Aug. 7, 1962 J. W. DUCKETT 3,048,139

BOAT HOOK AND DOCKER

Filed Feb. 28, 1961 2 Sheets-Sheet 1

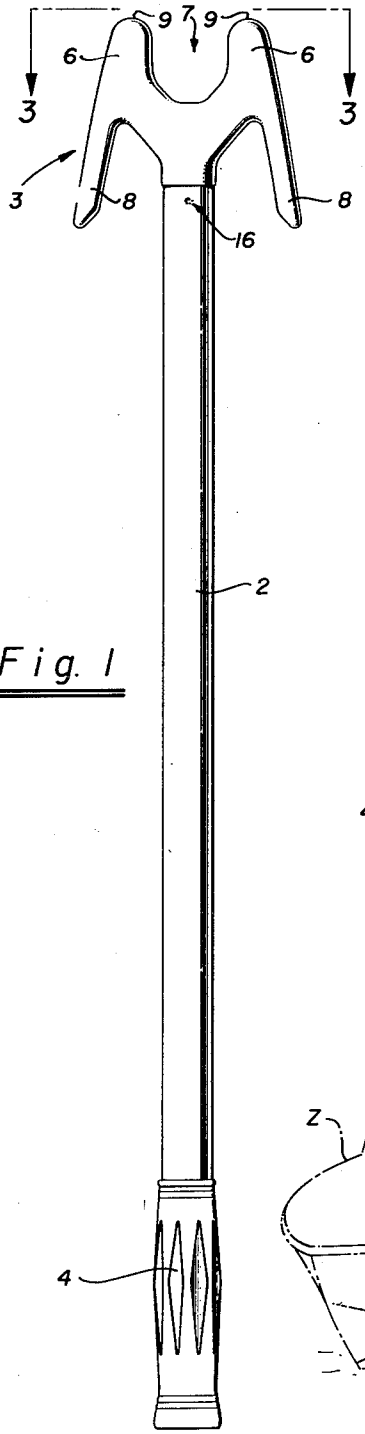


Fig. 1

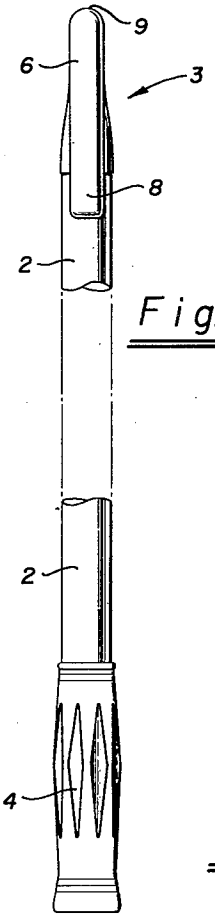


Fig. 2

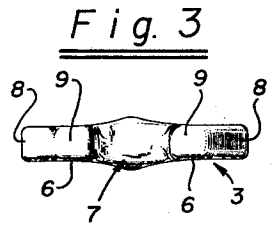


Fig. 3

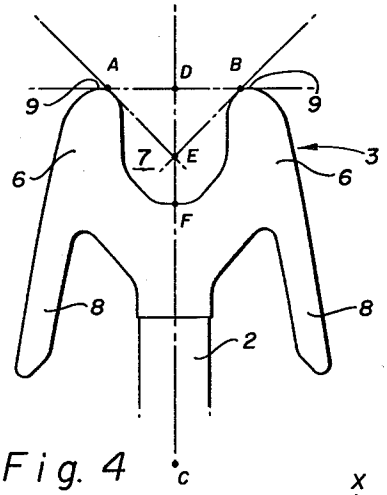


Fig. 4

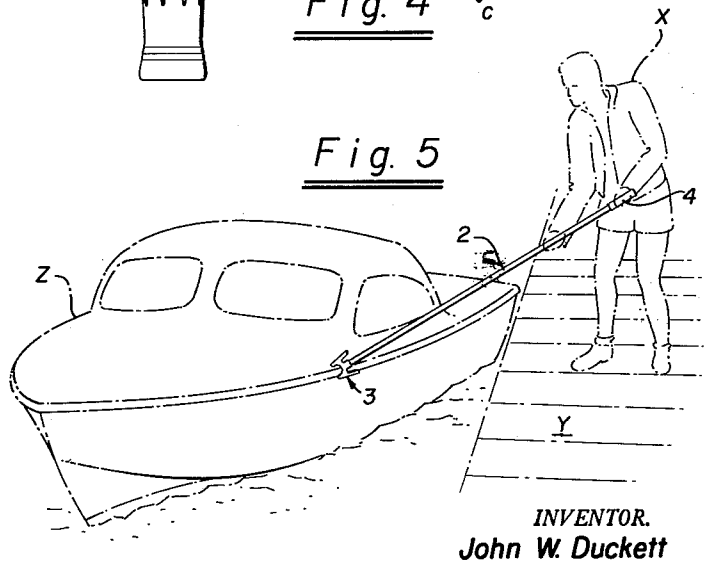


Fig. 5

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BOAT HOOK AND DOCKER

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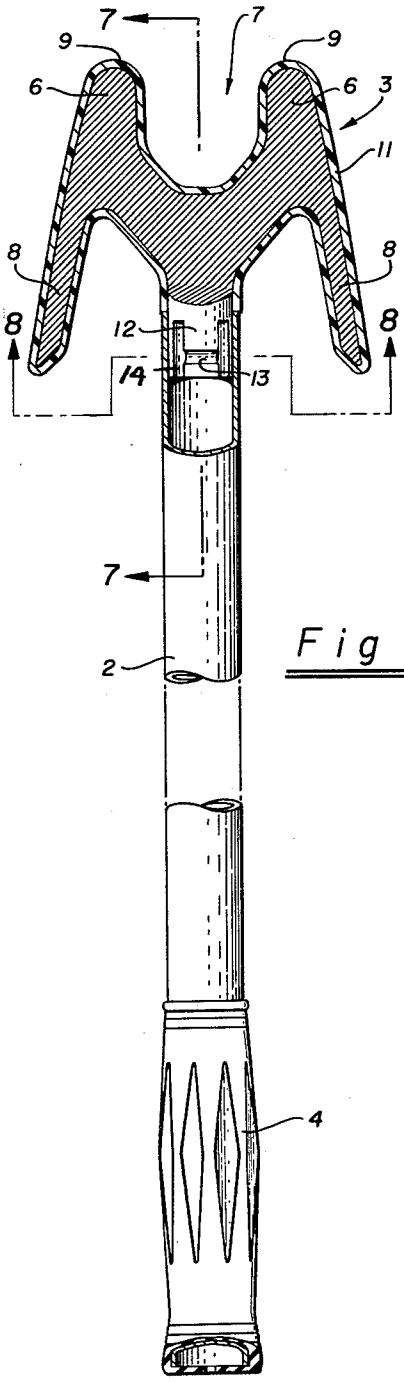


Fig 6

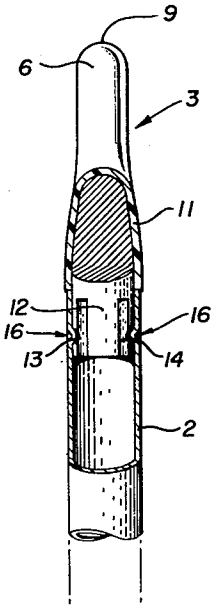
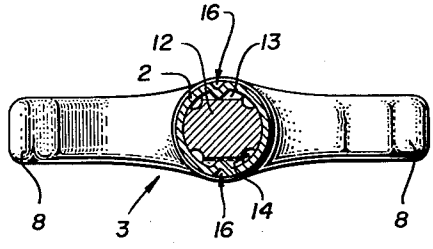


Fig. 7

Fig. 8



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BOAT HOOK AND DOCKER

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The invention relates to a novel boat hook which is designed for pushing a boat away from another object such as a dock, and more particularly to a boat hook which has spaced prongs defining a yoke opening outwardly from the shaft as well as a hook opening in an inward direction along the shaft.

Conventional boat hooks have a single sharp point extending outwardly along the axis of the shaft and a hook opening inwardly along the shaft. Although the hook serves its purpose for picking up mooring lines and for holding a boat from drifting away from a dock or other object, the single sharp point of the boat hook is not satisfactory for pushing a boat away from an object. The single point of the conventional boat hook either tends to slip on the surface which it engages when the pushing force overcomes frictional resistance, or else the point digs into and damages the surface of the dock or the boat. Furthermore, the use of a single pointed boat hook for pushing is actually dangerous to the user, since the user tends to fall forwardly when the single point slips on the surface against which the thrust is being applied. Although such boat hooks have been used for hundreds of years, no effective improvement in the single point used for pushing has bee devised.

In accordance with the present invention the foregoing disadvantages of conventional boat hooks are overcome by the provision of a boat hook which has spaced prongs opening outwardly to define a yoke at the end of the boat hook. In addition the hook has at least one other prong defining a conventional hook which opens in an inward direction along the shaft. This improved boat hook and docker with its spaced surface engaging prongs assures positive gripping on angularly disposed surfaces such as found on floats, docks, and circular pilings. It can be seen that when the yoke opening or cavity is placed to encompass the apex of angularly disposed surfaces, the grip of the prongs on the surfaces is not dependent upon friction, as is the case with conventional boat hooks. If one prong of the hook hereof should slip on one angularly disposed surface, the other prong will urge against the other surface and prevent further slipping.

