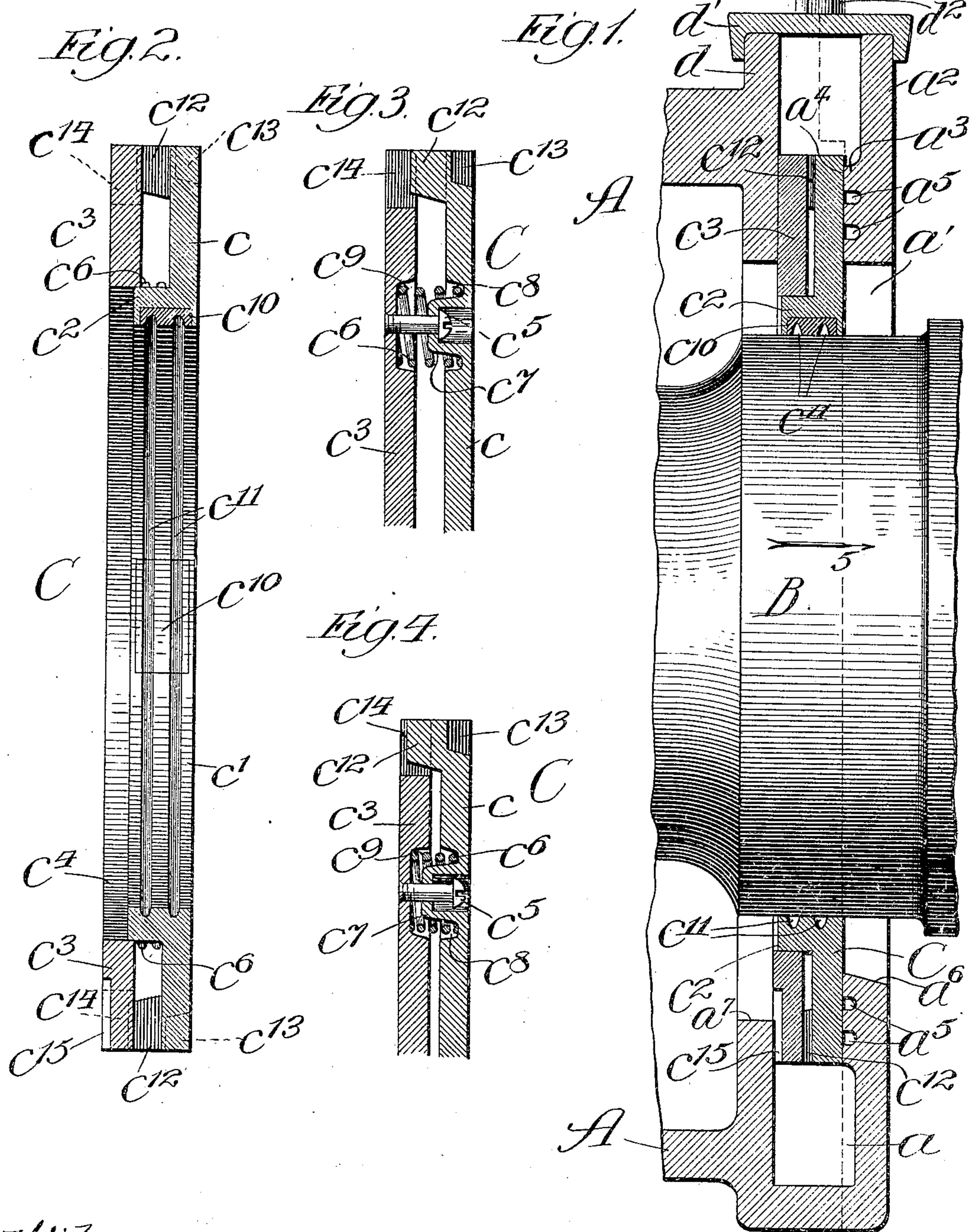


B. R. STARE.
CAR JOURNAL.

APPLICATION FILED MAY 21, 1904.

