

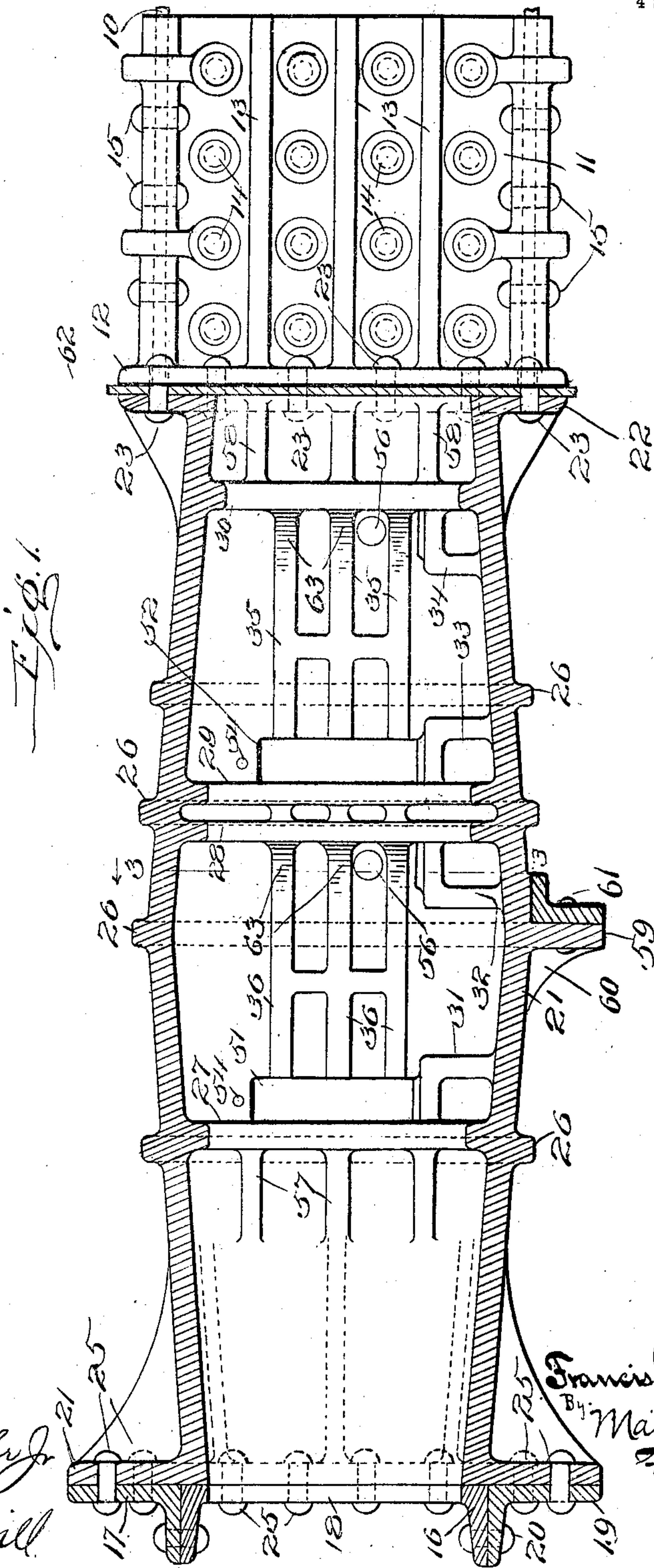
No. 841,017.

PATENTED JAN. 8, 1907.

F. JERDONE, JR.
DRAFT APPLIANCE.

APPLICATION FILED JULY 25, 1906.

