

No. 687,826.

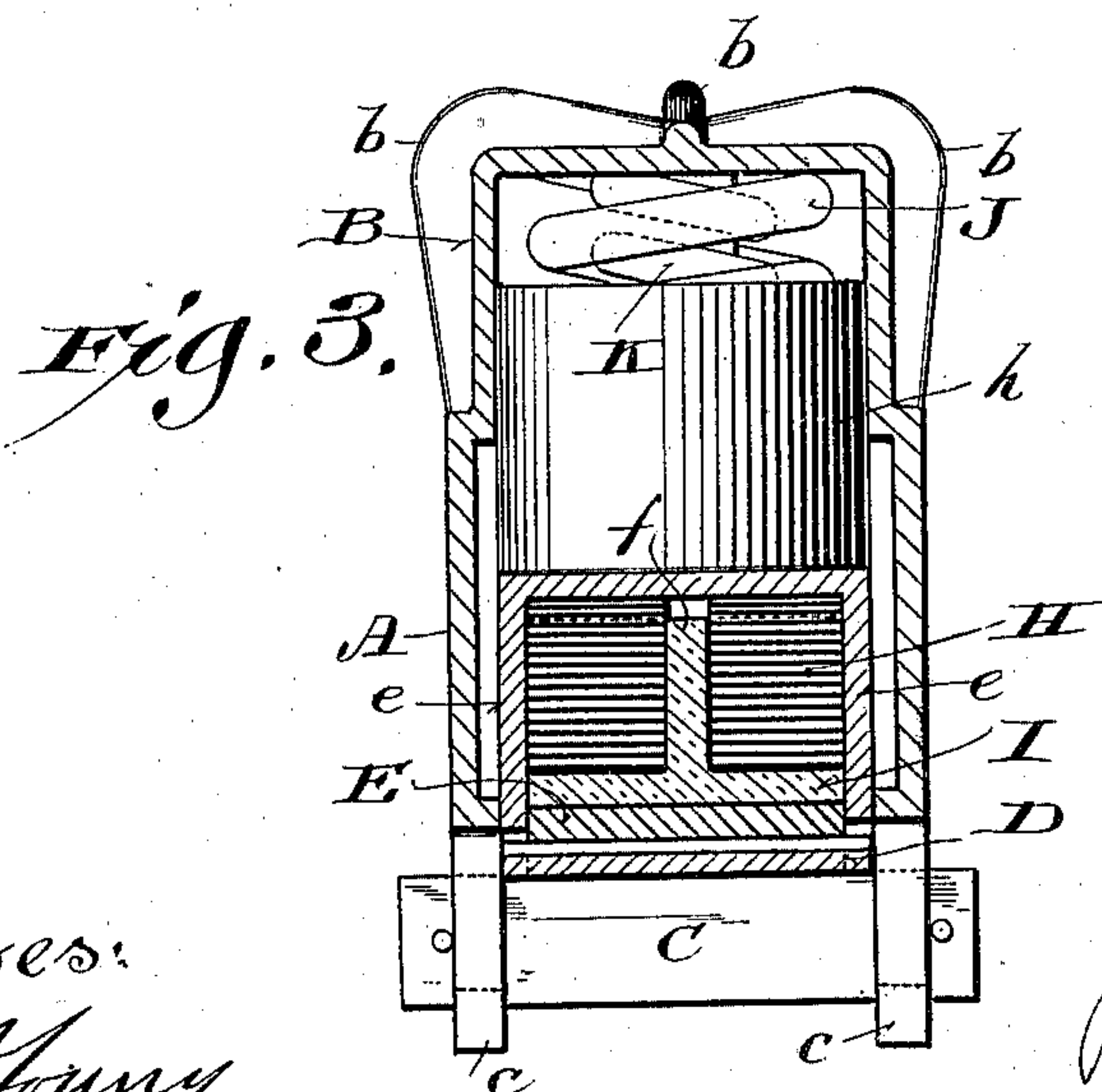
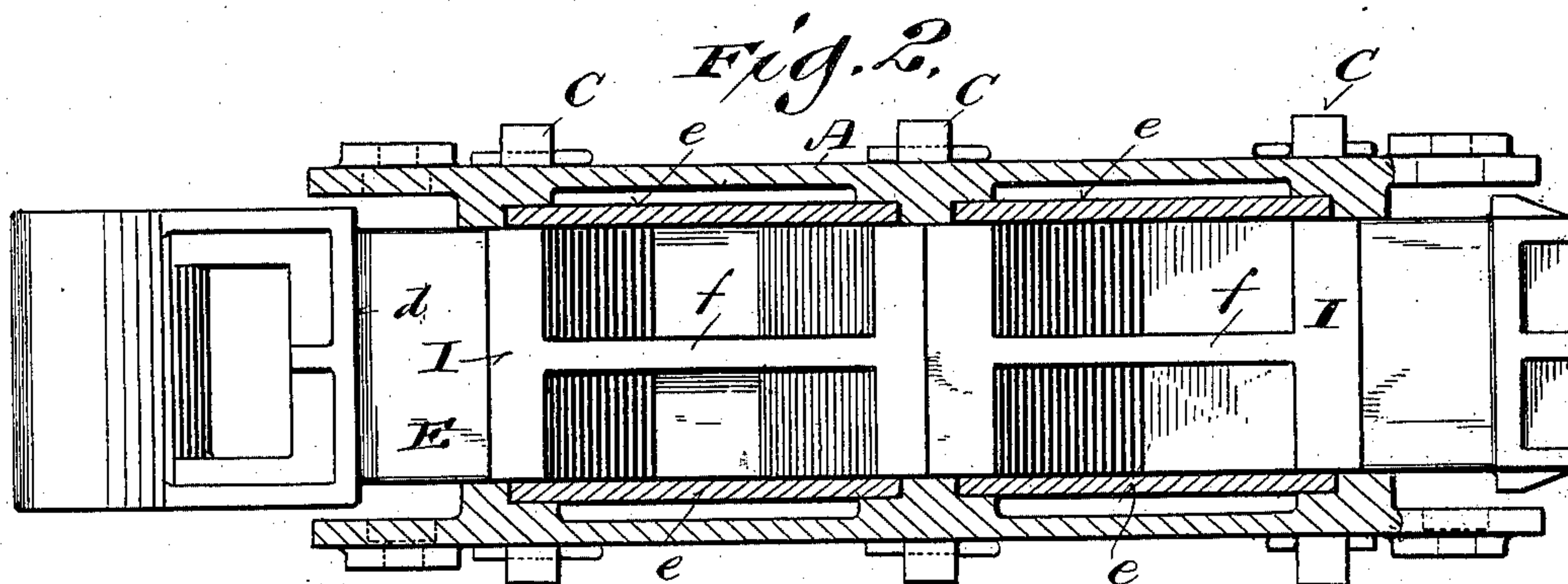
