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Patented Nov. 4, 1902.

R. H. PAUL,
PNEUMATIC SUGAR CANE CUTTER.

(Application filed Aug. 17, 1901.)

(No Model.)

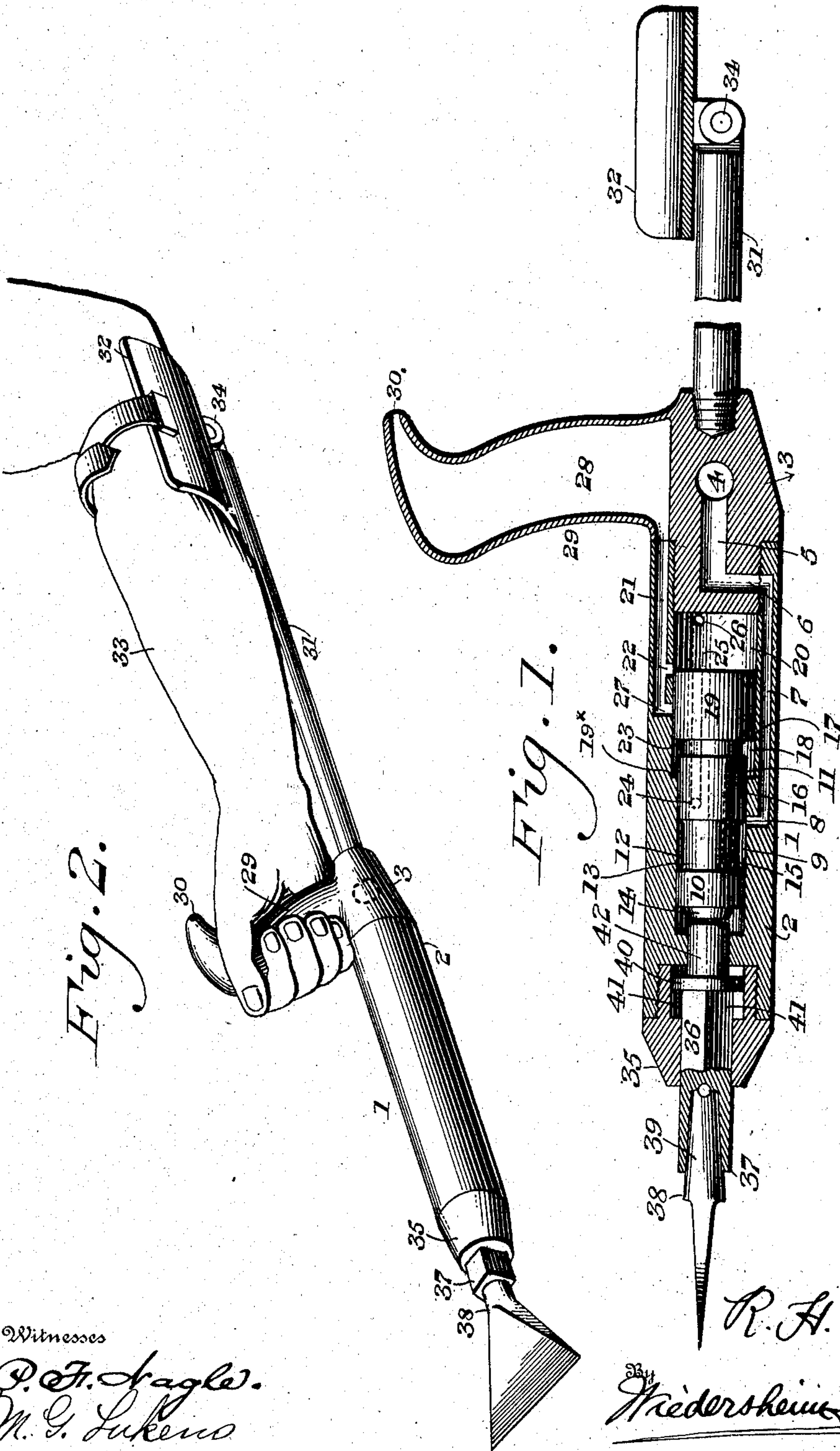


Fig. 2.

Fig. 1.

Witnesses
D. H. Taggart.
M. G. Lukens

Inventor
R. H. Paul.
Wiedersheim & Fambaut
Attorneys

UNITED STATES PATENT OFFICE.

RALPH H. PAUL, OF BRISBANE, QUEENSLAND, AUSTRALIA.

PNEUMATIC SUGAR-CANE CUTTER.

SPECIFICATION forming part of Letters Patent No. 712,843, dated November 4, 1902.

Application filed August 17, 1901. Serial No. 72,394. (No model.)

To all whom it may concern:

Be it known that I, RALPH HERBERT PAUL, a subject of the King of Great Britain, residing at Brisbane, Queensland, Australia, have invented a new and useful Improvement in Pneumatic Sugar-Cane Cutters, of which the following is a specification.

