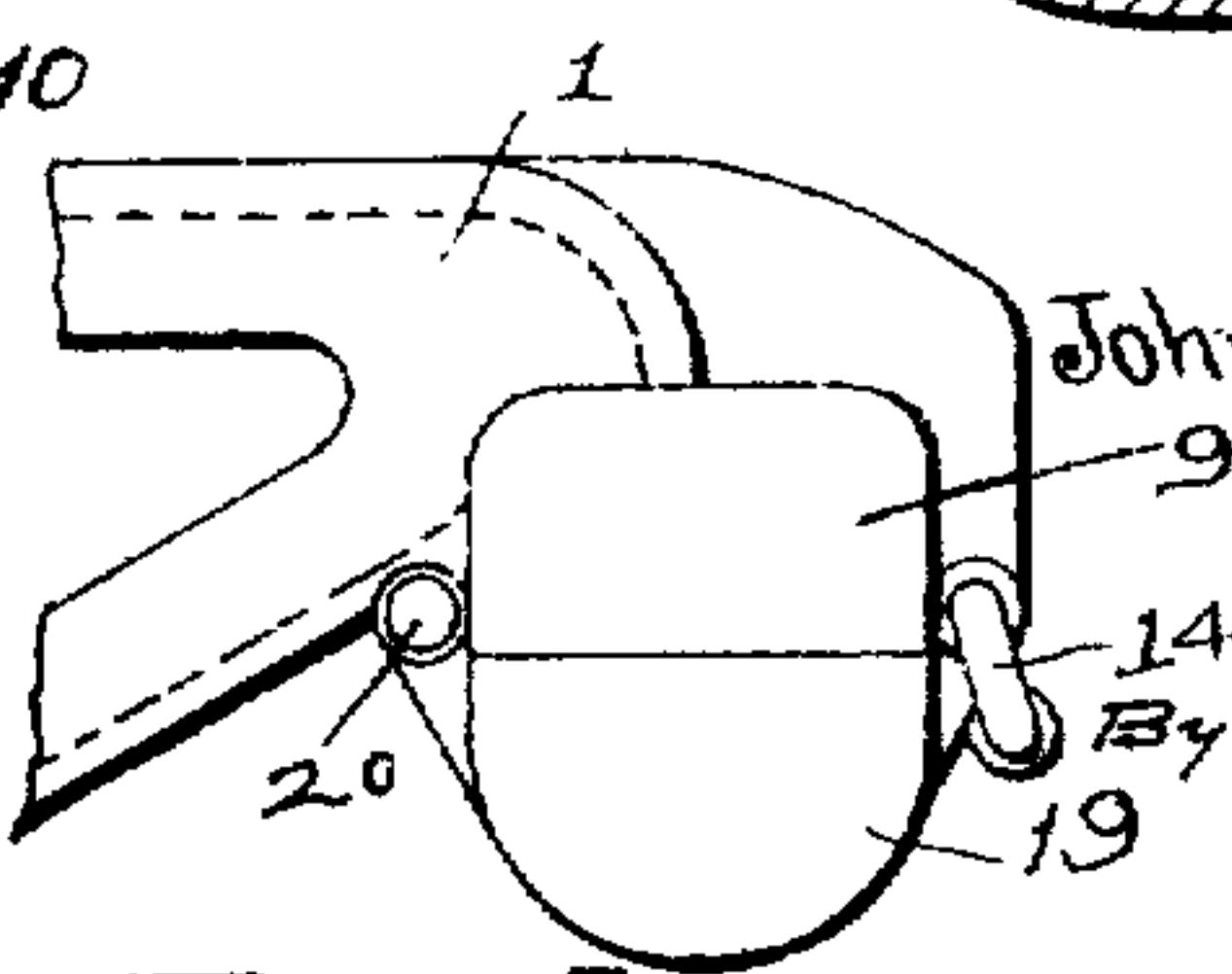
