G. A. WOODMAN.

JOURNAL BOX.

APPLICATION FILED MAY 14, 1909.

956,660. Patented May 3, 1910.

2 SHEETS—SHEET 1.

Fig. 1

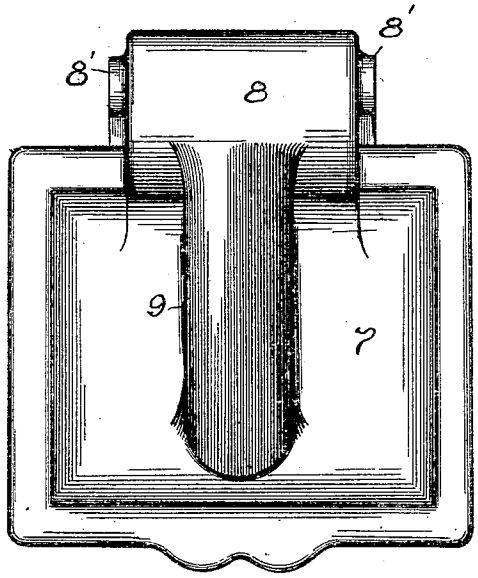


Fig. 2

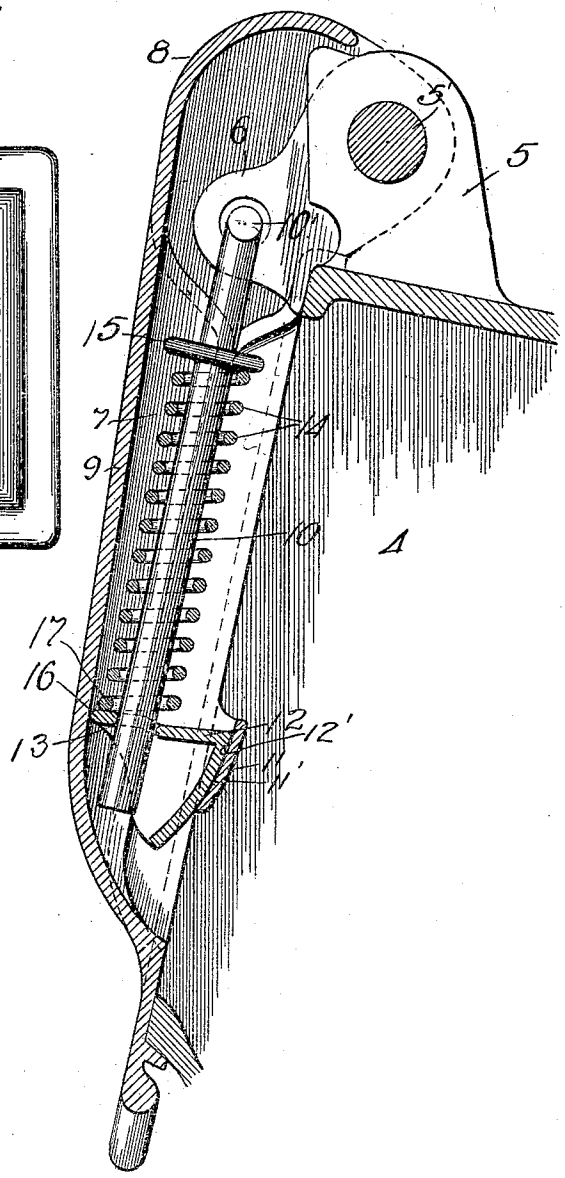
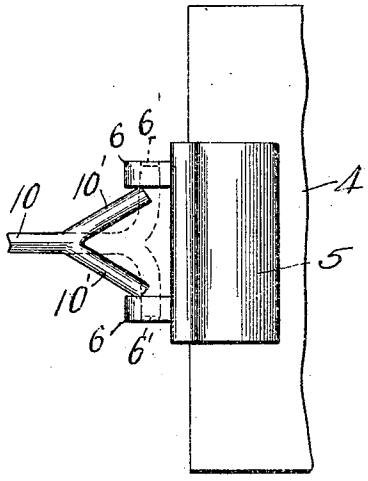


Fig. 3



Witnesses:
H. R. Lovlette
M. A. Riddle

Inventor:
George A. Woodman
By Thos. G. Orton
Atty.

