

(No Model.)

T. McGRATH.
JOURNAL BOX.

No. 390,880.

Patented Oct. 9, 1888.

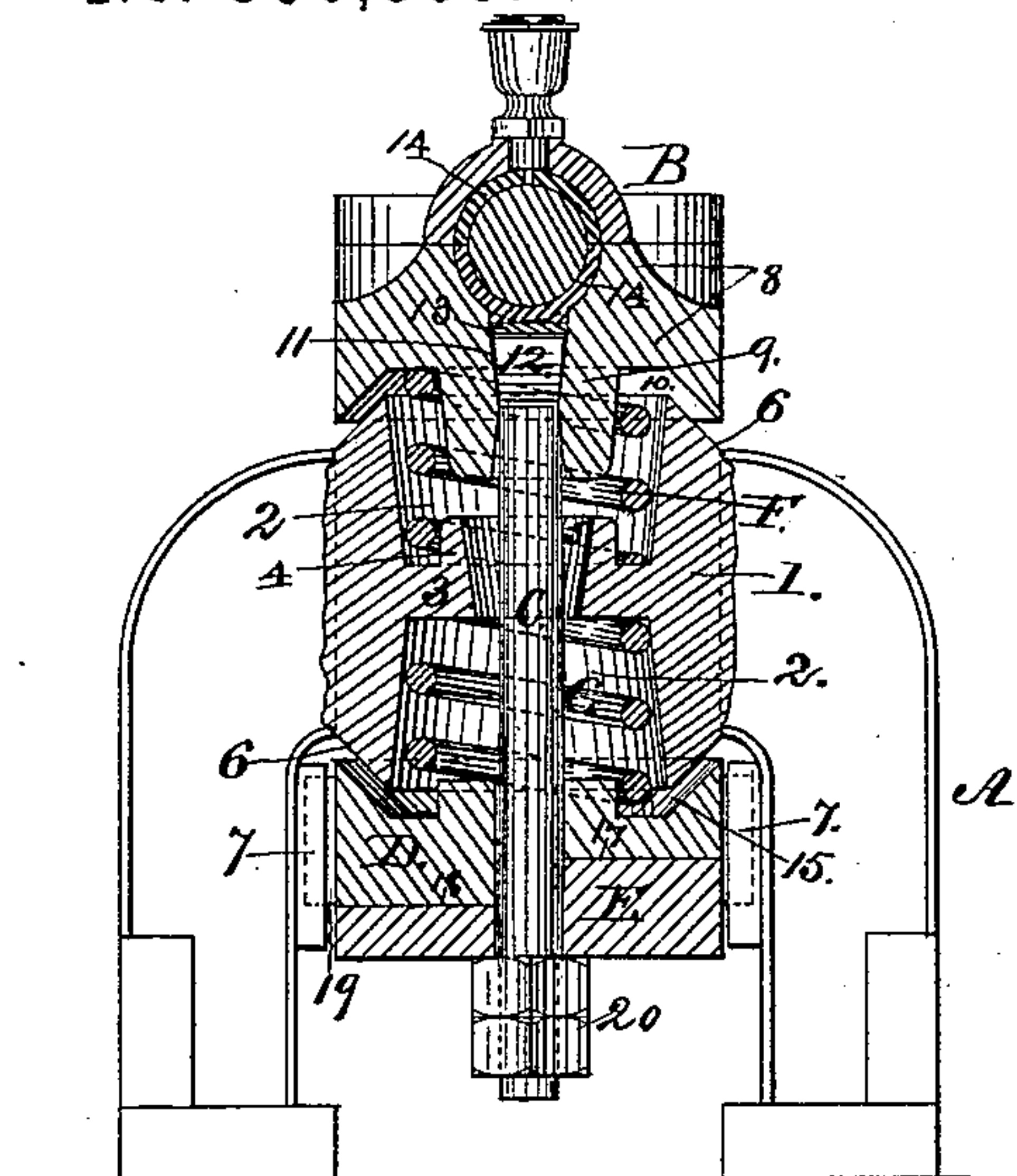


FIG. 1.

