Dec. 13, 1955 W. E. BONNELL 2,726,532

LOCKING DEVICE FOR OUTBOARD MOTORS

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Fig. 1.

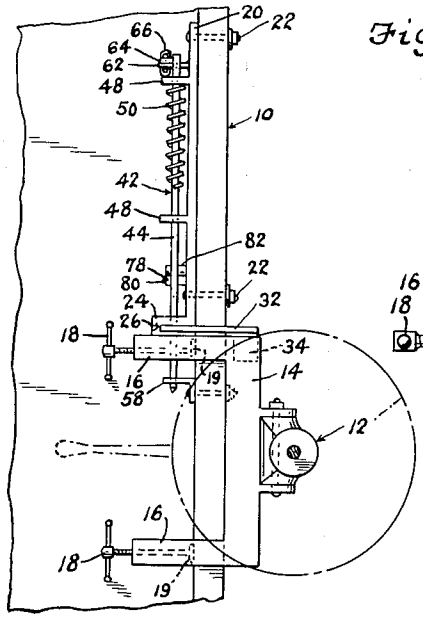


Fig. 2.

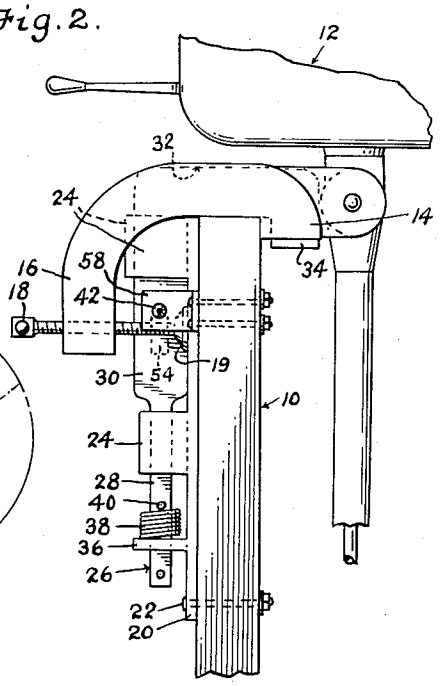


Fig. 3.

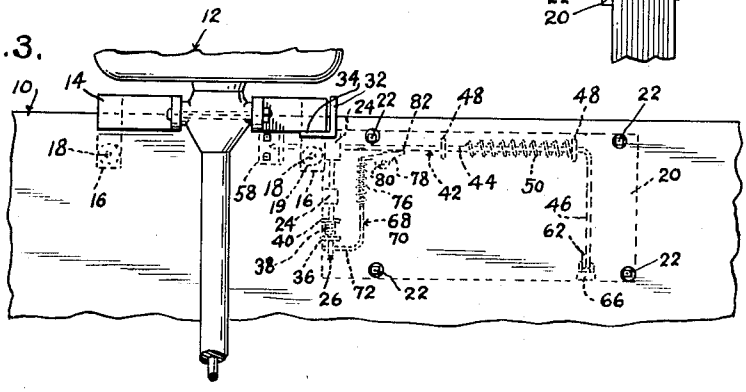
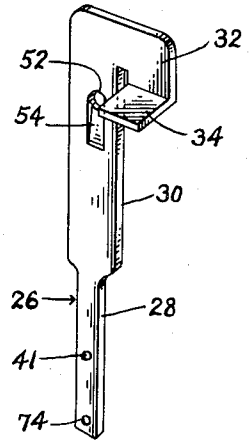


Fig. 4.



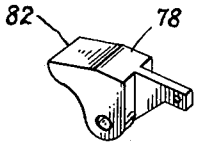


Fig. 5.

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Fig. 6.