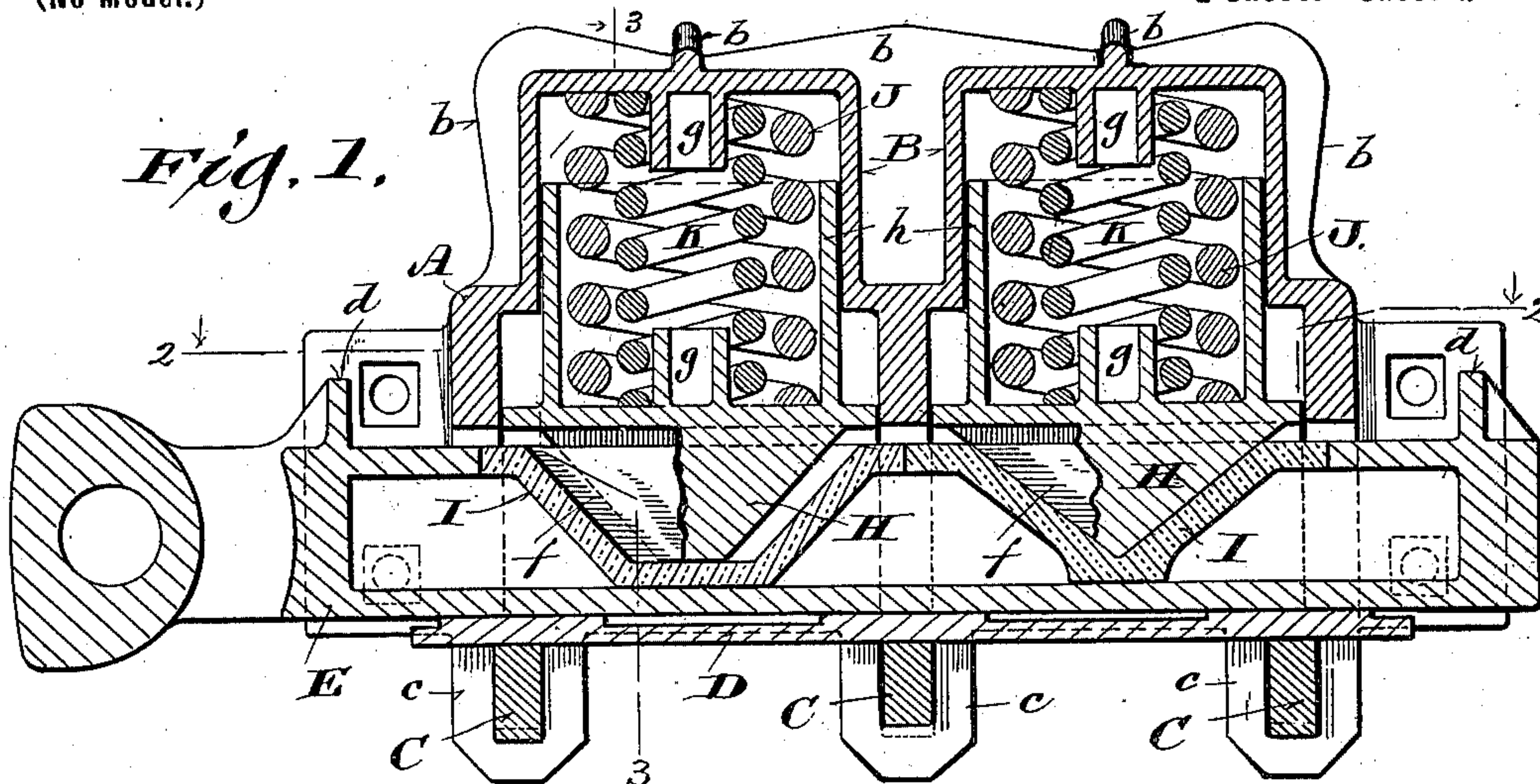
Patented Dec. 3, 1901.