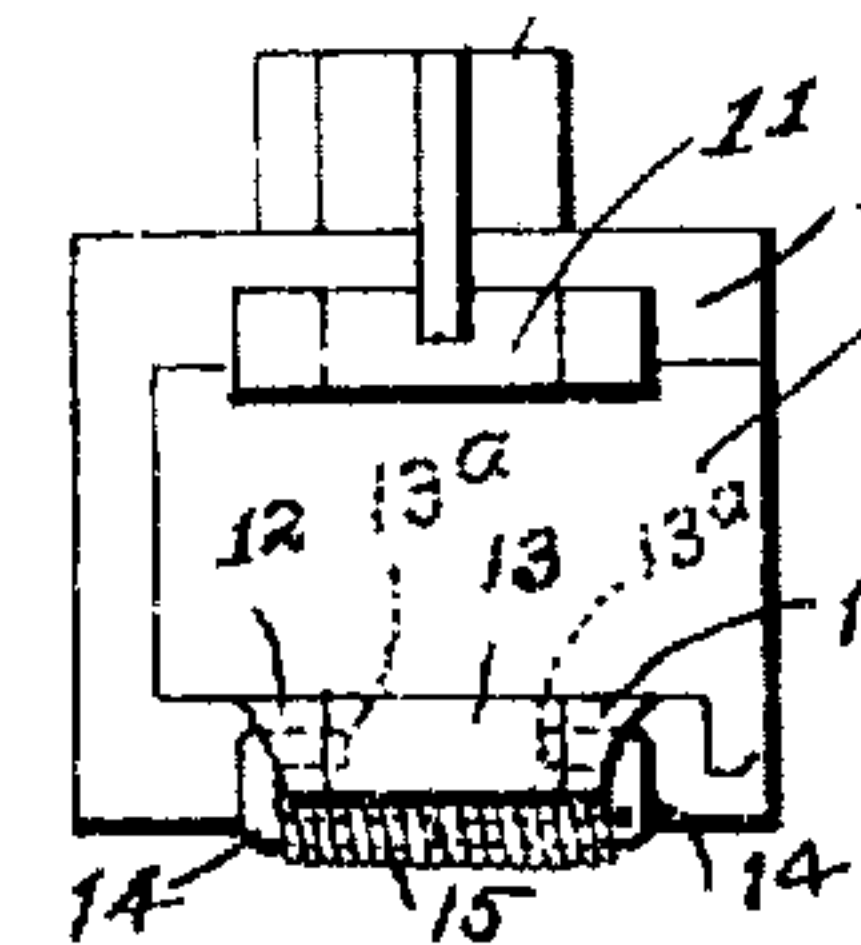