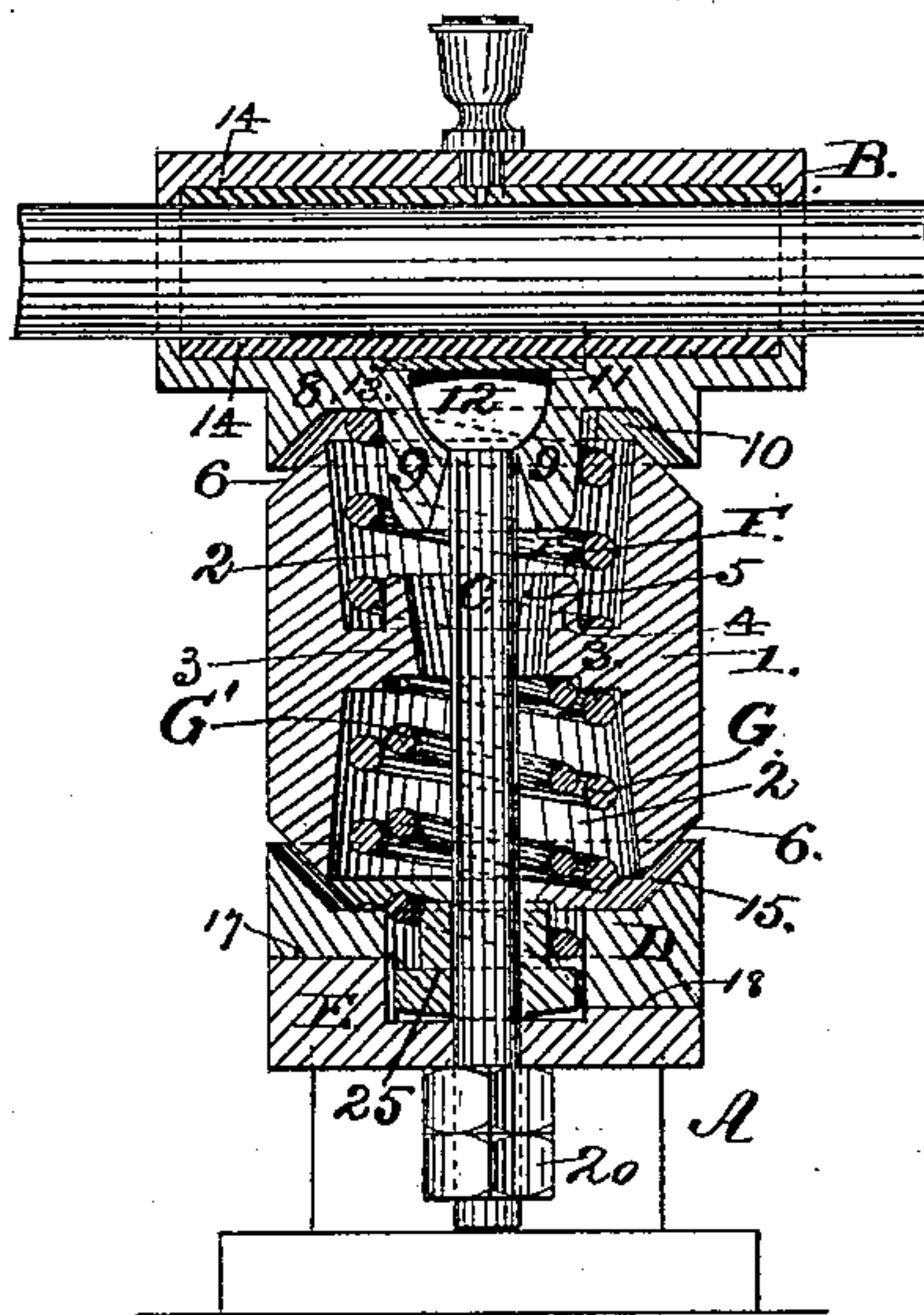


FIG. 2.

