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COTTON PICKER NOZZLE

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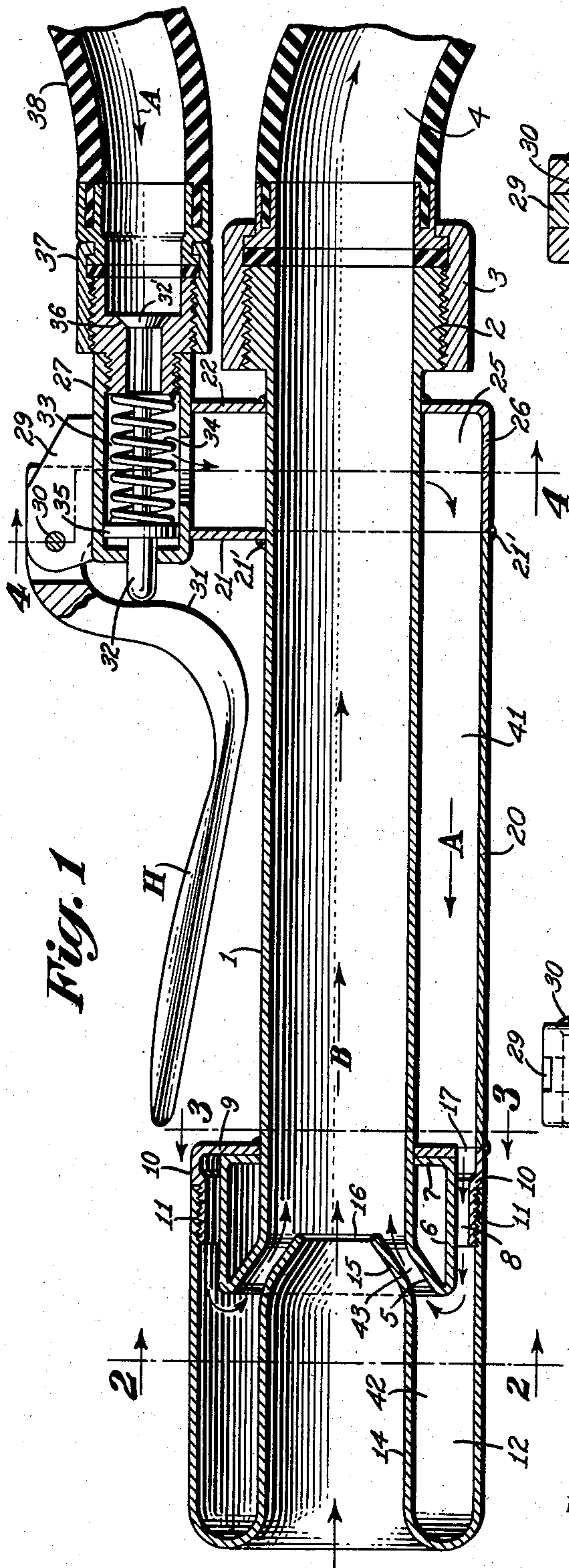


