

(No Model.)

G. H. KINZER.
LOCOMOTIVE JOURNAL BOX.

No. 332,157.

Patented Dec. 8, 1885.

Fig. 1.

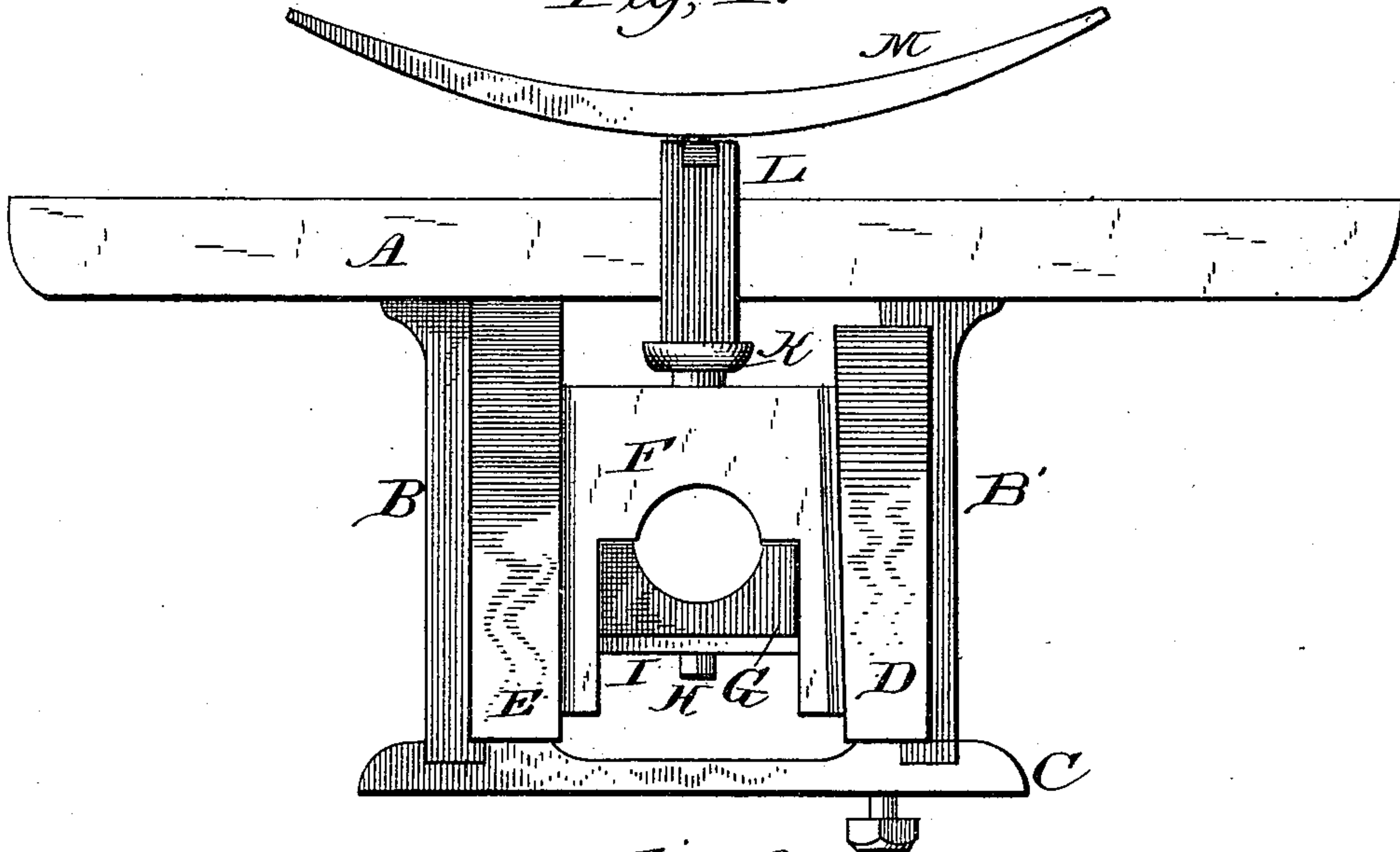


Fig. 2.

