

S. T. BOLE.

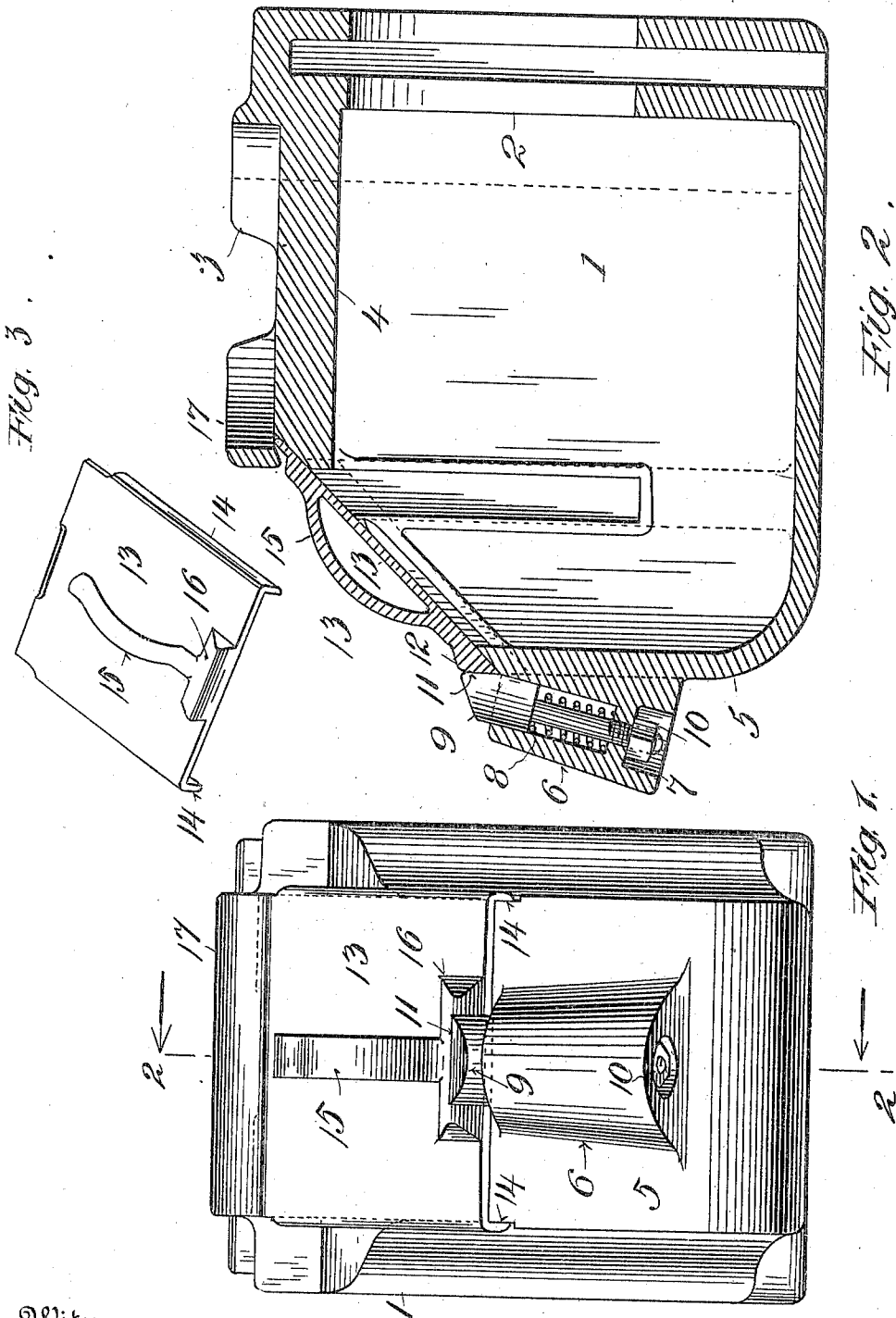
AXLE BOX.

APPLICATION FILED JULY 25, 1908.

948,037.

Patented Feb. 1, 1910.

5 SHEETS—SHEET 1.



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S. T. BOLE.