In the art of cutting sugar-cane prior to crushing the same it is essential that the cane should be cut level with or slightly below the level of the ground in order to prevent waste and to insure a good crop the following year. It has heretofore been the practice to cut the cane with a cane-knife wielded in the hand of the user, and as the stalks are usually from three-quarters of an inch to two inches thick the labor of cutting the same with the implements now in use is exceedingly arduous, since the operator is constantly in a stooping position and must cut the stalks at more or less of an angle and usually at irregular distances above the ground, whereby considerable waste occurs, as well as loss of time, owing to the operator having to raise and lower the cane-knife three feet or more to obtain sufficient power to sever each stalk.

The object of my invention is to provide an improved pneumatic sugar-cane cutter, the cutting device being applied to the stalks so as to cut the same at a level with or below the level of the ground, means being employed for supporting the cutter from the arm of the user and a suitable handle being also provided having an exhaust-passage, whereby the exhaust can be directed against the breast or shoulders of the user, so as to cool the latter.

It also comprises novel construction and combination of a casing or cylinder, a handle thereon having an exhaust-passage there-through, and an outlet directing the exhaust upon the body of the user in conjunction with a rod attached to said casing and having a plate adapted to be secured to the arm of the user pivotally attached thereto.

It further consists of novel details of construction, all as will be hereinafter fully set forth, and particularly pointed out in the claims.

Figure 1 represents a longitudinal sectional view of a pneumatic cane-cutter embodying my invention, certain of the parts being shown

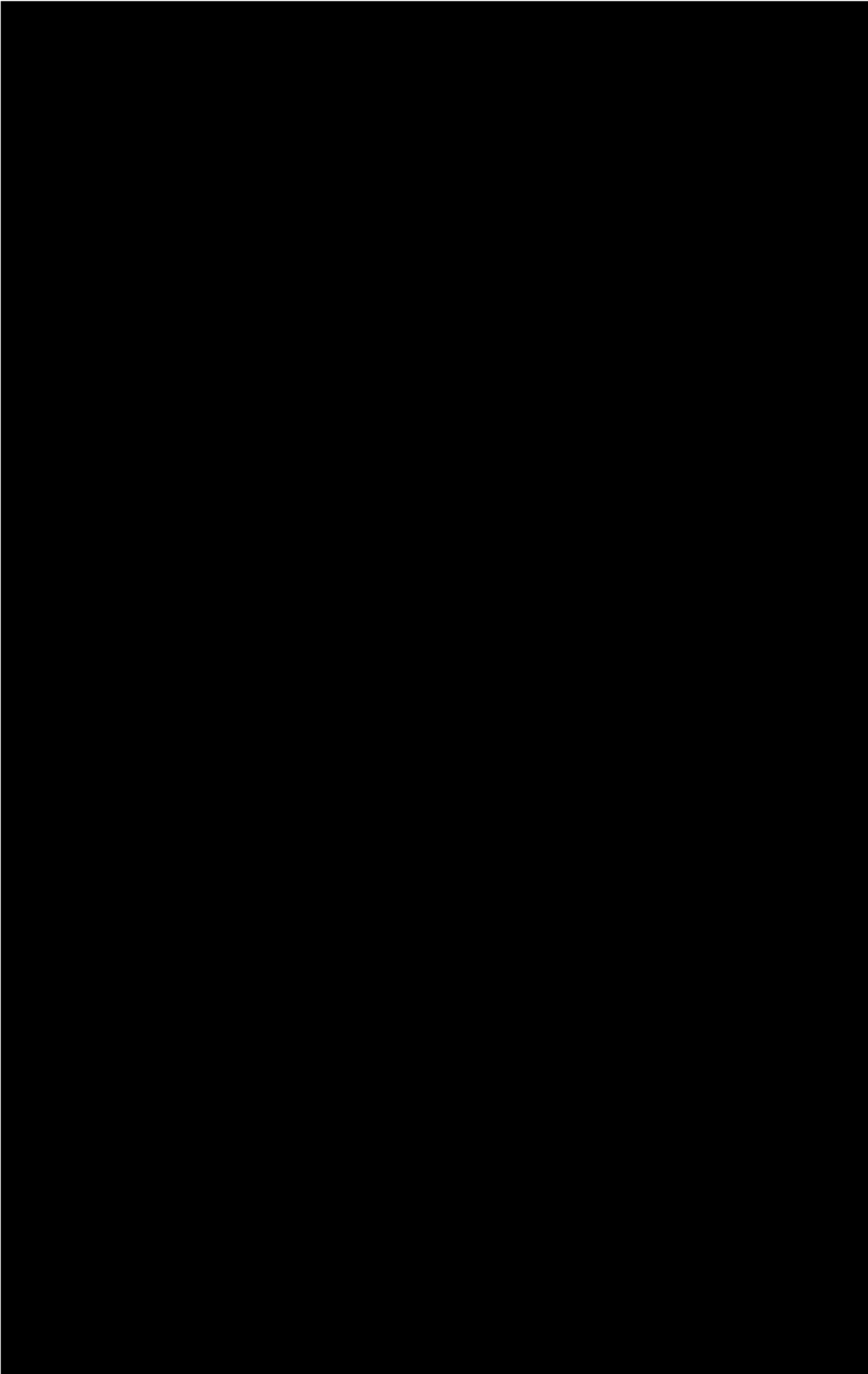
in elevation. Fig. 2 represents a perspective view of the cutter seen in Fig. 1.

