

(No Model.)

S. COLLINS.
CAR AXLE BOX.

No. 573,391.

Patented Dec. 15, 1896.

Fig. 1.

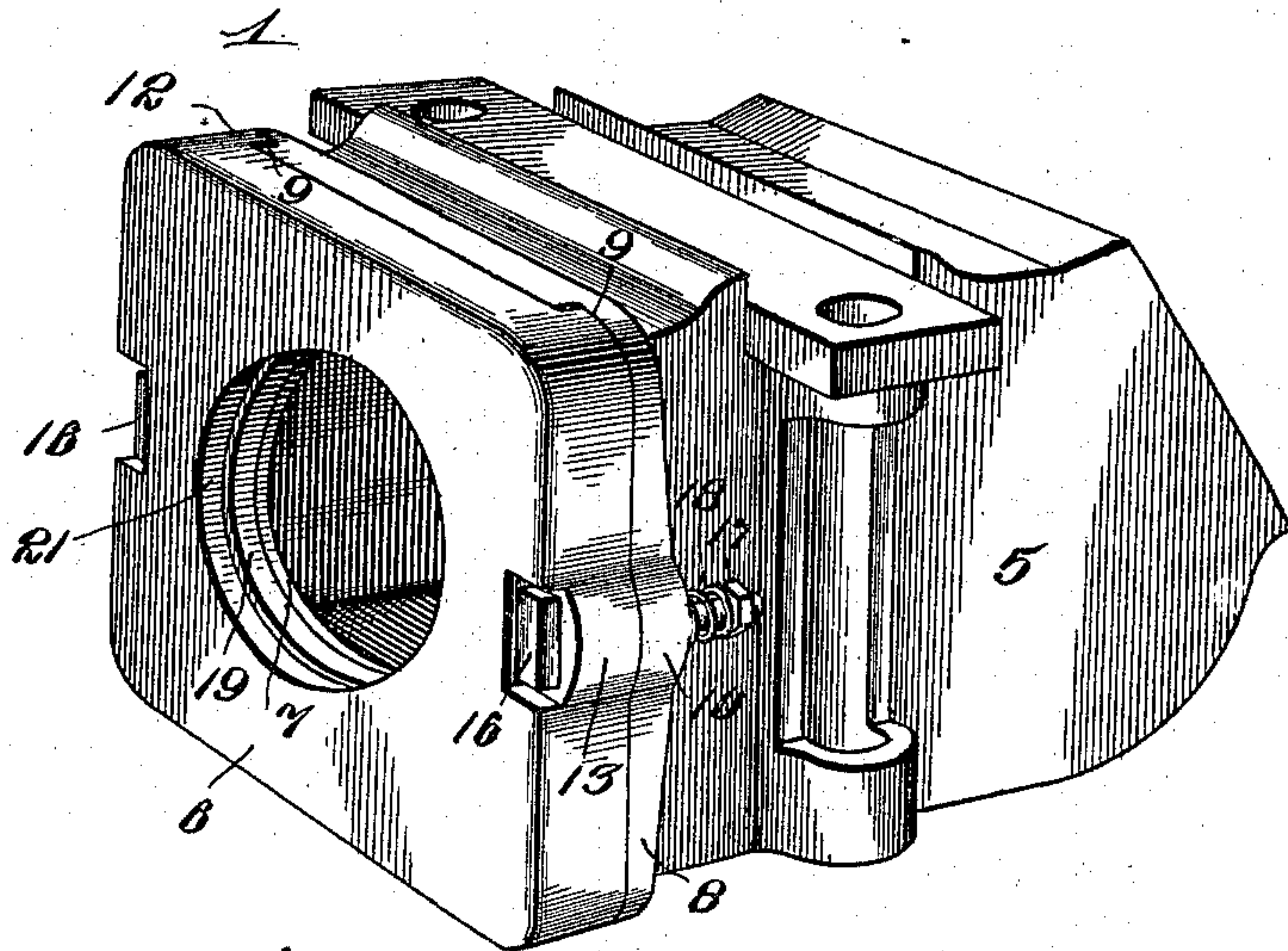


Fig. 2.