J. J. HENNESSEY.  
RAILWAY DRAFT APPLIANCE.

(Application filed May 22, 1901.)

(No Model.)

2 Sheets—Sheet 1.



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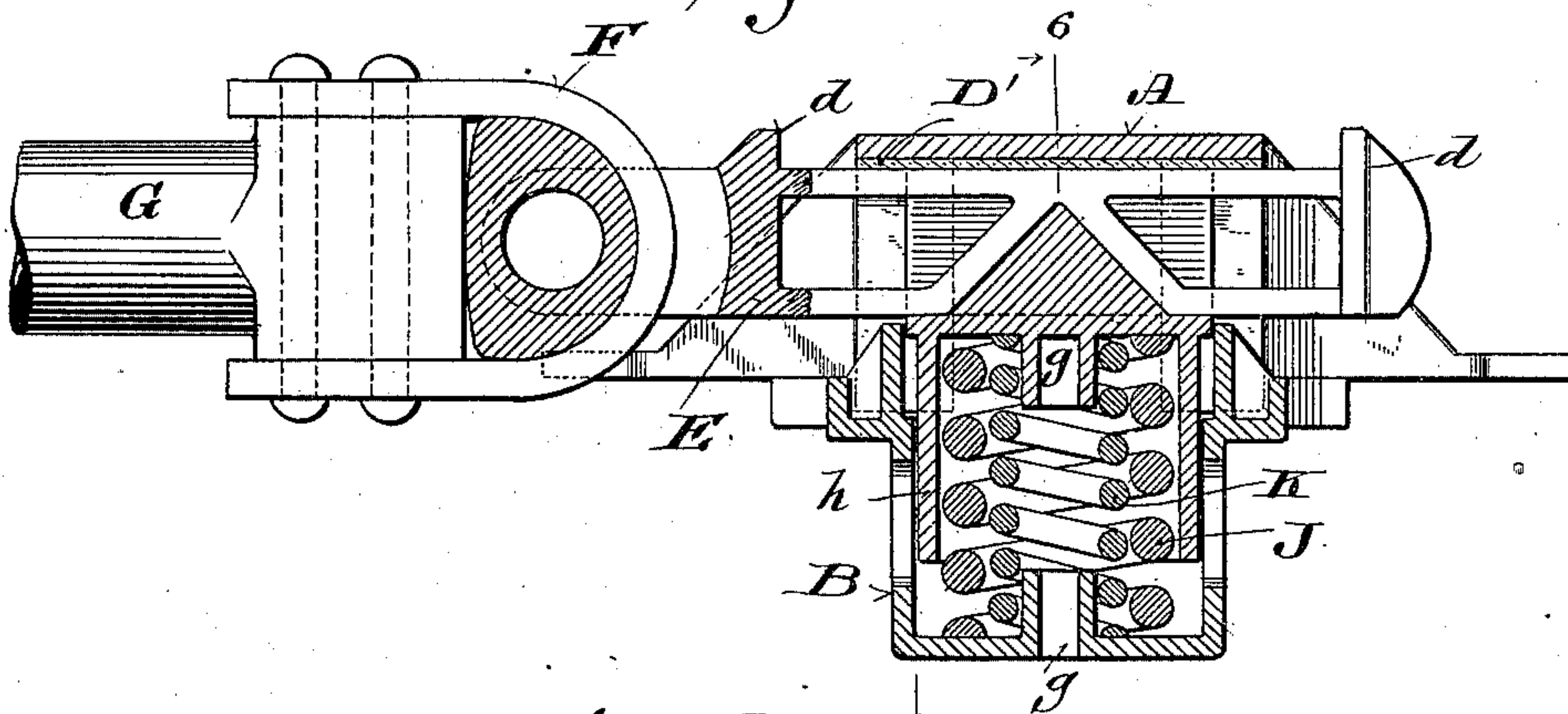
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