

C. F. MURRAY.

JOURNAL BOX.

APPLICATION FILED JULY 21, 1908.

992,976.

Patented May 23, 1911.

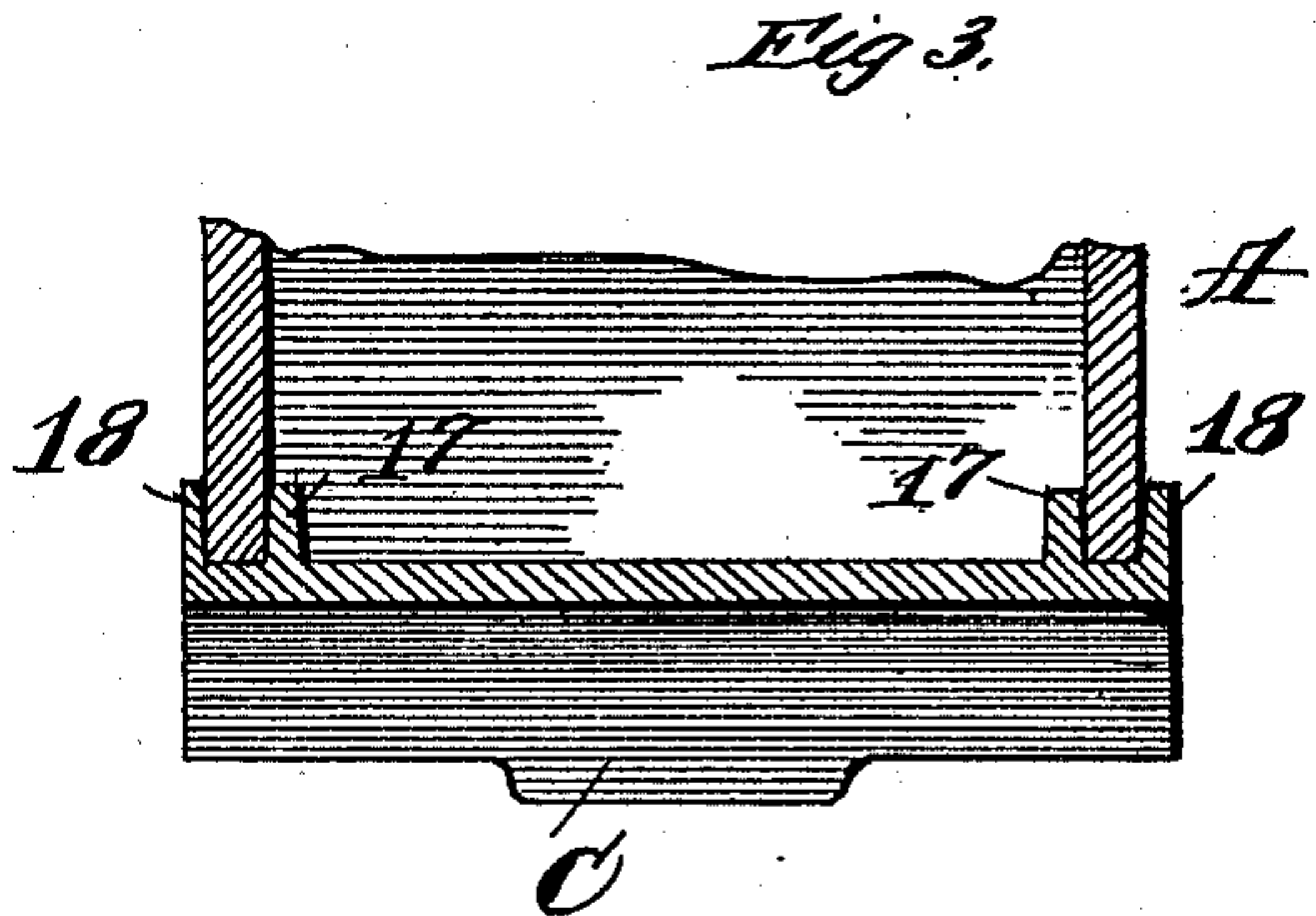