Similar numerals of reference indicate corresponding parts in the figures.

Referring to the drawings, 1 designates my improved pneumatic cane-cutter, consisting of the casing or cylinder 2, having the inlet-piece 3, which has the inlet-port 4 therein near the handle end thereof, to which the motive fluid is admitted and passes from thence through the passages 5, 6, and 7 to the port 8, where it enters the chamber 9, formed between the heads 10 and 11 by the neck 12 of the piston 13, which is provided with the striker 14. The compressed air passes from the chamber 9 through the port 15, passage 16, and port 17 into the chamber 18, which is formed between the head 19 of the piston and the shoulder 19^x of cylinder 2, it being noted that said head 19 is of larger area than the head 11, whereby a differential piston is formed. As the chamber 20 is open to the main exhaust-passage 21 by the port 22, it will be apparent that the air pressing on the shoulder 23 will force the piston 13 from the position seen in Fig. 1 toward the right, which movement will continue until the head 11 uncovers the port 24 to the live-air pressure in the chamber 9, and when the piston reaches this last-mentioned position the motive fluid passes through said port 24, passage 25, and port 26 into the chamber 20. The piston will now be moved from its extreme right-hand position toward the left, the exhaust taking place from the chamber 18 through the port 27 to the passage 21, which discharges into the chamber 28 in the handle 29, the outlet 30 in the latter being deflected in such a direction that the exhaust will discharge upon the breast, neck, and shoulders of the user, thereby cooling the latter.

31 designates a rod attached to the inlet-piece 3 and having at or near its extremity the curved or concave plate 32, to which the forearm 33 of the user is adapted to be strapped or otherwise secured, said plate being pivotally attached to said rod at the point 34, so that when the user lets go the handle 29 the tool or cutter will be supported; but the operator will at the same time be free to use his hand.

35 designates the nose-piece of the tool,



cutter and means carried by said cylinder for enabling the latter to be secured to and supported from the arm of the user.

10. In a pneumatic sugar-cane cutter, a
5 cylinder, a cutter-holder mounted in the front end thereof, means for preventing said cutter-holder from rotating, a sugar-cane cutter adapted to be inserted into said holder, a reciprocating piston in said cylinder, a
10 handle on said cylinder having rearward exhaust-passage therethrough and means carried by the latter for enabling the tool to be supported from the arm of the user.

11. In a pneumatic sugar-cane cutter, a
15 cylinder, a reciprocating piston therein, a sugar-cane cutter operated by the impacts of said piston, a handle attached to said cylinder and having an exhaust-passage therethrough and means on said cylinder for enabling the
20 latter to be supported from the arm of the user independently of said handle.

12. In a pneumatic sugar-cane cutter, a cylinder, a nose-piece therefor, a polygonal opening therethrough, a cutter-holder having
25 a polygonal-shaped body movable in said opening whereby rotation of said holder is prevented, a sugar-cane cutter in said holder, a piston in said cylinder, an inlet-

piece for the latter and a handle on said inlet-piece, having rearwardly-discharging exhaust-passage. 30

13. In a pneumatic sugar-cane cutter, a cylinder, a nose-piece therefor, a polygonal opening therethrough, a cutter-holder having a polygonal-shaped body movable in said
35 opening whereby rotation of said holder is prevented, a sugar-cane cutter in said holder, a piston in said cylinder, an inlet-piece for the latter and a handle on said inlet-piece having an exhaust-passage therethrough. 40

14. In a pneumatic sugar-cane cutter, a cylinder, a nose-piece therefor, a polygonal opening therethrough, a cutter-holder having a polygonal-shaped body movable in said
45 opening, whereby rotation of said holder is prevented, a sugar-cane cutter in said holder, a piston in said cylinder, an inlet-piece for the latter, and a handle on said inlet-piece having a discharge-passage therein, in combination with means carried by said inlet-
50 piece for enabling the tool to be independently supported from the arm of the user.

RALPH H. PAUL.

Witnesses:

JOHN A. WIEDERSHEIM,
E. HAYWARD FAIRBANKS.