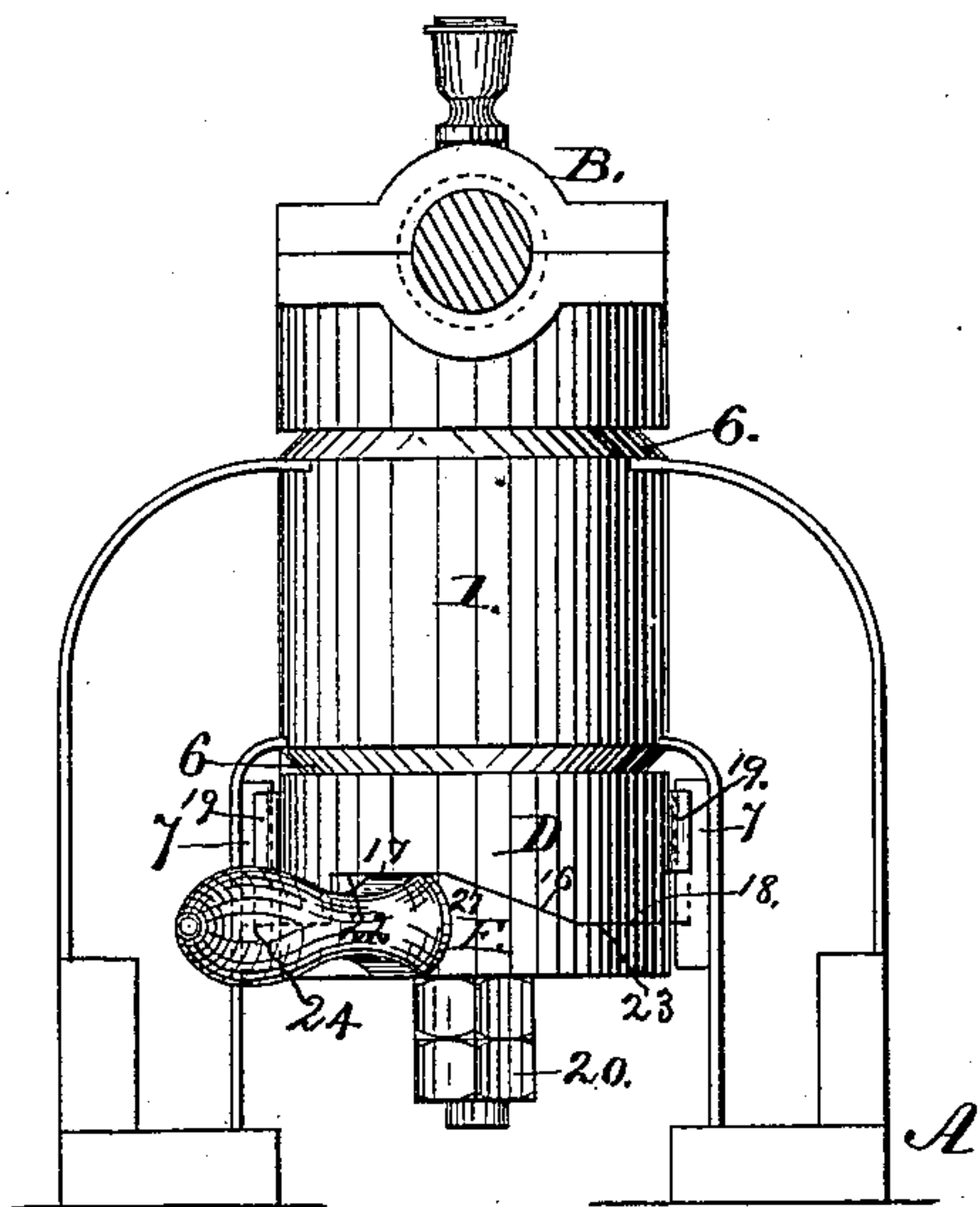


FIG. 3.