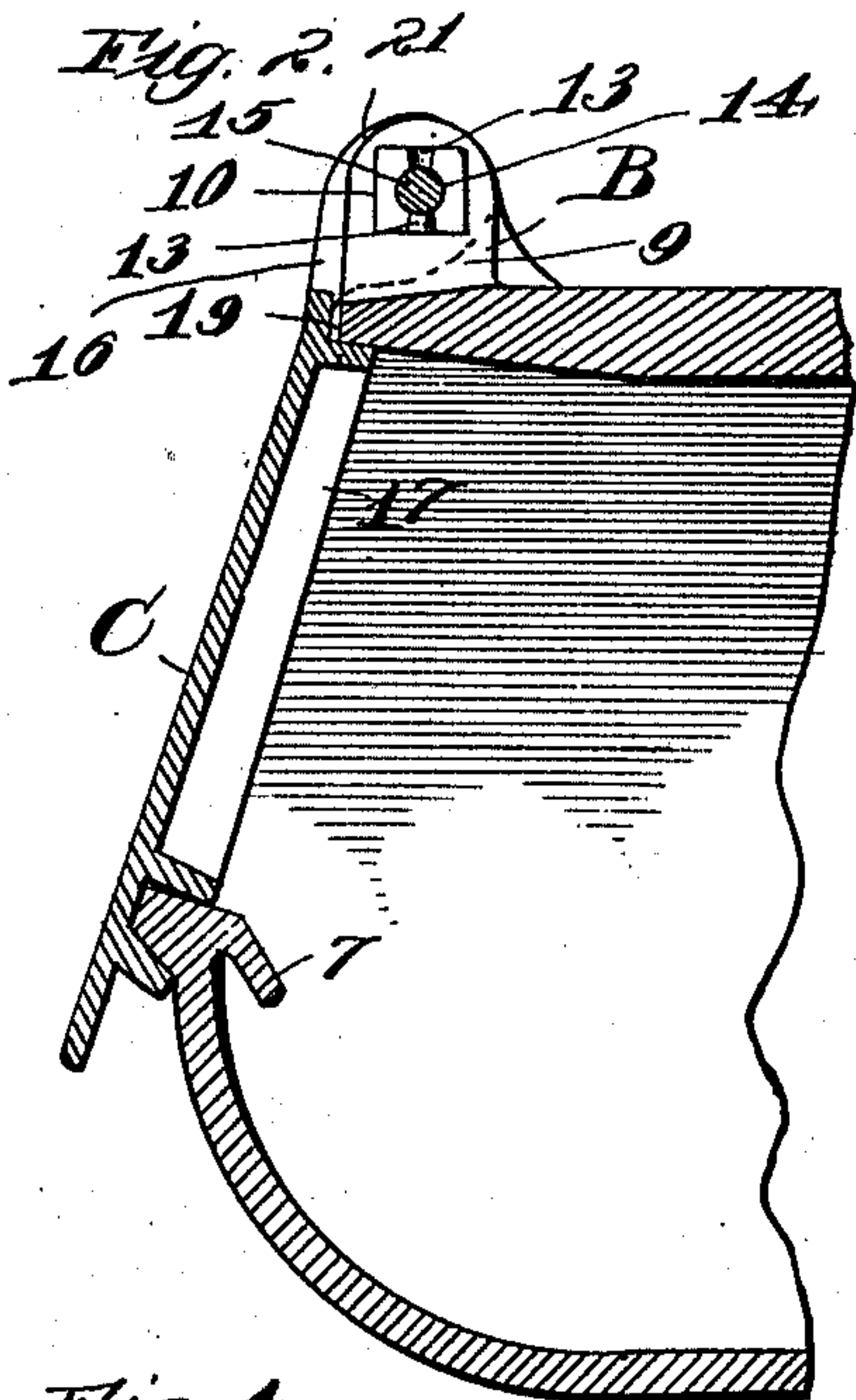
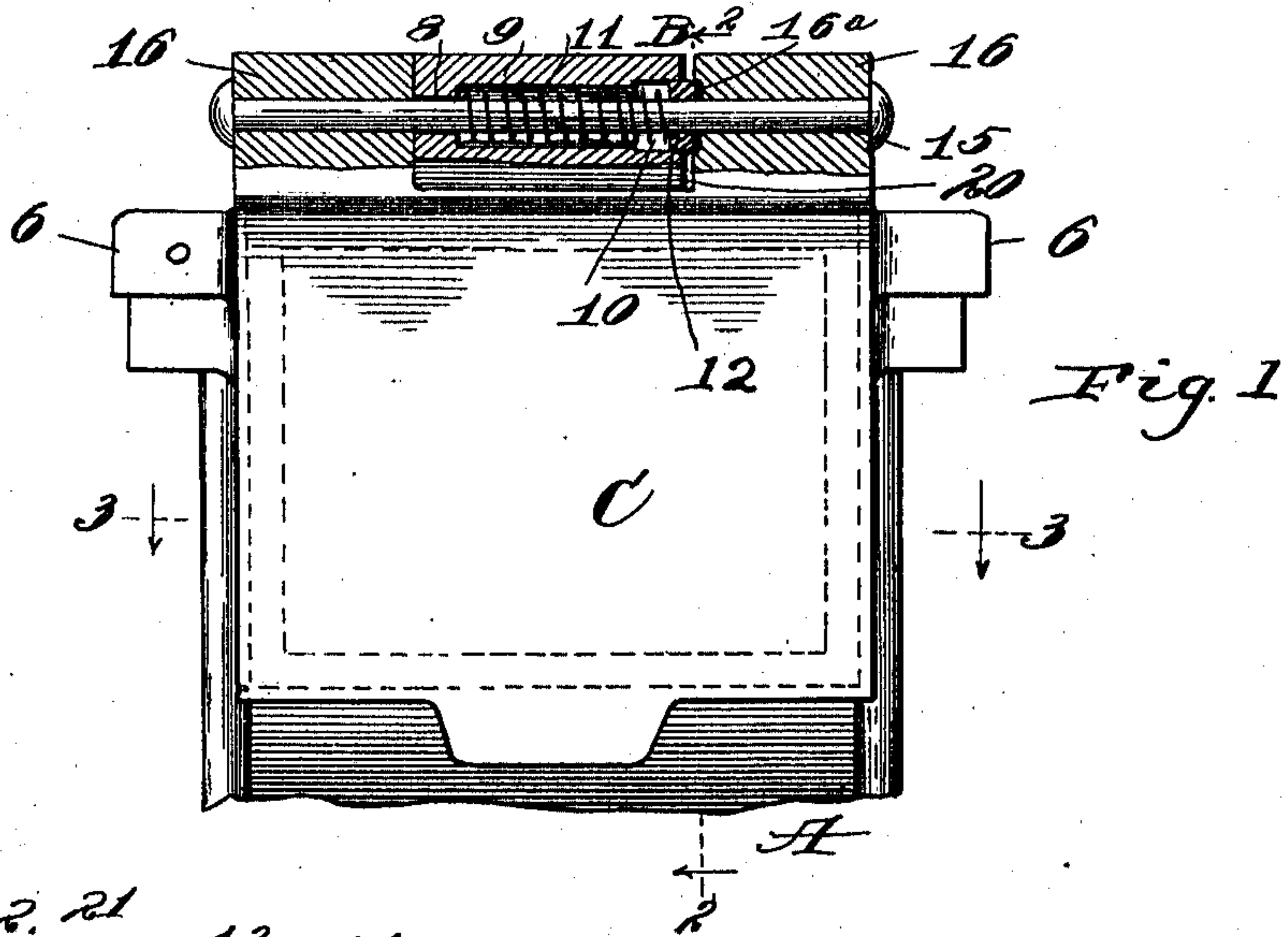


