(No Model.)

L. A. WALKER.

SNAP HOOK.

No. 559,640. Patented May 5, 1896.

Fig. 1.

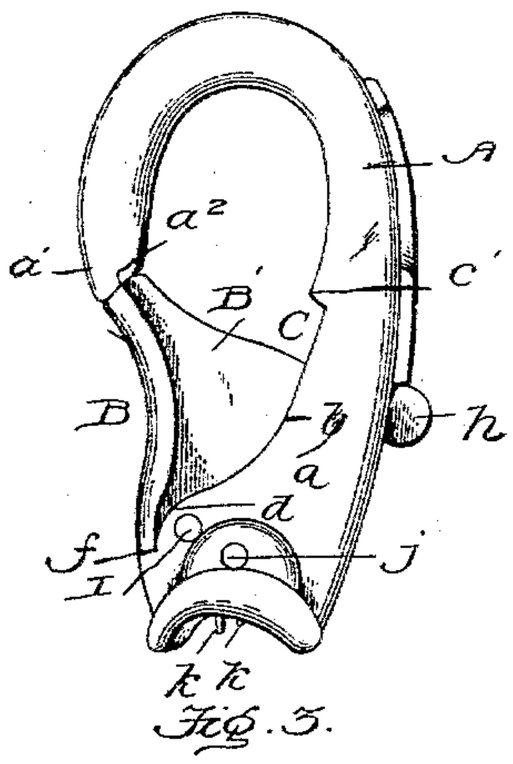


Fig. 3.

Fig. 2.

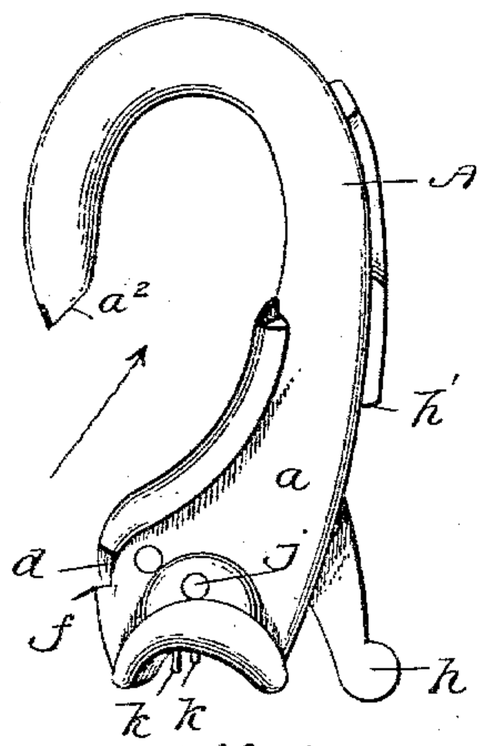


Fig. 4.

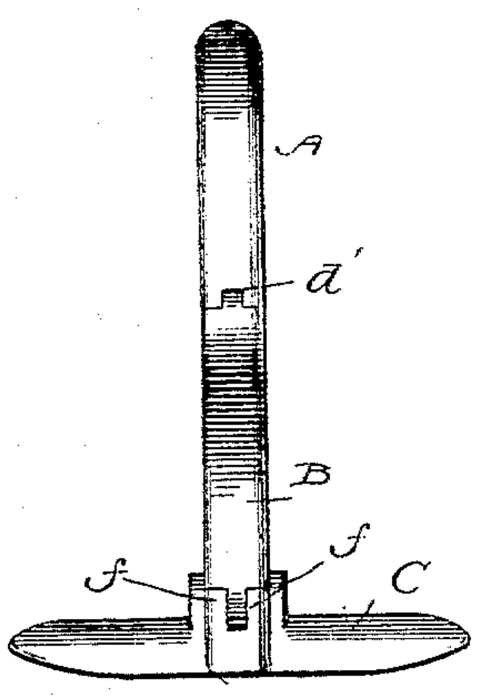


Fig. 5.

