

(No Model.)

E. H. WHITNEY.
CAPSTAN.

No. 587,897.

Patented Aug. 10, 1897.

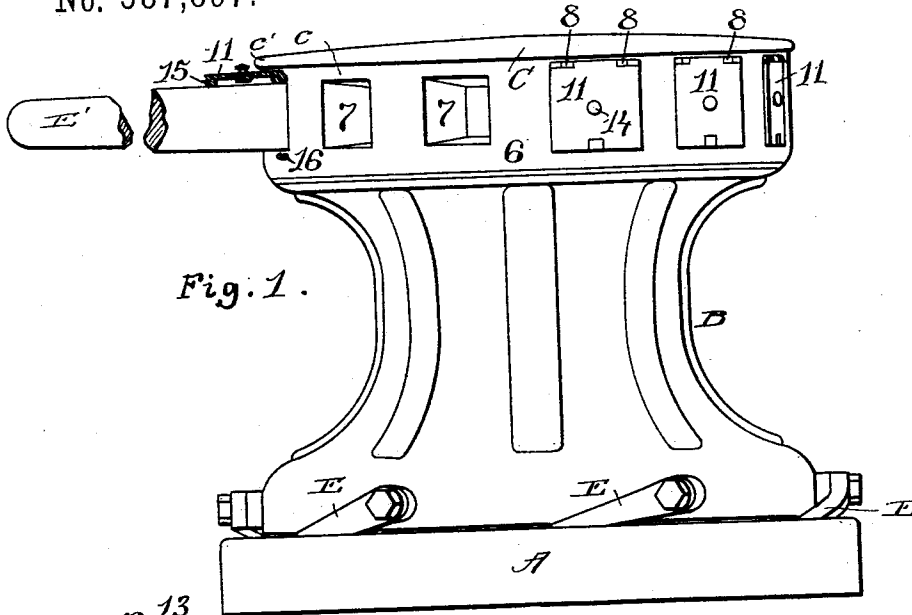


Fig. 1.

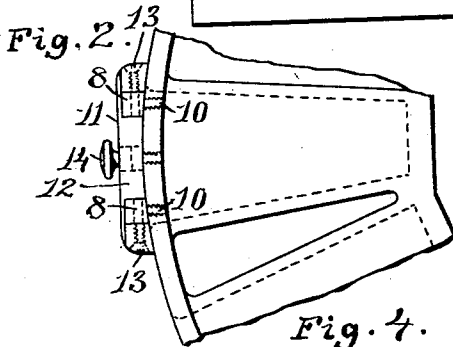


Fig. 4.

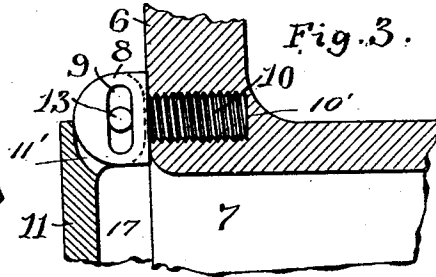


Fig. 3.

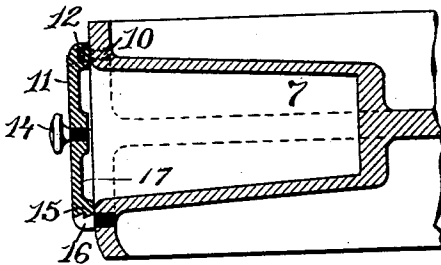
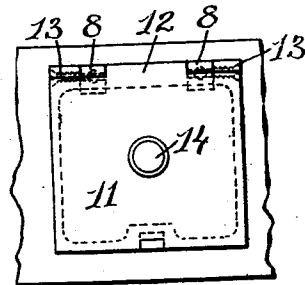


Fig. 5.



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CAPSTAN.

SPECIFICATION forming part of Letters Patent No. 587,897, dated August 10, 1897.

Application filed March 8, 1894. Serial No. 502,844. (No model.)

To all whom it may concern:

Be it known that I, EDWIN H. WHITNEY, of East Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Capstans; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to capstans of that class which are provided with sockets for the reception of the usual capstan-bars by which the capstan-barrel is rotated, and the improvements relate more particularly to a construction that operates automatically to close the bar-sockets on the withdrawal of the capstan-bars against the accumulation of dirt or the admission of water, which in inclement cold weather is liable to freeze in the sockets and prevent the insertion of the capstan-bars.

Prior to my invention it was common to close these bar-sockets by the employment of wooden or other plugs, which are entirely disassociated from the capstan when out of place in the bar-sockets therein. As the result of the use of these disconnected plugs they are laid upon the deck of a vessel and are thrown around from one place to another thereon, in consequence of which the plugs often cannot be found when it is desired to close up the bar-holes, and they are hammered or pounded out of shape, so that they do not properly fit in the bar-sockets and cannot be easily placed in or withdrawn from the capstan.