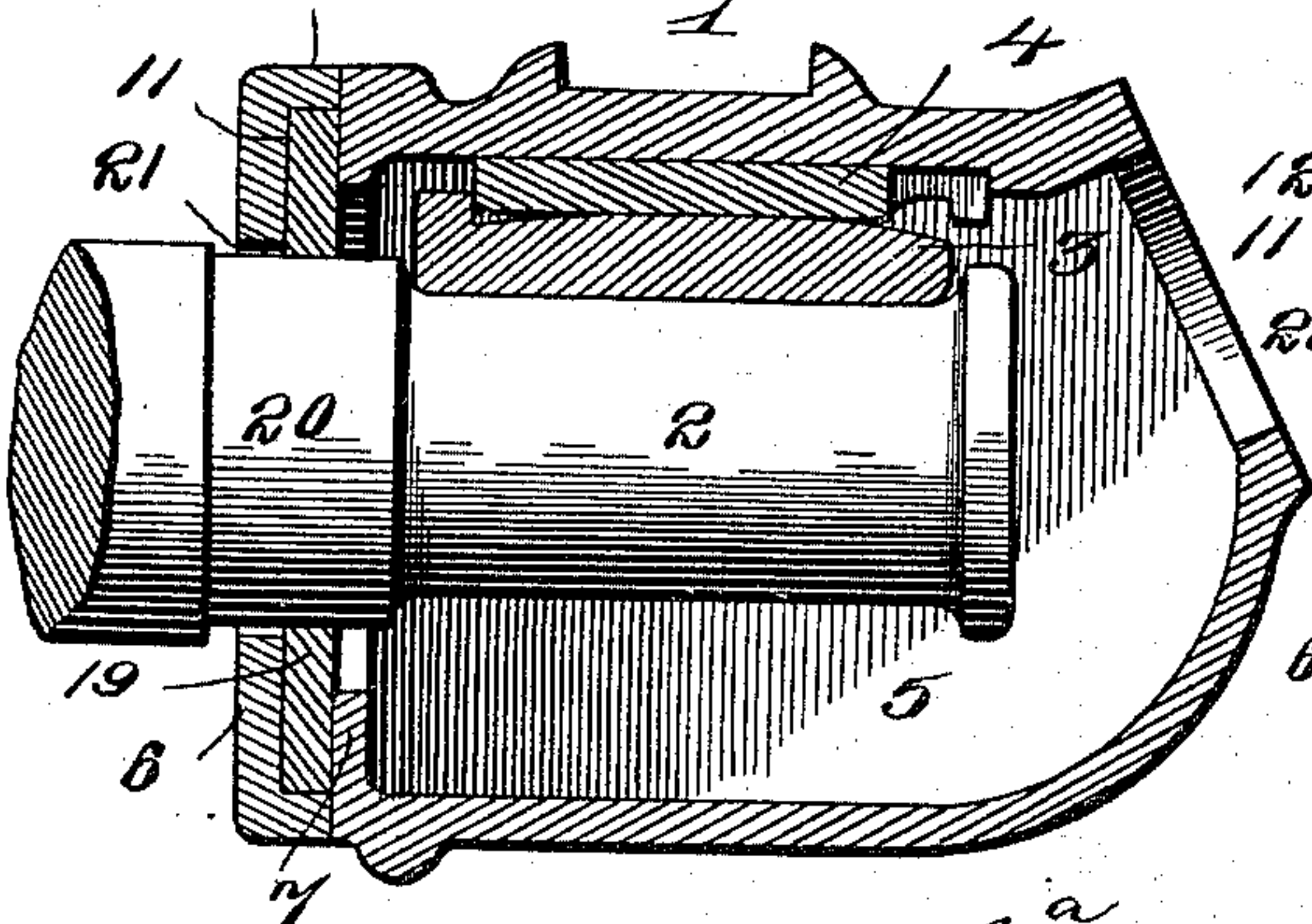


Fig. 3.