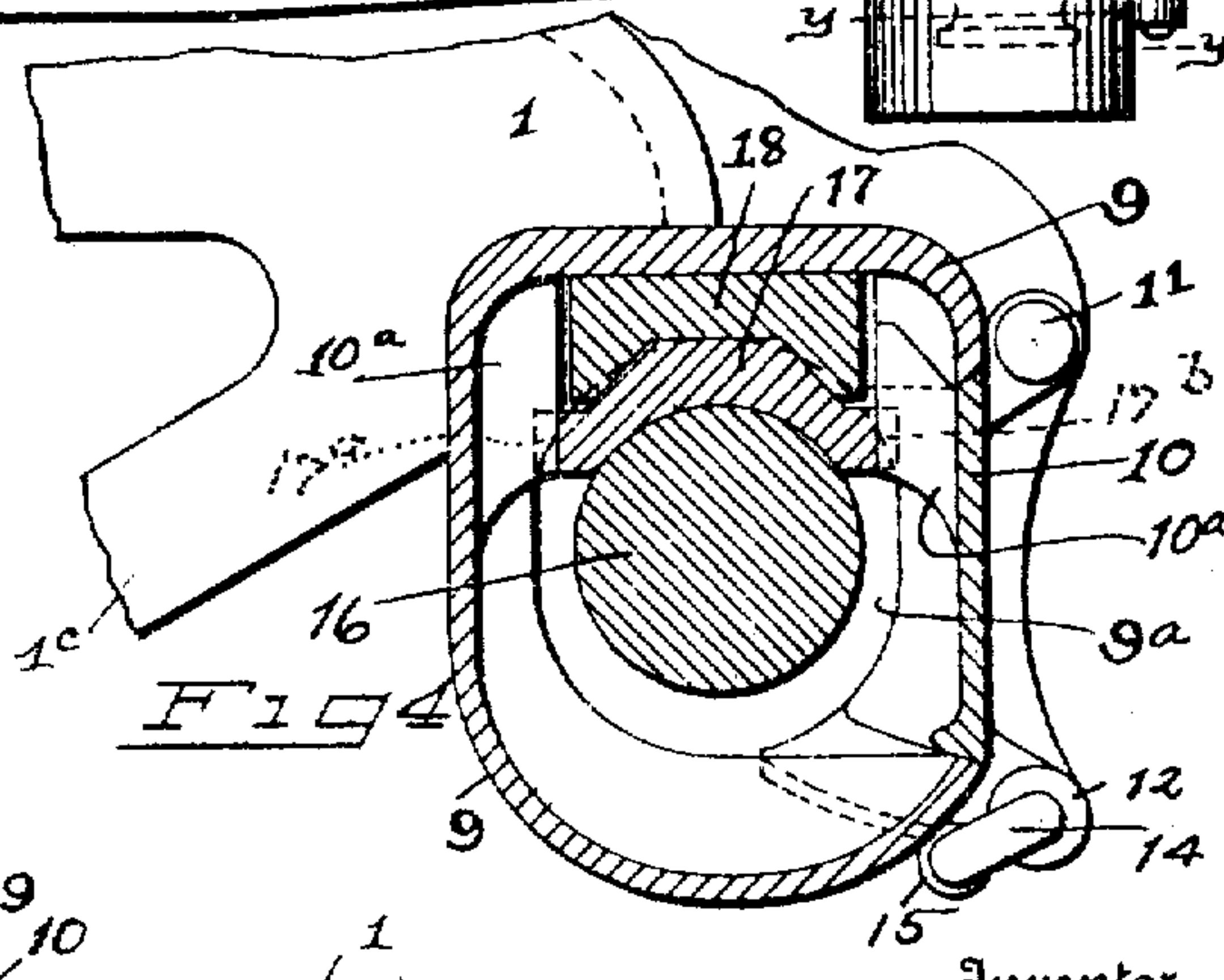
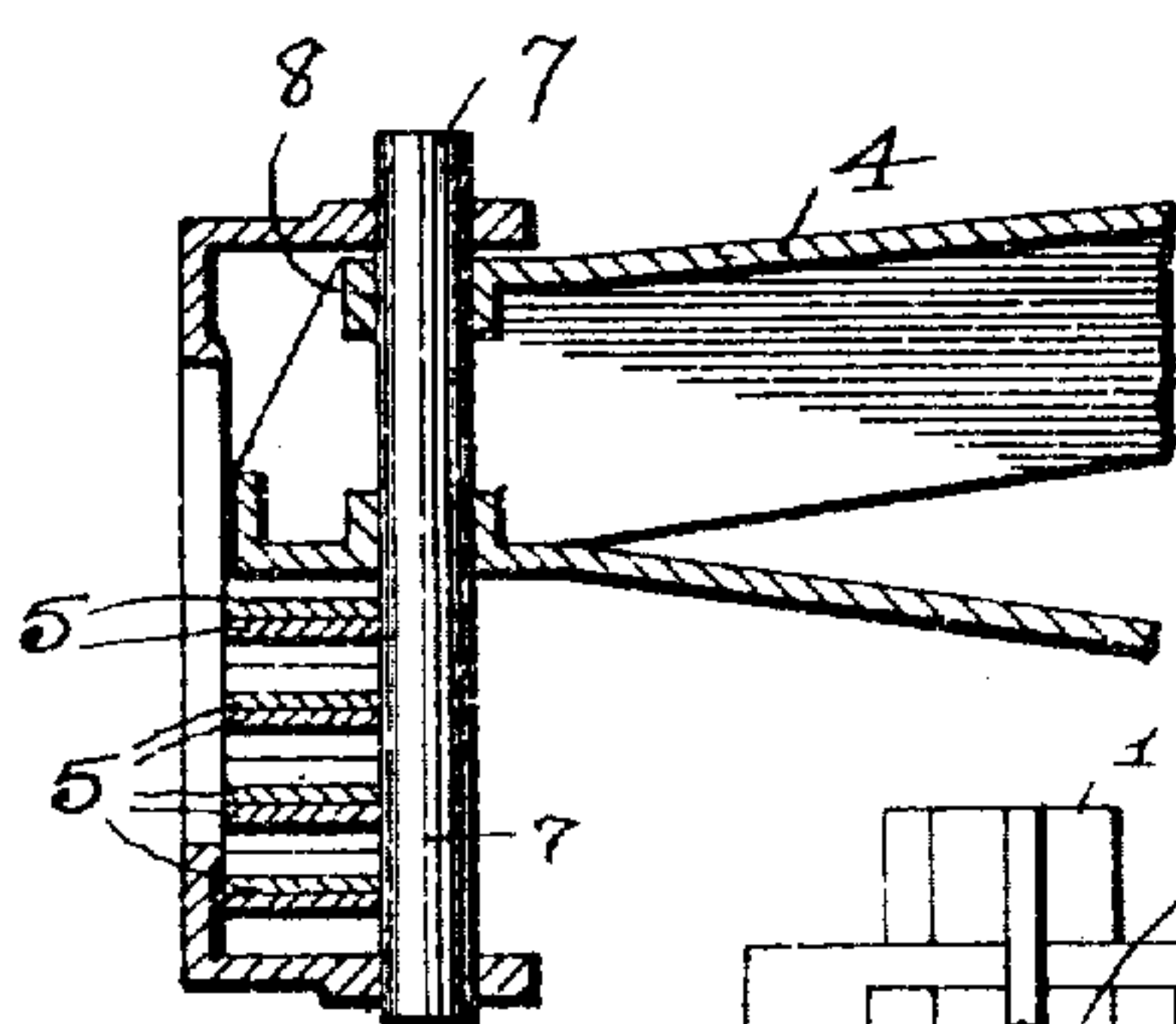