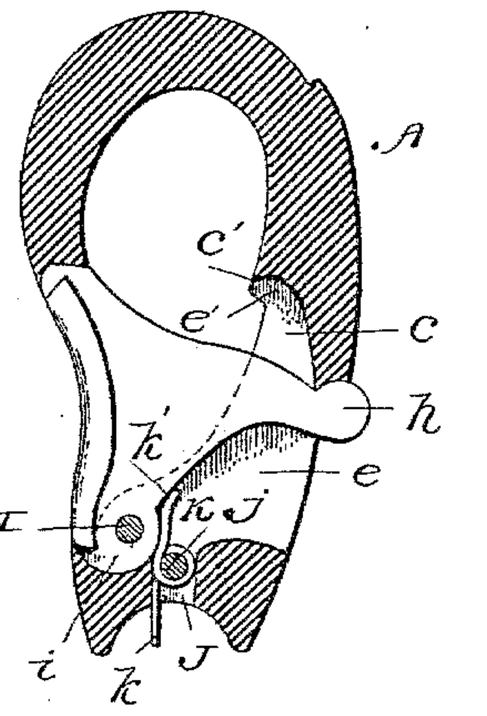
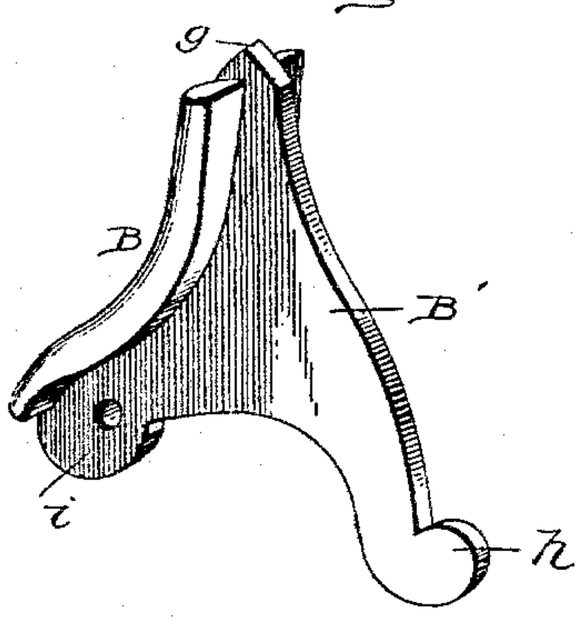
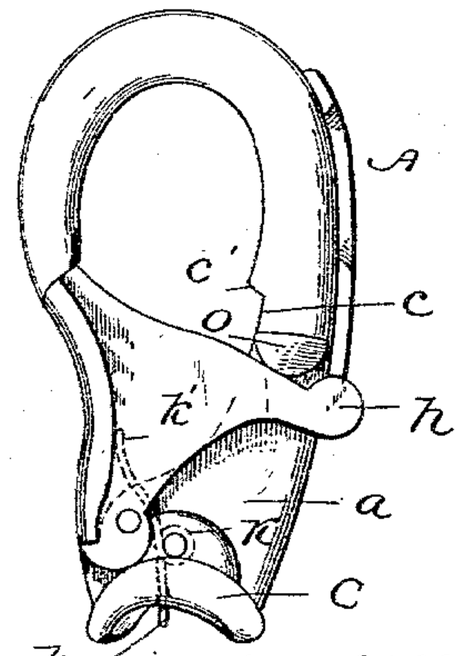


Fig. 6.





Witnesses
Wm. B. Dashiell
R. F. Bernhard

k Louis A. Walker.
Inventor
By. Edson Bros.
Atty's.

ANDREW B. GRAHAM, PHOTO-LITHO. WASHINGTON, D.C.

UNITED STATES PATENT OFFICE.

LOUIS A. WALKER, OF PORT JEFFERSON, NEW YORK, ASSIGNOR TO CORNELIUS S. MITCHILL, OF NEW YORK, N. Y.

SNAP-HOOK.

SPECIFICATION forming part of Letters Patent No. 559,640, dated May 5, 1896.

Application filed July 1, 1895. Serial No. 554,604. (No model.)

To all whom it may concern:

Be it known that I, LOUIS A. WALKER, a citizen of the United States, residing at Port Jefferson, in the county of Suffolk and State of New York, have invented certain new and useful Improvements in Snap-Hooks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in snap-hooks of that class which employs a pivoted tongue to close the space between the free end and the base of the hook.

The snap-hook which forms the subject-matter of the present application is more particularly intended to form part of the equipment of sailing and racing vessels and for use in connection with stays and light sails, although the hook is well adapted for use in other arts and relations on devices where a snap-hook is desirable or necessary.

