

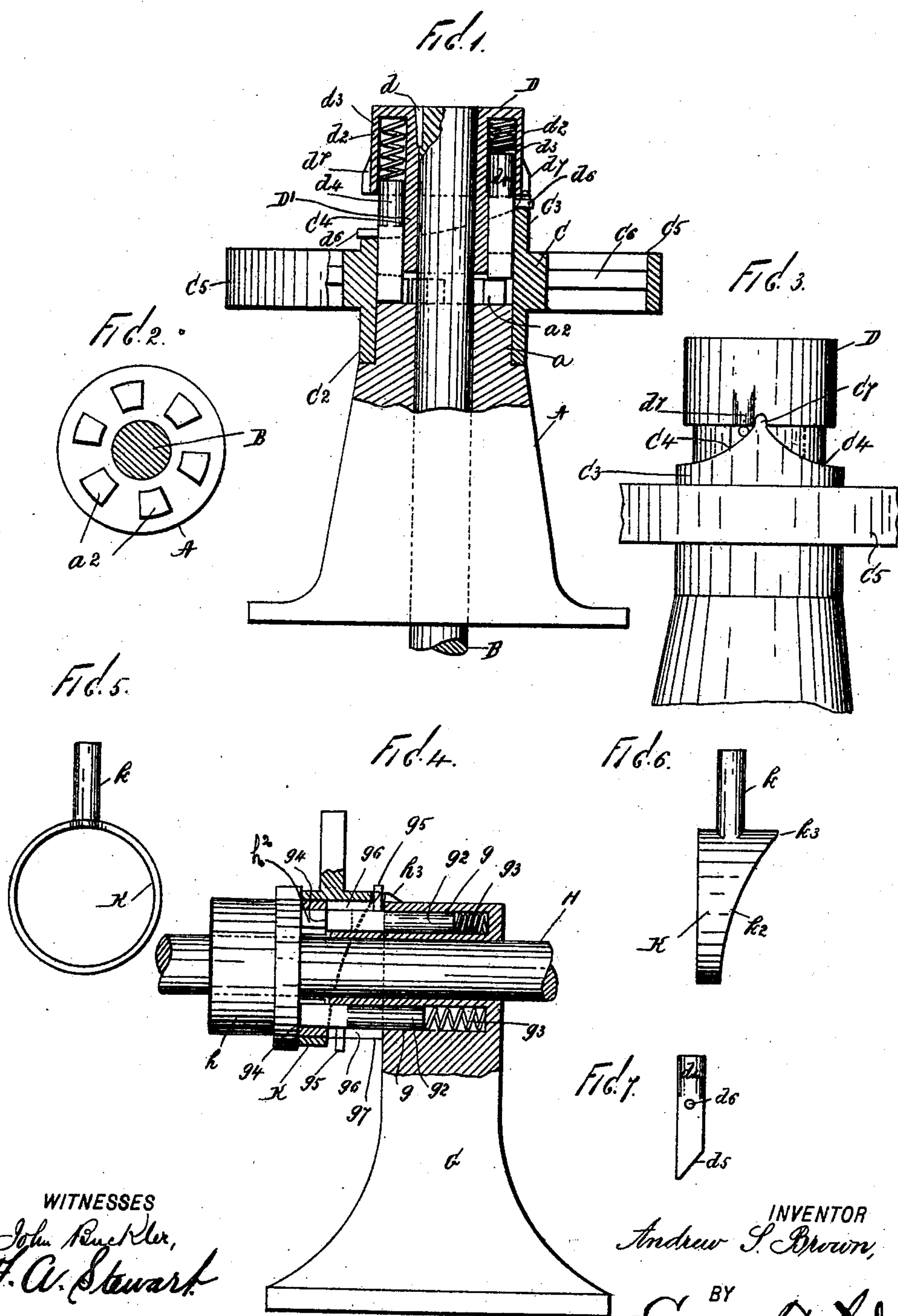
**No. 632,232.**

**Patented Sept. 5, 1899.**

**A. S. BROWN.**  
**LOCKING DEVICE.**

(Application filed Mar. 7, 1899.)

(No Model.)





# UNITED STATES PATENT OFFICE.

ANDREW S. BROWN, OF NEW YORK, N. Y.