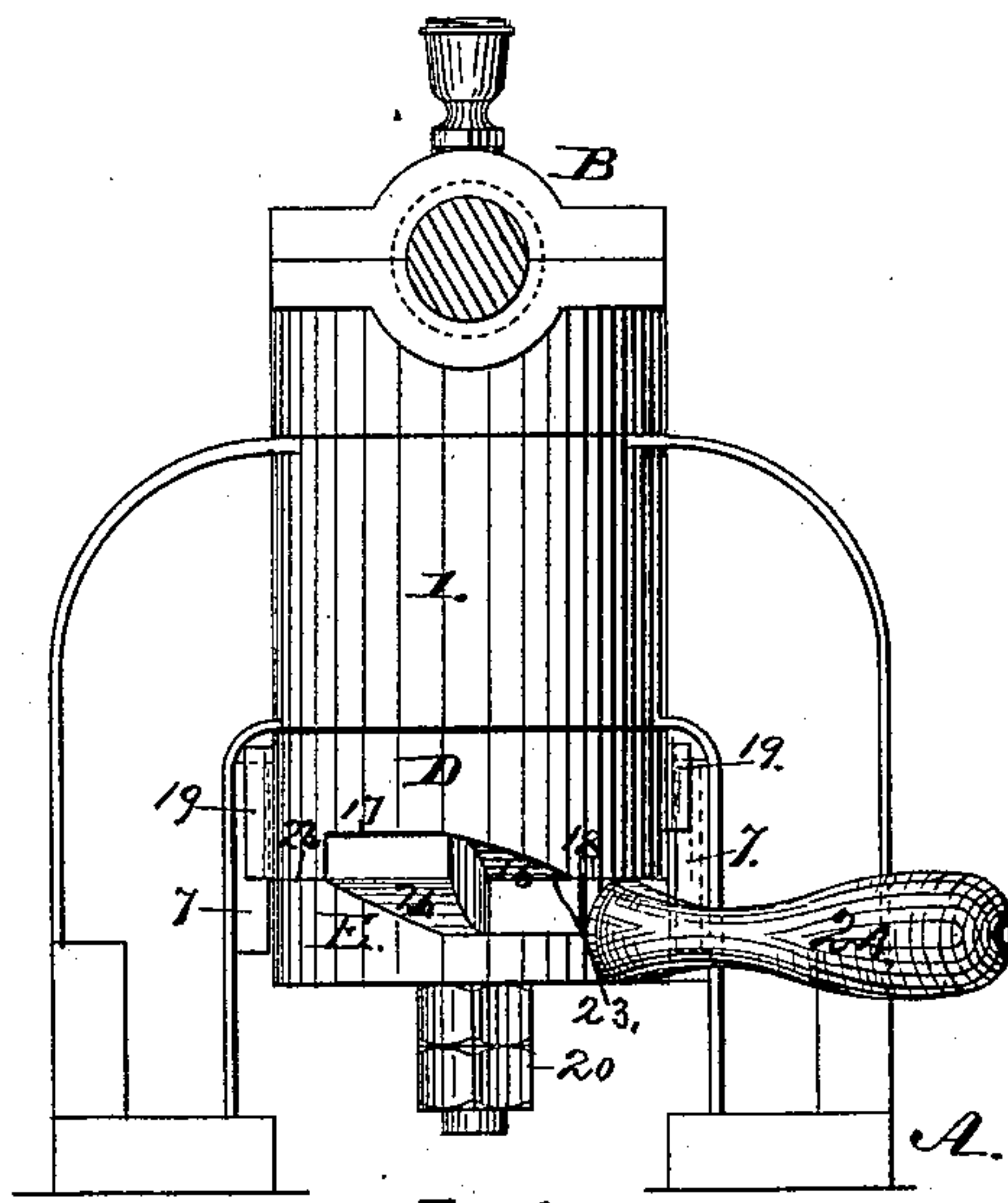


FIG. 4.