The principal object that I have in view in this invention is to so construct and arrange the tongue that a single motion in one direction will fasten the hook to a stay and to enable the tongue to move to a position clear back to and against the solid back part of the hook, whereby a stay or other article may be very quickly or almost instantly fitted in the hook and the necessity for using a hook larger than is required to fit the stay is entirely overcome.

In some styles of snap-hooks the pivoted tongue cannot be moved back far enough for the object to pass through the throat or space left open by pressing the tongue inwardly because the inward movement of the tongue is limited by a spring or other obstruction in the path of the tongue. Hence it is necessary in that style of snap-hooks to use a hook larger than is required to fit the stay or accommodate the article; but with a snap-hook constructed in accordance with my invention it is not necessary to use a hook larger than the stay because the tongue is capable of moving to a position practically flush with the rear part of the hook and thereby produce a throat sufficiently wide and large enough for the stay to quickly pass into or from the hook without obstruction or hindrance from the pivoted tongue.

A further object of my invention is to stiffen or strengthen the pivoted tongue by devices which also prevent the tongue from being twisted out of place and relieve to a considerable extent the strain on the pivotal pin of the tongue, which stiffening devices when closed also fill that portion of the hook between its base and that portion next to the sail or stay and thereby prevent unnecessary play or back-and-forward motion of the stay in the eye or loop of the snap-hook.

A further object of my invention is to provide the tongue with a thumb-piece arranged to project from the back or rear edge of the hook and to be convenient to operate from the back side of said hook for the purpose of easily opening the tongue without having to press against the front side of said tongue.

A further object of my invention is to so construct the hook and tongue that the movements of the tongue in either direction will be positively arrested to prevent the tongue from being strained and from passing outside of the point of the hook should the hook be drawn or sprung from sudden strain thereon.

A further object of my invention is to conceal the tongue-actuating spring within the hook, whereby the spring is out of the way, is protected by the hook, and does not interfere with the backward or inward movement of the tongue, thus enabling the tongue to move clear back against the hook and form the large throat or space for the stay to pass into the hook.

With these and such other ends as pertain to a device of this character my invention consists in the combination of parts and in the novel construction of parts, which will be hereinafter fully described and claimed.

To enable others to understand my invention, I have illustrated the preferred embodiment thereof in the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a perspective view of my improved snap-hook, showing the tongue closed against the point of the hook. Fig. 2 is a side elevation with the tongue in its opened or pressed-back condition. Fig. 3 is an edge view looking at the front side of the hook

with the tongue pressed back in the position shown by Fig. 2. Fig. 4 is a vertical transverse sectional view through the hook. Fig. 5 is a detail perspective view of the tongue. Fig. 6 is a view of a modified construction.

Like letters of reference denote corresponding parts in all the figures of the drawings, referring to which—

A designates the hook, and B is the swinging tongue thereof. The hook A is all cast in a single piece with a saddle-plate C at the base thereof, or said hook may have at its base the usual ring, and the base *a* of said hook is made broad to extend clear across the saddle-plate, as shown. This hook is substantially made to stand strain and rough usage, and from the broad base *a* the hook rises to a suitable height and curves over upon itself to terminate in the free point or extremity *a'*, the face of the point being inclined or beveled backwardly and upwardly at a^2 from the front edge to the rear edge of the overhanging part of the hook.

The broad base *a* of the hook is curved or made convex at its front edge, as at *b*, and in this curved edge of said base is cut or produced a recess *c*, the upper edge of which forms an abrupt shoulder *c'* about half-way up the vertical part of said hook, the lower end of the recess merging into the advanced forward part of the hook-base, where there is produced the rounded ears *d*.

A slot *e* is formed in the base and lower part of the upright hook, which slot extends up to the abrupt shoulder *c'* entirely through from front to back of the hook and base *a* and through the front edge of said base *a* and between the ears *d*, the front part of said slot *e* serving to divide or separate the ears. On the advanced front edge of the base *a* are formed the abrupt shoulders *f f*, which lie below the ears *d*.