2 SHEETS—SHEET 1.



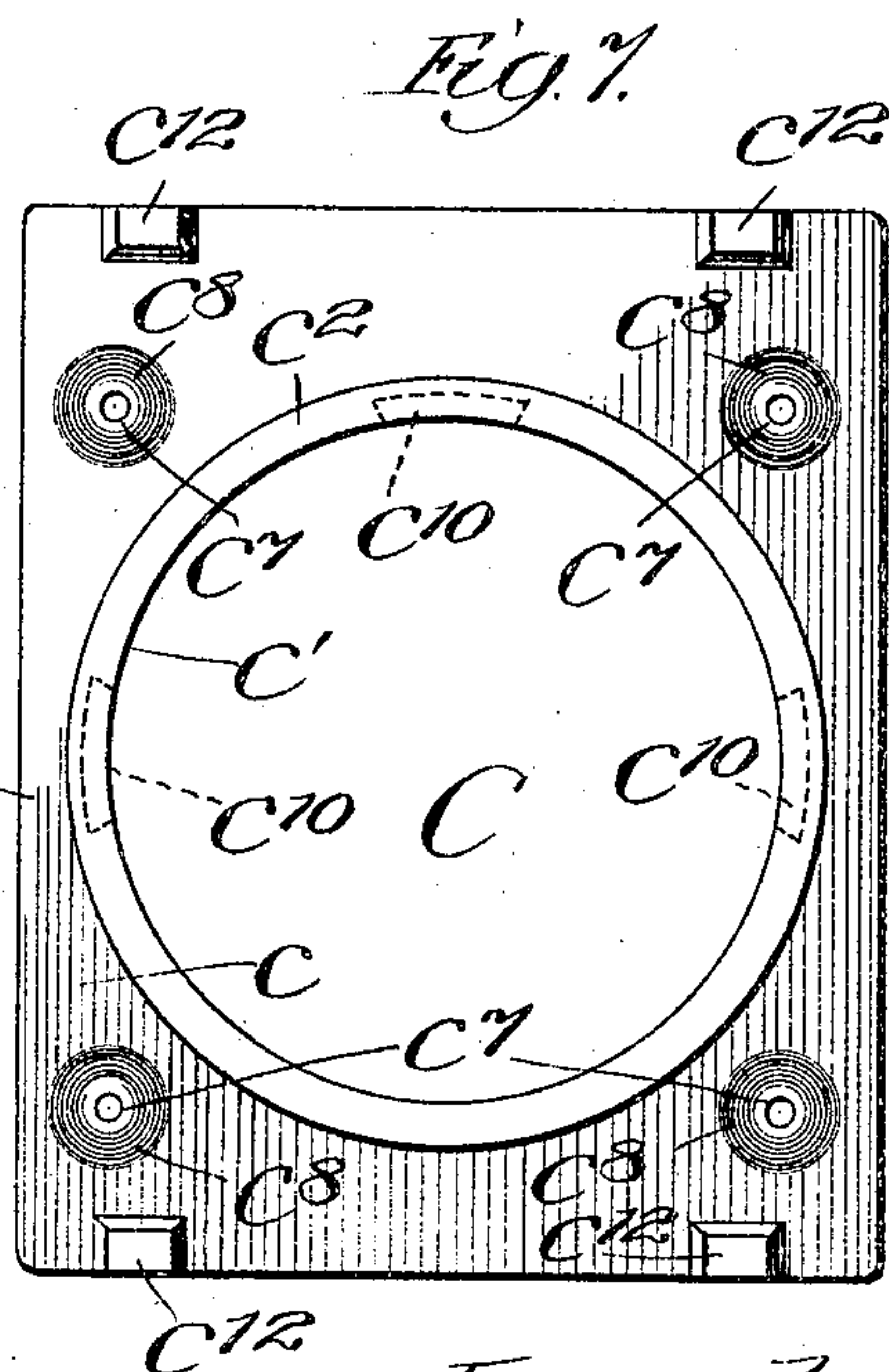