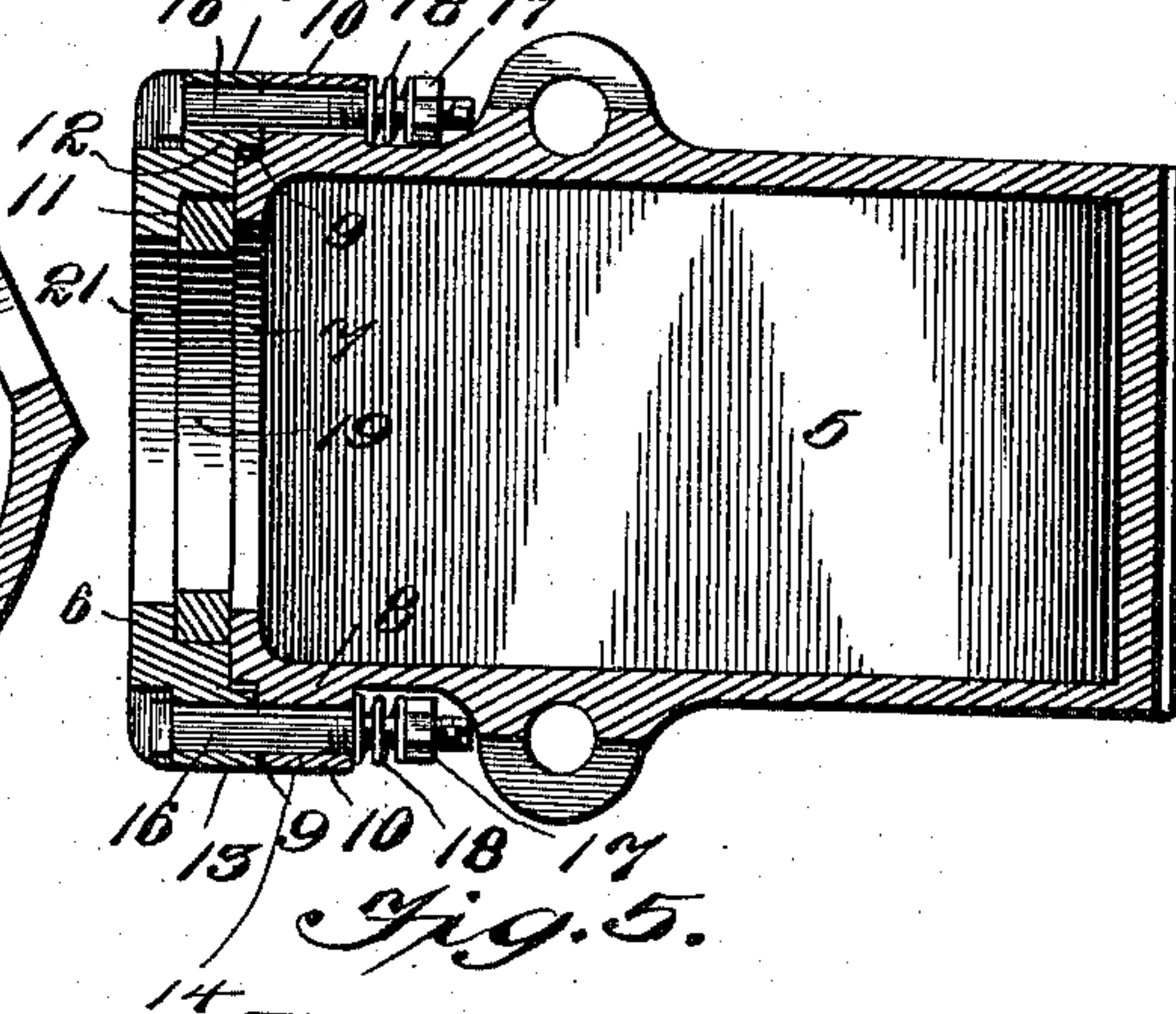


Fig. 4.