The tongue B has a web B', which serves to reinforce the tongue, obviate undue strain on the pivot of the tongue, and to fill the lower part of the hook, so as to prevent too much play of the stay or other object in the hook. This tongue and its web are cast in a single piece in the form shown by Fig. 5 to properly fit the hook, its slot *e*, and the base *a*.

The tongue proper, B, is equal in width to the width of the hook A, and it is curved to correspond to the curved recessed part *c* and base *a* of the hook, whereby the tongue B is adapted when pressed inward to fit closely up against and practically flush with the upright part of the hook, because said tongue is then received in the recess *c*. The web B' is of considerably less thickness than the tongue B, and it projects centrally from the rear side of the tongue. The upper edge of said web at the front of the tongue extends above the upper beveled end of the tongue to form the lip *g*, and from this lip *g* said upper edge of the web slants down toward the thumb-piece *h*. At the lower front side of the web B' it projects below the tongue to form the ear *i*, and back of this ear the lower edge of the web B' is inclined abruptly up toward the thumb-piece *h*. The web fits snugly in the vertical slot *e* in the base *a* and hook, and the length of the web is such that its rear part is contained in the slot *e* of the upright part of the hook when the tongue B is closed or seated against the beveled extremity a^2 of said hook, the thumb-piece *h* protruding from the rear or back side of the upright part of the hook, as shown. The ear *i* of the tongue is fitted between the ears *d d* on the base *a*, and through said ears *d d i* is passed the pivotal pin I, which serves to pivotally connect the tongue to the hook-base *a* and to permit the tongue to swing inward and outward.

The vertical slot *e* is extended up into the shoulder *c'* to form the notch *e'*, into which the lip *g* takes or fits when the tongue B is pressed inward against the upright part of the hook, and a notch *d'* is cut in the free end of the overhanging end of said hook, which notch opens through the beveled face a^2 and through the inner edge or side of said overhanging end of the hook. When the tongue is pressed forward to close the throat and its upper beveled end abuts against the beveled face a^2 of the hook, the lip *g* takes or fits in the notch *d'*, whereby the lip *g* and the web B'. fitting in the slot *e*, relieves the tongue and its pivot I from a large measure of sudden strain.

The lower end of the tongue is adapted to abut or rest squarely upon the shoulders *f f* when the tongue is closed against the overhanging end of the hook, and as the tongue is substantially made and rests firmly on the shoulders *f* it is well adapted to stand the wear and work and its free end is prevented from passing outside of the point of the hook should it be suddenly drawn or sprung while in use.

One of the important features of the improvement is the tongue having the convex front side or face and pivoted back of its front curved face to swing clear back to and rest upon the upright part of the hook substantially flush therewith, the web being projected through the slot *e* in the hook. This construction and organization of the parts enables a stay or other object to be passed into the hook while moving in a straight line continuously. as indicated by the arrow in Fig. 2, instead of moving the object against the hook to press the latter inward and then changing the object to move in a different direction or angle to pass the hook, and said tongue when pressed back also forms a large throat or space in the hook, which enables a stay to easily pass into the hook, whereby the necessity is avoided of using a hook larger than the stay which is to be fitted therein, which objectionable requirement has been made compulsory in using ordinary snap-hooks because the tongues thereof are capable of moving inward only part way toward the upright part of the hook.

A vertical cavity J is cut in the base *a* and

the saddle-plate C, and across this cavity extends an arbor or spindle *j*, the ends of which are suitably fastened in the base *a* or saddle-plate C. On said spindle is fitted one or more coiled springs K, although I prefer to use two of said springs. The ends of these coiled springs are extended to form the arms *k k'*, of which arms those lettered *k* are arranged to bear against the walls of the cavity, while the arms *k'* are fitted against a seat *l* on the web of the tongue B, whereby the springs tend to normally press the tongue to its closed position against the free end of the overhanging arm of the hook A. These springs are entirely housed within the snap-hook so as to be protected thereby, and the springs do not in any way interfere with the inward movement of the tongue, as is the case in some snap-hooks.

In Figs. 1 to 5, inclusive, of the drawings I have illustrated the snap-hook as provided with a central narrow slot *e* and the web B' as arranged centrally on the tongue B and adapted to pass through and to play in the slot *e*, and while this is my preferred construction I do not strictly limit myself thereto, because I am aware that the web B' can be arranged on the tongue at one side or edge thereof so as to pass on the outside of the upright part of the hook A, as shown by Fig. 6, in which event I provide a shoulder *o* on the outside of the hook A for the web B' to bear against when it is pressed inward.

