United States Patent [19]

Boskus

[11] **3,854,205**

[45] **Dec. 17, 1974**

[54] **HOSE CUTTING DEVICE**

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[21] Appl. No.: **352,118**

[52] **U.S. Cl.** **30/231,** 248/37.6

[51] **Int. Cl.** **B26b 13/00**

[58] **Field of Search** 30/231, 290, 296; 248/12, 248/14, 37.3, 37.6; 83/574, 589, 597, 598, 601, 605, 651

[56] **References Cited**

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Attorney, Agent, or Firm—Richard J. Myers

[57] **ABSTRACT**

A hose cutting device adapted for cutting a hose into selected lengths consisting of shears having a pair of opposed cutting jaws pivotally connected together at a point rearwardly of the jaws for pivotal cutting type movement toward and away from each other, one of the jaws being stationarily mounted on a mounting bracket and projecting outwardly therefrom with the other jaw being movable relative to the stationary jaw by utilization of an elongated handle member operatively attached to the movable jaw, and the mounting bracket including a first horizontally extending base and a second vertically extending base providing for universal mounting of the mounting bracket in a secure manner to a horizontal supporting surface, such as a table, or to a vertical supporting surface, such as a wall, thus enabling an individual to cut a length of hose to a selected length by utilization of only one hand to operate the movable jaw member while freeing the other hand for use in positioning of the hose or whatever other action might be required.

6 Claims, 5 Drawing Figures

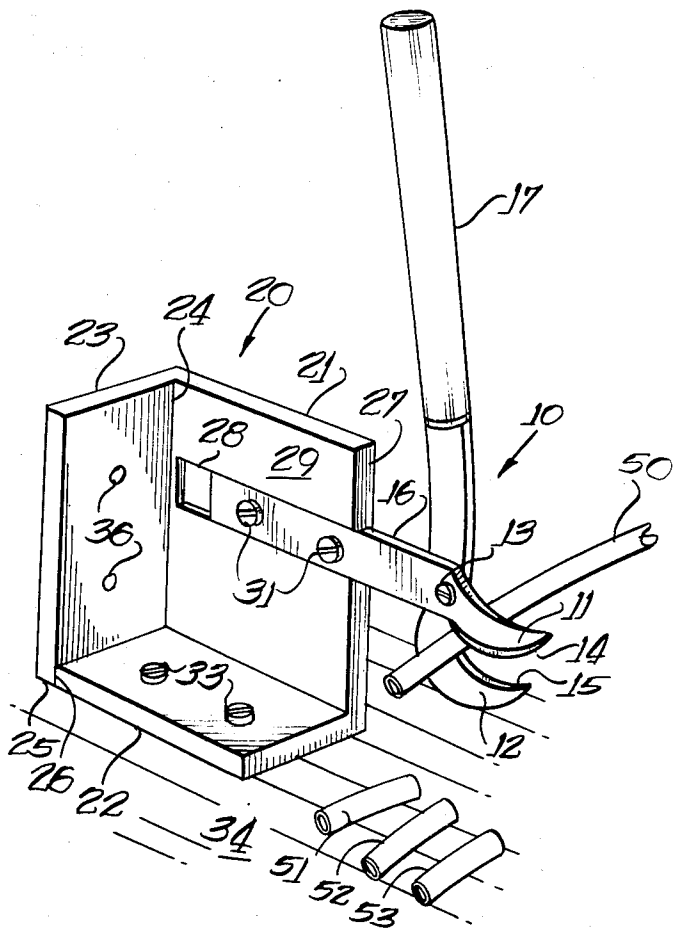


Fig. 1.