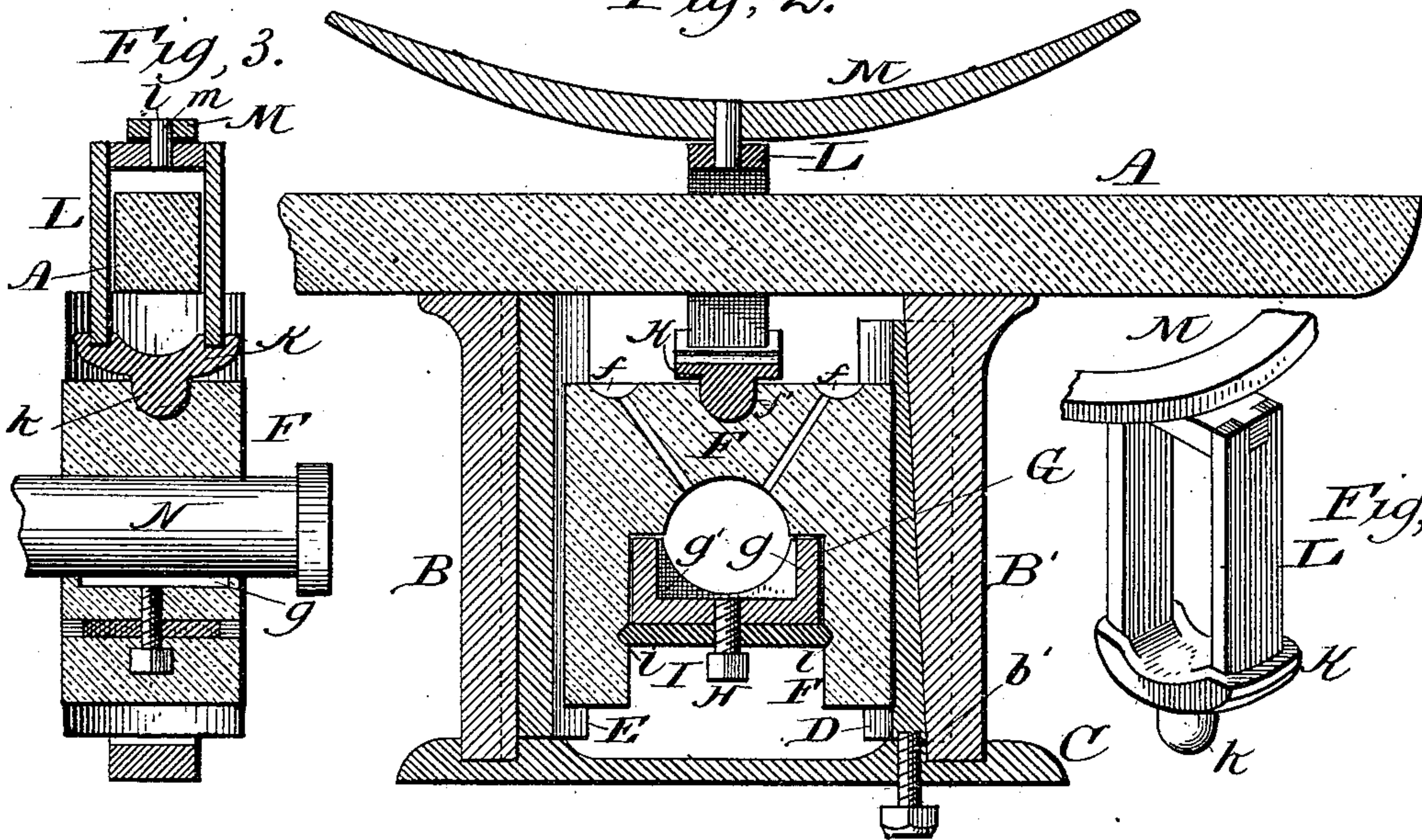


Fig. 3.