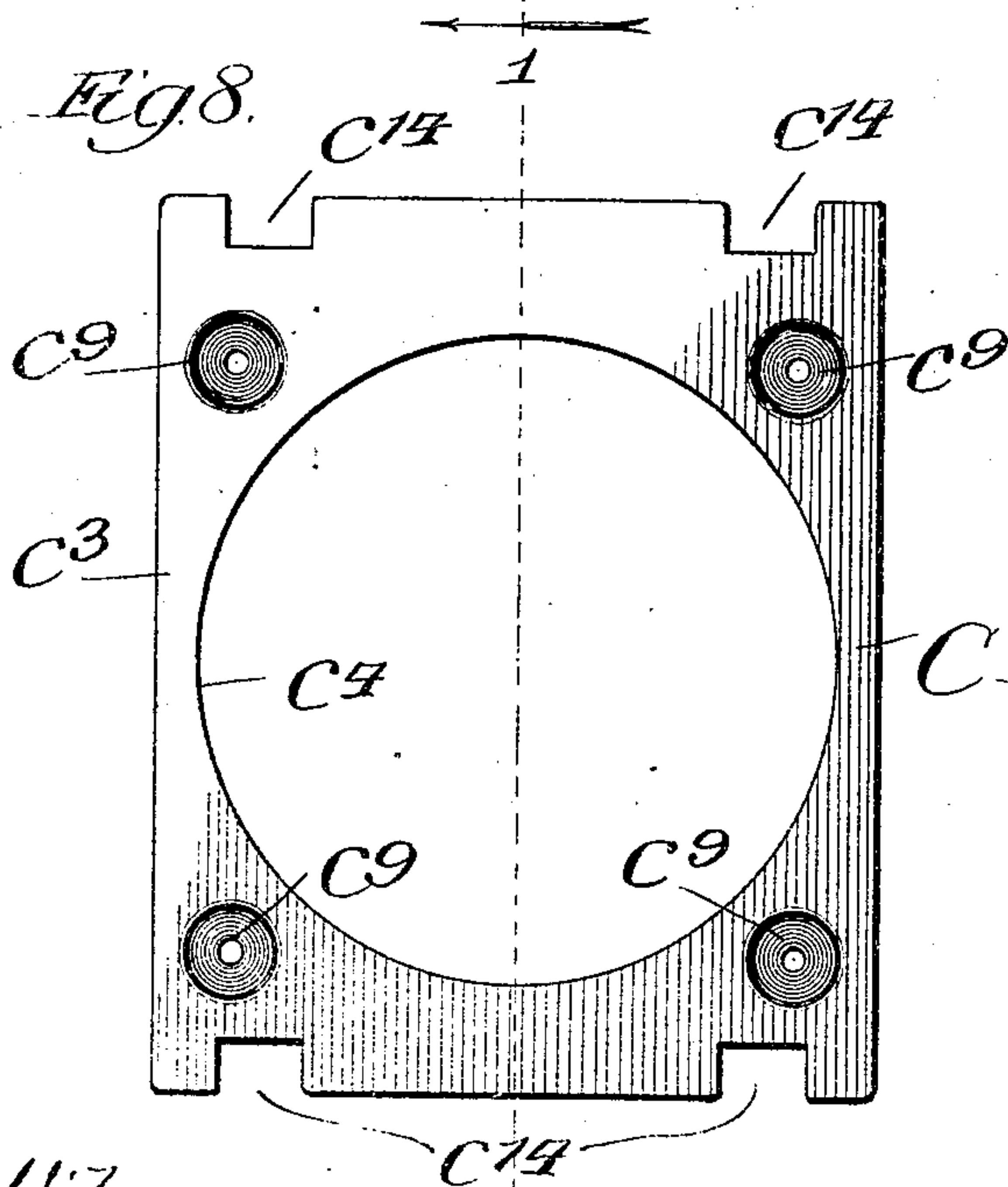
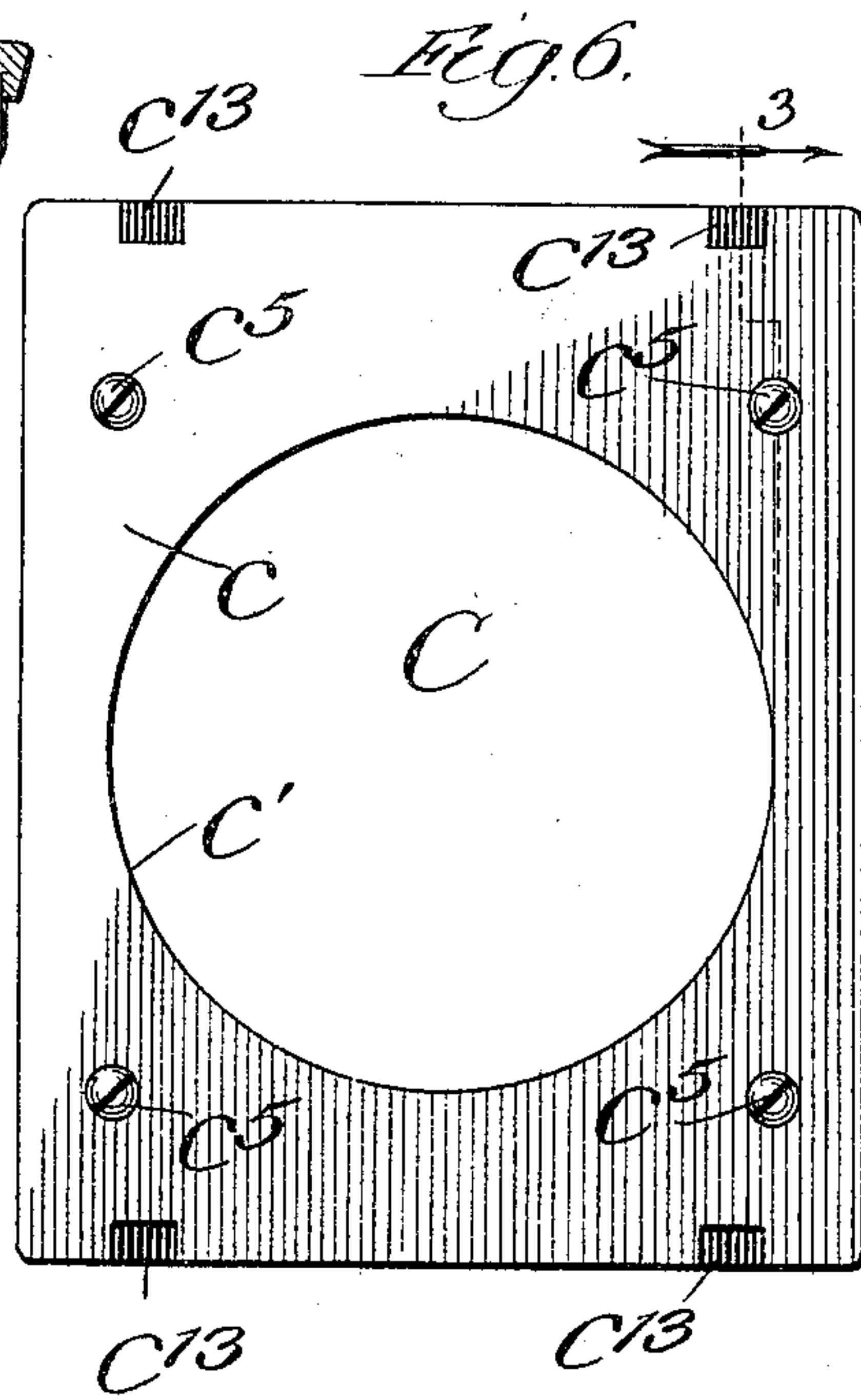