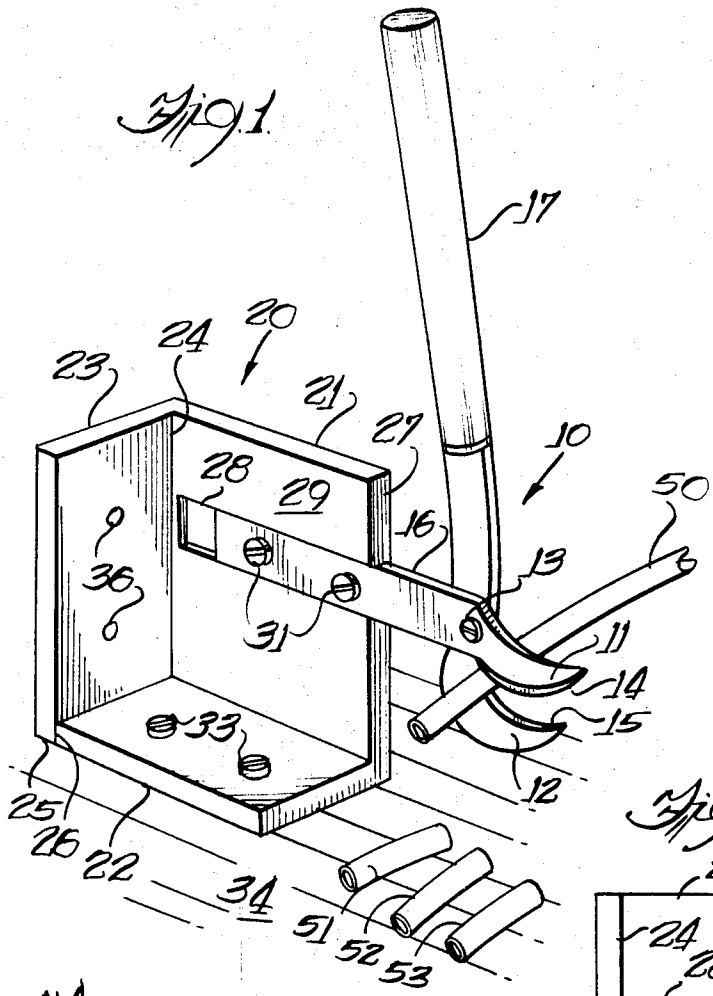


Fig. 2.

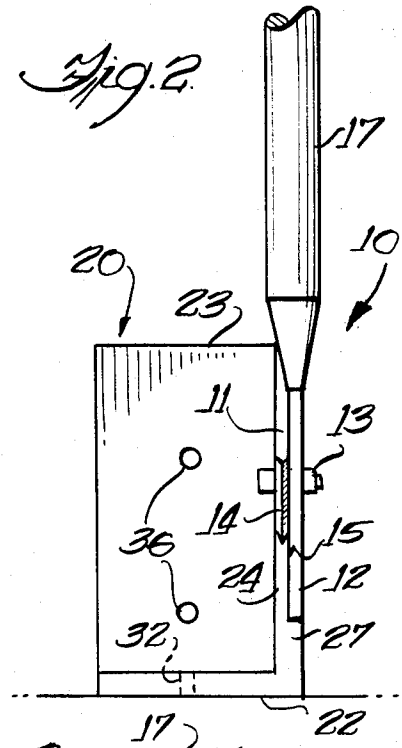


Fig. 3.