Fig. 4.

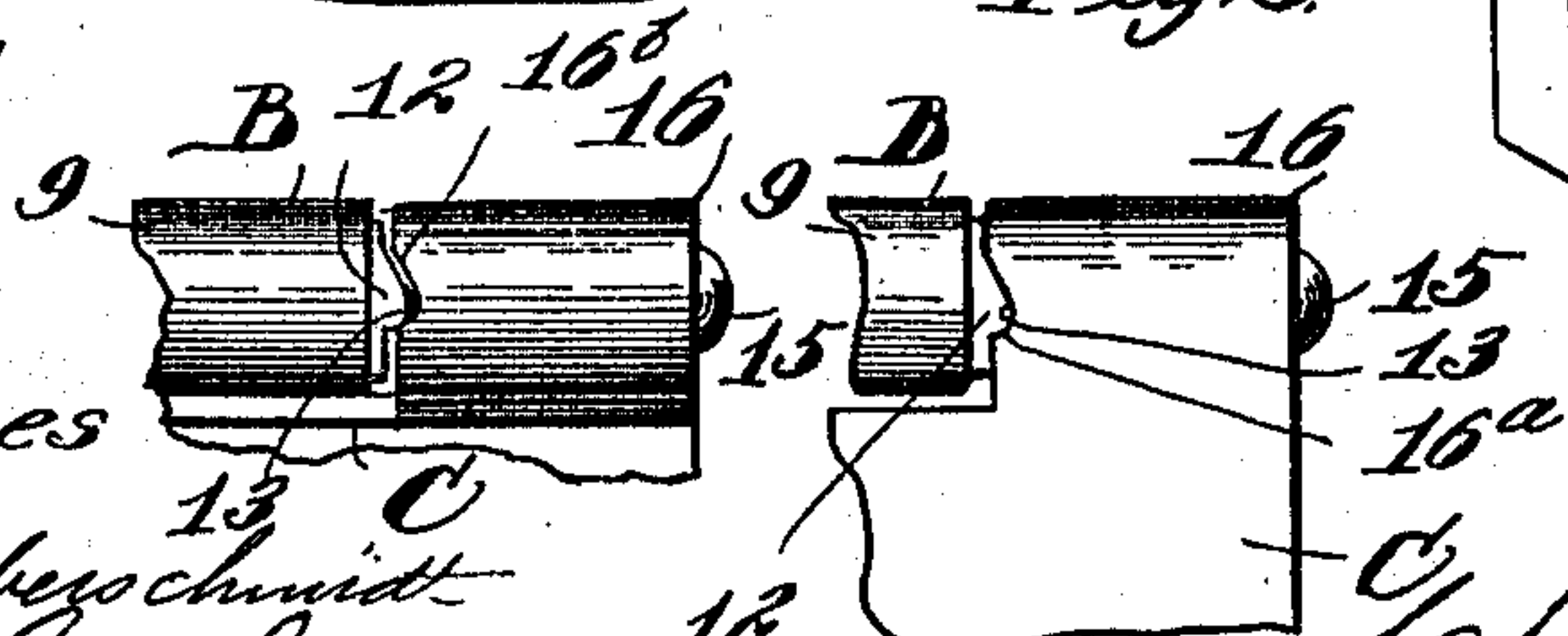
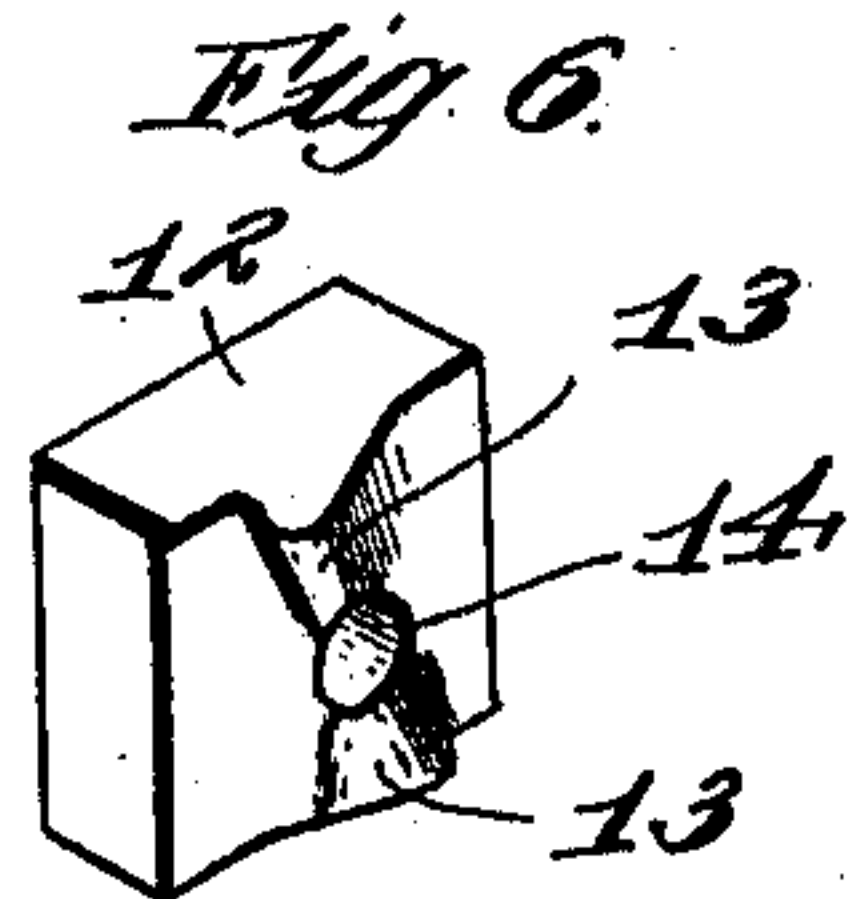


Fig. 5.