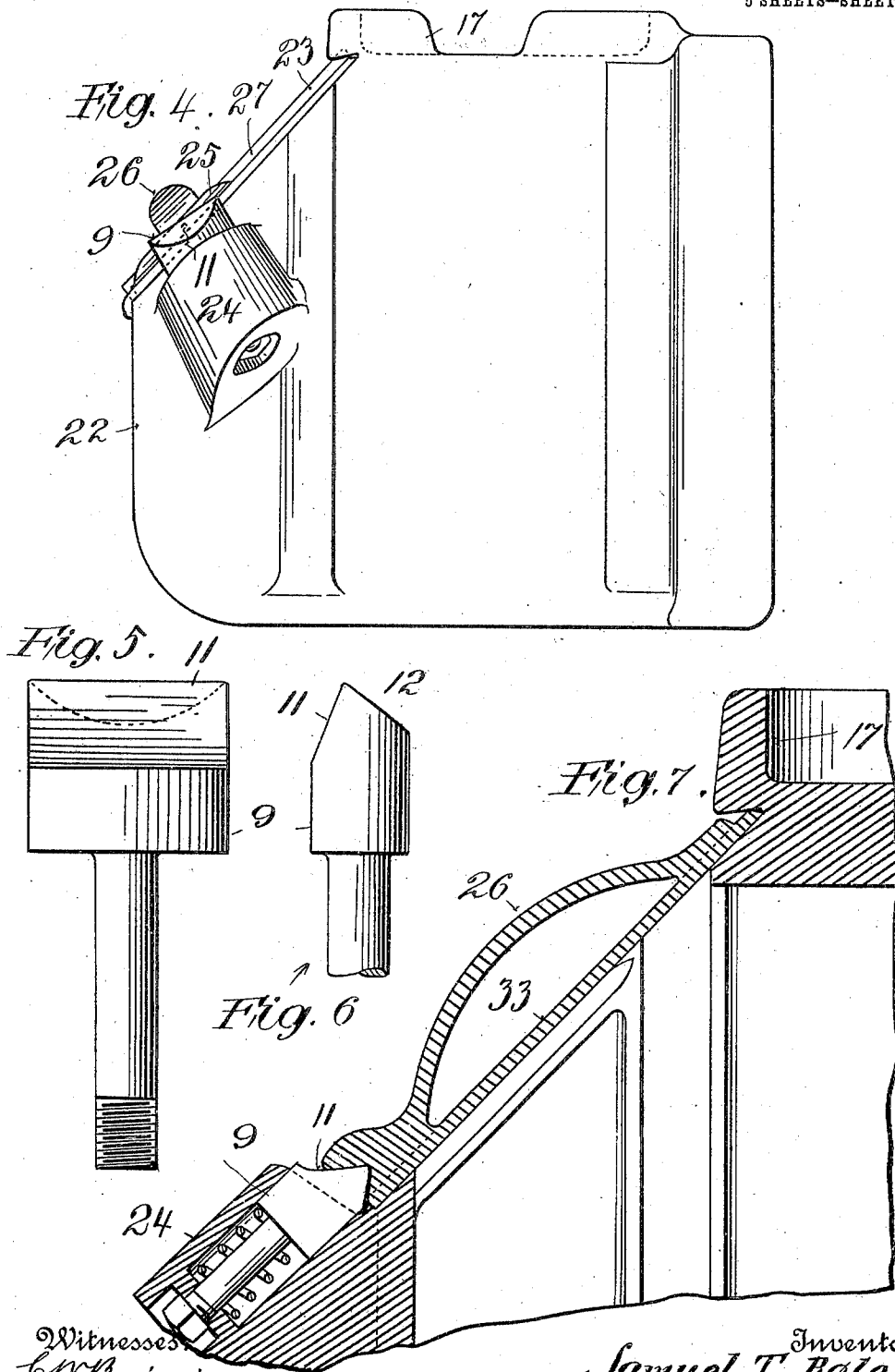
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5 SHEETS—SHEET 2.



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Fig. 8.