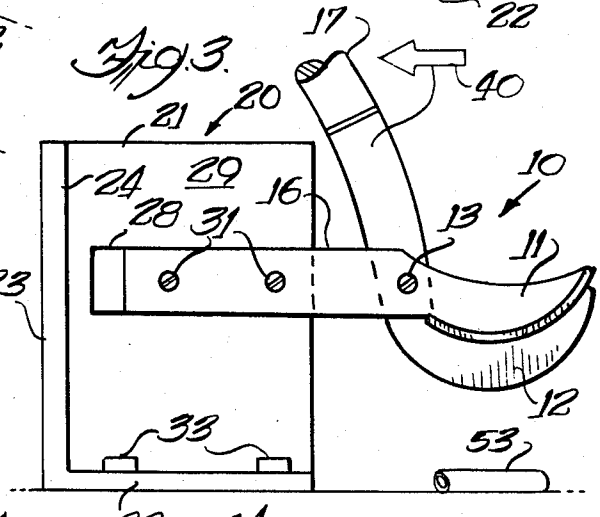


Fig. 4

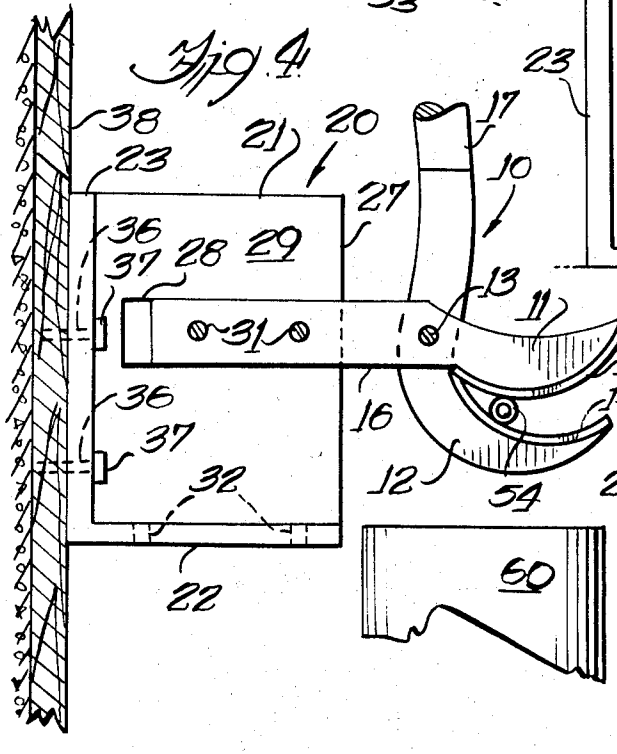
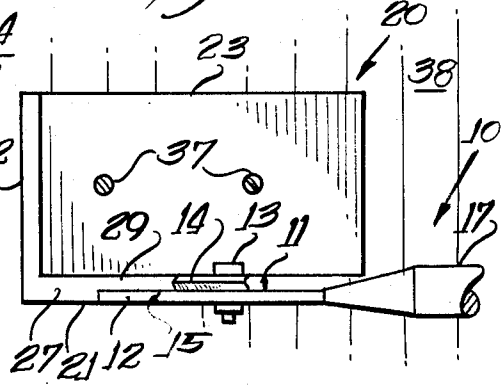


Fig. 5.



HOSE CUTTING DEVICE

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates generally to cutting apparatus and more particularly to a device for cutting or shearing flexible lengths of hoses and the like to desired selectable lengths.

2. Description of the Prior Art

A number of industries and repair service facilities, such as gas stations, air conditioning repair shops, hose manufacturers, and the like frequently encounter the need for cutting hose to a variety of lengths, and this cutting process often proves to be both difficult and time consuming in that the cutting of hose with a conventional type of shears requires that both hands be utilized to operate the shears thus requiring some method for securing the hose temporarily during the cutting process. It normally requires some type of temporary clamping arrangement for securing the hose which, being flexible, may result in unwanted damage thereto such that special clamps and holding devices must be utilized, and further, such clamps and holding devices must be properly sized for the size and diameter of the tubing or hose to be cut.

In the past, cutting knives have occasionally been utilized for cutting lengths of hose, but this provides a generally inconvenient and cumbersome cutting procedure considering that the knife is frequently misplaced, and even when the knife is retained in a known location by being attached to a cord or the like, it still requires a dangerous and hazardous cutting procedure for cutting the hose in view of the risk of the knife blade encountering a portion of an individual's body inflicting injury thereto.

It would thus be desirable to provide an improved hose cutting device readily mountable in a variety of locations and permitting ease of operation for readily cutting various types and lengths of hoses to desired lengths.

SUMMARY OF THE INVENTION

The present invention is designed to overcome the above-noted limitations that are attendant upon the cutting of flexible tubes and hoses to desired lengths by providing a novel hose cutting device that may be mounted to any convenient horizontal or vertical supporting surface in a manner permitting an individual to cut a length of hose by utilization of only one hand thus freeing the individual's other hand for the positioning of the hose or whatever other task might be required in the cutting of the hose.

It is a feature of the present invention to provide a hose cutting device adapted for secure mounting to any convenient horizontal or vertical support surface, such as a table or a wall, and which would enable an individual to accurately cut a hose to a desired length in a minimum of time and with a great amount of convenience in the handling of the hose and cutting device.