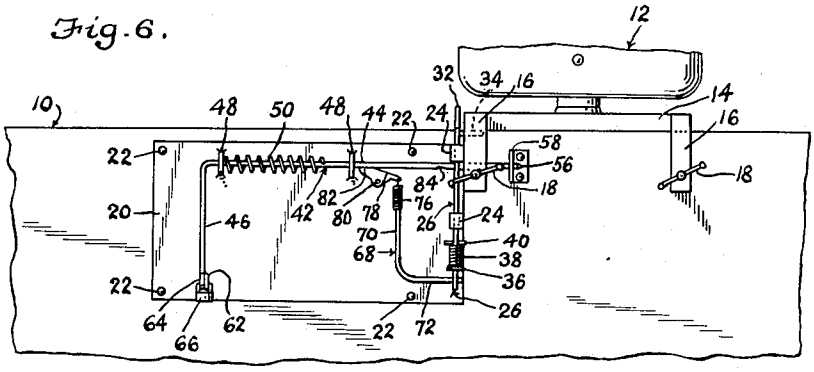


Fig. 7.

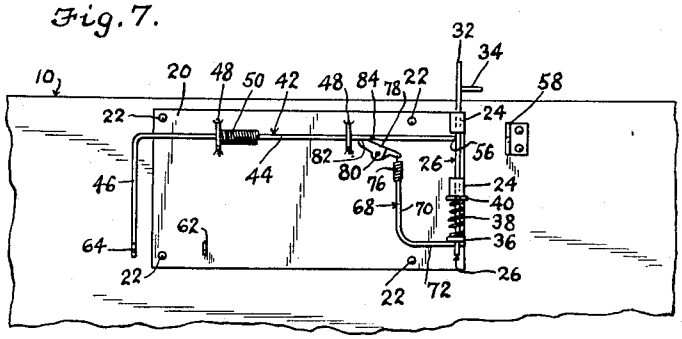


Fig. 8.

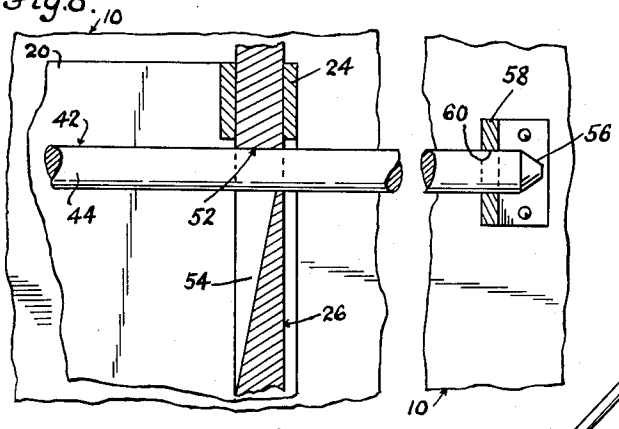


Fig. 9.

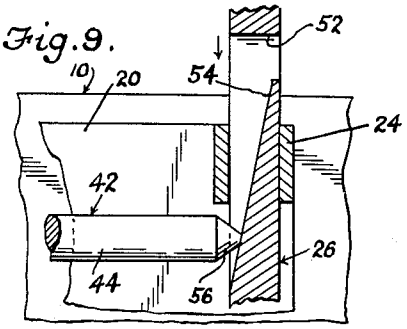
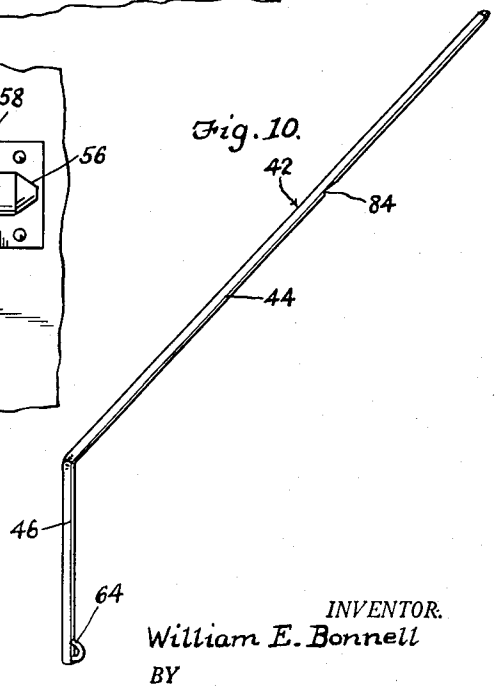


Fig. 10.



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United States Patent Office

2,726,532

Patented Dec. 13, 1955

2,726,532

LOCKING DEVICE FOR OUTBOARD MOTORS

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Application August 1, 1952, Serial No. 302,037

4 Claims. (Cl. 70—58)

This invention relates to a device for locking an outboard motor to the stern of a boat.