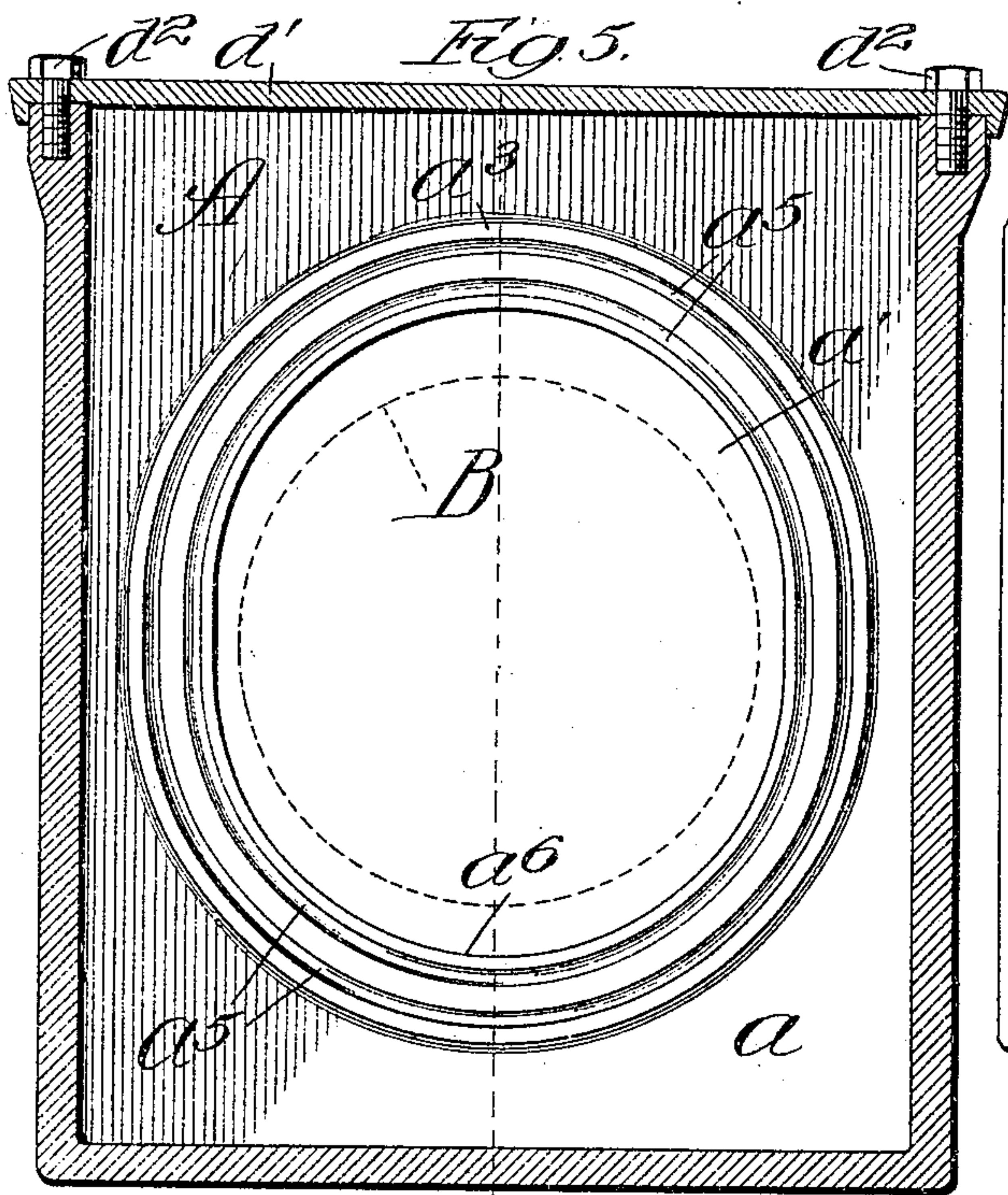
Witnesses:
E. C. Gaylord,
John Enders.