A further feature of the present invention provides a hose cutting device in combination with a novel support mounting bracket that facilitates the manipulation of the cutting device at a job site in shearing or cutting hosing and the like to desired lengths.

Still a further feature of the invention is the provision of a novel hose cutting device incorporating a mounting bracket which not only supports the cutting device but which also assures that the cutting jaws in their movement to and from the work being cut are always exactly at the same angle with canting of the jaws being prevented.

Yet still a further feature of the present invention provides a novel hose cutting device wherein the cutting elements may be readily removed for sharpening and replacement without affecting the securement of the mounting bracket to the supporting surface.

The provisions of a novel hose cutting device, such as briefly outlined above, and possessing the stated advantages, constitutes the principal features of the present invention. The provision of a hose cutting device which is simple in its construction and which therefore may be manufactured at a low cost and by simple manufacturing methods; one which is rugged and durable and which therefore may be guaranteed by the manufacturer to withstand rough usage; one which may be mounted to almost any available mounting surface, whether horizontal, vertical, or inclined and assure accurate operation of the cutting device; and one which, otherwise, is well adapted to perform the services required of it, are further desirable features which have been borne in mind in the production and development of the present invention.

Other features and advantages of this invention will be apparent during the course of the following description.

BRIEF DESCRIPTION OF THE DRAWINGS

In the accompanying drawings forming a part of this specification, and in which like reference characters are employed to designate like parts throughout the same:

FIG. **1** is a perspective view illustrating the cutting device of the present invention mounted to a horizontal supporting surface;

FIG. **2** is the side elevational view of the cutting device of FIG. **1**;

FIG. **3** is a front elevational view of the cutting device of FIG. **1** illustrating the cutting blades in the closed position;

FIG. **4** is a front elevational view of the cutting device of FIG. **1** illustrated as mounted to a vertical supporting wall surface and having a container disposed beneath the cutting blades for receiving the cut lengths of tubing therein; and

FIG. **5** is a side elevational view of a cutting device mounted to a vertical wall supporting surface with the cutting blades being disposed in a plane taken normal to the supporting wall in a manner to cut lengths of hosing inserted vertically between the cutting blades.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now to the drawings in detail and in particular to FIGS. **1** to **3** inclusive, reference numeral **10** generally designates a pair of shears including opposed cutting jaws **11** and **12** that are movable to and from each other by being pivotally connected thereto by pivot pin **13** connected therebetween at a point just rearwardly of the cutting jaws. The jaws **11** and **12** each extend rearwardly from their respective cutting edges **14** and **15**, the upper jaw **11** having a short elongated shaft **16** projecting rearwardly therefrom, and the lower jaw **12** being connected to an elongated hand operated lever **17** utilized for operation of the cutting device **10**. The blades **14** and **15** have been illustrated as

being arcuately shaped in a semi-circular manner and are preferably manufactured of tempered cutlery steel permitting ease of sharpening and maintenance of the blades. However, other blade shapes and designs may be supplied, such as the blades being of substantially parallel scissor type blades, and the like, all being envisioned within the scope of the present invention.

For utilization in mounting the shears **10** there is provided a mounting bracket generally designated by reference numeral **20** which includes a vertically extending substantially flat support member **21**, a horizontal mounting base member **22** having one edge connected to support member **21** and projecting horizontally outwardly therefrom in a manner perpendicular thereto, and a vertical base member **23** extending outwardly from back edge **24** of support member **21** in the same direction as horizontal base member **22** in a manner perpendicular both to the plane of the support member **21** and perpendicular to the plane of the horizontal base member **22**, the bottom edge portion **25** of the vertical base member **23** being secured to the back edge **26** of the horizontal base member **22.** A horizontally extending slot **28** is provided in the innermost face surface **29** of support member **21** and extends horizontally therealong from the front edge portion **27** rearwardly toward the back edge portion **24** a distance sufficient to receive therein the shank **16** of upper jaw member **11** of shears **10**, the shank **16** provided with a pair of longitudinally spaced openings therethrough adapted for alignment with a similar pair of openings (not shown) provided in slot **28** extending through support member **21** in a manner permitting a pair of bolts **31** to pass through respective aligned apertures and be secured therein by nuts (not shown) threadedly received on the outermost ends of such bolts and tightened to engage the outer face surface of the support member **21** thereby securing the shears **10** to the mounting bracket **20.**

