June 27, 1967 O. JOHNSTON 3,328,066

PICKUP DEVICE FOR TRASH

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Fig. 1

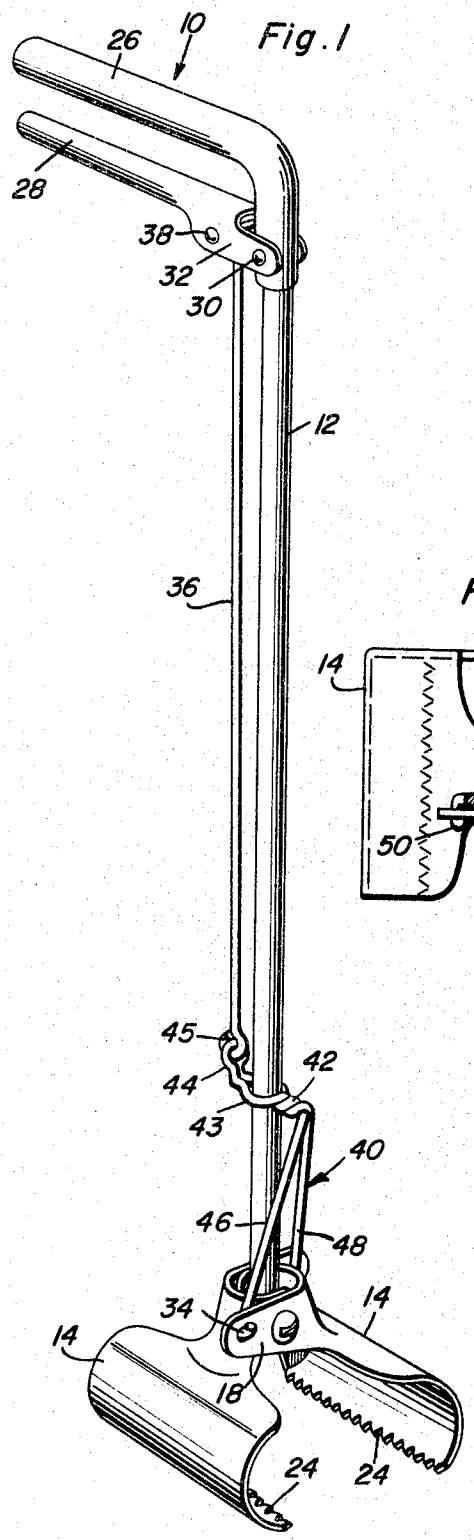


Fig. 2

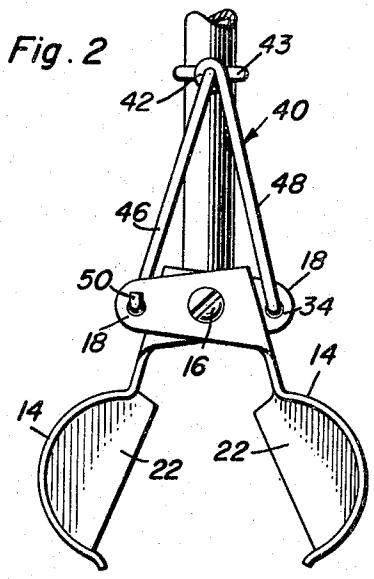


Fig. 3

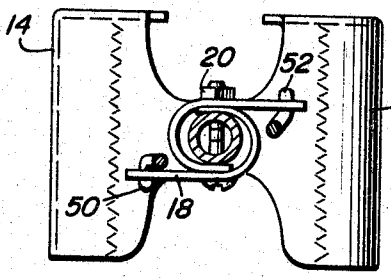
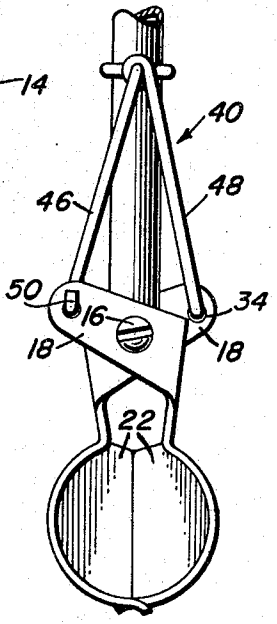


Fig. 4



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PICKUP DEVICE FOR TRASH

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The present invention relates to new and useful improvements in devices for picking up trash, refuse, and the like.

An important object of the invention is to provide a tool constructed with an elongated cane-like shaft having jaws on the end thereof which jaws may be operated to and away from each other by manipulating a lever provided near the handle end of the shaft. The jaws are formed with plates thereon and are constructed in a semi-cylindrical shape so that the plates will abut one against the other when the jaws are closed, to thereby form a pocket which can be tilted with the handle to a horizontal position and still retain small objects within the pocket, which have been picked up from the surface by the jaws.