4 SHEETS—SHEET 1.



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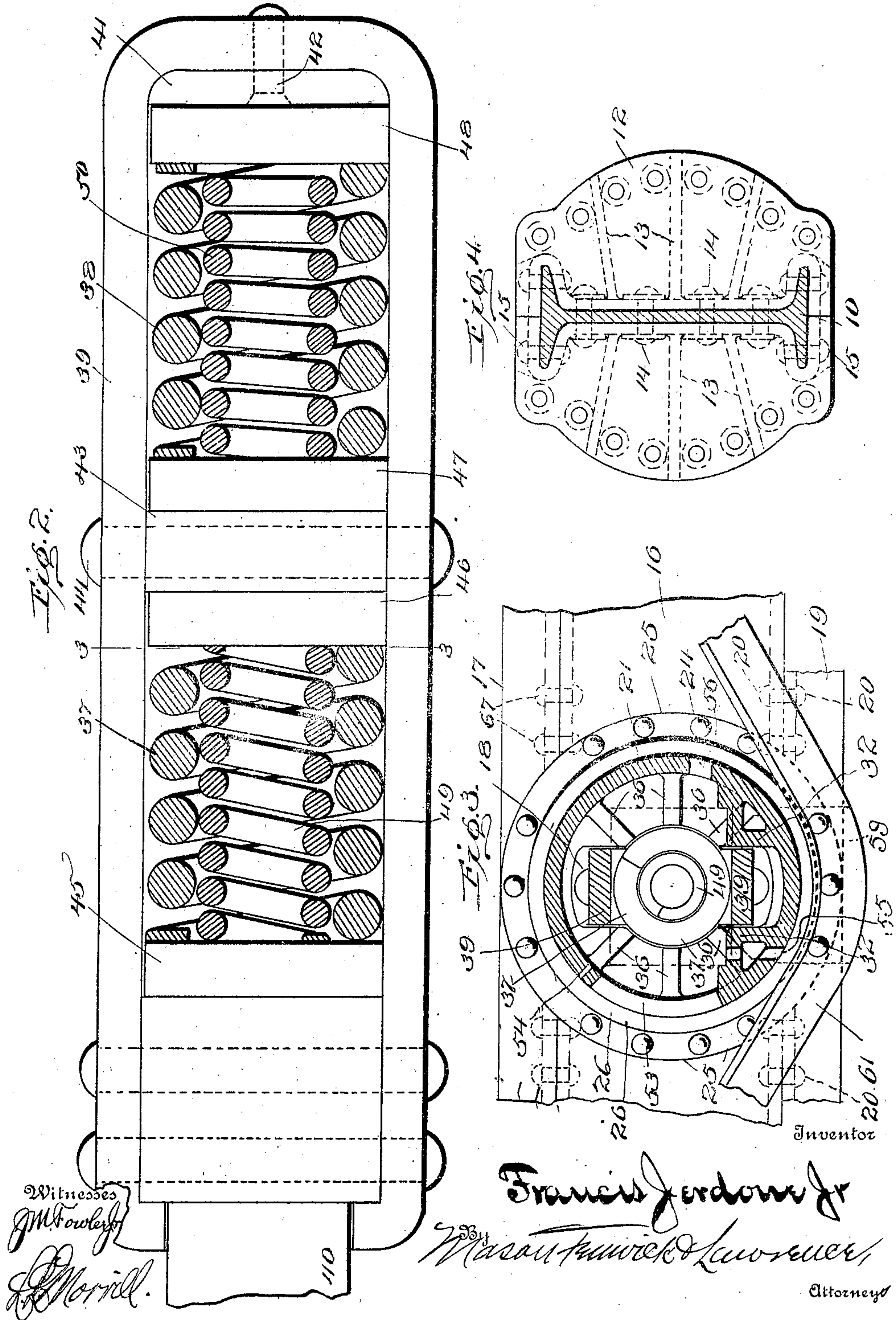
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