Further, the horizontal base member is provided with a pair of spaced apertures **32** extending vertically therethrough and adapted for receiving therein bolts or screws **33** for securing the mounting bracket **20** to a horizontal support surface **34.** Similarly, the vertical base member **23** is provided with a pair of vertically spaced apertures **36** extending therethrough and adapted for receiving therein bolts or screws **37** (FIG. **4**) in a manner securing the mounting bracket **20** to a vertical support surface, such as a wall **38.**

The slot **28** is provided in support member **21** a sufficient distance above horizontal base member **22** so as to provide sufficient clearance between the lower jaw **12** and the horizontal mounting surface **34** such that the lower jaw may be operated in a back and forth manner relative to stationary jaw **11** without any interference with the mounting surface **34.** Further, it is understood that shank **16** is of a sufficient length such that pivot point **13** projects forwardly of front edge **27** of support member **21** to assure no interference between the support member **21** and the operation of handle **17.**

The shears **10** is manipulated in a known manner, as by moving the operating handle **17** in the direction of arrow **40** (FIG. **3**) to force the movable cutting jaw **12** upwardly against stationary cutting jaw **11** in a manner to sever a hose **50** inserted therebetween, after which the operating handle **17** is moved in a direction opposite to arrow **40** to move the jaw **12** away from stationary jaw **11** to permit a new section of hose **50** to be inserted therebetween, after which the cutting operation is repeated thereby providing a series of different hose lengths **51–53.** The mounting bracket **20** providing a secure fixed support for the stationary jaw **11** thereby permitting operation of shears **10** with a single hand such that the shear operator may utilize the other hand for guidance of the hose **50** or for any other purpose associated with cutting the hose to make the cutting process convenient and simple in operation.

As seen in FIG. **4**, mounting bracket **20** is secured to a vertical wall surface **38** with a container **60** being shown disposed beneath the shears **10** for receiving therein a plurality of hose sections **54** as they are cut to size by operation of the shears. The use of container **60** conveniently illustrates one of the numerous possibilities available to users of the hose cutting device of the present invention in making the job of hose cutting a simple and pleasant work experience as to its adaptability for cutting hoses of various thicknesses, diameters and lengths into desired lengths which may be readily caught in a suitable container rather than having to pick up the individual lengths from the floor or supporting surface after the cutting process has been completed.

Referring to FIG. **5**, yet a further illustrative manner of mounting the mounting bracket **20** to a vertical supporting surface **38** is illustrated which, referring to FIG. **4**, is similar to FIG. **4** except that the entire mounting bracket **20** and shears **10** have been rotated about a 90° angle to place support member **21** in a horizontal position with horizontal base member **22** being placed in a vertical position such that pivot pin **13** assumes a vertical orientation with the operation of the shears **10** being as aforedescribed except now set up for cutting tubing that is inserted vertically between the jaws **11** and **12.**

It is, accordingly, apparent that the present invention provides a hose cutting device including a mounting bracket and cutting shears which will enable an individual to cut hosing of various lengths, diameters and wall thickness in a comparatively easy manner utilizing only a single hand to accomplish the cutting operation, the device being universally mountable in any of a great variety of possible mounting positions providing complete adaptability of the hose cutting device for a great variety of hose cutting situations.

It is to be understood that the form of this invention herewith shown and described is to be taken as preferred examples of the same, and that this invention is not to be limited to the exact arrangement of parts shown in the accompanying drawings or described in this specification as various changes in the details of construction as to shape, size, and arrangement of parts may be resorted to without departing from the spirit of the invention, the scope of the novel concepts thereof, or the scope of the sub-joined claims.