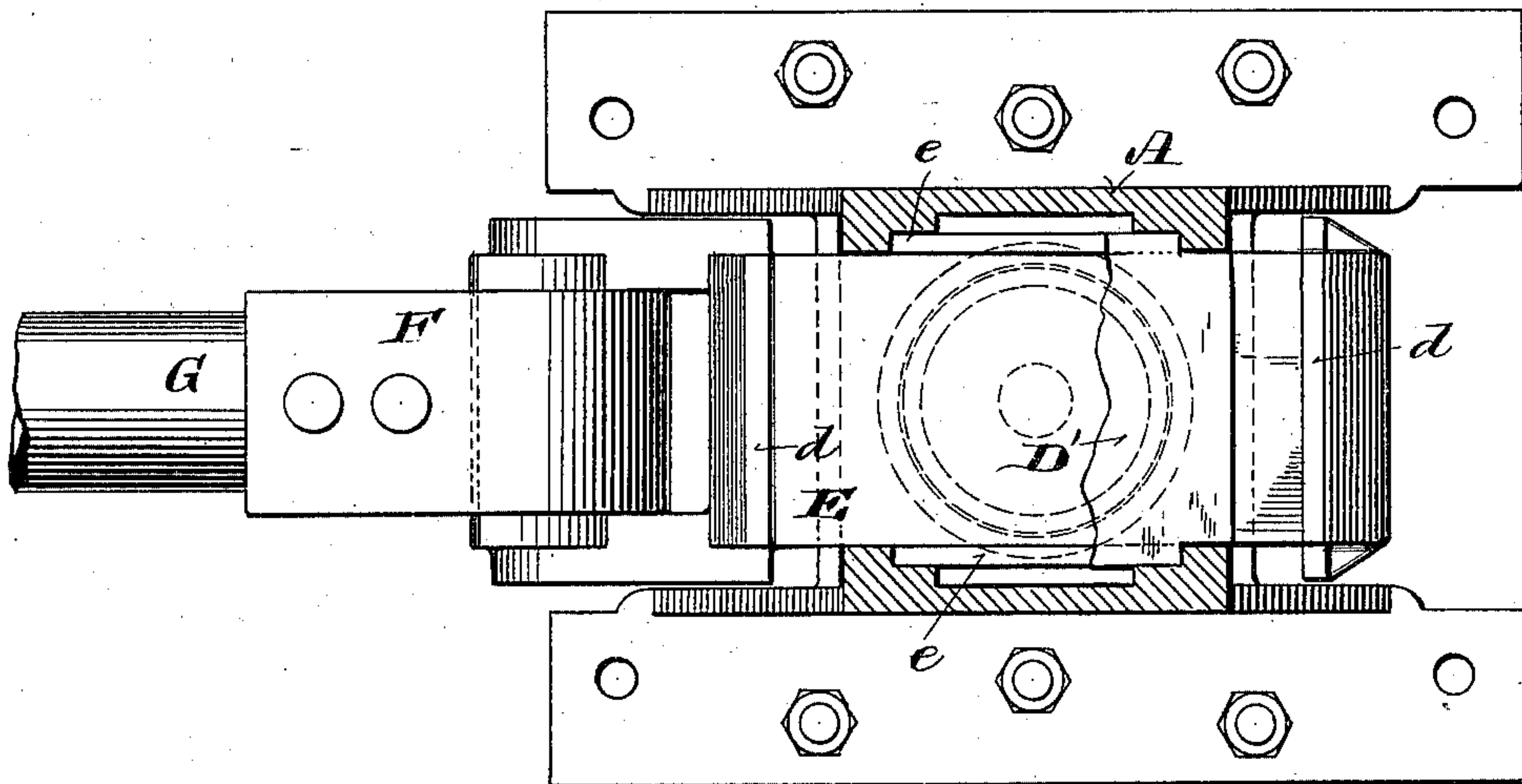
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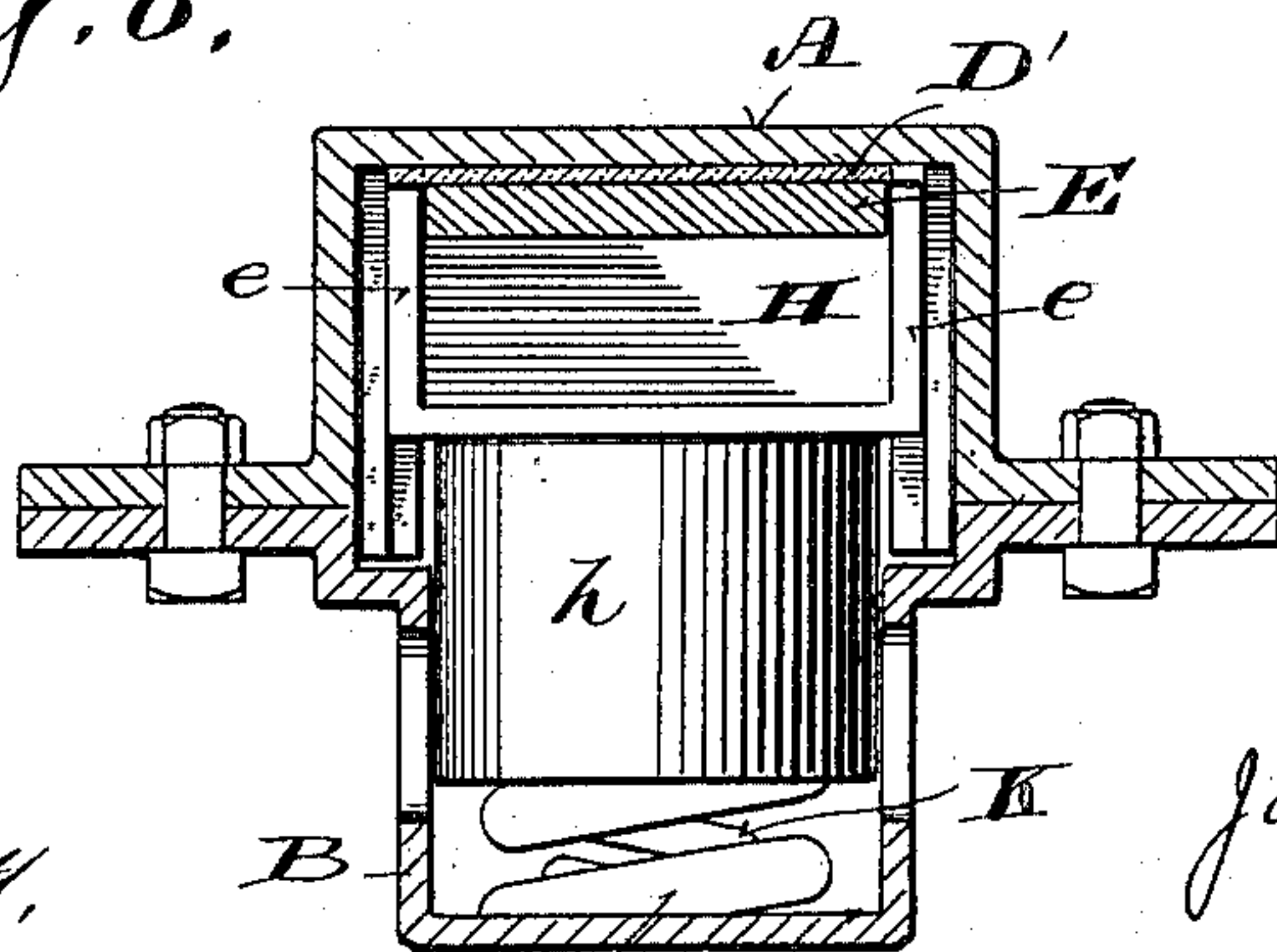
*Fig. 4.*