Witnesses

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UNITED STATES PATENT OFFICE.

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JOURNAL-BOX.

992,976.

Specification of Letters Patent.

Patented May 23, 1911.

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To all whom it may concern:

Be it known that I, CHARLES F. MURRAY, a citizen of the United States, and resident of Chicago, Cook county, Illinois, have invented certain new and useful Improvements in Journal-Boxes, of which the following is a specification.

This invention relates to railway car truck journal boxes and has particular reference to the means for retaining the journal box lid or cover thereon.

It is old in the art to secure the cover or lid to the journal box by means of springs of the spiral or flat variety and many forms of such spring retaining devices are now in use. However, there are certain inherent defects in many of these which it is the purpose of this invention to overcome. Referring particularly to those forms of spring retained lids wherein the spring is held underneath the lid within the box, it is well known that should the journal box become heated and catch fire, the resultant flame will so heat the spring as to remove the temper therefrom and make it worthless to accomplish the purpose for which it was designed. Further with reference to springs retained on the outside of the journal box lid, there is the objection that they are exposed to the weather and to the arduous conditions of service which renders them liable to breakage from rough usage and oxidation. This is particularly true on refrigerator cars where water is constantly dripping.

This invention is designed to overcome the effects above mentioned in that the spring is entirely concealed and therefore protected from internal heat as from hot journal boxes, as well as from conditions of rough usage and the effects of the elements.

I am aware that it is not new to provide horizontally placed spiral springs for the retention in place of the journal box lid, but in none of those known to me, is the spring entirely protected from the weather.

A further object of my invention is to provide a journal box of the class described which meets the Master Car Builders' requirements, as to the lug or projection upon

the journal boxes proper. The advantages of this construction lies in the fact that should the lid be broken on the road, it will be possible to supply to the box any of the other well known lids which meet the M. C. B. requirements. This is particularly advantageous, for as repairs can not be made on the road the box would have to be left open and the car sent on for repairs, meantime allowing the collection of dust and dirt and the consequent grinding of the journal.

A further object of my invention is to provide a cover or lid whose movements shall be in a vertical plane, that is not side shifting. This will permit of a better fit for the lugs or peripheral rim fitting within the journal box.

My invention will be more readily understood by reference to the accompanying drawings in which;

Figure 1 is a fragmentary front elevation partly in section illustrating the invention; Fig. 2 is a section on the line 2—2 of Fig. 1; Fig. 3 is a fragmentary section on the line 3—3 of Fig. 1; Fig. 4 is a plane view of the box lug and one of the lid lugs and shows the spring operated cam protruding from the box lug in the closed position of the lid; Fig. 5 is a similar view showing the position of the same parts when the lid is open; and Fig. 6 is a perspective view of the cam.

In the drawings, A, represents the journal box; B the lug thereon and C the journal box lid.

6, 6 represent side lugs which are cast upon the journal box and whereby the box is secured to the side frame by means of the usual bolts (not shown).

Within the journal box on its front lower edge, I provide an overhanging ledge, 7. There is at all times a quantity of oil within the oil cellar of the box and by the movement of the car this oil is inclined to shift and escape from around the lid. This ledge is designed to prevent such action.

The lug, B, is of the usual form having an opening therethrough conforming in diameter at one end, 8, to the usual M. C. B. size; at 9 this bore or opening is somewhat

enlarged and at 10 it is still further slightly enlarged and is preferably squared or non-cylindrical. A compression spring, 11, is seated in the space, 9, and bears at one end
 5 upon the shoulder between the chambers 8 and 9, and at the other end upon a block, 12, having upon its outer face oppositely disposed cams 13. The cam block is also provided with a central cylindrical aperture,
 10 14, of M. C. B. size for the passage of the pintle or hinge bolt, 15.