A further object of this invention is to provide serrated edges on the jaws, or blades, which edges are curved outwardly from the jaws to provide means which will make contact with the surface having refuse or trash thereon to thereby make the jaws more capable of picking up small objects from hard and smooth surfaces.

A still further object is to provide a tool of simple and practical construction which has jaws with resilient levers thereon, the jaws and levers being pivotally jointed together about a a common pivot pin provided therefor on the shaft and in a manner to provide an efficient, durable and simplified construction.

Another object of the invention is to provide a tool for picking up trash from a surface, which has a sliding spring thereon for operating a pair of opposing jaws on the end of the tool, which spring is self-retaining and requires no guide or special pull rod to operate the spring.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 is a perspective view of the tool in accordance with this invention for picking up trash from a surface;

FIGURE 2 is an end view of the tool of this invention with the shaft thereof partly broken away, and looking into the open jaws, and the plates attached to the jaws, with the jaws being disposed in a normally open position;

FIGURE 3 is a top view of the tool of this invention looking down on the jaws, which are in a normally open position, and showing the springs and shaft thereof being cut away in a cross sectional view; and

FIGURE 4 is an end view of this invention similar to FIGURE 2 but showing the jaws closed by the spring means to a position for lifting trash therein, and showing the plates on the jaws in abutting relationship.

Referring more in detail to the drawings, the tool **10** includes an elongated shaft **12** which has a pair of jaws **14** connected at one end thereof by a bolt **16** which extends through levers **18** provided on the jaws and through the elongated shaft **12**, to thereby mount the jaws to the shaft. A nut **20** is threaded to one end of the bolt **16** to prevent the bolt from withdrawing from the jaws and shaft. The bolt **16** provides a pivot means about which the jaws and the levers **18** provided on the jaws may rotate to and away from each other. The jaws **14** are formed in substantially semi-cylinrdical shape and have lateral coplanar closing plates **22** connected thereto at the ends thereof which plates are adapted to abut one against the other when the jaws are closed (FIG. 4) to thereby provide a

pocket within the jaws which can be used to lift small articles of trash, when the shaft is raised to a horizontal position. The jaws have serrated teeth **24** at the ends thereof, which serrated teeth are bent outwardly from the semi-cylindrical jaws to thereby form a means which is adapted to picking up trash from smooth or hard surfaces.

Connected to the other end of the shaft **12** is a handle **26**. A trip lever **28** is connected to the handle by a pin **30** which extends through yoke arms **32** on the lever **28** and extends through an aperture provided therefor in the handle **26**, and in the shaft **12**. The pin **30** may be riveted on each end thereof to prevent accidental withdrawal of the pin **30** from its position in the lever, handle, and shaft. The levers **18** on the jaws have apertures **34** provided therein. An elongated rod **36** is connected at one end (upper end) to the lever **28** by a pin **38** and is connected at its other end to a resilient self-retaining spring **40** by an eye loop **45**. The resilient spring **40** has a coat hanger twist **42** at one end thereof and a shaft loop **43** intermediate its ends and which extends about the shaft **12** and extends into a vertical rod loop **44** which is engaged by the eye loop **45** on the rod **36**, whereby the resilient spring **40** is connected to the trip lever **28**. The other end of the resilient spring **40** extends as two arms **46** and **48** from the coat hanger twist **42** and terminate as two hooks **50** and **52**. The hooks **50** and **52** are inserted into the apertures **34** provided in the lever arms **18** of the jaws **14**. The hooks are forced into their engaging position with the apertures **34** on levers **18**, whereby the spring will tend to assume a natural expanded position, with spring tensioned arms **46** and **48** spread beyond the position which they can assume while retained in the apertures **34** of the lever arms **18** thereby automatically biasing the jaws toward their open position.

The jaws **14** together with the lever arms **18** are substantially the same in configuration but are positioned on the shaft in opposing positions so that the lever arms **18** for each jaw will be found on opposite sides of the shaft **12**.

The operation of the tool for picking up trash is performed by manipulating the lever **28** on the handle **26**. An operator using the tool, and desiring to pick trash up from a flat surface, will place the open jaws of the tool about the article or articles to be picked up, and then the operator will squeeze the lever **28** towards the handle **26**, the lever **28** pivoting about the rivet pin **30**. This operation will lift the rod **36** towards the handle **26**, and also lift the resilient spring **40** towards the handle **26**, thereby raising the levers **18** on the clamping jaws **14**. When the levers **18** are raised, in such a manner, the jaws **14** will be clamped shut in the position shown in FIGURE 4, with the plates **22** thereof abutting one against the other to form a pocket in which the trash may be lifted with the shaft **12** of the tool to a horizontal position without fear that the trash will fall from the jaws **14**. When the lever **28** is released, the resilient spring **40** will attempt to resume an unrestricted position with the arms **46** and **48** thereof spread to a wide position beyond the position which the arms **46** and **48** can obtain while restricted within the apertures **34** in the lever arms **18** of the jaws **14**. As the spring arms **46** and **48** spread to a wider position the levers **18** will be spread apart to the maximum position which they can obtain which position will leave the lever arms in a substantially horizontal plane, or a plane containing both the apertures **34** in each lever arm **18**, and the rivet **16** about which the lever arms pivot. This position of the spring **40** with the spring arms **46** and **48** spread wide, and the lever arms **18** assuming a coplanar position, is illustrated in FIGURE 2. This movement of the lever arms will force the jaws **14** apart, opening the jaws and the pocket formed by the jaws when the jaws **14** are closed. This last-mentioned operation is