I am also aware that car-axle boxes have been provided with hinged and sliding covers to close the open ends of such boxes, but such prior devices have been constructed with special reference to their employment exclusively in connection with car-axle boxes, to which end the covers are joined to the boxes either to slide endwise upon the top of the box or to be inverted on a hinged joint to rest upon the top of said box, for the purpose of permitting unobstructed access to the box in placing the packing therein or for other purposes.

Because of the construction of ordinary capstans with which I use my improvements it is not practicable to combine such sliding

or pivoted covers as have been used in car-axle boxes.

In this my present invention I aim to overcome the serious objections which have been urged to the employment of removable and insertible disconnected stoppers and to provide a novel construction of cover or lid which serves to instantaneously and automatically close the bar-socket in the capstan on the withdrawal of the capstan-bar without requiring any adjustment whatever by hand on the withdrawal of the capstan-bar.

A further object of my invention is to provide a simple and cheap construction by which my improved cover or lid may be easily applied to the ordinary construction of capstans now in service, such application of the cover obviating any necessity for changes in the construction of the capstan in order to apply my invention thereto.

To the accomplishment of these ends my invention consists in the novel combination of devices and in the construction and arrangement of parts which will be hereinafter fully described, and pointed out in the claims.

To enable others to understand my invention, I have illustrated the same applied to a capstan of ordinary form in the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is an elevation of a capstan, showing at the right-hand side thereof certain of the bar-sockets closed by my covers or lids and also illustrating at the left hand a capstan-bar fitted in one of the sockets, the cover of which is shown in section and as being held in its raised opened position by the capstan-bar. Fig. 2 is an enlarged detail plan view of a part of the capstan-head with my cover or lid applied thereto, the dotted lines illustrating the bar-socket, the headed and slotted bolts for applying and supporting the cover, also the pivotal attaching-screws for connecting the cover to the bolts. Fig. 3 is an enlarged fragmentary vertical sectional elevation through a part of the capstan-barrel and the cover, illustrating the construction of the bolts more clearly. Fig. 4 is a vertical sectional elevation illustrating a part of the capstan-barrel with one complete socket therein and a cover or lid for said socket. Fig. 5 is

a face view of one of the covers, said figure illustrating in front elevation the parts shown by Fig. 2.

Like letters and numerals of reference denote corresponding parts in all the figures of the drawings.

The common style of capstan in general use consists of a base provided with annular ratchet-teeth, a rotatable barrel supported between said base, and a non-rotatable head or top plate, the latter overhanging the barrel and protruding circumferentially therefrom to afford protection to the barrel against the elements, and holding-dogs attached to the barrel for engagement by gravity with the ratchet-teeth, said rotatable barrel provided near its upper end with a plurality of radial sockets for the reception of the capstan-bars. Such a capstan is illustrated by Fig. 1 of the drawings, in which A designates the base; B, the rotatable barrel; C, the non-rotatable head or top plate, and E the pawls, which are pivoted to the barrel and arranged to engage with ratchet-teeth (not shown) in the base in the usual way.

Near the upper end of the capstan-barrel it is provided with a series of radial sockets, (indicated by the numeral 7 in the drawings,) said sockets lying below the head or top plate C and leaving a solid space *c* between the top edges of the sockets 7 and the head or top plate C. Each socket 7 is tapered somewhat from its inner closed end toward its outer open end, as shown in Fig. 4, but the form of the socket is not material.

In a capstan of the character referred to I apply my improvements, which, briefly stated, consist of a swinging cover or lid 11, a pair of attaching-bolts 10, and means for pivotally and detachably connecting the cover or lid to said bolts in a manner to permit the lid or cover to have an upward and outward swinging movement and a limited sliding movement, the whole being so arranged as to utilize the space *c* in the application of the cover to the capstan-barrel and also to utilize the circumferentially-protruding edge of the top plate or head C as a means for limiting or arresting the upward swinging movement of the cover and prevent it from going beyond a point at which it will remain in its raised position on the withdrawal of the capstan-bar, whereby the cover automatically closes across the mouth of the capstan-bar socket to exclude water and dirt therefrom.

In the space *c* between the bar-socket 7 and the overhanging edge of the top plate are tapped the threaded holes, (indicated at 10' in Fig. 3,) said holes lying above the bar-sockets 7 and in planes near opposite sides of the same, and in these holes are screwed the pair of bolts 10. These bolts have vertically-elongated heads 8, the outer edges of which are of segmental or arc shaped form, and in the bolt-heads are produced elongated holes or slots 9, which extend transversely through the bolt-heads, the slots in each pair of bolts

being substantially in alinement with each other.