The invention, summarized briefly, includes a base plate mountable upon the stern of a boat at a location where it will be disposed at one side of the clamp of an outboard motor carried on said stern. A lock pin is mounted on the base to reciprocate in a horizontal path, and is spring biased normally to one position in which it extends across a part of the clamp and is received in a locking bracket mountable on the stern at the other side of said part of the clamp, thus to lock the clamp to the stern. A release pin is slidably mounted on the base for movement in a vertical path and is arranged transversely of the lock pin. The release pin has an opening which permits passage of the lock pin to its clamp engaging position when the release pin is depressed. When, however, the release pin is shifted upwardly it prevents movement of the lock pin to said position. The release pin is normally spring biased to its upper position, but is depressed by the outboard motor itself, when the outboard motor is moved downwardly to mount the same on the stern of the boat. A detent is carried by and is shiftable with the release pin, the detent being so mounted as to be disengaged from the lock pin when the release pin is in its upper position. When the release pin is in its lower position, the detent may be engaged with the lock pin to hold the lock pin in outer engagement with the clamp, thus to permit removal of the motor. Means is provided on the base and lock pin adapted to receive the hasp of a conventional lock when the lock pin is in its clamp engaging position, thus to prevent theft of the motor.

Among important objects of the invention are the following:

First, to provide a device of the type stated which will not require modification or redesigning of the outboard motor or the boat;

Second, to provide a device of the character stated which will automatically move to a clamp enaging position responsive merely to mounting of the outboard motor on the stern of the boat;

Third, to provide a locking device for outboard motors which will not only be usable to prevent the motor from being lost accidentally from the boat while in use, but will also be usable as a locking means preventing theft of the motor; and

Fourth, to provide a locking device for outboard motors which can be constructed at a minimum of cost, will be rugged, and efficient in operation.

Other objects will appear from the following description, the claims appended thereto, and from the annexed drawings, in which like reference characters designate like parts throughout the several views, and wherein:

Figure 1 is a top plan view, a boat on which the device is mounted being illustrated fragmentarily and an outboard motor being shown in dotted lines;

Figure 2 is a side elevational view in which the boat and motor are illustrated fragmentarily;

Figure 3 is an elevational view taken from the right of Figure 2;

Figure 4 is a perspective view of the release pin per se;

Figure 5 is a perspective view of the latch member of the detent;

Figure 6 is a front elevational view of the clamp, the boat and motor being illustrated fragmentarily;

Figure 7 is a view similar to Figure 6 in which the outboard motor has been omitted and in which the device is shown in its inoperative position;

Figure 8 is an enlarged detail sectional view showing the relationship of the lock and release pins in the operative position of the lock pin;

Figure 9 is a view similar to Figure 8 showing the lock and release pins in the relationship assumed thereby when the lock pin is in its inoperative position; and

Figure 10 is a perspective view of the lock pin per se.

The reference numeral **10** designates generally the sternboard of a boat. An outboard motor **12** has a clamp plate **14** supported on the edge of the sternboard, depending clamps **16** rigid with the clamp plate and extending downwardly within the boat adjacent the sternboard, and thumb screws **18** threadable through the clamps against the sternboard and provided with feet **19** engaging the sternboard.

The invention includes a rectangular, flat base plate **20** fixedly connected at its corners to the sternboard by screws **22**, adjacent one of the clamps **16**. That edge of the base plate **20** adjacent said clamp is provided with vertically spaced sleeves **24** rigid with the base plate. A release pin **26** is slidably mounted in the sleeves for up and down movement on the base plate. The release pin is shown per se in Figure 4, and is formed from a single piece of flat bar stock having a lower end portion **28** of reduced width merging into a wider upper end portion **30** integral at its upper end with a laterally projected extension **32** of inverted L-shape formed integrally at its free end with a horizontally disposed ear **34**. The ear **34** is in the path of the motor **12**, when the motor **12** is being shifted downwardly by a user to its illustrated position, preliminary to clamping of the motor to the sternboard. Therefore, movement of the motor to said position is effective to depress the release pin. The release pin is illustrated in its upper position in Figure 7. The release pin is illustrated in its depressed position in Figure 6.