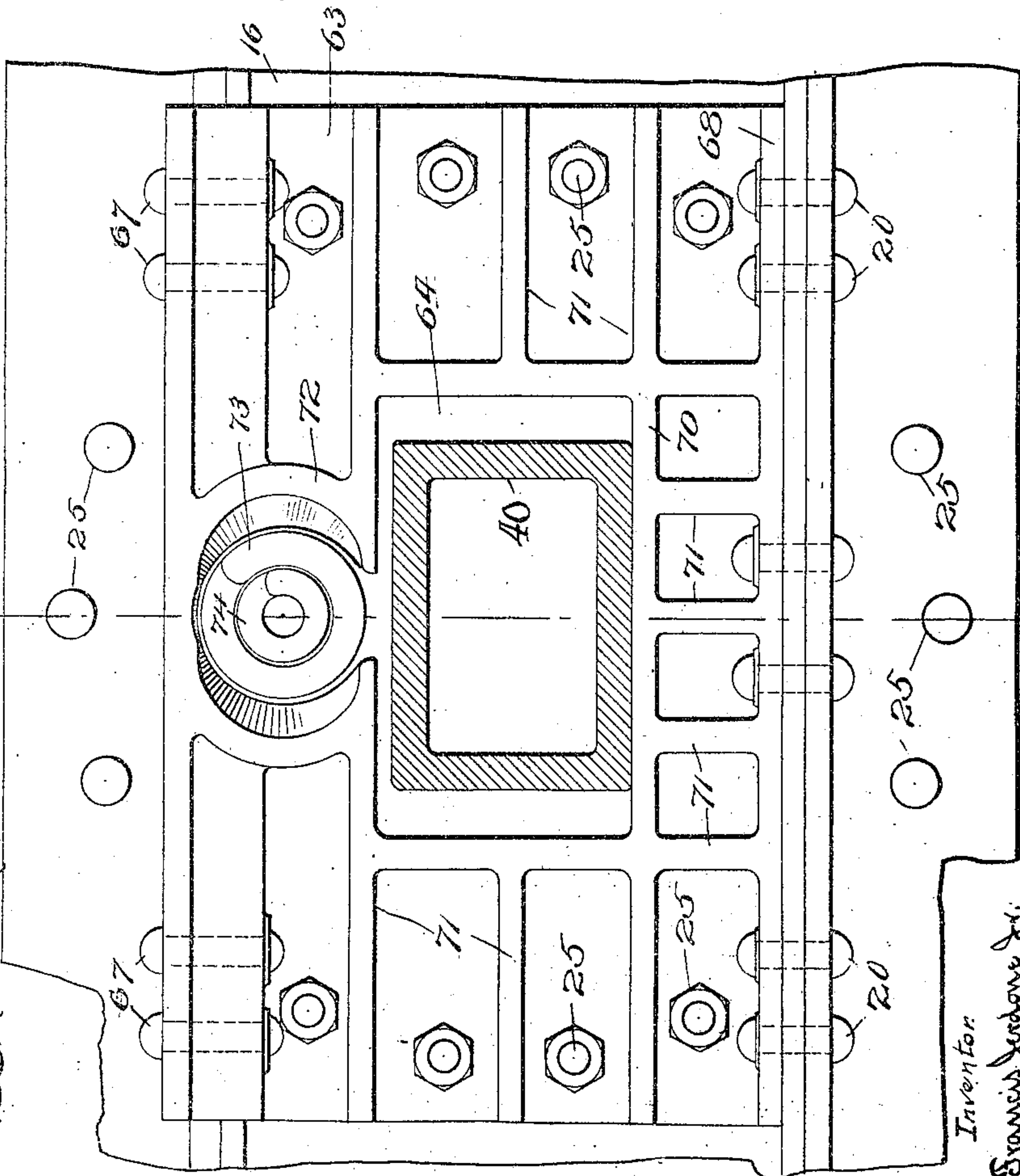
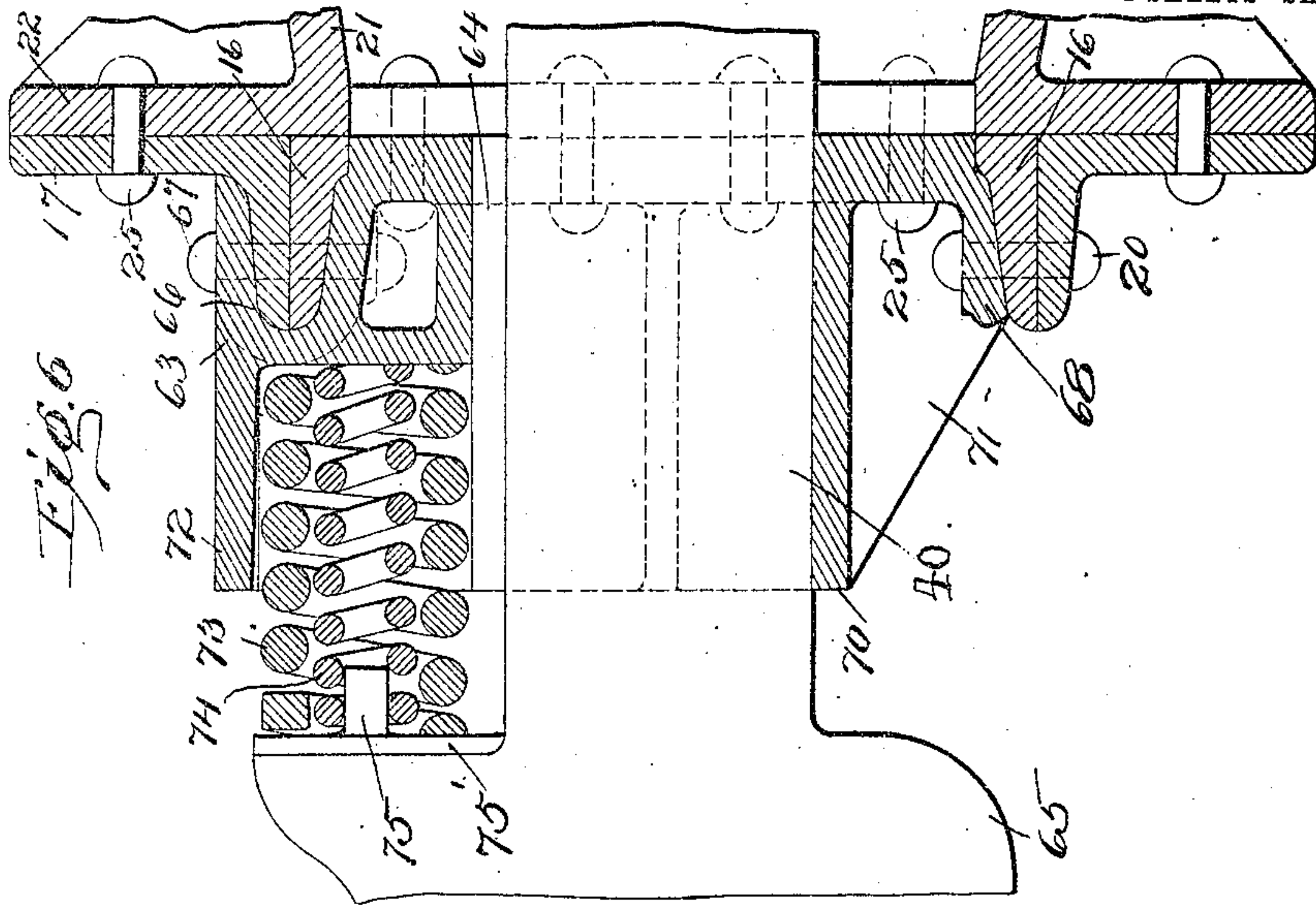
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