The lid, C, has the usual upstanding lugs or ears 16, 16, provided with alined apertures for the pivot or hinge bolt or pin, 15.
 15 Upon the inner face of one of the lugs, I provide two cam recesses 16^a and 16^b, adapted to cooperate with the cams, 13, upon the face of the block, 12. The inside of the lid, C, is provided with the flanges, 17, and 18,
 20 to fit snugly upon the wall of the box at its opening. These flanges are usually machined or dressed to such an extent that when the lid is closed, a tight fit is assured between the lid and the box as best shown
 25 in Figs. 2 and 3. It will be noted that there is a space, 19, between the top of the journal box and the inner face of the lid. In applying these lids a slight variation in the casting at this point will, because of the short
 30 distance from the center of rotation, namely the bolt, cause a much greater variation at the lower portion and therefore make an imperfect fit of the lid flanges with the edge of the box. Therefore I leave an open space
 35 at this point which will allow for any slight variation in the casting. Inasmuch as there is no possibility of the escape of oil at this point there is not the necessity for as tight a fit at the upper portion.

40 I assemble the journal box and lid as follows: The spring, 11, is first placed within the opening or cavity, 9, and the cam block follows being positioned in the squared compartment, 10. The lid is then placed in
 45 position, the cam block being pressed in opposition to the expansion force of spring 11, in order to allow the placing of the lid. This may be done by placing the cam surfaces of the lid upon the block and forcing
 50 it inwardly, thus compressing the spring, and, inasmuch as there is a slight space 20 between the parts, 16 and B, this may be easily accomplished. The bolt or pivot rivet, 15, is then placed in the alined openings or
 55 apertures and riveted or otherwise secured. It will be noted by reference to Fig. 4, that when the lid is in its closed position the cam recesses upon the lid and the cams of the sliding block or follower are not exactly in
 60 register. In other words, the cams 13 do not fully enter the recesses 16^b, and consequently there is at all times an action of the

spring through the cams and the walls of the recesses 16^b tending to force the lid
 downwardly upon its seat. When the lid is
 raised the cam surfaces of the two parts co-
 operating will press the spring until the lid
 is raised to a point where the cams ride upon
 flat surfaces when the lid will remain sta-
 tionary.

As the bolt, 15, fits tightly within the space, 8, and as the cam block is squared and fits closely within the squared portion, 10, it will be seen that the spring is completely
 protected from the effects of the weather as
 well as any injury resulting from an over-
 heated box.

This lid is adapted for interchange with any M. C. B. lid, it being only necessary to remove the broken lid and the spring, and
 then reverse the block, 12, in the squared
 portion, so as to present its flat surface out-
 wardly, the apertures through the lug and
 block being of the M. C. B. size.

As will be seen I have provided a flat-
 tened portion, 21, on the outer face of the
 lug, which will adapt itself to any flat
 spring lid.

As various modifications of my invention will readily suggest themselves to one skilled
 in the art, I do not confine my invention to
 the specific constructions herein shown and
 described.

Having thus described my invention I claim as new and desire to secure by Letters
 Patent:

1. The combination with a journal-box having an apertured hinge lug, of a lid therefor having hinge members and a pin for hinging the lid to the box, one of said
 hinge members having a cam surface, a cam
 follower mounted within the box lug and
 adapted to cooperate with the cam of the
 lid, and a spring arranged within the lug
 and adapted to press the cam follower into
 contact with the hinge cam during the
 swinging movement of the lid, substantially
 as described.

2. The combination with a journal-box having an apertured hinge lug, of a lid
 therefor having hinge members and a pin
 for hinging the lid to the box, one of said
 hinge members having a cam surface, a cam
 follower mounted within the box lug, said
 cam follower being held against rotation,
 adapted for sliding movement, and cooperating with the cam of the lid, and a spring
 arranged within the box lug and adapted
 to press the cam follower into contact with
 the hinge cam during the swinging move-
 ment of the lid, substantially as described.

3. A journal box having an upstanding lug provided with an aperture therethrough for the pivot bolt, one end of which aperture

is squared, in combination with a lid having
a cam surface upon one portion thereof, a
pivot bolt, and a spring pressed cam non-
rotatably mounted within the squared por-
5 tion of said aperture and adapted for co-
operation with the cam surface on said lid,
substantially as described.

In testimony whereof, I have hereunto set
my hand this 17th day of July, 1908, in the
presence of two subscribing witnesses.

CHARLES F. MURRAY.

Witnesses:

CLARE L. ROSENOW,
FREDERICK C. GOODWIN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."
