cover portion secured together, a cutting member guided between said casing portions, means movably mounted within said casing for supporting said cutting member, a toothed portion on said casing cooperating with said cutting member, and means for actuating the supporting means for said cutting member, substantially as specified.

2. An apparatus of the character described, comprising a casing-like frame, a toothed member arranged longitudinally along the front of said frame, a cutting member mounted in said frame and cooperating with said toothed member, means movably mounted in said frame for supporting said cutting member, a removable plate for covering said cutting member and said supporting means, a toothed part thereon extending over the edge of said cutting member and cooperating therewith and with said toothed member, and means for actuating said supporting means, substantially as specified.

3. An apparatus of the character described, comprising an elongated casing-like frame, a toothed member thereon arranged longitudinally of the frame, a cutting member therein having a single flat strip portion cooperating with said toothed member and movable longitudinally thereof, means for supporting said cutting member, means for adjustably tensioning said cutting member on said supporting means, handles secured to said frame at opposite ends for holding the same, means for actuating said supporting means, and a plate removably secured to said frame for covering said cutting member and said supporting means, said plate having a toothed part extending over and beyond the cutting edge of said cutting member and registering with said toothed member, substantially as specified.

4. An apparatus of the character described, comprising a frame, casings at opposite ends thereof, a toothed member in-

termediate said casings, revoluble supports in said casings, an endless cutting member extending over said supports and cooperating with said toothed member, a cover plate for said frame and casings, whereby said cutting member and said supports are protected, a toothed portion on said cover plate, arranged longitudinally thereof, extending over said cutting member and registering with said toothed member, and means for actuating said cutting member, substantially as specified.

5. An apparatus of the character described, comprising an elongated casing-like portable frame, a single pair of pulleys mounted thereon at opposite ends, an endless cutting member extending over said pulleys, having spaced intermediate portions protected by said casing-like frame and movable longitudinally of said frame, means associated with one of said intermediate portions of said cutting member to protect the same and to cooperate therewith during the cutting, and handles for carrying said frame, substantially as specified.

6. An apparatus of the character described, comprising an elongated casing-like portable frame, a single pair of pulleys mounted therein at opposite ends, an endless cutting member extending around said pulleys and protected by said frame, spring means associated with one of said pulleys and adjustable exteriorly of the casing for tensioning said cutting member, means for actuating said cutting member, and means for carrying said frame and including a handle protecting said spring means, substantially as specified.

7. An apparatus of the character described, comprising a frame, a pair of pulleys mounted thereon in spaced relation, an endless cutting member extending over said pulleys, spring means maintaining said cutting member yieldingly under tension, a toothed member cooperating with said cutting member, and means for actuating said cutting member, substantially as specified.

8. An apparatus of the character described, comprising a frame, a pair of pulleys mounted thereon in spaced relation, spring means tending to separate said pulleys, and endless cutting member extending over said pulleys, and means for actuating said pulleys and cutting member, substantially as specified.

9. An apparatus of the character described, comprising a frame, pulleys mounted at opposite ends of said frame, an endless cutting member extending over said pulleys and comprising spaced intermediate portions, a toothed member cooperating with one of said intermediate portions of said cutting member, and a grooved roller mounted on said frame and engaging the rear edge of said portions of said cutting member cooperating with said toothed member, substantially as specified.

10. An apparatus of the character described, comprising a frame, pulleys mounted at opposite ends of said frame, an endless cutting member extending over said pulleys and comprising spaced intermediate portions, spring means for maintaining said cutting member yieldingly tensioned, a toothed member cooperating with one of said intermediate portions of said cutting member, and a roller mounted on said frame and engaging the rear edge of said portions of said cutting member cooperating with said toothed member, substantially as specified.

11. An apparatus of the character described, comprising an elongated casing-like portable frame, a single pair of pulleys mounted on said frame in spaced relation, an endless cutting member extending over said pulleys and having spaced intermediate portions protected by said frame, spring means for tensioning said cutting member, toothed members arranged above and below one of said intermediate portions of said cutting member, means engaging the rear edge of said portions of said cutting member located between said toothed members, means for actuating said cutting member, and handles for carrying said frame, substantially as specified.

12. An apparatus of the character described, comprising an elongated casing-like frame, a single pair of pulleys mounted in said casing at opposite ends, an endless cutting member extending over said pulleys and having spaced intermediate portions, spring means acting on one of said pulleys for yieldingly maintaining said cutting member under tension, means for actuating said cutting member, and handles for carrying said frame, substantially as specified.

13. An apparatus of the character described, comprising an elongated casing-like portable frame, a single pair of pulleys mounted in said frame at opposite ends and protected thereby, an endless cutting member extending around said pulleys and including spaced intermediate portions arranged longitudinally of said frame and protected thereby, members arranged above and below one of said intermediate portions to protect the same and to cooperate therewith to cause the cutting, said frame being open between said intermediate portions of said cutting member to permit the material cut to pass therethrough, handles for carrying said frame, and means for actuating said cutting member, substantially as specified.

14. An apparatus of the character described, comprising a frame, casings at opposite ends of said frame, a toothed member arranged longitudinally of said frame be-

tween said casings, a pulley rotatably mounted in one of said casings, means for rotating said pulley, a bearing slidably mounted in the other of said casings and extending exteriorly thereof, a pulley rotatably mounted on said bearing within the casing of the same, an endless cutting member extending over said pulleys and having intermediate portions extending over and cooperating with said toothed member, a spring interposed between said casing and the exterior part of said bearing and tending to tension said cutting member, a cover plate secured to said frame and casings for closing the same, a toothed member thereon extending over said portions of said cutting member cooperating with said first named toother member, a roller on said frame engaging the rear edge of said portions of said cutting member cooperating with said toothed members, and handles secured to opposite ends of said frame, one of said handles enclosing said spring and forming a protection therefor, substantially as specified.

Signed at the city of New York, county and State of New York, this 9th day of September, one thousand nine hundred and twenty-one.

RUDOLPH WENDELIN WITTEMANN.