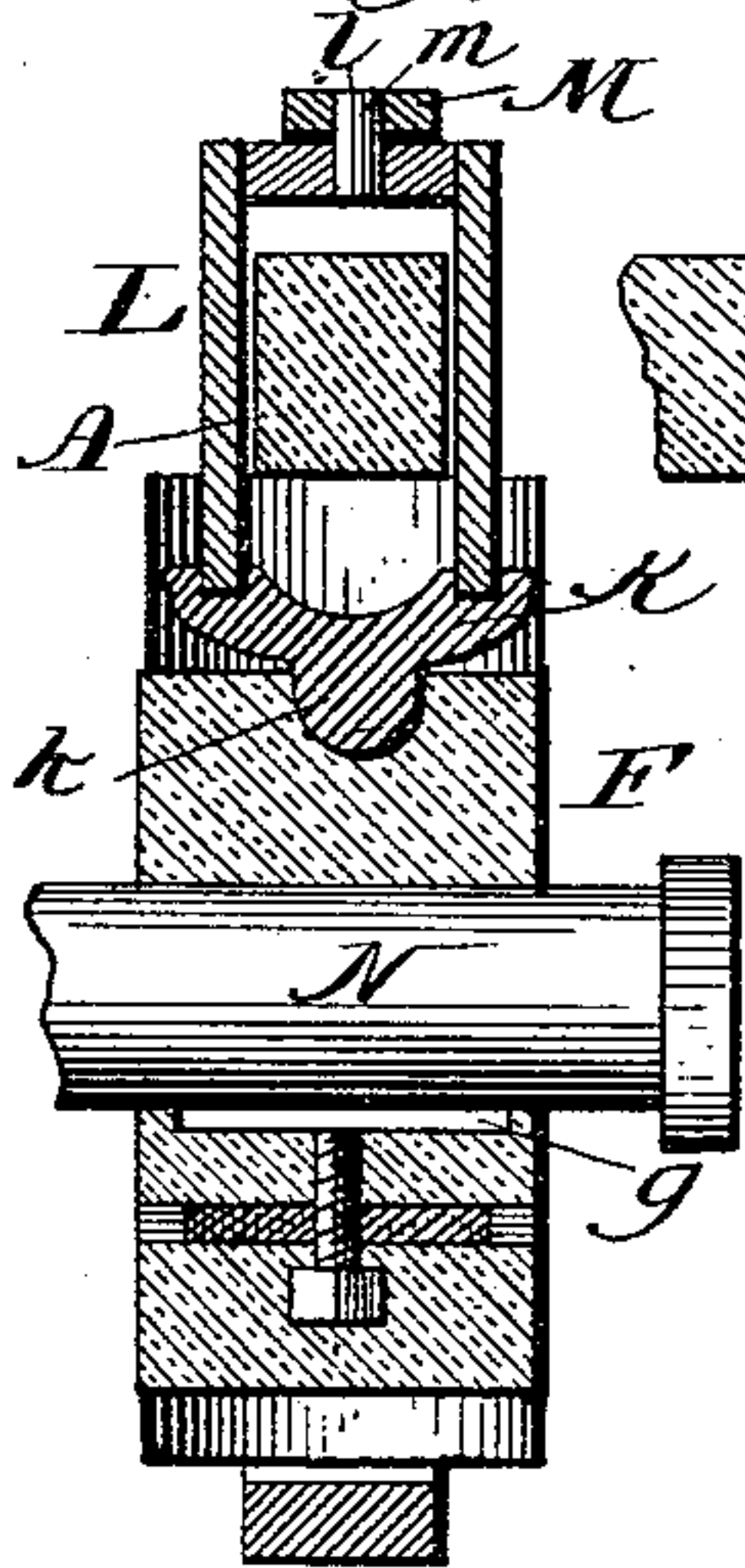
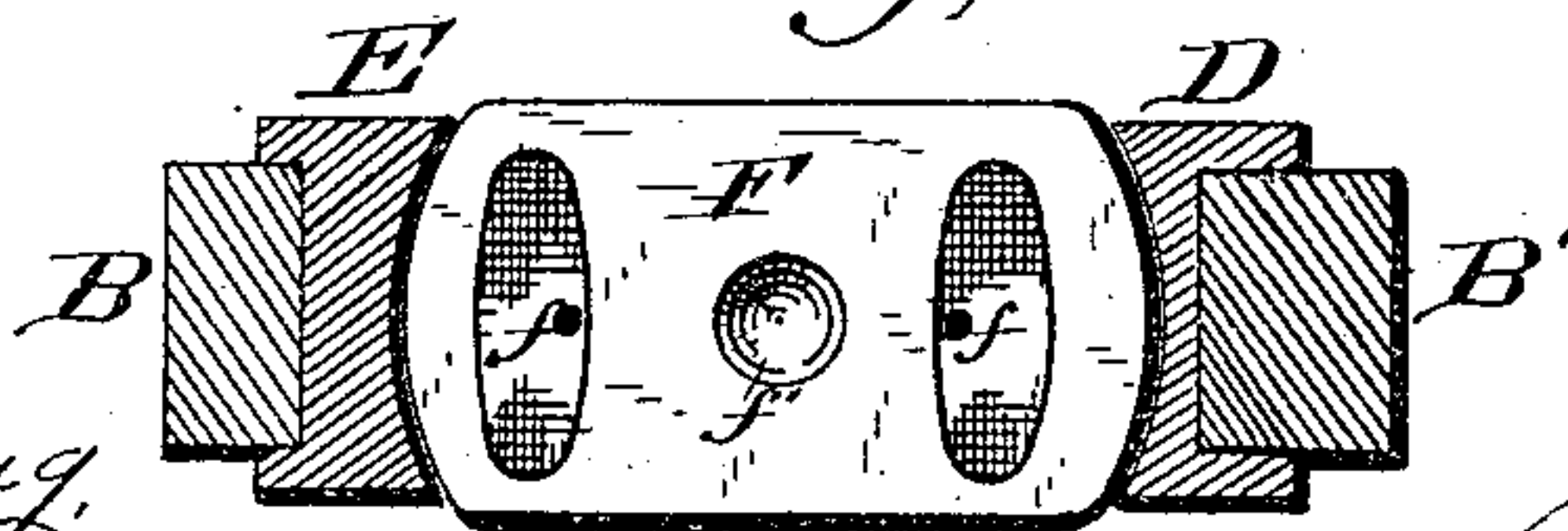