The cover or lid 11 is recessed at its upper edge on the sides thereof, as at 11' in Fig. 3, to enable it to fit snugly to the segmental heads of the attaching-bolts, and through flanges in the cover produced by the recessed portions 11' thereof are passed the pivotal bolts or screws 13. The screws pass through the vertical slots 9 in the bolt-heads and are fastened in the cover, whereby the bolts or screws 13 serve to detachably attach the cover to the bolt-heads 10, and they also furnish the pivotal connection between the cover and the bolts 10 to insure to the cover the outward and upward swinging motion until it is arrested by the overhanging edge *c'* of the top plate or head C. The pivotal screws 13 are capable of a limited sliding movement in the slots 9 of the attaching-bolts, said play of the screws 13 and the cover being sufficient to engage the recessed lower edge 15 of the cover with the keeper 16 or to disengage said edge of the cover from said keeper. For the convenient adjustment of the lid or cover a knob or handle 14 is attached to the same in a suitable place where it may be easily grasped by the hand.

The cover or lid is flanged at its sides and on the inner face thereof, as indicated at 17 in Figs. 3 and 4 and by dotted lines in Fig. 5, to make the cover conform to the face of the capstan-barrel around the socket 7 and to fit closely thereto when closed over the socket, and this close fitting is further attained by recessing the cover at 11' to fit closely to the rounded edges of the attaching-bolts, said recesses 11' and the rounded bolt-heads 8 providing for the free turning of the cover on the pivotal screws 13. This construction enables the cover to fit closely to the capstan-barrel around the mouth of the socket 7, so as to exclude dirt and water from the socket without providing interlocking side joints between the cover and capstan to secure the desired snug or tight fitting of the parts; but at the same time the cover is capable, when free from the keeper 16, of an unrestricted upturned and upward swinging movement until arrested by the overhanging edge *c'* of the top plate C.

To expose the socket 7 for admission of the capstan-bar thereto, it is only necessary to lift the cover 11 and cause the pivotal screws 13 to slide in the slots 9 until the edge 15 clears the keeper 16, and then swing the cover outward and upward to a substantially horizontal position, as indicated in Fig. 1, or until it abuts against the edge *c'* of the top plate or head C, which edge *c'* lies in the path of all the series of covers to arrest the upward movement of each independently-pivoted cover on the capstan-barrel. When the cover is thus raised, the capstan-bar (indicated at E' in Fig. 1) is thrust into the socket 7, and the cover 11 is free to drop and rest upon the capstan-bar, by which said cover is retained

in its raised position so long as the capstan-bar remains in the socket. The capstan-barrel may be rotated in the usual manner by the capstan-bars, which serve to sustain the hinged covers in their raised positions, but on the withdrawal of either of the capstan-bars the cover 11 descends or falls by its own weight, striking the beveled or inclined nose of the keeper 16, so as to be lifted sufficiently thereby to engage with said keeper, thus automatically closing the cover across the open mouth of the socket 7.

It will be seen that my invention entirely overcomes the objections heretofore existing in the use of the capstans with exposed sockets or provided with insertible plugs to close up the sockets, and that the covers are free to close the sockets immediately after the withdrawal of the capstan-bars without requiring adjustment by hand of the covers to close the sockets against the ingress of water and dirt.

My improvements may be embodied in capstans during their manufacture or they may be easily applied to capstans now in use by simply tapping the sockets 10' in the space c of the barrel, adjusting the bolts 10, the cover, and the screws 13, and applying the keeper 16.

The device is simple and cheap in construction, and it is efficient and reliable in operation because it does not depend upon manual adjustment of the cover in closing the same.

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

1. The combination of a capstan-barrel provided with a bar-socket and with threaded holes above said socket, attaching-bolts

screwed in said threaded holes and provided with exposed slotted heads, a cover recessed to fit snugly to the bolt-heads, and pivotal screws or bolts detachably fastened to the cover and fitted in the slotted bolt-heads to pivotally and slidably connect the cover to the bolts, as and for the purposes described.

2. The combination of a capstan-barrel having a bar-socket and threaded holes above said socket, the attaching-bolts 10 screwed in the threaded holes and having the vertically-elongated heads formed with segmental edges and with vertical slots, a flanged cover recessed to fit snugly to the segmental faces of the bolt-heads and to lie closely to the face of the capstan-barrel, the pivotal screws fastened to the cover and fitted in the slots of the bolt-head, a keeper to engage the free edge of the cover, and means in the path of the cover to limit the upward and outward swinging movement of the cover and prevent it from assuming an inverted vertical position above the capstan, as and for the purposes described.

3. The combination with a capstan having a bar-socket, of cover-attaching bolts fastened to said capstan substantially on the plane of the upper edge of the socket where it opens through said capstan, a cover, and bolts or pins which pivotally, and detachably, connect said cover to the attaching-bolts, as and for the purposes described.

In witness whereof I have hereunto set my hand.

EDWIN H. WHITNEY.

Witnesses:

HENRY J. MILLER,
M. F. BLIGH.