Witnesses:

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JOURNAL-BOX.

SPECIFICATION forming part of Letters Patent No. 390,880, dated October 9, 1888.

Application filed October 15, 1887. Serial No. 252,405. (No model.)

To all whom it may concern:

Be it known that I, THOMAS McGRATH, of the city and county of Albany, in the State of New York, have invented new and useful Improvements in Journal-Boxes, of which the following is a specification.

This invention, which relates to improvements in boxes for the journals of shafts that are revolved at a high rate of speed—such as the shafts of grinding and polishing machines—which are liable to acquire a tremulous motion by reason of their wheels wearing “out of truth,” and becoming unbalanced, is an improvement on the invention for which Letters Patent of the United States No. 360,237 were granted to me on the 29th day of March, 1887; and the object of my present invention is to provide a very simple and effective device for the purpose above set forth. This object I attain by the mechanism illustrated in the accompanying drawings, which are herein referred to and form part of this specification, and in which—

Figure 1 is a transverse vertical section of a bracket-bearing embodying my invention; Fig. 2, a longitudinal section; Fig. 3, an end elevation showing the parts adjusted for operating as a spring-bearing, and Fig. 4 a like elevation showing the parts adjusted to operate as a rigid bearing.

As represented in the drawings, A is the pedestal of a bracket-bearing. Said pedestal forms the stationary support for my journal-box and is provided with a boss, 1, which contains two coniform chambers, 2, that are separated by a horizontal partition, 3, which has on its upper side an annular rim, 4, through which a taper-hole, 5, is formed, with its larger end uppermost. The upper and lower ends of the boss 1 are preferably made with coniform seats 6, for a purpose hereinafter explained, and the pedestal A is provided with guides 7, on which a sliding clamp-plate moves.

B is the journal-box, which is divided horizontally in the usual manner, the lower part, 8, being provided with a central hub, 9, which is pendent therefrom and which loosely enters the upper chamber 2 of the boss 1. A coniform seat, 10, which corresponds to the seat 6 at the upper end of the boss 1 and is made to fit thereon, is formed on the under side of the lower part, 8, of said journal-box. A cham-

ber, 11, is formed in the hub 9 for the purpose of receiving a loosely-fitted bolt, C, which is provided with a head, 12, that is rounded on its under side and is fitted into the chamber 11 in such manner that the journal-box will be left free to rock slightly in either direction. The chamber 11 is capped over by a thin metallic plate, 13, which leaves the head of the bolt C free. Said plate is fixed over said chamber by first having its edges bedded in putty or other soft plastic material and then permanently secured in place by pouring over it a filling of melted anti-friction metal, 14, which is prevented by the putty from penetrating the chamber 11, wherein it would rigidly secure the bolt C and prevent the rocking motion of the journal-box above referred to.

D is a sliding clamp-plate, through which the bolt C passes loosely, and which has on its upper side a depressed coniform seat, 15, which corresponds to and fits on the coniform seat 6 on the lower end of the boss 1, and it has on its lower side indentations which form a series of alternating inclined planes, 16, and level planes or landings 17 and 18. Said clamp-plate is also provided with snugs 19, which are fitted to slide on the guides 7, and thereby prevent the clamp-plate from acquiring a rotary movement.

E is a cam-ring, through which the bolt C passes, and which is held up in its place by means of a nut and check-nut, 20, which are screwed on said bolt. Said cam-ring has on its upper side indentations which form a series of alternating inclined planes, 21, and level planes 22 and 23, which correspond to those on the lower side of the clamp-plate D. Said cam-ring is also provided with a radial handle, 24, which is preferably formed thereon, and by which said cam-ring is operated.

F is a spiral spring that is contained in the uppermost chamber 2 of the pedestal A, and which is fitted so that its upper end will bear against the lower side of the journal-box B, and its lower end bears upon the upper side of the partition 3 of said pedestal. The upper end of said spring fits snugly around the hub 9 on the lower part of the journal-box, and the lower end of it fits in the annular groove formed at the lower end of said chamber between the wall of the latter and the outer side of the rim 4.