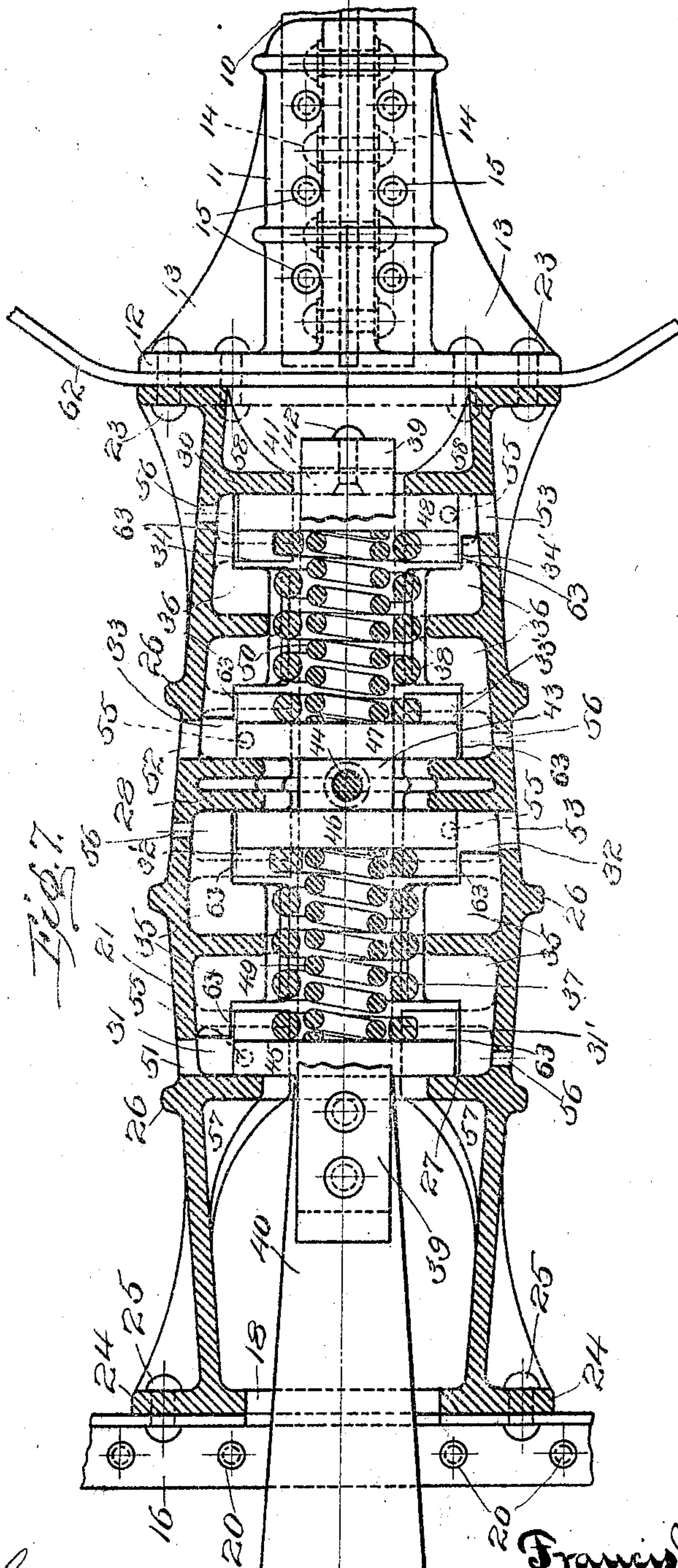
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UNITED STATES PATENT OFFICE.