*Fig. 5.*



*Fig. 6.*



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# UNITED STATES PATENT OFFICE.

JOHN J. HENNESSEY, OF MILWAUKEE, WISCONSIN.

## RAILWAY DRAFT APPLIANCE.

SPECIFICATION forming part of Letters Patent No. 687,826, dated December 3, 1901.

Application filed May 22, 1901. Serial No. 61,340. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN J. HENNESSEY, a citizen of the United States, and a resident of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Railway Draft Appliances; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention has for its object to provide simple and economical draft and buffing rigging applicable in various forms to any of the several species of railway-cars and in which there is coöperation of friction and spring resistance to strains, said invention consisting in what is hereinafter particularly set forth with reference to the accompanying drawings and subsequently claimed.

Figure 1 of the drawings represents a vertical longitudinal section view, on a plane central, of one form of railway draft appliance in accordance with my invention, parts in said view being broken; Fig. 2, a horizontal section view indicated by lines 2 2 in the first figure; Fig. 3, a transverse section view indicated by lines 3 3 in said first figure; Fig. 4, a vertical longitudinal section view, on a plane central, of another form of railway draft appliance in accordance with my invention, parts in said view being broken; Fig. 5, a plan view of the latter form of said appliance, partly broken and in horizontal section; and Fig. 6, a transverse section view indicated by lines 6 6 in the fourth figure.

Referring by letter to the drawings, I show a preferably cast-metal housing as variable in the matter of design and structural detail as the construction of different railway-cars may necessitate, this housing constituting the stationary element of my improved draft and buffer rigging that is applicable to wooden or metal center sills or draft-timbers of a car. The housing shown in Figs. 1, 2, and 3 of the drawings is one that combines an angular boxing A and a pair of upper barrels B, that are strengthened and joined by exterior ribs *b* at intervals circumferentially thereof. The housing shown in Figs. 4, 5, and 6 is one that combines an angular boxing A and depending single barrel B, this barrel being devoid of exterior strengthening-ribs, although such ribs may be provided in practice, their em-

ployment in any form of housing being optional. The single-barrel housing herein shown comprises two meeting sections, the outer horizontal flanges of which are bolted together.

In view of the foregoing it is to be understood that in either single or plural barrel types of housing the barrel or barrels may be uppermost or depending, according to the structural peculiarities of a car for which said housing is designed, and for some cars the housings will be made in half-sections.