Inventor:
Burton R. Stare,
By *Dyrenforth Dyrenforth & Lee*
Attys.

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2 SHEETS—SHEET 2.



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John Enders.

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UNITED STATES PATENT OFFICE.

BURTON R. STARE, OF CHICAGO, ILLINOIS.

CAR-JOURNAL.

No. 801,413.

Specification of Letters Patent.

Patented Oct. 10, 1905.

Application filed May 21, 1904. Serial No. 209,040.

To all whom it may concern:

Be it known that I, BURTON R. STARE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Car-Journals, of which the following is a specification.

My invention relates particularly to means for retaining oil in and excluding dust from journal-boxes at the inner ends thereof; and my primary object is to provide more efficient and desirable means for accomplishing said purposes than any heretofore known.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 represents a broken vertical longitudinal section of a journal and journal-box equipped with my improvements, the section being taken as indicated at line 1 of Fig. 5; Fig. 2, a section of the detached dust-guard; Fig. 3, an enlarged broken section of the dust-guard, taken as indicated at line 3 of Fig. 6; Fig. 4, a similar section showing the dust-guard collapsed, as when in the dust-guard cavity of the journal-box; Fig. 5, a section taken as indicated at line 5 of Fig. 1; Fig. 6, an outer face view of the improved dust-guard; Fig. 7, an inner face view of the outer plate of the dust-guard, and Fig. 8, an inner face view of the inner plate of the dust-guard.

In the preferred construction, A represents a journal-box, B a journal, and C a dust-guard confined in a cavity or slot a at the inner end of the journal-box.