Rigid with the base plate, and spaced vertically of and below the lower sleeve **24**, is an apertured abutment **36** receiving the reduced lower end portion **28**. A spring **38** is circumposed about said reduced lower end portion, and is engaged at one end against the abutment **36**, the other end of the spring engaging a cross pin **40** extending transversely of the release pin through an opening **41** formed in the release pin. The spring **38** is held under compression, and therefore normally biases the release pin to its upper position.

A lock pin **42** is of inverted L-shape, having an elongated horizontal leg **44** rigid at one end with a shorter, depending, vertical leg **46**. The base plate has rigid therewith apertured lugs **48** spaced longitudinally of the upper edge of the base plate, the leg **44** being slidably mounted for movement in a horizontal path in said apertured lugs. A spring **50** is circumposed about leg **44**, said spring being hooked at one end through the leg and being engaged at its other end against the lug **48** remote from the release pin **26**. The spring **50** is under compression, and therefore normally urges the lock pin to the position thereof shown in Figure 6, that is, in the direction of the clamp of the outboard motor. The lock pin can, however, be shifted to the position thereof shown in Figure 7, against the action of the spring.

Formed in the release pin is an opening **52**, and when the release pin is depressed, the opening **52** will align

with the leg 44, thus to permit the leg 44 to be urged through the opening 52 under the pressure of the spring 50, to the position of the lock pin shown in Figure 6 and also in Figure 8. An inclined cam surface 54 is formed in the release pin, and has its low end in communication with opening 52, the high end of the cam surface merging into the surface of the release pin.

At its free end, the leg 44 is pointed as at 56. A locking bracket 58 is formed to an L-shape, and is rigidly secured to the sternboard 10, at that side of the engaged clamp 16 remote from the side at which the base plate is disposed. The locking bracket 58 has an opening 60 adapted to receive the pointed end 56 of the lock pin, when the lock pin is shifted to its operative position shown in Figures 6 and 8.

When the lock pin is in said operative position, an apertured lug 62 rigid with the base plate will be disposed in close proximity to a staple 64 formed on the lower or free end of the depending leg 46 of the lock pin. The hasp of a conventional lock 66 can be extended through the lug 62 and staple 64, to lock the parts in the position shown in Figure 6, thus to prevent theft of the motor 12, the lock pin being disposed, in this position of the parts, in a position in which it will engage the foot 19 of one of the thumb screws 18 (see Figure 2), thus to prevent said thumb screw from being backed off from the sternboard 10.

A detent designated generally at 68 is provided with a vertical end portion 70, and a horizontal end portion 72, said end portions being rigidly connected. The end portion 72 has its free end extended through an opening 74 formed in the lower end of the release pin, thus to cause the detent to shift with the release pin between the upper and lower positions thereof. A spring 76 is hooked at its lower end to the upper end of the end portion 70, and is hooked at its upper end to one end of a latch member 78 pivoted intermediate its ends, as at 80, upon the base plate. The other end of the latch member has a tooth 82 engageable in a notch 84 of the lock pin.

In use of the device, the parts will appear as shown in Figure 7, before mounting of the outboard motor upon the boat. When the outboard motor is positioned upon the sternboard, it will depress the lateral projection or ear 34, causing the release pin to move downwardly against the resistance of spring 38. When the release pin moves downwardly, it will be moved to a position in which the opening 52 aligns with the leg 44 of the lock pin, and accordingly, under the pressure of the spring 50, the lock pin will shift to the right in Figure 6, past the adjacent clamp 16, to engage in the opening 60 of the locking bracket 58. As a result, the motor 12 will be held against accidental loss.

It is important to note, in this connection, that in the fully inoperative position of the lock pin, the detent will not be in engagement with the notch 84. This is due to the fact that the lock pin will, in the fully inoperative position of the parts shown in Figure 7, have its pointed end positioned against the sloped surface 54 of the release pin. In this position of the lock pin, the notch is disposed slightly to the right of the tooth 82 of the latch member, as shown in Figure 7. Further, in the fully inoperative position of the parts, with the lock pin retracted and with the release pin shifted to its upper position, the detent 68 will also be shifted upwardly, and as a result, the spring 76 will be fully contracted, so that no pull is exerted by spring 76 on latch member 78 tending to force the tooth 82 of the latch member upwardly against the lock pin.