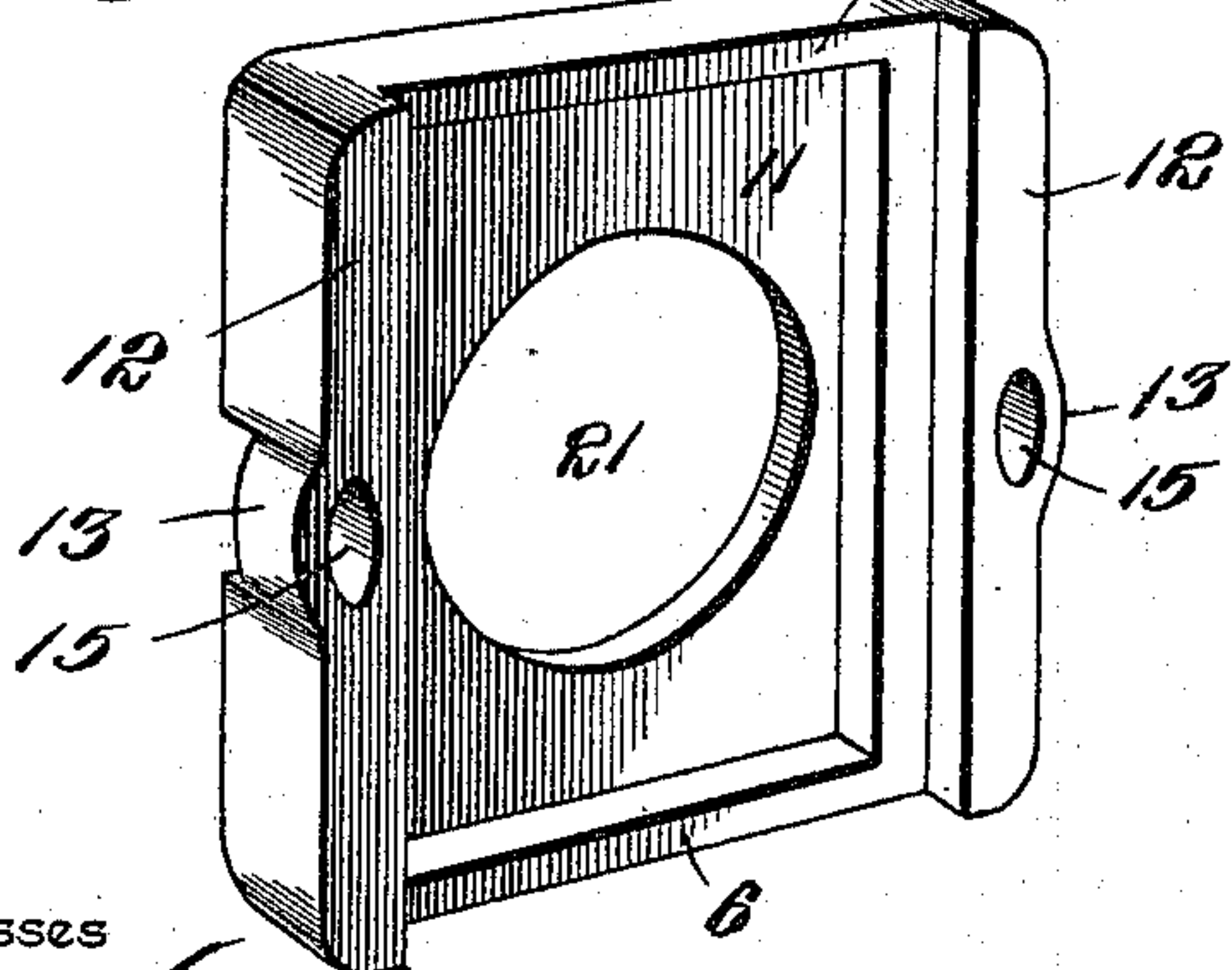