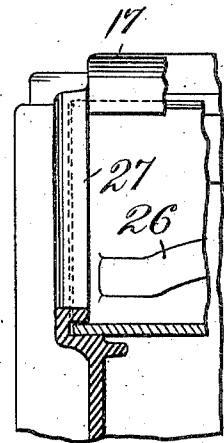
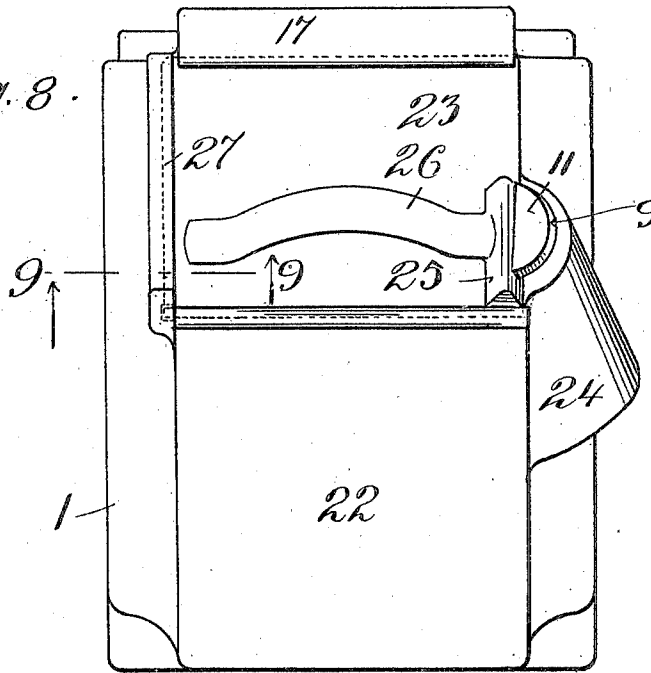
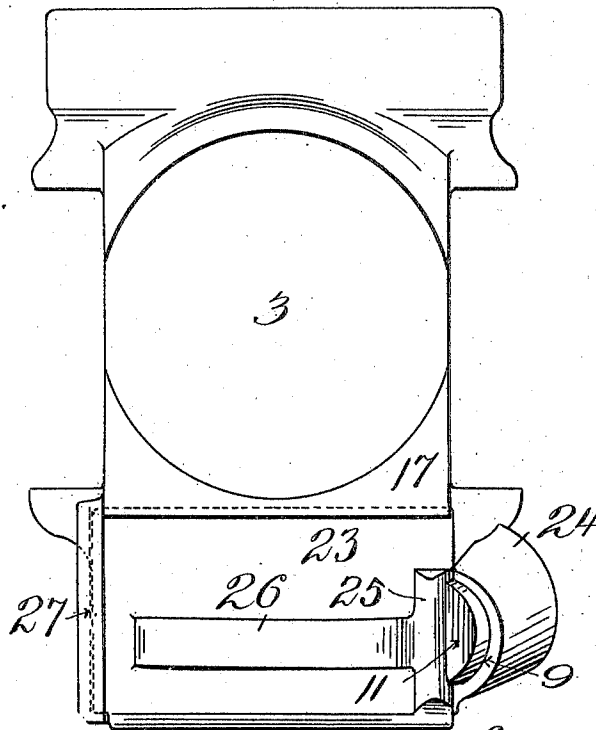


Fig. 9.

Fig. 10.



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5 SHEETS—SHEET 4.