Having thus described the invention, what is claimed is:

1. A hose cutting device adapted for use in cutting hoses of various lengths and diameters into selected lengths comprising:

a shears having a pair of opposed cutting jaws pivotally connected together at a point rearwardly of the jaws for pivotal substantially parallel cutting type movement toward and away from each other;

a mounting bracket including a support member adapted for supporting one of the cutting jaws in a stationary manner;

a handle member attached to the other cutting jaw for operation thereof in a movable manner relative to the stationary cutting jaw;

means securing the stationary cutting jaw to the support member of the mounting bracket;

means adapted for securing the mounting bracket to a supporting surface;

a substantially flat shaped vertically disposed stationary jaw support member having a top edge, a bottom edge, a front edge, and a back edge;

a first substantially flat mounting base having a side edge connected to the bottom edge of the support member and projecting substantially perpendicularly outwardly therefrom in a horizontal plane, the first mounting base member including a front edge, a back edge, and an outermost projecting side edge;

a second substantially flat mounting base member having a side edge connected to the back edge of the support member with a bottom edge connected to the back edge of the first mounting base member and projecting vertically in a plane normal to both the plane of the support member and the plane of the first mounting base member;

a slot provided in the support member extending from the front edge of the support member and disposed substantially normal to the plane of the front edge of the support member, the slot adapted to receive therein a portion of the stationary jaw member in a manner fixedly supporting the stationary jaw member projecting forwardly of the front edge of the support member; and

the combination of the two mounting base members providing a universal type of mounting bracket for the support member with the first mounting base member adapted for mounting generally to a horizontal support surface and with the second mounting base member adapted for mounting generally to a vertical support surface such that the shears may be positioned in any desired location for convenient hose cutting.

2. A hose cutting device as claimed in claim **1** further characterized by the stationary jaw comprising a support shaft member having one end portion adapted to be received in the slot provided in the support member with the opposite end projecting outwardly from the support member and merging with the rearward end portion of the stationary cutting jaw; the cutting jaw projecting outwardy from the shaft and having a cutting blade surface extending along one side thereof adapted for wiping type cutting action with the blade portion disposed on the movable cutting jaw; the end portion of the shaft associated with the support member having spaced apart apertures provided therethrough adapted for alignment with similarly provided apertures in the slotted support member; and fastening bolts adapted for passage through the apertures in the shaft and the apertures in the support member and adapted to be secured therein by nuts secured on the threaded ends thereof in a manner to securely fix the shaft and associated stationary cutting jaw to the supporting member.

3. A hose cutting device as claimed in claim **1** further characterized by the movable cutting jaw comprising a shaft having a handle portion attached to one end thereof adapted for grasping by an individual's hand with the opposite end of the shaft connected to the rearward end of the movable cutting jaw; the movable cutting jaw including a blade portion along one side thereof opposed to the blade portion of the stationary cutting jaw and adapted for operation therewith in a manner to sever a hose placed between the movable and stationary cutting jaws; and the movable cutting jaw and handle portion being secured in a pivotal manner to the stationary cutting jaw and stationary shaft portion by a pivot pin extending normal to the plane of operation of the movable cutting jaw.

4. A hose cutting device an claimed in claim **1** further characterized by the blade of the stationary cutting jaw being convexly arcuately formed in a semi-circular shape with the blade of the movable cutting jaw being concavely formed in an arcuate shape complementary to the stationary cutting jaw blade providing a smooth scissor type severing action therebetween as the movable blade is moved toward and away from the stationary blade in operation of the cutting shears.

5. A hose cutting device as claimed in claim **1** further characterized by the supporting member and the two mounting base members being formed of an integral single piece of material with the first base member being bent up to perpendicularly project relative to the support member and the second base member being bent in the same direction as the first base member to perpendicularly project from the support member and being perpendicularly disposed relative to the first base member, the abutting portion of the first and second base members then being suitably connected together to provide a rigid unitary mounting bracket.

6. A hose cutting device as claimed in claim **1** further characterized by the means adapted to secure the mounting bracket to a support surface comprising suitably threaded screws or bolts adapted for engagement through mounting holes provided in the base members for securing the particular base member to the desired supporting surface.

* * * * *

UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

Patent No. 3,854,205 Dated December 17, 1974

Inventor(s) Charles W. Boskus

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

On the Cover Sheet, in item [76], the last name of inventor "Baskus" should read -- Boskus --.

Signed and sealed this 1st day of April 1975.

(SEAL)
Attest:

RUTH C. MASON
Attesting Officer

C. MARSHALL DANN
Commissioner of Patents
and Trademarks

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