The inner end of the journal-box has a journal-opening a' , which is intersected by the dust-guard cavity in the usual manner. The outer wall a^2 of the cavity a is equipped on its inner surface with an annular boss a^3 , having a milled surface a^4 , provided with annular oil-grooves a^5 . The wall of the opening in the outer wall a^2 is beveled at its lower portion, as shown at a^6 . The inner end of the journal-box is of sufficient width to allow spaces between the side portions of the annular boss and the side walls of the journal-box, as shown in Fig. 5. This permits the boss to be readily milled and insures a close joint with the dust-guard. The opening in the inner wall of the guard-cavity is cut lower than the opening in the outer wall, as will be understood by observing the relative heights of the points a^7 and a^6 in Fig. 1.

The dust-guard comprises an outer plate c ,

having a circular perforation c' and an annular boss c^2 at the inner surface of the plate, an inner plate c^3 , provided with an opening c^4 , receiving the boss c^2 , screws c^5 , connecting the plates near the four corners thereof, and coil-springs c^6 , confined between the plates and encircling the screws. The plate c is provided near the four corners thereof and on the inner surface of the plate with bosses c^7 , surrounded by annular channels c^8 and affording sockets for the corresponding ends of the springs c^6 . The bosses are perforated to receive the screws c^5 , and the perforations are countersunk at their outer ends to receive the heads of the screws, as shown in Fig. 3. The plate c^3 is provided with corresponding sockets c^9 for the springs and with threaded perforations for the screws c^5 . The screws are turned in to the proper distance and then riveted, as shown in Fig. 3. The wall of the journal-receiving perforation c' of the plate c is provided at its side and top portions with fillings of Babbitt metal c^{10} , and the wall is provided with continuous circumferential grooves c^{11} . The plate c is provided at its inner surface, near the four corners thereof, with lugs c^{12} , whose inner surfaces project flush with the inner surface of the annular boss c^2 . At the lugs c^{12} the outer surface of the plate c is provided with depressions c^{13} .

The inner surface of the boss a^3 of the journal-box is milled, as stated above, and the outer surface of the plate c is milled, so that a close joint is provided. In addition the annular grooves a^5 become filled with oil and act as packing-rings to prevent passage of oil or dust. The bore of the plate c snugly receives the shoulder of the journal, as shown in Fig. 1, and the annular grooves c^{11} receive oil, which prevents the egress of oil and the ingress of dust. To secure a true surface at the outer face of the outer plate c , the plate is first secured upon the bed of a planer with the outer surface down, and the inner surfaces of the lugs c^{12} and the annular boss c^2 are planed. The plate is then turned over and clamped at the depressions c^{13} and the outer surface of the plate planed. The plates are preliminarily placed together with the lugs c^{12} passing into corresponding marginal recesses c^{14} in the plate c^3 , and the screw-receiving holes in the two plates are simultaneously bored. The construction insures the proper relation of the plates when the parts are assembled and fa-

cilitates the operation of assembling the parts. The inner surface of the plate c^3 is recessed at its bottom portion, as indicated at c^{15} , to enable the return of oil from the dust-guard cavity a to the interior of the journal-box.

When the parts of the dust-guard are assembled, the plates are normally separated by the springs to such an extent that the dust-guard is considerably thicker than the space which receives it when in working position. When the guard is forced into position, the springs are compressed, the guard being collapsed, or rendered thinner, as shown in Fig. 4. The springs are sufficiently strong to exert quite a high pressure, preferably more than one hundred pounds, so that the outer plate of the dust-guard will be forced firmly against the annular boss a^3 . It now will be understood that when oil is thrown against the dust-guard from the journal-box, as in rounding a curve, the liquid-pressure acts with the springs to hold the plate c firmly seated against the boss with which the outer wall of the dust-guard cavity is equipped. Moreover, inasmuch as the inner wall of the dust-guard cavity is cut lower than the outer wall, the source of oil from the inside of the dust-guard will not rise as high as the top of the lower portion of the outer retaining-wall. Furthermore, the bevel surface a^6 will serve to prevent water from entering the journal-box and causing the lighter oil to escape from the journal-box. As stated above, the bevel surface a^6 also tends to prevent sand or dust from entering the journal-box.

I have shown the journal-box provided with a boss d at the upper portion of the dust-guard cavity, and this boss has its top surface planed and surmounted with a flanged cap or cover d' , which is firmly secured in place by screws d^2 . It is usually desirable to insert a block of wood above the dust-guard and below the cap d' , although none is shown in the drawings.