The upper-barrel type of housing herein shown has depending and vertically-slotted side ears *c*, with which transverse vertically-slotted supports C have interlocking engagement. A stationary friction-plate D, preferably of steel, rests on supports C, and movable longitudinally on elevations of the plate is the shank portion of a draft-iron E, having a forward eye for the engagement of a clip F, that in practice is bolted to the angular rear end of a draw-bar G, as shown in Figs. 4 and 5, the head of the draft-iron forward of the eye being shaped to fit the clip and provide for tilt of the draw-bar. In a depending-barrel type of housing a friction-plate D' may be inserted between the draft-iron shank and top of said housing, as is shown in Figs. 4, 5, and 6, and in any type of housing its ends are in the way of transverse forward and rear stop-flanges *d*, provided on said draft-iron to prevent full compression of springs hereinafter specified. In all forms of my invention the shanks of the draft-irons are provided with taper-pockets engaged by vertically-movable friction-blocks H of corresponding taper and preferably provided with rectangular side flanges *e*, guided in the housings, these flanges being in frictional contact with the sides of the shanks of said draft-irons. As best shown in Fig. 4, each pocket may be a recess formed in a draft-iron shank; but it is also practical to have the pocket in the form of a taper shell set in space provided in said shank, the shell being preferably of steel. Steel shells I, constituting friction-block pockets, are shown set in the draft-iron shank of the double barrel-housing type of my invention herein illustrated, and, as best shown in Figs. 2 and 3, it is preferable to increase the frictional contact of all



blocks H and their pockets by providing each pocket with a central partition *f* in a direction longitudinally of said draft-iron shank and grooving the corresponding block to fit the partition.

Arranged in space between each friction-block and a barrel-head of a housing is a spiral spring J, and another such spring K is preferably nested in the one aforesaid, these springs being of high resistance, and it is preferable to provide said block and barrel-head with centering-bosses *g* for the springs. It is also preferable to provide each friction-block with a cylindrical flange *h*, that surrounds the spring J and has vertical play in a housing-barrel.

In single-barrel types of my draft and buffer rigging the friction-blocks H have snug fit in their pockets, with which the shanks of the draft-irons are provided, and the rear friction-block in the herein-illustrated double-barrel type of said rigging has like fit in its pocket; but the relative dimensions of the forward friction-block and its pocket are such that the draft-iron may have limited longitudinal play in either direction before there is frictional contact of taper faces of said forward block and pocket.

When the herein-described rigging in any form is applied to a car, pull or push strain on the draft-iron will be met by coöperative friction and spring resistance, movement of said draft-iron along opposing friction-surface in the housing occurring when there is vertical yield of a friction-block and spring in opposition thereto, said resistance being more or less in proportion to area of contact of the draft-iron shank with friction-surface in the housing and the spring power and inclination of abutting taper faces of the block and its pocket, the spring aforesaid being operative to bind said draft-iron shank in contact with opposing friction-surface.

In that form of the aforesaid rigging best shown by Fig. 1 the initial resistance to strains is had as a result of frictional contact of the draft-iron shank with friction-surface in the housing and by means of the rear friction-block and spring. This resistance being partially overcome, longitudinal movement of the draft-iron will result in its meeting with the resistance of the forward friction-block and spring. Hence it will be understood that in some instances I provide for accumulative coöperative friction and spring resistance to strains that come upon a draft-iron.

The general construction and arrangement of parts in all forms of the herein-described draft and buffer rigging are very simple as well as compact. Hence it is economical in the matter of manufacture and occupies comparatively little space when applied to a car, its function being to prevent shock or oscillation of the said car incidental to coupling, starting, stopping, and running of the same.