As soon as the release pin is depressed, the spring 75 will, of course, be placed under tension and pressure will be exerted on the latch member tending to force the latch member upwardly into engagement with the leg 44 of the lock pin. However, the notch 84, not being engaged at this time by the latch member, will not interfere with movement of the lock pin to the right in Figure 6 or Figure 7, under the pressure of the spring 50, and the lock pin will accordingly move into locking engagement with the clamp of the outboard motor.

At such time as it is desired to remove the outboard motor, and assuming that lock 66 has been removed, one need only shift the lock pin manually to the left in Figures 6 and 7, until the notch 84 is engaged by the tooth of the latch member. The latch member will spring into the notch 84 at this time, since the spring 76 will at this point be under tension, the outboard motor still holding the release pin in its down position.

Thereafter, the outboard motor is removed, and as soon as the outboard motor is removed, spring 38 will be effective to shift the release pin to its up position. In the up position of the release pin, spring 76 loses its tension, and urges upwardly the end of the latch member to which spring 76 is connected, depressing tooth 82 out of engagement with the notch 84. Spring 50 will accordingly be permitted to expand slightly, and will urge the lock pin 42 to the position shown in Figure 9, in engagement with the sloped surface 54. The slight movement of lock pin 42 to the right in Figure 7 which results from this action causes notch 84 to shift slightly to the right of tooth 82, so that tooth 82 will not interfere with the full movement of the lock pin into its clamp engaging position, when the outboard motor is next mounted on the boat.

From the foregoing, it will be evident that the device for locking the outboard motor 12 in its stern-supported position on the boat comprises the base 20 which is attachable to the stern 10 of the boat, the base 20 having a lock pin 42 mounted thereon for longitudinal movement in a horizontal path and adapted to engage the clamp of the motor 12 when moved in one direction, the release pin 26 which is also carried by the plate 20 and is mounted for movement thereon in a vertical path intersecting the longitudinal path of movement of the lock pin 42, the release pin aperture 52 receiving one end of the locking pin when the locking pin is in its clamp-engaging position and the release pin having a camming surface 54 upon which the one end of the lock pin can ride upon to enter the aperture 52, and means, ear 34, on the release pin 26 engageable by the motor 12 when the motor is moved to its stern-supported position thereby causing movement of the release pin in its vertical path permitting the one end of the lock pin 42 which will ride upon the camming surface 54 to enter the aperture 52 so as to lockingly engage the clamp of the motor 12. The clamp of the motor 12, will of course, be engaged by a portion of the lock pin 42 intermediate the ends of the shank 44 of the lock pin 42.

It is believed clear that the invention is not necessarily confined to the specific use or uses thereof described above, since it may be utilized for any purpose to which it may be suited. Nor is the invention to be necessarily limited to the specific construction illustrated and described, since such construction is only intended to be illustrative of the principles of operation and the means presently devised to carry out said principles, it being considered that the invention comprehends any minor change in construction that may be permitted within the scope of the appended claims.

What is claimed is:

1. A device for locking the clamp of an outboard motor on the stern of a boat comprising a base plate adapted to be attached to a stern, a lock pin mounted on said plate for movement in a rectilinear path longitudinally thereof and adapted to engage said clamp when moved in one direction, said lock pin including a horizontal leg and a vertical leg depending from one end of the horizontal leg, resilient means between said plate and said horizontal leg urging said lock pin in said one direction in its path of movement, a release pin carried by said plate and mounted for movement thereon in a rectilinear path intersecting the path of movement of said lock pin, resilient means operatively connected to said release pin urging

said release pin in its path of movement into intersecting relation with the path of movement of said lock pin, said release pin having an aperture therethrough to receive the other end of said horizontal leg of the lock pin when urged to move in said one direction into its clamp-engaging position, and means on said release pin engageable by the clamp upon movement to its stern-supported position causing movement of said release pin in its rectilinear path whereby said other end of the horizontal leg of the lock pin will enter said aperture so as to permit the lock pin to lockingly engage the clamp, an apertured lug carried by said base plate adjacent the end of said vertical locking pin leg remote from said horizontal leg and disposed in the path of movement of said vertical leg so as to abut the end of the vertical leg when the locking pin moves into its clamp-engaging position.