G. A. WOODMAN.

JOURNAL BOX.

APPLICATION FILED MAY 14, 1909.

956,660.

Patented May 3, 1910.

2 SHEETS—SHEET 2.

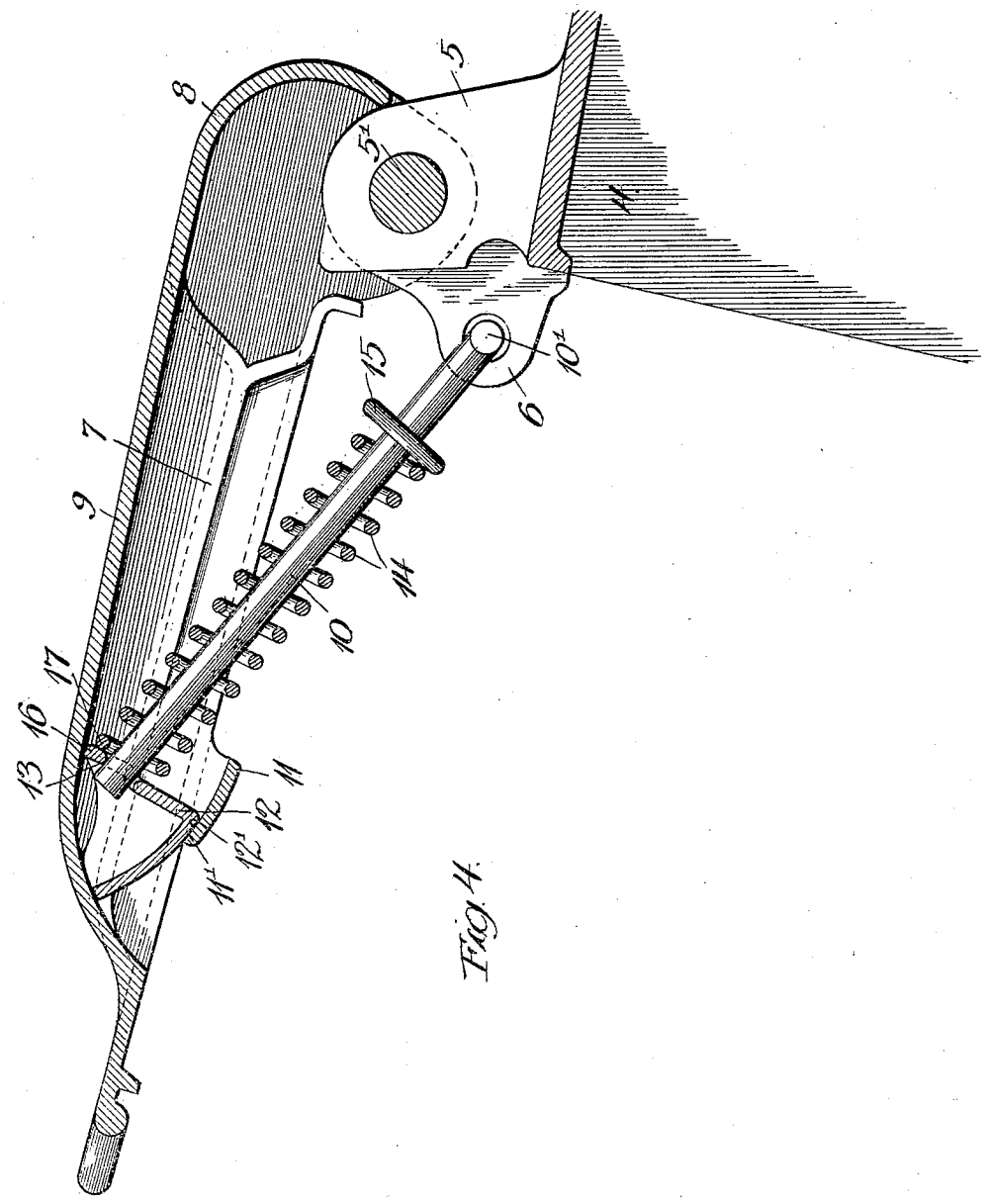


Fig. 4.