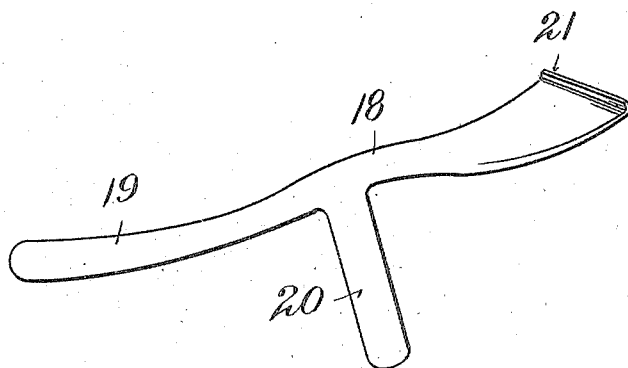


Fig. 11

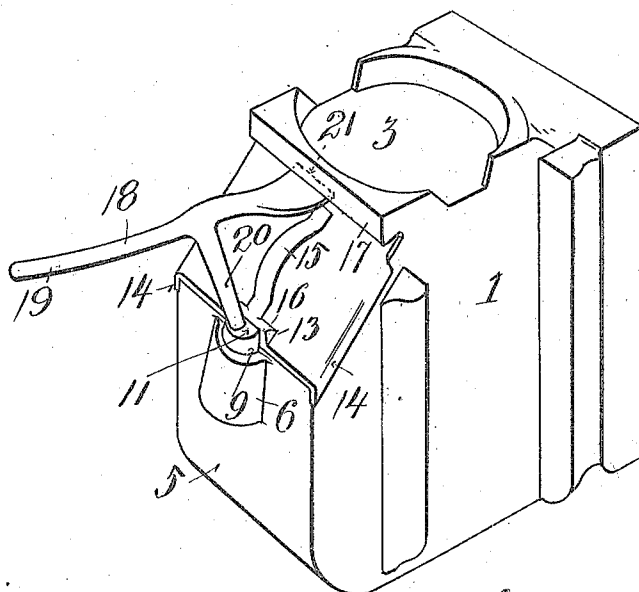


Fig. 12

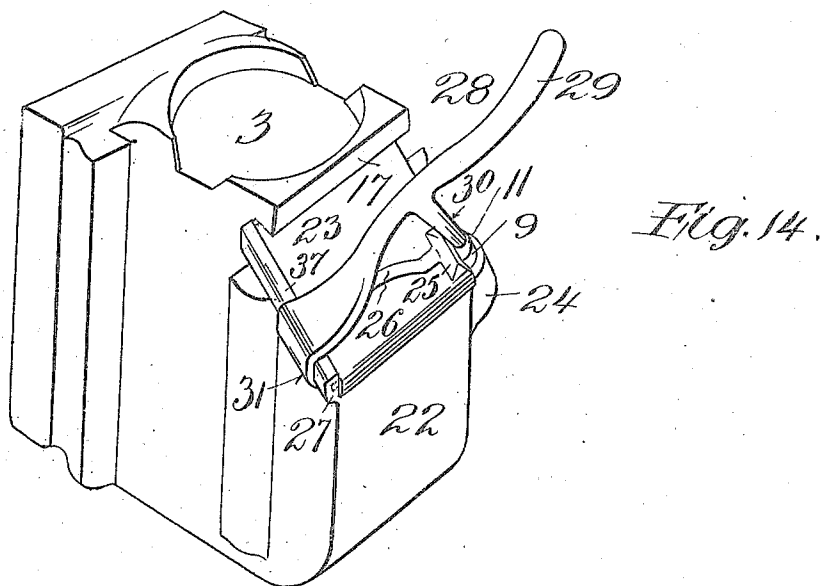
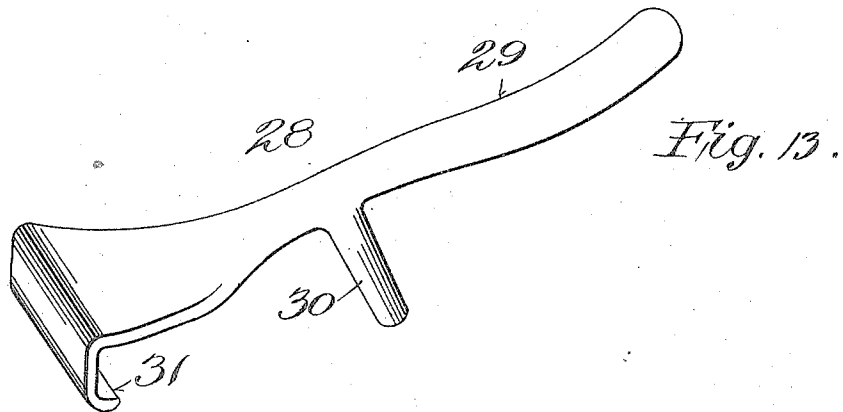
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5 SHEETS—SHEET 5.