Fig. 1

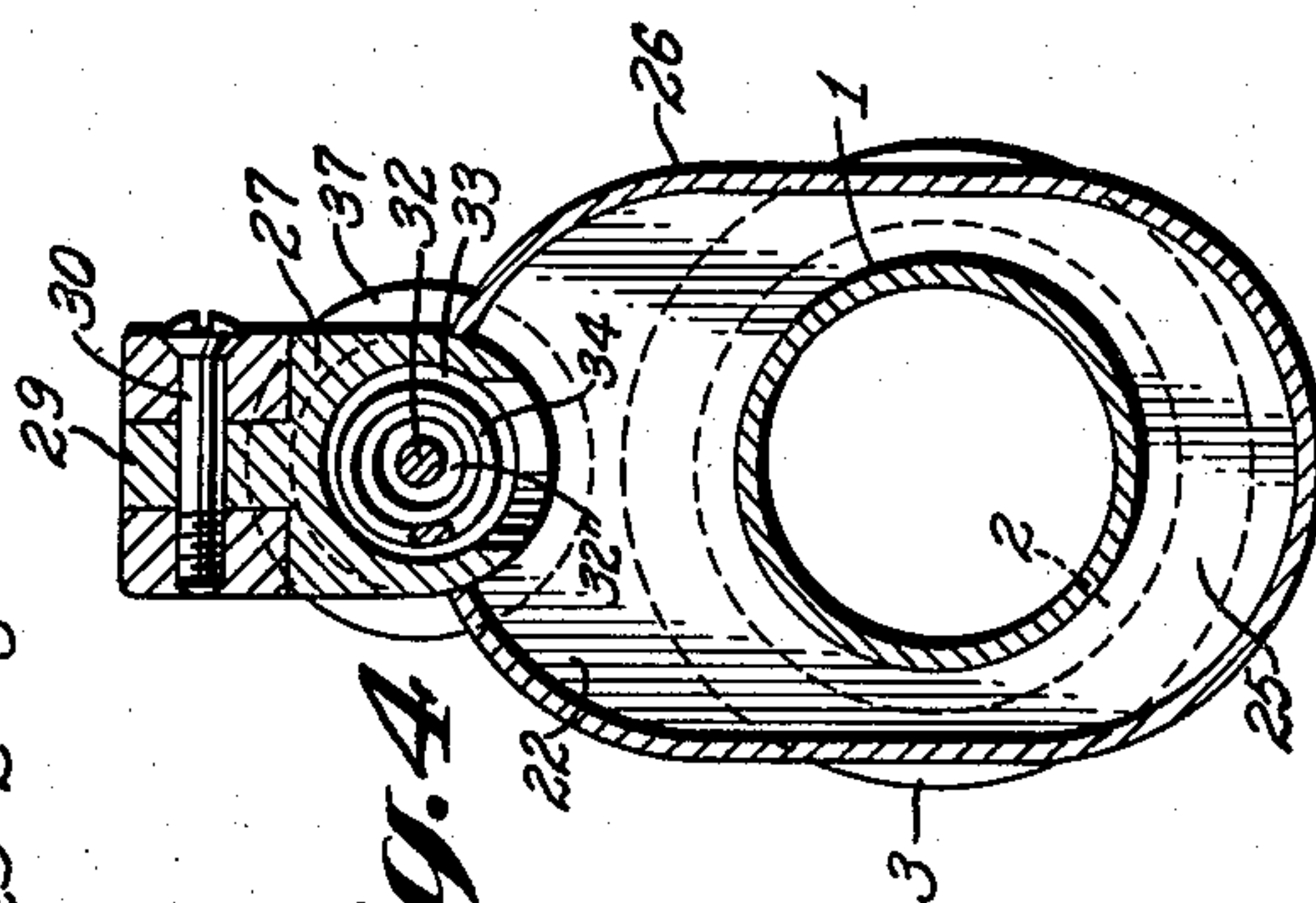


Fig. 4

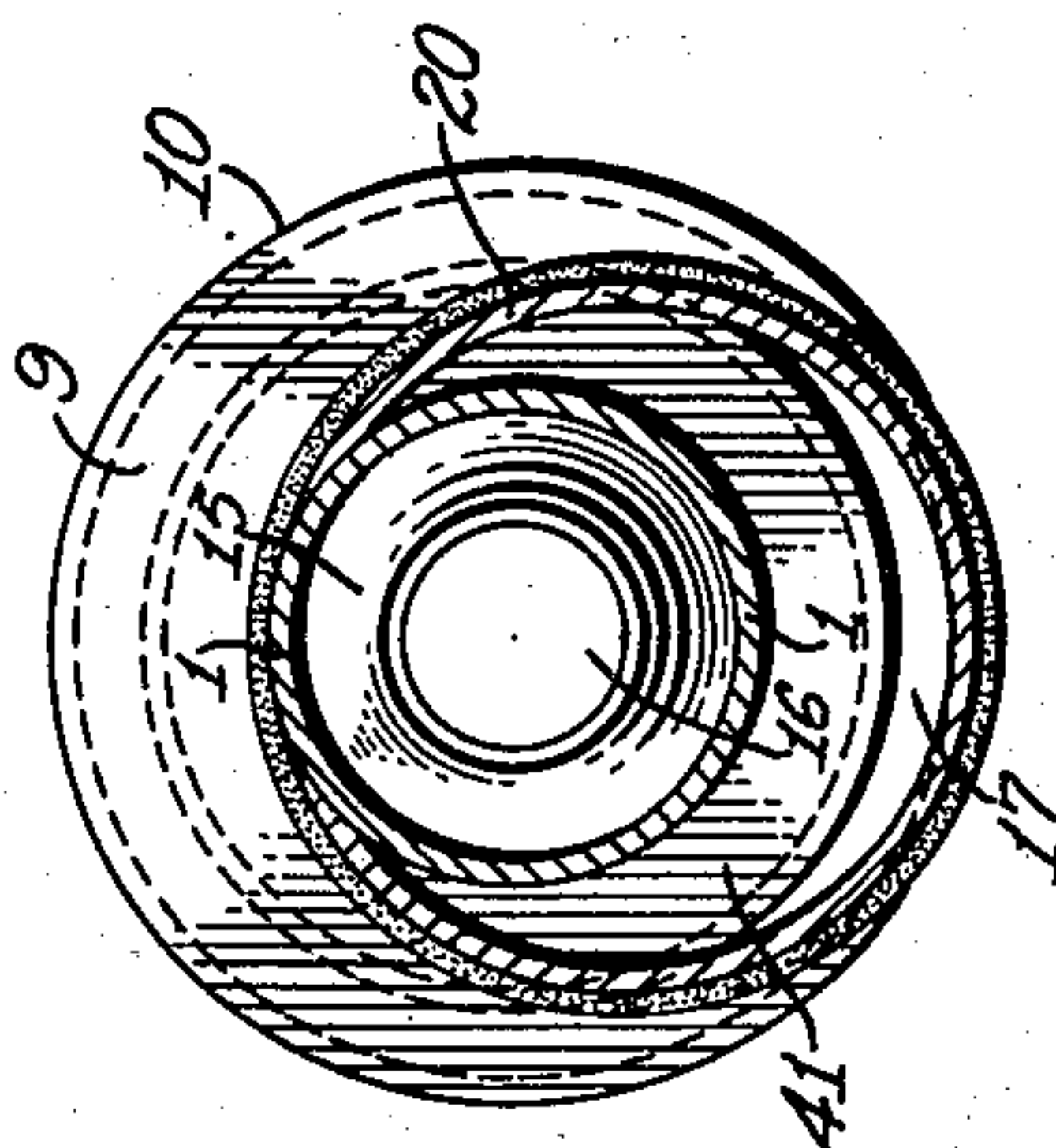


Fig. 3

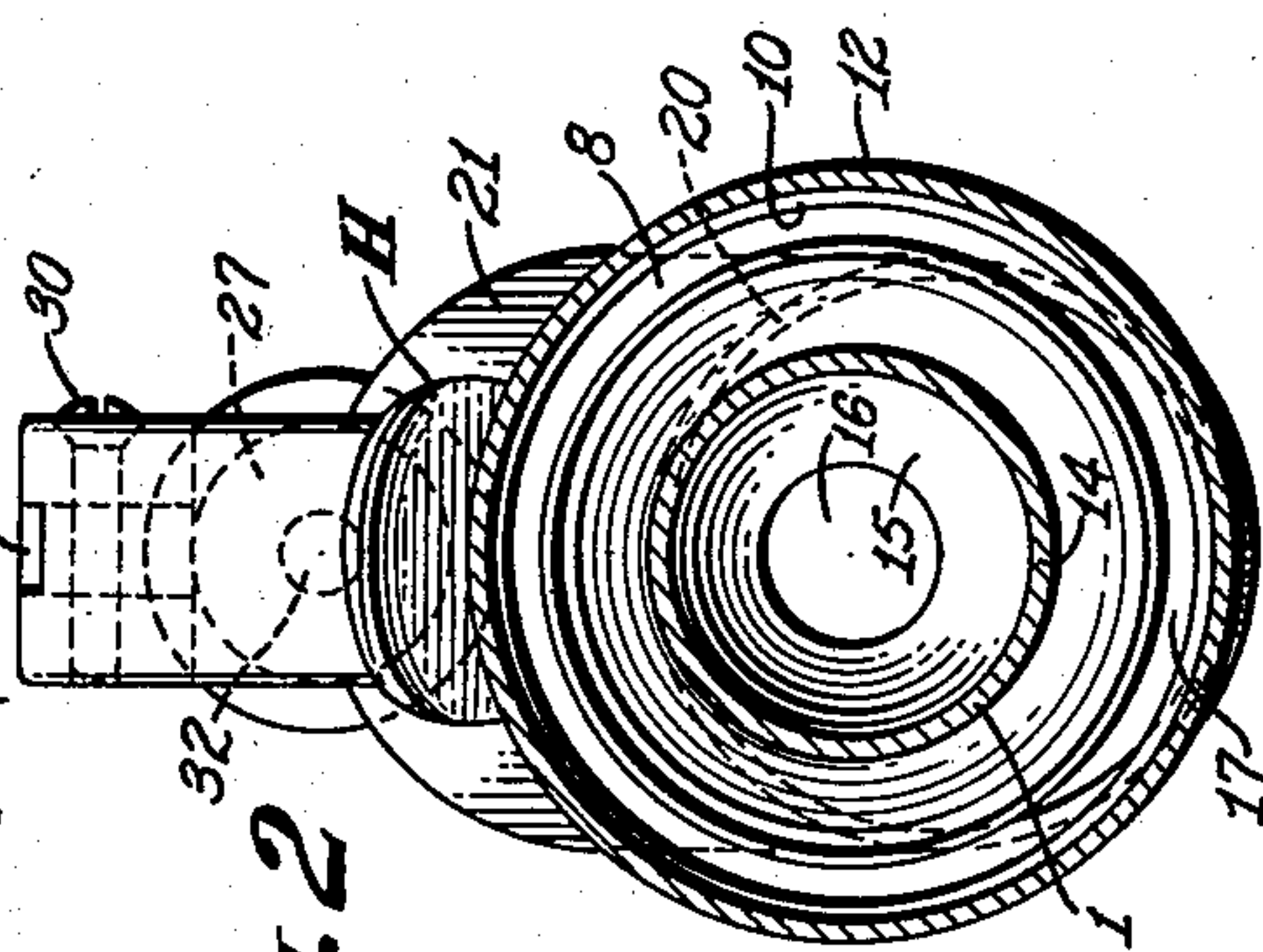


Fig. 2

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COTTON PICKER NOZZLE

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2 Claims. (Cl. 56—32)

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This invention relates to cotton pickers, and more particularly to that type of cotton pickers adapted to be handled as a tool and selectively applied to the plant, as desired by the operator.

An object of the invention is to provide an improved cotton picking tool of simple and light construction which can be readily handled and manipulated with one hand of the operator.

A further object of the invention is to provide an improved cotton picking tool in which compressed air from a suitable source is utilized in the tool to set up an induced suction at a nozzle end, whereby the cotton fibers are drawn through the tool and delivered through a suitable conduit connected with the tool to a cotton receptacle or collecting bag.

Other objects will more particularly appear in the course of the following detailed description.

The invention consists in the novel construction, arrangement and combinations of parts hereinafter more particularly described and claimed.

One sheet of drawings accompanies this specification as part thereof, in which like reference characters indicate like parts throughout.

In the drawing:

Figure 1 is a central longitudinal vertical cross section through the improved cotton picker tool;

Figure 2 is a transverse cross section taken on line 2—2 of Figure 1;

Figure 3 is a transverse cross section taken on line 3—3 of Figure 1; and

Figure 4 is a transverse cross section taken on line 4—4 of Figure 1.

In the embodiment of the invention herein illustrated in detail, the improved tool comprises a housing 20, divided longitudinally to provide a tube 1 and a parallel passage 41 of crescent-shaped cross-section positioned about the bottom of the tube. The rear end of the tube is enlarged and exteriorly threaded, as at 2, to accommodate a coupling 3 secured to a flexible tube 4 which extends to a cotton collecting bag, not shown.