Witnesses
H. R. L. White.
M. A. Kiddie

Inventor
George A. Woodman
By [illegible] Atty.

UNITED STATES PATENT OFFICE.

GEORGE A. WOODMAN, OF CHICAGO, ILLINOIS, ASSIGNOR TO KIRBY EQUIPMENT COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

JOURNAL-BOX.

956,660. Specification of Letters Patent. **Patented May 3, 1910.**

Application filed May 14, 1909. Serial No. 496,007.

To all whom it may concern:

Be it known that I, GEORGE A. WOODMAN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Journal-Boxes, of which the following is a specification.

The object of this invention is to provide means of simple construction for holding the lid of a car axle box in open position and for automatically swinging the lid to closed position when it is released from open position and yieldingly but tightly locking it against the box to form an effective closure and exclude dirt and prevent rattling.

In the accompanying drawings Figure 1 is a front view of the lid. Fig. 2 is an enlarged sectional view showing the lid in closed position on the box. Fig. 3 is a detail view showing how the spring pin is engaged with the box. Fig. 4 shows the lid in open position.

Referring to the drawings, 4 designates a car axle box of any suitable construction which is provided with a lug 5 and ears 6 projecting forwardly from the lug. The lid 7 has a hood 8 for the lug and ears on the box and a spring housing 9. The lid is hinged to the box in the usual manner by a pintle 5′ which is arranged in a bore in the lug and in openings in the ends 8′ of the hood. A pin 10 is pivotally engaged with the ears 6 and hangs down in the housing 9. I may engage the pin with the ears in any suitable manner but I prefer to provide it at the upper end with a fork, the branches 10′ of which are initially straight, as shown in full lines in Fig. 3. The pin is arranged with the ends of the branches opposite openings 6′ in the ears and is then driven in with sufficient force to bend the branches and drive them into the openings to the position shown in broken lines in Fig. 3. Thus the pin is permanently engaged with the ears on the box but so that it can swing freely with the lid. A keeper 11 is provided on the inner side of the lid adjacent to the bottom of the housing and I prefer to cast it integral with the lid, as shown. A loose thimble or spring seat 12 is arranged in the space between the keeper and the housing and as this thimble moves on and relatively to the keeper I provide it with a convex surface 12′ to engage a complementary concave surface 11′ on the keeper. The thimble has an opening 13 to receive the lower end of the pin 10 and a spring 14 is arranged on the pin between the thimble and a collar 15 on the pin. When the lid is in closed position the pin will hang in a position substantially parallel with and in front of the front face of the box.

The spring is arranged in place under compression and its pressure is transmitted to the bottom of the lid to hold it tight against the box in closed position to exclude dirt and prevent rattling. I prefer to make the thimble somewhat higher at 16 in front of the pin than behind the pin and to arrange the lower end 17 of the spring to bear on this high point 16 so that the pressure of the spring will be exerted thereon and thus tend to press the thimble inwardly against the keeper, thereby more effectually applying the force of the spring to press the lid tightly against the box.