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DRAFT APPLIANCE.

No. 841,017.

Specification of Letters Patent.

Patented Jan. 8, 1907.

Application filed July 25, 1906. Serial No. 327,754.

To all whom it may concern:

Be it known that I, FRANCIS JERDONE, Jr., a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Draft Appliances; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to draft-riggings for cars, and has for an object to provide a draft appliance embodying new and improved features of reliability, convenience of operation, and economy of construction.

A further object of the invention is to provide a draft-rigging having a barrel arranged to be permanently and rigidly secured to the car structure and with a yoke which may be quickly and conveniently inserted and removed from the barrel.

A further object of the invention is to provide in a draft-rigging cushioning-springs and improved means for securing the springs within the device and of engaging the springs operatively.

With these and other objects in view the invention comprises certain other novel constructions, combinations, and arrangements of parts, as will be hereinafter fully described and claimed.

In the drawings, Figure 1 is a longitudinal vertical sectional view of the barrel of the improved draft-rigging with the spring-carrying yoke removed and the means for attaching to the car structure shown in elevation. Fig. 2 is a longitudinal sectional view of the spring-carrying yoke with the spring shown in longitudinal section. Fig. 3 is a transverse sectional view taken on the line 3-3 of the barrel and yoke shown in Figs. 1 and 2. Fig. 4 is a view in end elevation of the plate for attachment to the car structure and to which the barrel of the draft-rigging is rigidly secured. Fig. 5 is a view in front elevation of the cushioning device secured to the front of the car and showing the shank of the draw-head in transverse section. Fig. 6 is a vertical sectional view of the cushioning device and means for applying, taken on line 6-6 of Fig. 5. Fig. 7 is a longitudinal sectional view of the improved draft-rigging, taken on a horizontal plane slightly below the diametrical middle of the barrel.

Like characters of reference designate cor-

responding parts throughout the several views.

The draft-rigging forming the subject-matter of this application may by slight modification be applied to car structures employing any usual and ordinary metal frame; but is here shown and preferably used in association with a structure employing a single center beam, as shown in the structure forming the subject-matter of a copending application bearing Serial No. 327,753, filed July 25, 1906, and in which the central I-beam is here shown, as at 10, and which extends longitudinally of the car structure and centrally beneath the same.

The I-beam 10 stops short of the opposite ends of the car and at its opposite ends is provided with a bracing member (shown as a whole at 11) and comprising a plate-like structure 12, disposed in a plane transversely of the car and perpendicular to the longitudinal axis of the I-beam. The plate-like portion 12 is provided at its back side or the side away from the end of the car with bracing-webs 13, preferably formed as wide at their forward ends as the width of the plate structure 12 and with their sides inclined or tapered to the I-beam 10. The structure 11 is secured rigidly to the I-beam 10 in any approved manner, as by the rivet 14, extending transversely through the structure and through the I-beam, and by rivets 15, extending vertically through the upper and lower portions of the structure 11 and through the flanges of the I-beam, so that as applied the extremities of the I-beam are provided with transversely-disposed substantially plain plate-like structures with head portions 12.