In the drawings:

FIG. 1 is a front elevation of the boat hook.

FIG. 2 is a side elevation of the boat hook with a portion of the shaft broken away.

FIG. 3 is an end elevation of the head of the boat hook taken in a direction indicated by 3—3 in FIG. 1.

FIG. 4 is a schematic outline of the head of the boat hook with some pertinent geometrical relationships being shown in broken lines.

FIG. 5 is a perspective view illustrating the manner in which the boat book is used for pushing a boat away from a dock.

FIG. 6 is a front view of the boat hook partly in elevation and partly in section, with the head and adjacent end of the shaft shown in section to show the manner in which the head of the boat hook is secured to the shaft.

FIG. 7 is a sectional view through the head and adjacent end of the shaft taken along a line indicated by line 7—7 of FIG. 6.

FIG. 8 is a sectional view taken along a line indicated by line 8—8 in FIG. 6 and illustrating the manner in which the head is secured to the shaft.

In greater detail, the boat hook hereof has a shaft 2

and a head 3 secured to an outer end of the shaft. The other end of shaft 2 is conveniently fitted with a handle grip 4 to prevent the user's hands from slipping on the shaft.

Head 3 of the shaft has spaced prongs 6 which define a yoke cavity 7 opening in an outward direction from the shaft and in the same general direction as the axis of the shaft. Other prongs 8 extend in an inward direction along said shaft to define hooks opening along said shaft. Surface engaging tips 9 of prongs 6 are spaced to engage both sides of an angled object with the apex of the angle fitting within the yoke opening as best illustrated in FIG. 5. Prongs 6 which define the yoke cavity 7 and prongs 8 which define hooks advantageously lie in the same plane so that there will be no projecting parts over which a person might trip when the boat hook is placed down upon a dock or deck of a boat.

The axis of the shaft 2 advantageously bisects the yoke opening 7 between spaced prongs 6 so that the user is able to transmit maximum thrust in a direction along the axis of the shaft 2 to the surface engaging prongs 6. This arrangement together with the symmetrical arrangement of prongs 8 about the axis of shaft 2 provides a well balanced easily handled boat hook. However, the axis of shaft 2 may be displaced to one side of a line bisecting yoke opening 7 as long as the distance between the axis of the shaft and the bisector of the yoke opening is not so great as to cause a substantial moment when thrust is exerted in a direction along the axis of the shaft.

For most efficient results and performance, the yoke opening or cavity 7 defined by spaced prongs 6 should have certain geometrical characteristics. As best illustrated in FIG. 4, the configuration of the yoke and the yoke cavity 7 should be such as to permit the cavity to accept a right angle AEB while the surface engaging tips 9 of spaced prongs 6 engage the sides of the right angle without contact between the yoke and the apex E of the right angle. Preferably the line AB uniting the points of contact of said surface engaging tips should extend inwardly in cavity 7 a distance DF at least about one-third greater than the distance DE from AB to apex E of the angle. This insures that the cavity of the yoke will accept angles which are acute as well as right angles, and yet the separated surface engaging ends 9 will still engage and thrust evenly upon the sides of the angled surface without interference from or contact with the apex of the angle. This feature is extremely important since it provides for thrust on either side of the angled object and minimizes the danger of the hook slipping.

The prongs 6 and cavity 7 are also designed to provide a firm grip on the angled object when the axis CF of shaft 2 is at an angle to the bisector DE of the angled surface. This feature is most desirable since it is not always possible to hold the boat hook at a specific angle when pushing against an object since the angled corner against which the thrust is exerted may be higher or lower than the user of the boat hook. In order to permit the thrust to be applied along an axis which is not parallel to the bisector of the angle against which the user of the hook is pushing, the yoke cavity 7 should have a generally concave configuration on both sides which will at least accept the sides of a right angle without contact between the yoke and the apex of the right angle as long as the axis of the shaft of the hook is within thirty degrees on either side of a line which bisects a right angle. A right angle is used as the basis for the design of the yoke opening and cavity 7 since the user generally encounters angles that are close to right angles against which to push the boat hook. In other words the cavity is designed so that apex E does not

touch the inner surface of prongs 6 which define cavity 7 as long as the axis of the shaft FC is maintained within about thirty degrees on either side of an extension of the line DE which bisects the right angle.