In practice the lid and pin are connected to the box, the spring is put on the pin under compression, and then the thimble is arranged on the pin and permitted to slip into place on its seat. When the lid is closed the spring is under compression and the thimble is held between the front of the lid and the seat. As the lid is swung to open position the spring first compresses and then expands, and it is at approximately the same tension when the lid is open as when it is closed. The spring is under its greatest compression when the lid is midway between open and closed positions. As the lid is swung open the thimble slides outward on its seat until, when the lid reaches the limit of its opening movement the outer end of the thimble is wedged under the pressure of the spring against the front of the lid to hold the lid open. The lid is returned to closed position by a blow or pressure sufficient to move the lid downward until the spring has passed the point of greatest compression, after which the spring will act to close and hold the lid tightly against the box. During the closing movement of the lid the thimble slides back to its normal position as shown in Fig. 2, and in this position the tension of the spring is exerted through the thimble against the housing near the lower edge of the lid to hold the latter tightly closed. During the opening and closing movements of the lid the thimble slides freely up and down in a plane sub-

stantially parallel with the lid and it transmits the pressure of the spring inward to hold the lid tightly closed or outward to hold the lid open when the lid is in its closed or open positions respectively.

What I claim and desire to secure by Letters Patent is:

1. The combination of a car axle box having a lug and ears projecting forwardly from the lug beyond the front of the box, a lid hinged to the lug and having a hood for the lug and a housing below the hood, a pin pivotally engaged with the ears and arranged in the housing substantially parallel with the front of the box when the lid is closed, a movable thimble carried by the lid in the housing separate from and independent of the box and provided with an opening for the lower end of the pin, and a compression spring on the pin arranged to bear on the thimble.

2. The combination of a car axle box having a lug and ears thereon, a lid hinged to the lug and provided with a housing, a pin pivotally engaged with the ears and arranged in said housing, a movable thimble separate from and independent of the box and carried by the lid in engagement with the lower end of the pin, and a compression spring on the pin arranged to press the thimble inward toward the box when the lid is closed.

3. The combination of a car axle box, a lid hinged to the box, a keeper on the inner side of the lid, a pin pivotally connected to the box, a movable thimble separate from and independent of the box and held on the lid by the keeper and provided with an opening for the lower end of the pin, and a compression spring on the pin arranged to press the thimble inward toward the box when the lid is closed and outward away from the box when the lid is opened.

4. The combination of a car axle box, a lid hinged to the box, a keeper on the inner side of the lid, a pin pivotally connected to the box, a thimble separate from and independent of the box and loosely held on the lid by the keeper and provided with an opening for the lower end of the pin, said keeper having a concave surface and said thimble having a convex surface to engage said concave surface, and a compression spring on the pin arranged to bear on the thimble, said thimble being movable up and down under the pressure of the spring in a plane substantially parallel with the lid and adapted to have its lower end engage the lid when the latter is opened and clear the lid when the latter is closed.

5. The combination of a car axle box, a lid hinged to the box, a keeper on the inner side of the lid, a pin pivotally connected to the box, a movable thimble separate from and independent of the box and loosely held on the lid by the keeper and provided with an opening for the lower end of the pin, said thimble being higher in front of than behind said pin, and a compression spring on the pin arranged to bear on said high part of the thimble.

6. The combination of a car axle box, a lid hinged to the box, a keeper on the inner side of the lid, a pin pivotally connected to the box, a thimble separate from and independent of the box and loosely held on the lid by the keeper and provided with an opening for the lower end of the pin, said keeper having a concave surface and said thimble having a convex surface to engage the concave surface, said thimble being higher in front of than behind said pin and movable freely in a plane substantially parallel with the lid, and a compression spring on the pin arranged to bear on said high part of the thimble.

7. The combination of a car axle box having a lug and ears projecting forwardly from the lug, said ears having openings therein, a lid hinged to the box, a pin having a fork at one end with the branches of said fork arranged in said openings to pivotally engage the pin with the ears, a movable thimble carried by the lid separate from and independent of the box, and having an opening for the lower end of the pin, and a compression spring on the pin arranged to bear on said thimble.

GEORGE A. WOODMAN.

Witnesses:
WM. O. BELT,
M. A. KIDDIE.