The thumb-piece *h* always remains on the outside at the back edge of the hook A, so that it is accessible at all times in order to press the tongue inward, and when the tongue is closed this thumb-piece bears against a shoulder *h'* on the back of the hook A.

I may provide the snap-hook with the curved saddle-plate C for convenience in fastening it rigidly in place; but it is evident that the base of the hook may be provided with a ring or eye in lieu of the saddle-plate.

It is thought that the operation and advantages of my improved snap-hook will be readily understood and appreciated from the foregoing description taken in connection with the drawings.

Changes in the form and proportion of parts and in the details of construction herein shown and described as an embodiment of my invention may be made by a skilled mechanic without departing from the spirit or sacrificing the advantages of my invention—as, for example, the thumb-piece may be omitted and the web on the tongue arranged to abut against the upper end wall of the slot, or the form of the spring may be modified and its arrangement relative to the tongue varied somewhat—and I therefore reserve the right to make such modifications and alterations as fairly fall within the scope of my invention.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A snap-hook having the front face of its upright part curved downwardly and forwardly substantially to the front edge of the base and provided with the slot *e* which extends through said lower part of the hook, in combination with a curved tongue equal in width to the width of the hook and shaped to conform to the curved face of said hook, said tongue being pivoted to the base to swing back to, and rest against, the curved face of the hook, and a vertical web B' rigid with the tongue and extended rearwardly therefrom through the slot *e* in the hook, substantially as and for the purposes described.

2. A snap-hook having its upright part made broad at the lower end where it joins the base and provided with the recess *c* in its front face and with the transverse slot, *e*, combined with a curved tongue B equal in width to the width of the hook and pivoted to the base to swing back against the recessed part *c* of, and rest substantially flush with, the upright part of the hook, a reinforcing vertical web B' rigid with the tongue and extending rearwardly therefrom through said transverse slot, *e*, and a spring supported on an arbor or pin within the base of the hook independent of the tongue-pivot and seated at one end against the web, substantially as and for the purposes described.

3. A snap-hook having its upright part curved downward and forward substantially to the front edge of the base and provided with the transverse slot *e* and with the stop-shoulders *f*, *f*, which shoulders lie below the pivotal ears and on the front edge of the base, in combination with a curved tongue B equal in width to the width of the hook and provided with a vertical reinforcement-web B' which is extended backwardly through the slot in said hook, a pivotal pin which connects the tongue and web to the base and causes the lower end of the tongue to rest firmly upon the stop-shoulders *f* when its free end abuts against the overhanging end of the hook, and in connection with web B keeps the tongue in position should the overhanging end or point of the hook be drawn or sprung beyond the upper end of the tongue, a pin or arbor I supported in the base, and a spring fitted to said pin or arbor and seated against said web, substantially as and for the purposes described.

4. A snap-hook having its broad upright slotted part provided with the recess *c* and with the notch *e'*, and its free beveled end provided with the notch *d'*, in combination with the curved tongue B equal in width to the hook and pivoted to the base thereof to swing back into the recess *c* to lie against the front face of the hook, said tongue having at its free end the lip, *g*, which, when the tongue is opened, fits in the notch *e'* and when said tongue is closed fits in the notch *d'*, the vertical reinforcement-web B' rigid with said tongue B and extended rearwardly therefrom

through the slot *e*, and a spring seated against the web B′, substantially as and for the purposes described.

5. A snap-hook having the lower broad end of its upright part curved forward and downward to the front edge of the base, and provided with the vertical cavity J in the base, the shoulders *f* on the front edge of said base, and the transverse slot *e*, combined with a curved tongue equal in width to the hook and provided with a vertical web B′ which has an ear *i* fitted between the pivotal ears *d*, *d* on the base, a pivotal pin I passing through the ears *d*, *i*, an arbor, *j*, extending across the cavity in the base, and a spring fitted on the arbor, *j*, and seated against the web, substantially as and for the purposes described.

In testimony whereof I affix my signature in presence of two witnesses.

LOUIS A. WALKER.

Witnesses:

JOHN HOOTON,

ROBERT B. P. WALKER.