The car-frame structure is preferably composed at the end of a channel-iron 16, extending horizontally and transversely of the car under and rigidly secured to an angle-iron 17, forming the sill at the lower edge of the structure. The channel-iron 16 is provided with an opening 18, disposed centrally of the car and reinforced by means of an angle-iron 19, rigidly secured to the lower side of the channel-iron 16 in any approved manner, as by the rivets 20.

Between the head 11 and the channel-iron 16 is rigidly secured the cylinder or barrel 21 of the draft structure, which is provided at its outer end with a flange 22, proportioned to conform to the shape and size of the plate 12 and rigidly secured thereto in any approved

manner, as by the rivets 23. At its outer end the cylinder or barrel, as provided, has a substantially circular flange 24, proportioned to extend vertically the combined distance covered by the channel-iron 16 and its associated angle-irons 17 and 19 and rigidly secured to the said channel-iron and angle-irons, as by the rivets 25.

The barrel 21 is of any convenient and approved form and is provided externally with any approved number of ribs 26 for strengthening the barrel structure. The barrel is also provided internally with annular ribs 27, 28, 29, and 30, adjacent which supporting-shoulders 31, 32, 33, and 34 are formed in the lower wall of the barrel, and the said shoulders are respectively provided with depressions or grooves 31', 32', 33', and 34'. The barrel is also provided with ribs 35 and 36, extending radially inward from the wall of the barrel and in position to hold the springs 37 and 38 from displacement.

The springs 37 and 38 are disposed within yoke 39 and rigidly secured at its forward end to the shank 40 of any ordinary and usual draw-head and provided at its opposite end with a plate 41, secured in any approved manner, as by countersunk rivets 42. The yoke is also provided with a centrally-disposed division-plate 43, secured in any approved manner, as by a rivet 44. Plates 45 and 46 47 and 48 are provided which bear, respectively, against annular ribs 27, 28, 29, and 30 and between which are secured the springs 37 and 38 and the usual and ordinary inner springs, as 49 and 50. For inserting the plates 45, 46, 47, and 48 within the barrel 21 after the yoke 39 is inserted a plurality of openings 51 and 52 are provided and with similar openings 53, formed in the opposite side of the barrel. (Shown in dotted position in Fig. 1 and in elevation in Fig. 3.)

The yoke 39 with the springs 37, 38, 49, and 50 in position is first inserted in the opening 18, and after being so inserted the plate 45 is driven through the opening 51 and the plate 46 through the opening 53, whereby the springs 37 and 49 are placed under slight tension and the plate 45 in position to rest upon the shoulder 31 and bear against the rib 27 under draft, and the plate 46 to rest upon the knee 32 and bear against the rib 28 under buffing. The plate 47 is driven through the opening 52 and the plate 48 through the opening 53 to engage opposite ends of the springs 38 and 50 with the plate 47 resting upon the shoulder 33 and bearing against the rib 29 under draft, and the plate 48 resting upon the shoulder 34 and against the rib 30 under buffing.

To prevent accidental displacement of the plates 45, 46, 47, and 48, openings 54 are formed in the wall of the barrel adjacent the openings 51, 52, and 53, and through which any convenient securing means, as a wire

ring, may be inserted to engage the plates and prevent their return passage through the said openings.

For removing the plates when desired a plurality of openings 55 are provided in the under side of the barrel structure and in position to register with the several plates 45, 46, 47, and 48, and through which a bolt or other instrument is inserted for lifting the plates out of the groove of the shoulders upon which they rest. Other openings, as 56, are also provided registering with the said plates and through which any convenient tool may be inserted to receive hammer-blows to drive the plates through the openings 51, 52, and 53. The extreme annular ribs 27 and 30 may be braced by properly-placed bracing-ribs 57 and 58 at their opposite sides and with the ribs 35 and 36 bracing them from the inner sides.

To add to the rigidity of the barrel relative to the frame of the car, one of the ribs 26 is formed at the lower side with an extended lug 59, strengthened in any approved manner, as by the web 60, and arranged to be rigidly riveted to an angle or other iron 61, which extends from opposite car-sills or other supporting means and beneath the barrel of the draft appliance.