## LOCKING DEVICE.

SPECIFICATION forming part of Letters Patent No. 632,232, dated September 5, 1899.

Application filed March 7, 1899. Serial No. 708,066. (No model.)

*To all whom it may concern:*

Be it known that I, ANDREW S. BROWN, a citizen of the United States, residing at New York, (Brooklyn,) in the county of Kings and State of New York, have invented certain new and useful Improvements in Locking Devices for Shafts, of which the following is a full and complete specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to steering and locking devices for the shafts of fire-trucks, motor-vehicles, and other vehicles, also for lever-shafts of various kinds and classes, and steering or guiding shafts in general; and the object thereof is to provide an improved device of this class by means of which such shafts may be turned when necessary or desirable and locked in any desired position, a further object being to provide a device of the class described which may be applied to the rudders of vessels for turning the same and holding them in any desired position.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which—

Figure 1 is a sectional side view of an apparatus embodying my invention; Fig. 2, a plan view of a detail thereof; Fig. 3, a side view; Fig. 4, a view similar to Fig. 1, showing a modified form of construction; Fig. 5, a side view of a detail thereof; Fig. 6, a view at right angles to Fig. 5, and Fig. 7 a side view of a locking-bolt which I employ.

In the drawings forming part of this specification the separate parts of my improvement are designated by letters of reference, and in the practice of my invention, reference being made to Figs. 1 to 3, inclusive, I provide a support A, through which is vertically passed a guide or steering shaft B. The upper portion of the support A is reduced in size, as shown at *a*, and mounted thereon is a ring C, which is preferably provided with a depending flange *C*<sup>2</sup> and an upwardly-directed flange *C*<sup>3</sup>, the opposite sides of which are formed into cam-surfaces *C*<sup>4</sup>, and the ring C is preferably provided with a rim *C*<sup>5</sup>, which is connected therewith by radial spokes *C*<sup>6</sup>, and by which the ring C is manipulated in the operation of the device, as hereinafter described.

Mounted on the upper end of the shaft B is a cylindrical head D, which is keyed thereto, as shown at *d*, and provided with a downwardly-directed hub *D*<sup>1</sup>, which closely fits the shaft B, and in the opposite sides of said head are formed sockets *d*<sup>2</sup>, which open downwardly and in each of which is mounted a spiral spring *d*<sup>3</sup> and a locking-bolt *d*<sup>4</sup>.

Arranged in a circle on the top of the support A are upwardly-directed lugs or projections *a*<sup>2</sup>, six of which are shown in Fig. 2, and the locking-bolts *d*<sup>4</sup> pass downwardly between the hub *D*<sup>1</sup> and the flange *C*<sup>3</sup> of the ring C, and the lower ends thereof are beveled, as shown at *d*<sup>5</sup>, one of said bolts being shown in Fig. 7, and said lock-bolts operate in connection with said lugs or projections, as hereinafter described.

Each of the locking-bolts *d*<sup>4</sup> is provided with an outwardly-directed pin *d*<sup>6</sup>, and the head D is provided at its lower end and on the opposite sides thereof with lugs or projections *d*<sup>7</sup>, and the flange *C*<sup>3</sup> is provided on the side thereof and at the highest point of the cam-surfaces *C*<sup>4</sup> with an upwardly-directed point or projection *C*<sup>7</sup>, which operates in connection with said lugs or projections *d*<sup>7</sup>.

The operation of this form of construction is as follows: It will be understood that the shaft B, in the form of construction shown in Figs. 1 to 3, inclusive, is manipulated entirely by the ring C, and the ring C is manipulated by the rim *C*<sup>5</sup> thereof. The ring C may be turned through almost a half-revolution in either direction, and in this operation the shaft B may be also turned in either direction. One of the locking-bolts *d*<sup>4</sup>, in the position of the ring C shown in Fig. 1, and also when said ring is in the opposite position, is raised and the other lowered, and in this position the shaft may be turned in one direction, the beveled portion *d*<sup>5</sup> at the lower end of the locking-bolts permitting one of said bolts to move over the upwardly-directed lugs or projections *a*<sup>2</sup>, while the other is raised above said lugs or projections. It will therefore be seen that by means of the construction shown in Figs. 1 to 3, inclusive, the shaft B may be turned in either direction and locked in position.