The purpose of providing the antifriction-bearings c^{10} at the upper and side portions of the packing-ring is to prevent undue wear at the points which are most subjected thereto owing to the starting and stopping of trains and to the jolting action which occurs when the trains are running. The springs c^6 are practically effective to relieve the journal from the weight of the dust-guard, and the upper bearing of Babbitt metal is an additional precaution to prevent undue wearing. Changes in minor details of construction within the spirit of my invention may be made. Hence no undue limitation should be understood from the foregoing detailed description.

What I regard as new, and desire to secure by Letters Patent, is—

1. The combination of a journal-box provided at its inner end with a dust-guard cavity whose outer wall is equipped on its inner

surface with an annular boss, and a dust-guard comprising suitable plates and interposed springs tending to force the outer plate against said boss, for the purpose set forth.

2. The combination of a journal-box having a dust-guard cavity provided on the inner surface of its outer wall with a planed surface having an annular oil-groove therein, and a dust-guard comprising plates and interposed springs forcing the outer plate firmly against said planed surface, for the purpose set forth.

3. The combination of a journal, a journal-box, having a dust-guard cavity provided with a planed annular boss at the inner surface of its outer wall and an annular oil-groove in said boss, and a dust-guard comprising two plates, one of which is provided with a bore which snugly receives the journal and is provided with an annular oil-groove adjacent to the journal, and springs interposed between the plates and serving to force the outer plate against said boss, for the purpose set forth.

4. The combination of a journal, a journal-box, having a dust-guard cavity provided at the inner surface of its outer wall with an annularly-grooved boss, said dust-guard cavity having its inner wall cut lower than its outer wall, and a dust-guard comprising an outer plate having an inwardly-projecting annular boss, an inner plate having a perforation receiving said boss, and springs confined between said plates, for the purpose set forth.

5. A dust-guard comprising an outer plate provided with a journal-receiving bore and having at its inner surface an annular boss, an inner plate having a bore fitting slidably on said annular boss, springs confined between said plates, and connecting means joining the plates together and permitting a collapsing action of the dust-guard, for the purpose set forth.

6. A dust-guard comprising an outer plate provided on its inner surface with an annular boss and near its edges with bosses projecting flush with said annular boss, an inner plate having a bore receiving said annular boss and recesses receiving said other bosses, springs confined between said plates, and connecting means joining the plates, for the purpose set forth.

7. A dust-guard comprising an outer plate having an inwardly-projecting annular boss, an inner plate having a bore receiving said boss, coil-springs confined between said plates, and screws extending through said coil-springs and joining the plates and permitting collapsing movement thereof, for the purpose set forth.

8. A dust-guard comprising an outer plate provided with an annular boss and provided with spring-sockets and countersunk rivet-receiving perforations encircled thereby, an inner plate provided with a bore receiving said

annular boss and provided also with sockets corresponding with said first-named sockets, coil-springs confined between said plates at said sockets and rivets connecting said plates and permitting collapsing movement thereof, for the purpose set forth.

9. The combination of a journal-box provided at its inner end with a dust-guard cavity whose outer wall is equipped on its inner surface with an annular boss having a milled surface, and a dust-guard comprising a plate having a smooth surface contacting with said milled surface, and springs forcing said plate against said milled surface, for the purpose set forth.

10. The combination of a journal-box having a plane vertical surface near its inner end, and a dust-guard provided with a continuous journal-opening and having a plane surface held yieldingly in contact with said first-named surface, said dust-guard being free to slide upon said first-named surface, one of said surfaces being provided with a continuous annular oil-

groove, substantially as and for the purpose set forth.

11. The combination with a journal and a journal-box having a plane vertical surface at its inner end, of a dust-guard having a plane surface contacting with said first-named surface and having also a continuous journal-receiving bore provided with a continuous annular oil-groove, said dust-guard being free to slide upon said first-named surface, substantially as and for the purpose set forth.

12. The combination with a journal and a journal-box having a plane vertical surface at its inner end, of a dust-guard having a plane surface contacting with said first-named surface, one of said surfaces having an annular oil-groove, said dust-guard having a journal-receiving bore provided with an annular oil-groove, for the purpose set forth.

BURTON R. STARE.

In presence of—

M. S. MACKENZIE,

WALTER N. WINBERG.