The opposite or forward end of the tube 1 is outwardly flared as at 5 and thence bent backwardly as at 6 and inwardly as at 7 to form an annular abutment for the base 9 of a cup-like coupling connection 10 externally threaded, as at 11, to receive a nozzle 12. The base 9 is cut out to surround tube 1 and provide crescent-shaped port 17 on one side, which communicates with the longitudinally extending passage-way 41. At the rear end of tube 1 is secured

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by welding, as at 21', an elliptical plate 21 which extends above the top of housing 20. Parallel to the plate 21 is positioned a second housing plate 22, which housing plate 22 is formed with a flange 26 which is joined to plate 21 and forms a continuation of the passage 41 transversely and around tube 1 to a control valve having a housing 27 set into suitable notches formed in the plates 21 and 22, this valve housing 27 being formed with a chamber 33 through which the valve stem 32 passes and housing a compression spring 34 arranged to contact a transverse abutment 35 formed on the valve stem 32 arranged to normally bias the valve 32' into closed relationship to the valve seat 36. A coupling 37 connects a flexible tube 38 which extends to a suitable source of compressed air adapted to supply to the tool a stream of compressed air, indicated generally by the arrows marked A. Valve stem 32 is controlled by a valve control handle H which is formed with a cam face 31, one end of this lever being pivoted on an upstanding ear 29 formed on the valve housing 27, as by pin 30. The valve handle H, it will be observed, extends parallel with the tubular housing member 1 and closely adjacent thereto, intermediate the forwardly positioned nozzle 12 and the rearwardly positioned valve 27, so that the operator's hand grasping the tool will include the handle H and by compression can regulate the supply of compressed air supplied to the tool.

At the forward end of the tool the nozzle 12 is formed with an inwardly turned tubular extension 14 extending rearwardly and having its inner end contracted into a tapering conical portion 15 which terminates in the restricted port 16 positioned centrally of the tube 1, the inwardly tapered portion 15 of the tubular part 14 extending substantially parallel to the outwardly tapering portion 5 of the tube 1 and forming a conical annular passage, herein identified as 43. The nozzle 12, by reason of the structure thus described, provides an annular chamber 42 for the compressed air, which as will be apparent, is supplied to it through the passage-way 41, the crescent-shaped port 17, and the annular passage 8 provided between the rearwardly directed portion 6 of the tube 1 and the flange 10 of the housing plate 9 upon which the nozzle is threaded.

The operation of this improved tool will be readily apparent, the operator grasping it with one hand surrounding the handle H and the superposed tubes 1 and 20, and by opening valve

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32' permitting a supply of compressed air to pass from the tubular conduit 38 through the valve, around tube 1, through the chamber 25 at the rear end of the device, thence forwardly as indicated by the arrows A into the nozzle from which this compressed air is directed rearwardly through the conical passage 43 into the tube 1, thus inducing through the nozzle a suction introducing the cotton fibers and forcing the same rearwardly through tube 1, as indicated by the arrows B, and thence through the hose 4 to a cotton collecting bag.

Various changes in the particular details of construction will readily suggest themselves to those skilled in the art, but within the scope of the present invention as claimed.

Having thus fully described my invention, I claim:

1. A cotton picker comprising, a housing divided longitudinally into a tube and a crescent-shaped passage, the tube and passage lying parallel to one another, means coupled to one end of said tube to receive picked cotton from said tube, means to supply compressed air to the same end of said passage, the opposite end of said tube being flared, a nozzle connected to said housing adjacent the flared end of said tube, a cylindrical part on said nozzle directed inwardly and having its inward end tapered to form a restricted throat, said cylindrical part posi-

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tioned with its tapered end within and spaced from the flared end of said tube whereby a conical annular passage communicating with said tube is formed between the tapered end of the cylindrical part of the nozzle and the flared end of the tube, said nozzle having a chamber surrounding said cylindrical part and having a port communicating with said crescent-shaped passage whereby compressed air from said crescent-shaped passage may enter said chamber and be directed rearwardly into said tube through said conical annular passage.

2. In a cotton picker as claimed in claim 1, a valve to control the flow of compressed air into said crescent-shaped passage, said valve having an operating handle positioned adjacent said housing whereby the housing and handle may be simultaneously gripped.

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