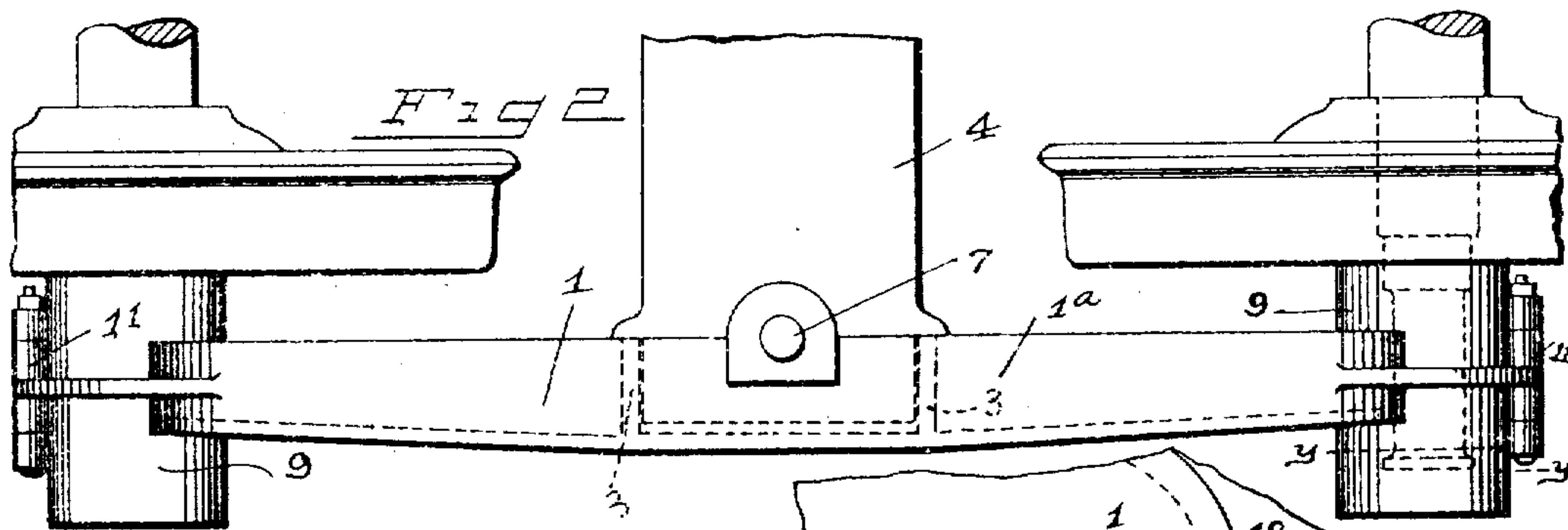