Owing to its general construction and arrangement of parts the herein-described draft appliance in preferable forms is attachable to a car, so as to have the draft-iron shank and its housing between center sills or draft-timbers of said car, the pull and push strains being then upon the center line of said sills or timbers instead of below the same, this being a matter of considerable importance in practice, as the greatest possible rigidity of the stationary portions of said draft appliance is attained.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. Railway draft appliance comprising a housing attachable to a car, a draft-iron attachable at one end to draw-bar and having its shank portion in sliding engagement with the housing against stationary friction-surface, a taper friction-block fitting a corresponding pocket in the draft-iron shank, and a high-resistance spring between the friction-block and head of a barrel constituting part of said housing, the spring serving to resist yield of said friction-block in its pocket and bind said draft-iron shank against the stationary friction-surface with which it has sliding contact in the aforesaid housing.

2. Railway draft appliance comprising a housing attachable to a car, a draft-iron attachable at one end to a draw-bar and having its shank portion in sliding engagement with the housing against stationary friction-surface, a taper friction-block fitting a corresponding pocket in the draft-iron shank, friction-block flanges opposing sides of said draft-iron shank, and a high-resistance spring between the friction-block and head of a barrel constituting part of said housing, the spring serving to resist yield of said friction-block in its pocket and bind said draft-iron shank against the stationary friction-surface with which it has sliding contact in the aforesaid housing.

3. Railway draft appliance comprising a housing attachable to a car, a draft-iron attachable at one end to a draw-bar and having its shank portion in sliding engagement with the housing against stationary friction-surface, a partition longitudinally of the draft-iron shank in a taper pocket of the same, a grooved friction-block fitting said partition and pocket, and a high-resistance spring between the friction-block and head of a barrel constituting part of said housing, the spring serving to resist yield of said friction-block in its pocket and bind said draft-iron shank against the stationary friction-surface with which it has sliding contact in the aforesaid housing.

4. A railway draft appliance comprising a housing attachable to a car, a draft-iron attachable at one end to a draw-bar and having its shank portion in sliding engagement with the housing against stationary friction-sur-



face, a taper-pocket shell set in the draft-iron shank, a friction-block fitting the pocket in the shell, and a high-resistance spring between the friction-block and head of a barrel constituting part of said housing, the spring serving to resist yield of said friction-block in its pocket and bind said draft-iron shank against the stationary friction-surface with which it has sliding contact in the aforesaid housing.

5. Railway draft appliance comprising a housing attachable to a car, a stationary friction-plate in the housing, a draft-iron attachable at one end to a draw-bar and having its shank portion in sliding engagement with said housing against the friction-plate, a taper friction-block engaging a corresponding pocket in the draft-iron shank, and a high-resistance spring between the friction-block and head of a barrel constituting part of the aforesaid housing, the spring serving to bind said draft-iron shank against said friction-plate with which it has sliding contact.

6. Railway draft appliance comprising a housing attachable to a car, a draft-iron attachable at one end to a draw-bar and having its shank portion in sliding engagement with the housing against stationary friction-surface, stop-flanges on the draft-iron shank opposing ends of said housing, a taper friction-block engaging a corresponding pocket in said draft-iron shank, and a high-resistance spring between the friction-block and head of a barrel constituting part of the aforesaid housing, the spring serving to resist yield of said friction-block in its pocket and bind said draft-iron shank against the stationary fric-

tion-surface with which it has sliding contact in the aforesaid housing.

7. Railway draft appliance comprising a housing having main and auxiliary barrel portions, a draft-iron arranged to slide in the housing and provided with main and auxiliary taper pockets, taper friction-blocks engaging the pockets, and a spring of high resistance between each block and a barrel-head of said housing, there being snug fit of the main friction-block in its pocket but such disparity between relative proportions of the auxiliary friction-block and pocket that partial yield of said main friction-block and its opposing spring to longitudinal movement of the draft-iron is requisite prior to contact of taper faces of said auxiliary block and pocket.

8. Railway draft appliance comprising an independent draft-iron having a forward head and a shank-eye back of the head, a draw-bar clip engaging the shank-eye and having tilt fit on said head, a housing attachable to a car and with which the draft-iron shank has sliding engagement, and means constituting coöperative friction and spring resistance to longitudinal movement of said draft-iron incidental to pull and push strains thereon.

In testimony that I claim the foregoing I have hereunto set my hand, at Milwaukee, in the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

JOHN J. HENNESSEY.

Witnesses:

N. E. OLIPHANT,  
B. C. ROLOFF.