Fig. 5.



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LOCOMOTIVE JOURNAL-BOX.

SPECIFICATION forming part of Letters Patent No. 332,157, dated December 8, 1885.

Application filed June 2, 1885. Serial No. 167,412. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. KINZER, of Grant's Pass, in the county of Josephine and State of Oregon, have invented certain new and useful Improvements in Combined Journal-Box and Spring Bearings for Locomotives; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

My invention relates to the bearings of locomotive-axes; and it has for its object to provide a bearing for the journals of locomotive-axes which will, by virtue of its improved construction, compensate for irregularities of motion, whether the same be caused by the wheels passing over slight irregularities in the track or slight obstructions thereon, or by passing around curves of greater or less radii. To accomplish these results I have devised the constructions, combinations, and arrangements of mechanism which I shall now proceed to fully and accurately describe; and my invention consists in the specific parts and combinations thereof which I shall specify in the claims appended to this specification.

In the drawings hereto annexed and forming a part hereof, Figure 1 is a view in side elevation of so much of a locomotive as is necessary to properly illustrate my invention. Fig. 2 is a central longitudinal vertical section thereof. Fig. 3 is a central transverse vertical section, the journal of the axle being shown in elevation; and Fig. 4 is a fragmentary perspective view showing a portion of one of the springs, its stirrup, and ball-bearing. Fig. 5 is a top plan view, partly in section, of the box and shoe.

Like letters of reference indicate corresponding parts in all the figures.

Referring to the drawings by letter, A is the frame of the truck; B B', the pedestal-blocks, and C the strap for the same. These parts are of any ordinary and well-known construction, with the exception that the pedestal block B' is inclined on its inner side, as shown plainly in Fig. 2, such inclination being outward from *b* to *b'*, and being for the purpose