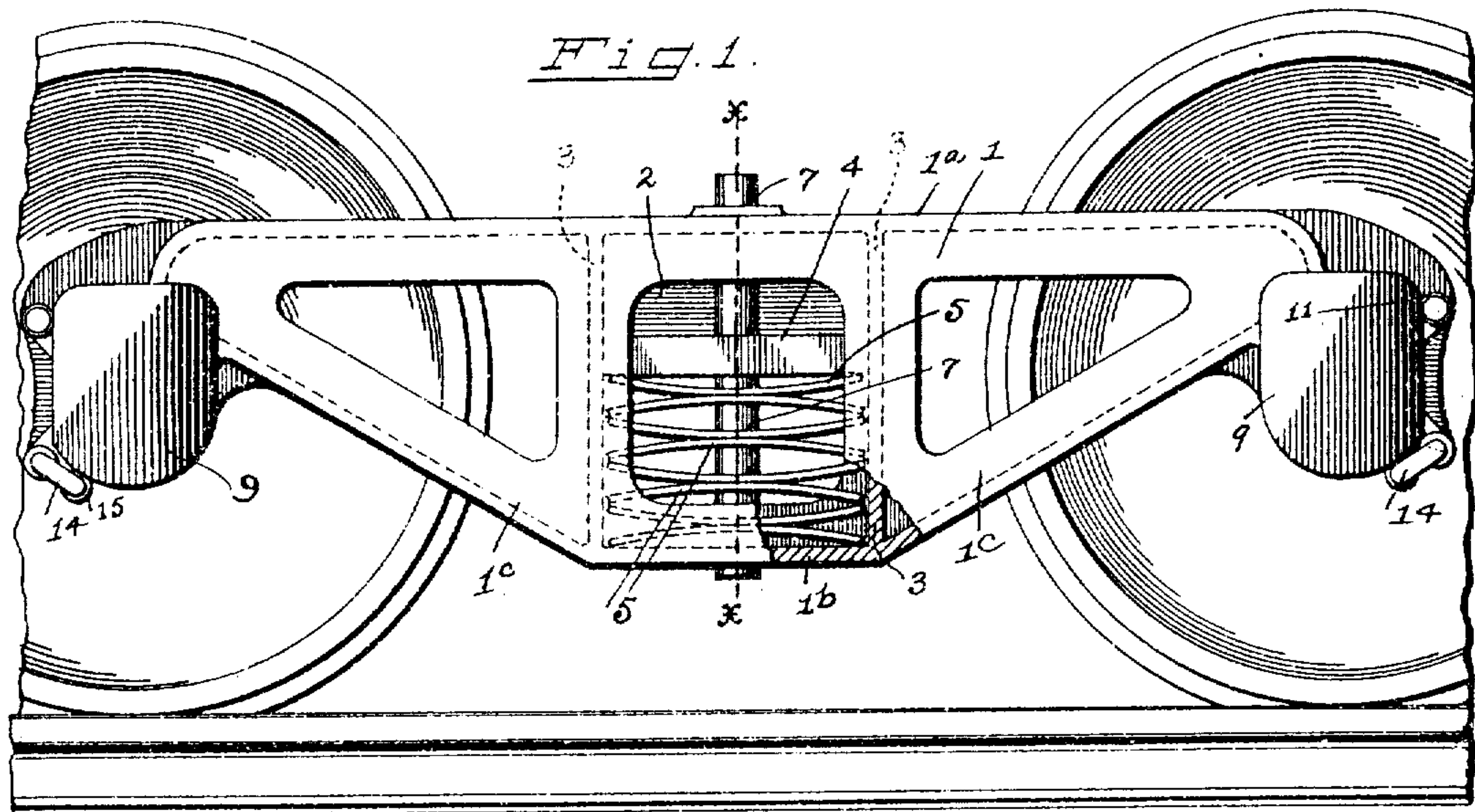