2. A device for locking the clamp of an outboard motor on the stern of a boat comprising a base plate adapted to be attached to a stern, a lock pin mounted on said plate for movement in a rectilinear path longitudinally thereof and adapted to engage said clamp when moved in one direction, resilient means between said plate and said lock pin urging said lock pin in said one direction, a release pin carried by said plate and mounted for movement thereon in a rectilinear path intersecting the path of movement of said lock pin, resilient means operatively connected to said release pin urging said release pin in its path of movement into intersecting relation with the path of movement of said lock pin, said release pin having an aperture therethrough to receive one end of said lock pin as the lock pin is urged to move in said one direction into clamp-engaging position, means on said release pin engageable by the clamp causing movement of said release pin in its rectilinear path whereby said one end of the lock pin will enter said aperture so as to permit the lock pin to lockingly engage the clamp, and detent means operatively connected to said release pin and arranged in restraining engagement with said lock pin to keep the lock pin out of engagement with said aperture when said clamp is not in its stern-supported position, said detent means responsive to movement of said release pin as said release pin is moved in its rectilinear path by the movement of said clamp to its stern-supported position to release the restraining engagement with said lock pin.

3. A device for locking the clamp of an outboard motor on the stern of a boat comprising a base plate adapted to be attached to a stern, a lock pin mounted on said plate for movement in a rectilinear path longitudinally thereof and adapted to engage said clamp when moved in one direction, said lock pin including a horizontal leg and a vertical leg depending from one end of the horizontal leg, resilient means between said plate and said horizontal leg urging said lock pin in said one direction in its path of movement, a release pin carried by said plate and mounted for movement thereon in a rectilinear path intersecting the path of movement of said lock pin, resilient means operatively connected to said release pin urging said release pin in its path of movement into intersecting relation with the path of movement of said lock pin, said release pin having an aperture therethrough to receive the other end of said horizontal leg of the lock pin when urged to move in said one direction into its clamp-engaging position, and means on said release pin engageable by the clamp upon movement to its stern-supported position causing movement of said release pin in its rectilinear path whereby said other end of the horizontal leg of the lock pin will enter said aperture so as to permit the lock pin to lockingly engage the clamp of said motor, an apertured lug defining a hasp carried by said base plate adjacent the end of said vertical leg of the lock pin, a lock retaining means carried by said vertical leg adjacent its end remote from said horizontal leg and adapted to register with said hasp as said lock pin moves in its rectilinear path for the reception of a lock through said last-mentioned means and said hasp to prevent movement of said lock pin in its rectilinear path out of intersecting relation with the aperture in said release pin.

4. A device for locking the clamp of an outboard motor on the stern of a boat comprising a base plate adapted to be attached to a stern, a lock pin mounted on said plate for movement in a rectilinear path longitudinally thereof and adapted to engage said clamp when moved in one direction, resilient means between said plate and said lock pin urging said lock pin in said one direction, a release pin carried by said plate and mounted for movement thereon in a rectilinear path intersecting the path of movement of said lock pin, resilient means operatively connected to said release pin urging said release pin in its path of movement into intersecting relation with the path of movement of said lock pin, said release pin having an aperture therethrough to receive one end of said lock pin as the locking pin is urged to move in said one direction into clamp-engaging position, means on said release pin engageable by the clamp upon movement to its stern-supported position causing movement of said release pin in its rectilinear path whereby said one end of the lock pin will enter said aperture so as to permit the lock pin to lockingly engage the clamp, and detent means operatively connected to said release pin, said detent means comprising end portions disposed in angular relation, one of said end portions being secured to said release pin to cause movement of said detent means with said release pin, said lock pin having a notch therein intermediate its ends, a latch member carried by said base plate and having a tooth engageable in said notch, a spring connected between the other one of said end portions and said latch to urge said tooth into engagement with said notch when said lock pin is moved away from a position adjacent said release pin.

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