performed when it is desired to release the trash from within the pocket within the clamping jaws **14**. The operation of this simplified trash remover tool is simple and easy to use, when trash is desired to be lifted by using the tool the lever **28** is squeezed by the operator of the tool towards the handle **26**. When the trash is desired to be released from the tool the lever **28** is released so that it may assume a position away from the handle **26**, which is controlled by the resilient spring **40** sliding by the shaft loop **43** on the shaft **12**. As the arms **46** and **48** of the spring **40** resume a widespread position according to the limitations provided by the apertures **34** in the lever arms **18** of the clamping jaws, the jaws will be moved to a wide open position.

The spring means **40** constitutes and provides a unique one-piece unit wherein the loop **43** constitutes and provides a collar which is slidingly shiftable in a manner to assume the normal down position in FIG. 2 and the up or elevated position in FIG. 4. It will be noted too that the inherent resiliency of the downwardly and outwardly divergent arms or legs **46** and **48** of this unit provides the desired spring-loaded or resilient toggle joint, that is, a joint wherein the tongues or lever arms **18** coordinate with the two legs to achieve the unique toggle joint action disclosed in FIGS. 2 and 4.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A tool for picking up trash comprising, a shaft, a pair of clamping jaws situated at one end of said shaft, said jaws having resilient levers thereon, pivot means mounting said jaws on said one end of said shaft, said jaws having serrated ground engaging teeth thereon adapted to overlap when said jaws are clamped shut, said jaws being adapted to retain trash therebetween, an elongate resilient means connected to said shaft, said elongate resilient means being connected to said resilient levers on said jaws, said elongate resilient means being adapted to move said resilient levers to thereby close said clamping jaws, a handle means on the other end of said shaft, said elongate resilient means being connected to said handle means whereby said handle means is operable to move said clamping jaws to a closed position, said clamping jaws having plates on one end thereof, said plates being adapted to abut with one another when said jaws are clamped shut whereby trash picked up in said clamping jaws may be held in said jaws and against said plates when said shaft is raised to a horizontal position.

2. An implement for picking up and handling trash

comprising a vertically elongated shaft having upper and lower end portions, said upper end portion provided with a fixed handgrip, a rigid but manually squeezable trip lever opposed and adjacent to said handgrip and having one end pivotally mounted on said upper end portion, a pair of companion jaws situated adjacent the lower end portion of said shaft, said jaws having opposed upper edge portions provided with jaw actuating levers projecting laterally therefrom, one lever directed to the left of the lower end portion of said shaft and the other lever directed to the right of said lower end portion, the lower end portion of said shaft being interposed between and straddled by both of said levers and said levers being pivoted on said lower end portion, a link alongside said shaft having an upper end pivotally connected to said trip lever, and unitary spring means having a component part shiftably slidable on said shaft above said jaws, said means embodying integral constantly tensioned components which are pivotally operatively joined to free end portions of said levers, said levers in conjunction with said tensioned components constituting and providing a self-contained spring-loaded toggle joint which automatically functions to spread said jaws apart to assume a normal open ready-to-use position.

3. The implement according to claim **2**, and wherein said first-mentioned component part embodies a collar-like loop slidingly embracing said shaft, and said second-named components comprise a pair of like downwardly outwardly diverging springy arms having hooks at lower ends connected with apertures provided therefor in oriented free end portions of the respectively cooperable levers.

4. The implement according to claim **3**, and wherein said jaws are horizontally elongated and semi-circular in transverse section, are provided at like ends with co-acting lateral end-closing plates which abut each other when the jaws are closed to thus define an elongated cup-like holder, and also wherein the corresponding lower lengthwise edges of said jaws are provided with overlapping but outwardly flared rows of surface contacting small article pickup teeth.

References Cited

UNITED STATES PATENTS

66,492	7/1867	Hellen	294—118 X
283,598	8/1883	Gosnell	294—112 X
297,788	4/1884	Green	294—16
407,465	7/1889	Brick	294—118 X
1,168,919	1/1916	Surface	294—118 X
1,453,812	5/1923	Thomas	294—22
1,531,567	3/1925	Niblock	81—3.8
2,961,674	11/1960	Hunt	294—28 X
3,105,715	10/1963	Happ	294—19 X

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