of accommodating the wedge-shoe D, the incline of such wedge-shoe being opposite to that of the pedestal-block, the purpose being to provide for the proper holding and adjustment of the bearing-block F, said adjustment being effected by forcing the wedge-shoe D inward when desired by means of the screw D', which has a bearing against the end of the wedge-shoe, and is threaded through the strap C, hereinbefore referred to. The inner side of the pedestal-block B is vertical, and forms a bearing for the shoe E, each of the shoes D and E being provided with a longitudinal groove on its outer side, which embrace the pedestal-blocks, and thus prevent lateral displacement of the shoes. The inner sides of the shoes are concaved to form bearings for the outer convex sides of the bearing-block F, so that the bearing-block may have a movement on a vertical axis when desired. The bearing-block F forms the upper half of the bearing or box, while the lower half thereof is formed by the block G, which is hollowed, as shown at *g* in Fig. 2, so that it may be filled with any desirable lubricating metal, *g'*, and which filling rests on a screw, H, which passes through the block G and is threaded in a plate, I, secured in transverse grooves *i* in the bearing-block F. The upper side of the block F is provided with three bowls or sockets, *f'ff*, the outer bowls, *ff*, forming lubricator or oil receptacles, and the central socket forming a bearing for the ball *k* on a plate, K, which supports at its outer ends, as seen in Fig. 3, the lower ends of the stirrup L, which embraces the frame A and has a pin, *l*, centrally disposed on its upper end, to enter a perforation, *m*, in the spring M.

N is one of the journals or spindles of the axles.

The operation of my device may be described as follows: The parts being in position, as shown, the weight bearing on the spring M is transmitted through the stirrup L and plate K to the bearing-block F, and the arrangement of these parts permits a lateral or longitudinal movement or a slight turning on the ball-and-socket joint formed by the plate K and socket *f'*. This will compensate for any slight irregularity in motion which may occur, and prevent breakage. Should the locomotive pass around a short curve, the bearing-block

will turn on its vertical axis, and thus prevent any wrenching of the axle or undue wear from twist therein. Should it be desired to adjust the bearing-block higher or lower by reason of wear or of a change of axle, this can be accomplished by placing the bearing-block in the desired position and securing it there by forcing in the wedge-shoe D, by means of the screw D', as before stated. Should the lubricating metal with which the lower bearing, E, is filled become worn, it can be adjusted by turning up the screw H.

It will be observed that one of the jaws of the pedestal-blocks is tapering to correspond with the taper of the movable tapering shoe, so that when the journal-box slides up or down the shoe-bearings are always parallel. The journal-bearings have oil-wells on their top and communicating channels leading therefrom to the journal, so that the lubricating material can readily run on the journal of the axle.

The step or socket on the top of the journal-box with the bearing for the stirrup, which holds the springs in conjunction with the partially-rotating journal-box, are the most essential features of my invention, and by this construction the axles, and, in fact, the whole body of the engine is given an easy movement, whereby all wrenching and twisting out of line of the rigid parts of the engine is prevented. By this prevention the engine is made to run with less friction, thus saving the motive power. The bolts remaining tight also saves labor and material, a less quantity of lubricant is used, and above all the engine is less liable to get out of order when in motion, thereby lessening the danger of breakdowns and stoppages.

Having thus described my invention and a few of the advantages thereof, what I claim

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

1. A journal-box for locomotives, having convex concentric bearings, corresponding concave shoes, one of which is tapering and vertically adjustable, in combination with the pedestal, substantially as described.

2. The bearing-block having convex vertical sides and a socket in its top surface, the shoes having concave vertical bearings to receive said convex sides, the stirrup having ball to engage the socket, and the spring surmounting the stirrup, all combined as set forth.

3. A journal-box having convex bearings and concave shoes, adapted to work in a pedestal-block, said box being also provided with a socket-bearing and oil-wells in its top and oil-channels, for the purpose described, in combination with the spring-stirrup having a saddle to work in said socket in the manner shown.

4. A combined journal-box and spring-bearing having convex bearings, in combination with concave shoes, one of which is rigid, the other tapering and adjustable, the tie-plate, and set-screw, substantially as set forth.

5. A journal-box for locomotives, having convex bearings, concave shoes, one of which is tapering and adjustable, in combination with a pedestal having one tapering jaw, a tie-plate, and set screw, said box having a socketed bearing for the spring, the whole being arranged to yield to the irregular movement of the engine and to preserve the axles in line, substantially as set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

GEO. H. KINZER.

Witnesses:

O. E. DUFFY,
JOHN ENDERS, Jr.