In addition it is advantageous to have the line between the points of contact of surface engaging tips 9 lie substantially perpendicular to the axis of the shaft. In other words, AB should preferably be perpendicular to the line FC. If one of the prongs 6 extends outwardly further than the other prong, the outward prong tends to engage a surface first, and the head automatically tends to be offset to one side of the angled surface which it engages. Also, when one prong 6 is longer than the other, a thrust along the axis of the shaft tends to be transmitted primarily to the outwardly extending prong. This can readily cause slipping of an end 9, and obviate some of the desirable features of the two prong arrangement of the present invention. For practical purposes, the line AB extending between the points of contact of the outer tips 9 of prongs 6 may vary twenty degrees from the perpendicular to axis FC of the shaft, and the boat hook head will still retain desirable features of the two prong device.

The use of a two prong boat hook for thrusting is of great advantage when the momentum of a boat carries it toward a dock, or when the wind or tide urges a boat toward a dock. The two prong engagement hereof provides a firm positive grip either on the corner of the dock or on the corner of the boat. As illustrated in FIG. 5, a man X standing on dock Y may use the boat hook to thrust a boat Z away from the dock.

A preferred, but not essential, method of constructing the boat hook is shown in FIGS. 6, 7 and 8. Head 3 and particularly surface engaging tips 9 are desirably covered with a plastic rubbery coating 11 to protect the finest finishes which the boat hook may engage. Furthermore, surface engaging ends 9 are desirably rounded rather than pointed to aid in protecting fine finishes and to provide a substantial area of contact for good frictional resistance regardless of the angle of contact between tips 9 and the engaging surface. Shaft 2 is desirably of a hollow metal construction so the shaft 2 will be lightweight and yet have substantial strength. Head 3 may be made of cast metal, such as aluminum, which is cast into the desired geometrical configuration. Hollow shaft 2 and head 3 are readily secured by press-fitting the outer end of hollow shaft 2 over neck 12 of head 3. Grooves 13 in neck 12 of head 3 extend axially with respect to shaft 2, and grooves 14 in neck 12 extend transversely of the axis of shaft 2. Indentations 16 punched in the outer end of shaft 2 fit in grooves 13 and 14 to further secure head 3 against axial or radial movement on shaft 2.

I claim:

1. A boat hook and docking device which comprises a shaft and a head secured to an outer end of said shaft, said head having spaced outwardly extending prongs thereon ending in surface engaging tips and defining a yoke opening in an outward direction from said shaft and in the same general direction as the axis of said shaft, the configuration of said yoke being such as to accept a right angle while said surface engaging tips contact the sides of said right angle without contact between said yoke and the apex of said right angle as long as the angle between a line along the axis of said shaft and a line bisecting said right angle is between zero and about thirty degrees on either side of zero, and an inwardly extending prong on said head defining a hook opening in an inward direction along said shaft, the depth of said hook opening along a line parallel to the axis of said shaft being more than one-half the width of said opening taken along a line from the tip of said inwardly extending prong perpendicular to the axis of said shaft.

2. The boat hook and docking device as claimed in claim 1 in which said surface engaging tips are covered with a tough, rubbery plastic coating.

3. A boat hook and docking device which comprises a shaft and a head secured to an outer end of said shaft, said head having spaced outwardly extending prongs thereon ending in surface engaging tips and defining a yoke opening in an outward direction from said shaft and in the same general direction as the axis of said shaft, the configuration of said yoke being such as to accept in said opening a right angle while said surface engaging tips contact the sides of said right angle without contact between said yoke and the apex of said right angle as long as the angle between a line along the axis of said shaft and a line bisecting said right angle is between zero and about thirty degrees on either side of zero, the opening of said yoke extending inwardly from a line connecting the points of contact of said surface engaging tips with the sides of said right angle a distance at least one-third greater than the distance from said line to the apex of said right angle, and an inwardly extending prong on said head defining a hook opening in an inward direction along said shaft, the depth of said hook opening along a line parallel to the axis of said shaft being more than one-half the width of said opening taken along a line from the tip of said inwardly extending prong perpendicular to the axis of said shaft.

4. A boat hook and docking device which comprises a shaft and a head secured to an outer end of said shaft, said head having spaced prongs outwardly extending thereon ending in surface engaging tips and defining a yoke opening in an outward direction from said shaft and in the same general direction as the axis of said shaft, the configuration of said yoke being such as to accept a right angle while said surface engaging tips contact the sides of said angle without contact between said yoke and the apex of said right angle as long as the angle between a line along the axis of said shaft and a line bisecting said right angle is between zero and about thirty degrees on either side of zero, the angles formed by the intersection of a line between the points of contact of said surface engaging tips with the sides of said right angle and a line along the axis of said shaft being between about seventy and one hundred ten degrees, and an inwardly extending prong on said head defining a hook opening in an inward direction along said shaft, the depth of said hook opening along a line parallel to the axis of said shaft being more than one-half the width of said opening taken along a line from the tip of said inwardly extending prong perpendicular to the axis of said shaft.

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