In the construction shown in Figs. 4 to 6, inclusive, I have shown a support G, and a



shaft H passing transversely through the top thereof, and the support G is provided on the opposite sides of said shaft with sockets  $g$ , in which are mounted locking-bolts  $g^2$  and 5 springs  $g^3$ , which operate to force said bolts outwardly. In this form of construction the shaft H is provided with a cylindrical head  $h$ , having on the end thereof adjacent to the support G lugs or projections  $h^2$ , which are 10 arranged in a circle similar to the lugs or projections  $a^2$ , (shown in Fig. 2,) and the ends  $g^4$  of the locking-bolts  $g^2$  are beveled the same as in the construction shown in Fig. 1, and said ends of said bolts operate in connection 15 with the lugs or projections  $h^2$ . In this form of construction I employ a ring K, which takes the place of the ring C (shown in Fig. 1) and is provided on one side with a handle  $k$ , and the opposite sides of said ring in the direction 20 of the support G are formed into cam-surfaces  $k^2$ . In this form of construction the locking-bolts  $g^2$  are provided with pins  $g^5$ , which move in slots  $g^6$ , formed in a hub  $g^7$ , formed on the support G, and the locking-bolts  $g^2$  move 25 freely in said hub, while the head  $h$  is keyed to or formed integrally with the shaft H, and the ring K is adapted to turn freely on the hub  $g^7$  through almost one-half of a revolution in either direction. The hub  $g^7$  or the 30 support G adjacent thereto is provided at one side with a lug or projection  $h^3$ , and the ring K, at the highest point between the cam-surfaces  $k^2$ , is provided with a point or projection  $k^3$ , which operates, in connection with the lug or projection  $h^3$ , to limit the movement of the 35 ring K. In this form of construction the pins  $g^5$  on the locking-bolts  $g^2$  move over the cam-surfaces  $k^2$  of the ring K, and said ring K is free to turn through a partial revolution the same as in the construction shown in Fig. 1, 40 and the shaft H may be turned or operated by any desired means and may be locked in any desired position by turning the ring K. One of the locking-bolts  $g^2$  is free to move over 45 the lugs or projections  $h^2$  on the head H when said shaft turns in one direction; but the opposite bolt strikes said lugs or projections and stops the shaft as the ring K is manipulated. In the position of the ring  $g^3$  shown in Fig. 4 50 the shaft may be turned in one direction, but cannot turn in the other, and by reversing the position of said ring the movement of the shaft may be reversed.

In each of the forms of construction herein 55 shown and described it will be seen that I employ a support, a shaft passing therethrough and provided with a head, said support and said head being provided one with spring-operated locking-bolts and the other with lugs 60 or projections in connection with which said

bolts operate and a cam-ring which operates to move said bolts against the tension of the springs by which they are operated.

The lower ends of the locking-bolts  $d^5$  in both forms of construction herein shown and 65 described are both beveled on the same side, so that the straight side of one of said bolts will come in engagement with the lugs or projections in connection with which they operate when the ring by which said bolts are 70 operated is turned in either direction.

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

1. In a device of the class described, a sup- 75 port, a shaft passing therethrough and provided with a head, said support and said head being provided one with a plurality of spring-operated locking-bolts, and the other with 80 lugs or projections in connection with which said bolts operate, and a cam-ring adapted to turn on said support and to move said bolts against the tension of the springs by which they are operated, substantially as shown and 85 described.

2. In a device of the class described, a sup- port, a shaft passing therethrough and pro- 90 vided with a cylindrical head, said support and said head being provided one with lugs or projections, and the other with spring-op- 95 erated bolts which operate in connection with said lugs or projections, the ends of said bolts which operate in connection with said lugs or projections being beveled on opposite sides, and means for moving said bolts against the 100 tension of the springs by which they are operated, substantially as shown and described.

3. In a device of the class described, a sup- port, a shaft passing therethrough and pro- 105 vided with a cylindrical head, said support and said head being provided one with lugs or projections, and the other with spring-op- 110 erated bolts which operate in connection with said lugs or projections being beveled on opposite sides, and means for moving said bolts against the tension of the springs by which they are operated, consisting of a cam-ring mounted on said support and adapted to turn thereon, sub- 115 stantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 6th day of March, 1899.

ANDREW S. BROWN.

Witnesses:

F. A. STEWART,  
A. C. McLOUGHLIN.