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UNITED STATES PATENT OFFICE.

SAMUEL T. BOLE, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE J. G. BRILL COMPANY, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

AXLE-BOX.

948,037.

Specification of Letters Patent.

Patented Feb. 1, 1910.

Application filed July 25, 1908. Serial No. 445,300.

To all whom it may concern:

Be it known that I, SAMUEL T. BOLE, a citizen of the United States, and a resident of Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Axle-Boxes, of which the following is a specification.

The object of my invention is to provide a device of this class which will be economical to construct and operate and which at the same time will have its lid so secured that it will not be practical to remove it except with a special instrument so that it will be difficult, if not impossible, for malicious persons to remove the axle box cover and extract either the brass or the waste from the box.

A further object is to provide, a device which will permit the cover to be readily inserted in place after removal.

These objects are accomplished by my invention, certain embodiments of which are described below.

For a more particular description of my invention, reference is to be had to the accompanying drawings, forming a part hereof, in which:

Figure 1 is an end elevation of a box provided with my improvement. Fig. 2 is a sectional view of the same, taken on the line 2—2 of Fig. 1, looking in the direction of the arrows. Fig. 3 is a perspective view of the cover. Fig. 4 is a side elevation of a modified structure. Figs. 5 and 6 are side and end elevations respectively of the bolt for securing the axle box cover in position. Fig. 7 is a sectional view showing a further modification. Fig. 8 is an end elevation of the structure shown in Fig. 4. Fig. 9 is a sectional view taken on the line of 9—9 of Fig. 8, looking in the direction of the arrows. Fig. 10 is a plan view of the structure shown in Fig. 8. Fig. 11, is a perspective view showing a tool for removing the axle box cover shown in Fig. 1. Fig. 12 is a perspective view showing how the tool shown in Fig. 11 is used. Fig. 13 is a perspective view of a tool suitable for the structure shown in Fig. 8. Fig. 14 is a perspective view illustrating the use of the tool shown in Fig. 13.

Throughout the various views of the drawings, similar reference characters designate similar parts.

My improved axle box 1 is provided with the

usual opening 2 for the axle and the spring seat 3 for the axle box spring. Except as herein noted, this axle box is of the conventional form, and is provided with the usual seat 4 for the brass and at its bottom this axle box is provided with suitable space for the waste. The exterior end wall 5 of the axle box 1, is provided with a suitable lug 6, in the modification shown in Figs. 1, 2 and 12, which lug is made hollow except for a perforated diaphragm collar 7, the upper wall of which forms a seat for a spring 8 whose upper end presses against the bolt 9 which has a nut 10 secured to its lower end immediately below the collar 7, and is pressed against this collar by the spring 8 when the bolt 9 is in its normal position. The upper edges of the bolt 9 are beveled at 11 and 12 for a purpose that will appear below. The bolt 9 may be made in any suitable form, but is preferably made substantially as shown.

The axle box cover 13 has downwardly extending side flanges 14 and a handle 15 and a bolt engaging portion 16 all of which may be of any suitable form, but are preferably as shown.

The spring seat 3 has its exterior wall 17 extended so as to slightly overhang the beveled portion or cover seat of the end 5 on which the cover 13 is placed. When this cover 13 is pressed down it forces the bolt 9 against the action of the spring 8 until the thickened portion 16 of the cover 13 has cleared the bolt 9. The bolt 9, under the action of the spring 8, immediately flies back and the bevel 12 of this bolt 9 rubs against the thickened portion 16 and forces the cover 13 snug on to its seat where it is held securely by the wall 17 on its upper edge, the flanges 14 on its side edges and the bolt 9 on its lower edge. Obviously it cannot be removed without lowering the bolts 9 against the tension of the spring 8. This spring 8 is preferably made sufficiently stiff to prevent the bolt 9 from being moved without considerable force and as only a small surface of this bolt 9 is accessible it is moved with great force which must be brought to bear upon its exposed surfaces to cause it to shift so that the cover 13 can be removed.