J. H. McCORMICK.
TRUCK SIDE FRAME.
APPLICATION FILED MAR. 18, 1909.

945,133.

Patented Jan. 4, 1910.



Witnesses
Carl Stoughton
A. L. Phelps

Inventor
John H. McCormick

By C. C. Shepherd
Attorney

UNITED STATES PATENT OFFICE.

JOHN H. McCORMICK, OF COLUMBUS, OHIO.

TRUCK SIDE FRAME.

945,133.

Specification of Letters Patent.

Patented Jan. 4, 1910.

Application filed March 18, 1909. Serial No. 484,313.

To all whom it may concern:

Be it known that I, JOHN H. McCORMICK, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Truck Side Frames, of which the following is a specification.

My invention relates to the improvement of truck side frames for cars, and the objects of my invention are to provide an improved side frame having maximum strength and minimum weight; to construct my improved side frame of comparatively few parts and of such arrangement as to provide for the convenient replacement of the parts thereof and at the same time to produce a truck side frame, which may be adapted for use on all classes of cars; to produce my improved side frame of a single arched design without weakening or impairing the strength thereof and without exceeding the standard dimensions and at the same time provide space for the heaviest bolster and spring; to provide improved means for supporting the bolster in connection with the side frame; to provide my improved frame with integrally formed bearing boxes, said boxes being so constructed as to permit of the removal therefrom of the bearing brasses and axle spindles and to produce other improvements, the details of which will be more fully pointed out hereinafter. These objects I accomplish in the manner illustrated in the accompanying drawing, in which:

Figure 1 is a side elevation of a truck having my improved side frame and showing a portion of the latter broken away for the sake of convenience in illustration, Fig. 2 is a plan view of the same, Fig. 3 is a sectional view on line $x-x$ of Fig. 1, Fig. 4 is an enlarged transverse section through one of the boxings, the same being taken on two planes as shown by line $y-y$ of Fig. 2, Fig. 5 is a side elevation of one of the boxings, and, Fig. 6 is an end elevation of one of the boxings showing a modified construction and arrangement of door therefor.

Similar numerals refer to similar parts throughout the several views.

1 represents my improved side frame, the body of which as indicated in the drawing, comprises a straight horizontal top portion 1^a and an arched lower portion, the latter comprising a central horizontal bottom portion 1^b and inclined members 1^c leading

therefrom to the ends of the frame. The frame members thus described are of substantially L-shape in cross section and the central portion of the frame is closed on its outer side, with the exception of an opening 2 which is formed therein for the sake of decreasing the weight of the casting. On opposite sides of the center of the length of the frame, I provide inwardly projecting vertical flanges 3, which in conjunction with the inwardly projecting flanges of the top and bottom frame members, serve to form a central frame pocket on the inner side of the frame, this pocket being adapted to receive the end of a bolster 4, which projects into the upper end portion of the pocket and bears upon the upper one of a plurality of longitudinally disposed arched or curved spring bars 5, which are arranged one upon the other, the lower spring member bearing in the bottom of said frame pocket and extending between the ribs 3.

In the construction of the upper and lower central portions of the frame 1, I form the inturned horizontal flanges thereof, with oppositely located pin bearing openings 6, in which bear the ends of a bolster pin 7, the latter passing through and fixed in oppositely located openings 8 in the end portion of the bolster 4. It will thus be seen that the spring members 5 are arranged between the vertical wall of the frame and said pin 7.

In producing the frame 1, I form integrally with each end thereof, an axle or spindle bearing box 9. Ordinarily, car journal boxes are formed with an upper side opening and lid therefor, but for reasons hereinafter set forth, I form the upper sides of my journal boxes closed and provide a doorway and swinging door therefor either in the side or bottom of the box, the said doorway or opening connecting with the usual hub opening 9^a . In the drawings, with the exception of that shown in Fig. 6, I have shown this door and doorway at the side of the box and the door which is indicated at 10, has its upper portion suitably hinged above the doorway as indicated at 11, the lower portion of the door being formed with two separated projecting lugs 12, which when the door is in a closed position, embrace opposite ends of a lug 13 which projects from the box 9 below the doorway.

In order to provide a desirable form of fastening for the door 10, I employ two sub-

stantially hook-shaped bolts or locking members 14, the hook ends of which are adapted to pass through openings in the lugs 12 shown in dotted lines in Fig. 5 and into sockets 13^a in the ends of the lug 13. The longer arms of these hook members 14 extend toward each other and are surrounded and connected by a coiled spring 15.

It will be observed that the outer sides of the lugs 12 are inclined and that the hook members 14 are in contact with these inclined lug sides, being held in this position by the tension of the spring 15. Assuming that the door is locked or that the hook ends of the bolts are in engagement with the sockets 13^a of the lug 13, the method of unlocking the same or withdrawing said bolts from said sockets, consists in swinging the spring 15 and the longer arms of the bolts upward, resulting through the engagement of the hook members of the bolts with the inclined sides of the lugs 12, in forcing the hook terminations of said bolts outward until they are disengaged from the lug 13.