G is a spiral spring which is contained in the lower chamber 2 of the pedestal A, and is interposed between the lower side of the partition 3 and the upper side of the clamp-plate D, as shown in Fig. 2, which shows a modification of my invention that is adapted for use on machines whose driving-belts are subjected to a strong upward strain. An auxiliary spring, G', is fixed inside of the spring G, with its upper end bearing against the lower side of the partition 3 and its lower end, which passes through a central opening in the clamp-plate D, bearing against the upper side of the cam-ring E, and in such cases a centering-hub, 25, is preferably interposed between the lower end of the auxiliary spring G' and the upper face of the cam-ring.

When my journal-box is to be used as a spring-bearing, as shown in Figs. 1, 2, and 3, the cam ring E should be turned so that its indentations will interlock with those of the clamp-plate D, and while in this position the spring F forces the journal-box B upward and the spring G forces the clamp-plate D downward, thereby carrying the seats 10 and 15 clear from the seats 6 and leaving the journal-box free to play both vertically and laterally under the restraining influences of the springs F and G. To adjust my journal-box to operate as a rigid bearing, all that is required is to turn the cam-ring E on the center bolt, C, to bring the level planes 23 of said cam-ring to bear against the level planes 18 of the clamp-plate D, whereby the seats 10 and 15 will be drawn into close contact with the corresponding seats, 6, of the pedestal A to render the bearing perfectly rigid and unyielding.

When preferred, the cam-ring E may be dispensed with, the lower side of the clamp-plate D being then made smooth. The clamping of the journal-box B and clamp-plate D to the seats on the pedestal A will then be effected by means of nuts on the bolt C; but, as in this last-described construction the adjustment of the parts must of necessity be slow, I prefer to retain the cam ring.

Flat seats or seats of any other preferred form may be substituted for the coniform seats 6, 10, and 15, and a satisfactory result will be obtained.

While I have only shown and described my invention as applied to a bracket-bearing, it is manifest that without further invention it is equally applicable to any other form of shaft-bearings.

I claim as my invention—

1. A journal-box which comprises the following parts: a pedestal having a boss which contains an upper and lower spring-chamber separated by an annular partition, the upper and lower ends of said boss forming seats, as herein set forth, said box being provided with a pendent center bolt and with a seat which is fitted to bear upon the upper seat of the pedestal-boss, springs which are fitted in the upper and lower chambers of the pedestal-boss to bear upon the annular partition and exert pressure against the journal-box and clamping-plate, a clamping-plate provided with a seat that is fitted to bear against the lower seat on the pedestal-boss, and a clamping mechanism whereby the seats of the journal-box and clamping-plate can be simultaneously drawn into contact with the seats of the pedestal-boss, as and for the purpose herein specified.

2. A journal-box having on its lower side a bowl shaped chamber for receiving a loosely-fitted center bolt and a seat which corresponds to the upper seat of the pedestal, in combination with a chambered pedestal containing springs, as herein described, a clamping mechanism whereby the seats of the journal-box and clamping-plate can be simultaneously drawn into contact with the seats of the pedestal, and a center bolt which is loosely fitted into the chamber in the lower part of the journal-box, and upon which the latter is fitted to rock, as and for the purpose herein specified.

3. In a journal-box, the combination of a pedestal provided with a boss having upper and lower spring-chambers that are separated by an annular partition, seats being formed on the upper and lower ends of said boss, and said spring-chambers containing independently-acting springs, said box being provided with a pendent center bolt and with a seat that is fitted to bear upon the upper seat of the pedestal-boss, a sliding clamping-plate that has on its upper face a seat that is fitted to bear on the lower seat of the pedestal-boss and on its lower face a series of alternating indentations and planes, and a cam-ring having on its upper side a series of indentations and planes which correspond to and co-operate with the indentations and planes on the lower face of the clamping-plate, as and for the purpose herein specified.

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Witnesses:

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