To facilitate the removal of my improved axle box cover, I have invented the following tool 18 which consists of a handle 19 a projection 20 and a lip 21. This tool or lever

is so shaped and proportioned that its lip 21 is adapted to be inserted under the wall 17 and its projection 20 rests on the bevel 11 of the bolt 9 so that when the handle 19 is depressed this bolt 9 will be lowered and the cover 13 may be readily removed. The position occupied by the tool 18 while performing its function can be readily understood from Fig. 12.

In the structures shown in Figs. 4, 8, 9, 10 and 14, the end 22 of the axle box 1 is left free and undisturbed. The wall 17 about the spring seat 3 is the same as above described with regard to Figs. 1 and 2. However, the cover 23 is slightly modified and other parts are necessarily modified to correspond. The lug 24 is placed at one side of the end 22 and is precisely the same as the lug 6 above described, and contains a spring actuated bolt 9 which is also identical with the bolt 9 above described and acts in precisely the same manner, the spring for actuating the same not being shown. The cover 23 has a thickened portion 25 extending along one of its side edges and adjacent to this and near the lower edge is a handle 26. The wall of the end 22 opposite the lug 24 is enlarged and extends above the seat of the cover 23. This enlargement 27 is suitably recessed so as to receive one edge of the cover 23 so that this cover can be removed therefrom in one direction namely, that is toward the lug 24 and in no other direction. The cover 23 is placed in position by sliding one edge under the wall 17 and the adjacent edge in the groove of the enlargement 27. It is then pressed on the bolt 9 and this bolt is depressed until the enlargement 25 is clear of this bolt, when the bolt flies back under the action of its spring and covers this enlargement thereby securing the cover in place.

The cover is removed by means of the tool shown in Fig. 13. This tool 28 is provided with a handle 29, a projection 30 and an overhanging flange 31. When in use this flange passes over the enlargement 27, the projection 30 presses upon the bolt 9 as shown in Fig. 14, and then when the handle 29 is depressed, the bolt 9 is forced clear of the cover 23 which may then be readily removed as is obvious.

The structure shown in Fig. 7 is in the substance the same as that shown in Fig. 1, except that the bolt 32 has its head beveled at a different angle and the cover 33 has its lower edge beveled to correspond. In this construction the bolt is intended to push directly against the end of the cover 33 which is held with slightly less firmness than by the other device.

It is obvious that my invention is not restricted to the precise details of construction herein set forth, but is broad enough to cover

all features that come within the scope of the annexed claims.

Having described my invention what I claim is:

1. In a device of the class described, an axle box having an inclined portion with a projecting wall at one edge thereof, a cover resting upon said inclined portion and having one edge extending under said projecting wall, and an upwardly inclined exteriorly-disposed spring actuated bolt having a portion projecting beyond the lower end of said inclined portion and engaged by the side of the cover opposite that engaged by said projecting wall.

2. In an axle box, a lid, an abutment on the box for the lid, and a spring actuated bolt arranged exteriorly of the box and between which and said abutment the lid is retained, one end of the cover fitting under said bolt between the same and the box, said bolt being substantially vertically disposed, and downwardly depressible to permit of the removal of the lid.

3. In a device of the class described, a projecting wall, a cover seat extending under said wall exteriorly of the box and a lug opposite said wall upon the exterior of the box, a spring actuated bolt in said lug and disposed substantially vertically and a cover having one end fitting under the said wall and the other end under said bolt, said bolt being downwardly depressible to permit of removal of the lid.

4. In a device of the class described, an overhanging wall and a cover seat extending under said overhanging portion, a spring actuated bolt mounted exteriorly of the box near said seat and a cover having one edge adapted to fit under said wall and a second edge adapted to fit under said bolt and two other edges provided with depending flanges the upper edges of the bolt being oppositely inclined.

5. In a device of the character described, an axle box having an overhanging wall, an unpivoted bodily movable slidable cover having one edge enlarged and adapted to take under said overhanging wall, and a substantially vertically disposed spring actuated bolt mounted exteriorly of said box opposite said overhanging wall with its upper edge oppositely inclined and adapted to have said cover fit under the projecting end thereof to secure said cover and hold it against sliding movement.

Signed at the city, county and State of New York, this 24th day of July 1908.

SAMUEL T. BOLE.

Witnesses:

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