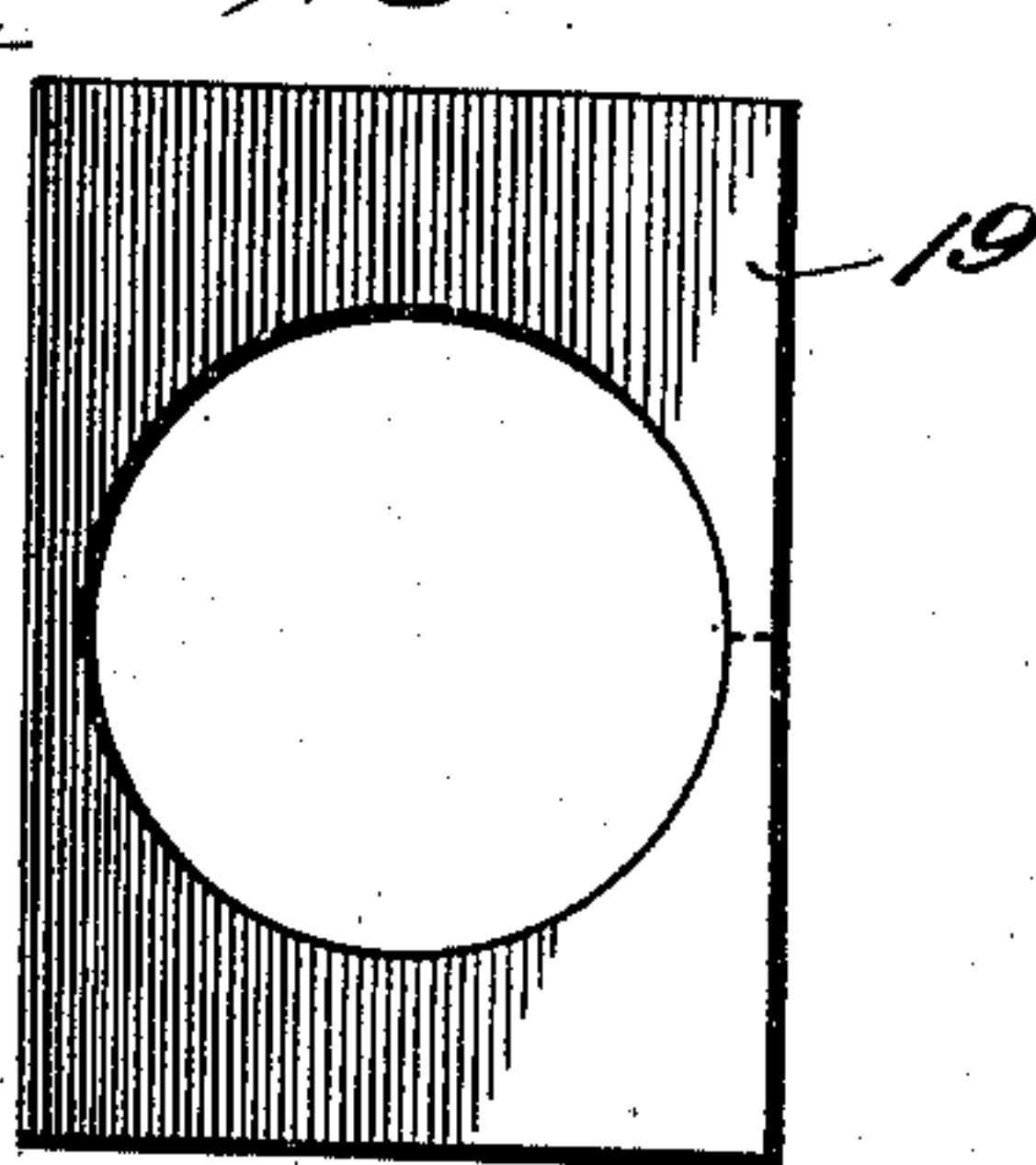