In Fig. 4 of the drawing, I have shown the car wheel axle spindle in cross section at 16 and above this spindle, the usual form of bearing block or brass 17 which is surmounted by a follower 18. This bearing brass has a lateral extension 17^a which engages an internal wing 10^a on one side of the upper portion of the box 9 and on the opposite side said brass is likewise provided with a projection or extension 17^b which engages a recess in an inwardly projecting arm 10^a of the door 10, when the latter is in a closed position, the brass bearing member being thus properly retained in contact with the upper side of the spindle. This method of supporting the bearing brasses is, however, well known and does not form an essential part of my invention.

In Fig. 6 of the drawing, I have shown a slight modification in the construction of the box, which consists in forming the door opening in the bottom of the box and providing a hinged door therefor as shown at 19. It will be understood that the same construction of fastening device may be employed as that described for the door 10.

In the construction of side frame which I have described, it will be observed that the bolster ends do not pass through the side frames, but instead are located in inner pockets formed in said frames and by this construction both the bolster ends and springs upon which they bear, are accommodated between the upper and lower members of the frame without the necessity of extending the spring seat beyond the sides of the frame body and without the necessity of providing a specially formed seat for the spring, inasmuch as the bottom flange of the lower frame member, serves as a seat

for said springs. It will also be observed that the advantages mentioned, are accomplished in conjunction with a single arch frame and that this single arch frame is of a construction which not only provides the required strength and gives space for the support of the heaviest bolsters and springs in a truck frame in which the standard dimensions are not exceeded. The employment of the single arch frame is of especial value in providing a frame of reduced height which is desirable for the reason that a greater space is provided between the frames and tracks and between the frames and cars, thereby facilitating the employment of bottom dump cars without interference by the truck frames.

I am aware that it is not broadly new to provide an integrally formed truck frame and journal boxes, but the difficulty usually experienced in such constructions lies in the inability to disconnect the axle bearing spindles from the journal boxes.

The construction which I have shown and described provides for a door which may be located at the side or bottom of the box instead of providing the usual upper side opening and lid therefor.

Assuming that my journal boxes are equipped with the side doors such as those indicated at 10, it is obvious that when the truck frame has been jacked up to a sufficient height, said side doors may be opened to permit of the lateral withdrawal of the axle. It will also be understood that in the opening of the side door, the engagement of the arm 10^a and brass 17, will be released, thus providing means for readily removing brasses from the boxes or inserting new ones. It is obvious that this removal may be accomplished by the employment of a bottom door such as that indicated at 19.

Another advantage of my construction, lies in the fact that by providing the bearing openings in the upper and lower portions of the frame, distant bearings are provided for the bolster guide pin, which obviates the necessity or desirability of employing the usual tie connections between the frames to retain the frames in their relative positions with reference to the bolster. This construction also permits of doing away with the usual column guides between the upper and lower bolster members.

What I claim, is:

1. A truck side frame and journal box comprising but two separately formed elements which consist in a side frame body having a journal box body cast integral therewith and a movable door for said box adapted to permit the lateral removal of the axle and cooperating bearings.

2. A truck side frame having journal boxes cast integral therewith, said journal boxes each having an opening which permits

the lateral removal of the axle and coöperating bearings, said opening being covered by a readily movable door.

3. A truck side frame having journal
5 boxes cast integral therewith, said journal boxes having openings, doors for said openings, and positive interlocking members connected with the journal boxes and doors for
10 latching the same in connection with each other.

4. A truck side frame having integrally formed journal boxes, said frame having opposing bolster guide bearings in its upper and lower members.

15 5. The combination of an integrally

formed truck side frame, the top and bottom members of which are formed with inwardly projecting flanges and inwardly projecting vertical flanges on opposite sides of the center of the length of the ^{frame} ~~flange~~, said 20 flanges coöperating with the side frame body to form a housing for the bolster ends and its supporting springs.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN H. McCORMICK.

Witnesses:

C. C. SHEPHERD,
A. L. PHELPS.

Correction in Letters Patent No. 945,133.

It is hereby certified that in Letters Patent No. 945,133, granted January 4, 1910, upon the application of John H. McCormick, of Columbus, Ohio, for an improvement in "Truck Side Frames" an error appears in the printed specification requiring correction, as follows: Page 3, line 20, the word "flange" should read frame; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 1st day of February, A. D., 1910.

[SEAL.]

C. C. BILLINGS,

Acting Commissioner of Patents.

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