Fig. 5.



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UNITED STATES PATENT OFFICE.

STEPHEN COLLINS, OF PORTLAND, OREGON.

CAR-AXLE BOX.

SPECIFICATION forming part of Letters Patent No. 573,391, dated December 15, 1896.

Application filed April 30, 1896. Serial No. 589,713. (No model.)

To all whom it may concern:

Be it known that I, STEPHEN COLLINS, a citizen of the United States, residing at Portland, in the county of Multnomah and State of Oregon, have invented a new and useful Car-Axle Box, of which the following is a specification.

The invention relates to improvements in axle-boxes.

10 The objects of the present invention are to improve the construction of axle-boxes, more especially the back portion thereof, to reduce the perforation of the latter, and to exclude dust more effectually, and prevent the wast-
15 ing of a lubricant.

A further object of the invention is to enable the dust-guard to be conveniently removed and applied without detaching the journal-box and without tilting the latter and
20 spilling the lubricant.

Another object of the invention is to enable the dust-guard and the dust-guard chamber to conform to the vertical and lateral movement of an axle in order to preserve at all
25 times a close joint between the dust-guard and the dust-guard seat of the axle.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated
30 in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a perspective view of an axle-box constructed in accordance with this invention. Fig. 2 is a vertical longitudinal sectional view of the same. Fig. 3
35 is a horizontal sectional view. Fig. 4 is a detail perspective view of the rear section of the axle-box, illustrating the construction of the dust-guard chamber. Fig. 5 is a detail view
40 of the dust-guard.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates an axle or journal box adapted
45 to receive a journal 2 and provided with the usual journal-bearings 3 and journal-bearing key 4. The journal-box is composed of a body portion 5 and a yielding-mounted rear section 6, forming a dust-guard chamber and capable of a limited vertical and lateral move-
50 ment to accommodate itself to the movements

of a journal resulting from wear of the journal-bearing 3 and the application of a brake. As the journal-bearing becomes worn the journal has a slight vertical play, and when a brake
55 is applied the journal receives a slight lateral thrust, but by yieldingly mounting the dust-guard chamber and the dust-guard the latter is adapted to conform to the movements of the journal to prevent any space or opening
60 occurring at any time between it and the dust-guard seat of the axle.

The body of the journal-box, which is provided at its back with a transverse partition or diaphragm 7, and which has an enlarged
65 elliptical opening or perforation therein for the passage of the axle, is provided at opposite sides with vertical flanges 8, arranged a short distance from the back or rear face of the body portion of the journal to provide
70 recesses 9 and having central enlargements or bosses 10, and the flanges or ribs 8 are preferably continued across the journal-box at the bottom thereof, as shown.

The rear section 6 is provided with a rec-
75 tangular recess to form the dust-guard chamber 11, and it is provided at opposite sides with vertical flanges 12, fitting against the flanges 8 of the body portion of the journal-box and fitting in the recesses 9. The recesses
80 9 form vertical ways for the reception of the flanges 12, and a sufficient space is left between the inner edges of the flanges 12 and the adjacent shoulders, formed by the recesses 9, to allow the rear section of the journal-box
85 a limited lateral movement. The ways formed by the recesses 9 are open at the top and bottom, and the rear face of the body between the said ways is smooth and vertical.

The flanges 12 of the rear section 6 are pro-
90 vided with central enlargements or bosses 13, similar to the enlargements or bosses 10 of the flanges 8, and these bosses or enlargements 10 and 13 are provided with elliptical openings or perforations 14 and 15 for the re-
95 ception of fastening devices 16, disposed horizontally and located at opposite sides of the journal-box. The fastening devices 16 preferably consist of bolts provided at their rear ends with heads and receiving nuts 17 at their
100 front ends, and spiral springs 18 are arranged on the front portions of the fastening devices

and interposed between the nuts and the flanges 8 of the journal-box, whereby the rear section of the journal-box is yieldingly connected with the body portion thereof. The
 5 elliptical openings permit a limited lateral and vertical movement of the fastening devices to allow a movement of the body of the journal-box and the rear section thereof, and the springs will preserve a tight joint between
 10 the parts and will take up any wear of the same.

The fastening devices may be provided, if desired, at their front ends with keys or the like to prevent the nuts from accidentally un-
 15 screwing, and the rear or outer face of the rear section of the axle or journal box is provided at opposite sides with recesses for the reception of the heads of the bolts to prevent the heads of the bolts from projecting out-
 20 ward beyond the rear face of the rear section and coming in contact with the hub of a wheel.

The dust-guard chamber is adapted to receive an ordinary dust-guard 19, which may be constructed of any suitable material and
 25 which may be of any desired form. The form shown in the accompanying drawings is the one usually employed, and it is rectangular and provided with a circular opening fitting closely against the dust-guard seat 20 of the
 30 axle. The rear section of the axle or journal box is provided with a circular opening 21, which is slightly larger than the dust-guard seat of the axle.

The dust-guard has its inner face flush with
 35 the adjacent inner bearing-face 6^a of the rear section 6, between the flanges thereof, and the inner face of the dust-guard and the inner bearing-face 6^a of the rear section 6, fit flat against the vertical rear face of the body of
 40 the journal-box, between the ways thereof, and are adapted to slide vertically and laterally thereon without the dust-guard being released or in any wise loosened.

When it is desired to renew the dust-guard,
 45 the fastening devices 16 are removed, the dust-guard is cut into two sections or portions, as illustrated by dotted lines in Fig. 5 of the accompanying drawings, and by this means the dust-guard may be applied to the
 50 journal or axle box without removing the same from the axle and without tilting the box or spilling the lubricant contained therein.

It will be seen that the back of the journal or axle box is absolutely dust-proof, that the
 55 dust-guard may be conveniently removed and applied without detaching the journal-box or tilting the same and spilling the lubricant, and that the dust-guard and the dust-guard chamber are yieldingly mounted and permit
 60 a limited vertical and lateral movement to conform to the movements of an axle, occa-

sioned by wear of the journal-bearing and the application of a brake.

Changes in the form, proportion, and minor details of construction may be resorted to
 65 without departing from the spirit or sacrificing any of the advantages of this invention.

What I claim is—

1. A journal-box comprising a body provided at its back with vertical recesses ex-
 70 tending from the top to the bottom of the journal-box and forming ways open at the ends, said body having its rear face, between the ways, smooth and vertical, a dust-guard, a rear section completing the back of the jour-
 75 nal-box and provided at its inner face with a dust-guard chamber or recess receiving the dust-guard and having the inner face thereof flush with its inner bearing-face and fitting
 80 against the adjacent vertical face of the body of the journal-box and adapted to slide vertically and laterally thereon, vertical flanges extending from the inner face of the rear section, projecting beyond the inner face of the
 85 dust-guard and arranged in the said ways to slide vertically therein, contiguous perforated bosses 10 and 13, located at opposite sides of the journal-box and formed integral with the body and the rear section, and short
 90 bolts passing through said bosses and securing the rear section to the body, substantially as described.

2. An axle or journal box comprising a body, provided at opposite sides adjacent to its
 95 rear face with vertical flanges forming recesses or ways, and provided with enlargements or bosses 10, having vertically-arranged elliptical perforations, a rear section completing the axle-box, provided at its inner face
 100 with a dust-guard chamber and having vertical flanges at opposite sides, fitting against the flanges of the body portion and arranged in the recesses or ways formed by the same and provided with vertically-arranged elliptical
 105 perforations, fastening devices connecting the rear section to the body portion of the axle or journal box and passing through the said elliptical perforations, the shorter diameter of the perforations being greater than the di-
 110 ameter of the fastening devices, whereby the axle-box will be permitted both a vertical and a lateral movement, and springs disposed on the fastening devices and yieldingly connect-
 ing the parts, substantially as described.

In testimony that I claim the foregoing as
 115 my own I have hereto affixed my signature in the presence of two witnesses.

STEPHEN COLLINS.

Witnesses:

JOHN H. SIGGERS,
 THEODORE DALTON.