The device is further provided with a plate 62, interposed between the plate 12 of the bearings on the end of the I-beam 10 and the rearward or inner end of the barrel represented by the flange 22. The plate 62 is adapted for connection with any approved bracing means forming a part of or rigidly connected with the car structure.

To permit the plates 45, 46, 47, and 48 to move longitudinally without interference from the ribs 35 and 36, the said ribs 35 and 36 are formed narrower adjacent the position of the said plates by tapering or reducing the said ribs in width, as indicated at 63.

While it is immaterial from the point of utility whether the member 11 is formed integral or in halves, it is found more convenient in the matter of applying and removing from the center I-beam to have the member 11 formed in halves, as indicated more particularly in Fig. 4.

It will be understood that with the yoke 39 in position within the barrel 21 and with the plates 45, 46, 47, and 48 properly driven into position the tension of draft will be upon the plate 41 and dividing-plate 43 against the movable plates 48 and 46, which are free to move a limited distance upon the shoulders 34 and 31 and against the plates 47 and 45, bearing rigidly against the ribs 29 and 27. In buffing the tension is upon the inner end of the shank 40 and upon the dividing-plate 43, bearing, respectively, against the movable plates 45 and 47 and the springs 37 and 38, bearing against the plates 46 and 48, which are respectively held rigid against the

annular ribs 28 and 30, the plates 45 and 47 being free to move a limited distance upon the shoulders 31 and 33.

It will be understood that the springs 49 and 50 are held within the springs 37 and 38 by the said springs 37 and 38 surrounding and embracing the small springs and that the springs 37 and 38 are held from displacement by the yoke 39 above and below the springs and by the ribs 35 and 36 extending radially from the inner surface of the barrel to and engaging the said springs.

For cushioning the draw-head relative to the structure of the car the device shown in Figs. 5 and 6 is applied to the channel-iron 16 adjacent the opening registering with the barrel member 21. The cushioning member comprises a casting 63, provided with an opening 64, proportioned to receive and accommodate the shank 40, carrying the draw-head 65. (Shown in Fig. 6 and broken away.) The casting 63 is provided along its upper edge with a U-shaped groove, as at 66, to receive and accommodate the joined horizontal flanges of the angle-iron 17 and the channel-iron 16 and is secured upon the said flanges in any approved manner, as by means of the rivet 67. The casting 63 is also provided with a flange 68, proportioned and positioned to bear upon the upper inner surface of the lower flange of the channel-irons 16 and to be secured thereupon, as by the rivet 20. The casting 63 is further secured in position by means of the rivet or bolts 25, by means of which the barrel member 21 is secured in position relative to the structural bars 16, 17, and 19.

The casting 62 is provided with an outstanding knee 70, strengthened in any approved manner, as by means of the bracing-webs 71, and is provided adjacent its upper surface with a sleeve 72. The sleeve 72 is formed tapered and larger at its outer end than at its inner end, and therein is disposed a spring 73, preferably embracing a small spring 74, which bear at their inner ends against the inner end of the socket formed by the sleeve 72; and at their outer ends bear against the inner or rearward surface of the draw-head 65, and are positioned, as by a lug 75, formed upon a plate 75', movable upon said draw-head. It will be noted that in Fig. 1 the structure is represented without the casting 63 being applied thereto, such omission being for the purpose of showing the barrel member 21 as large as possible, and it is to be understood that the device shown in Fig. 6 is a continuation of and an addition to the parts shown in Fig. 1.

The socket formed by the sleeve 72 is tapered larger at its outer end to permit a slight and limited movement of the shank of the draw-head, both laterally and vertically in response to the various movements to which the draft-rigging is subjected.

It will be seen that the springs 73 and 74 are auxiliary to the springs 37, 38, 49, and 50 as cushioning-springs for buffing and that by reason of applying the springs as shown to the external portions of the car structure the strain of buffing is to a greater extent equalized than when applied entirely within the lines of the car structure.

While the barrel 21 is shown at Fig. 1 as provided with a bilge, it is to be understood that such bilged form is not essential to the invention, and the term "barrel" is used as indicating a cylindrical or similar device not limited to a hollow sleeve with a bilge.

What I claim is—

1. In a draft-rigging, a barrel provided with openings formed in its walls, a yoke disposed and movable longitudinally within the barrel, cushioning members disposed within the yoke, and plates proportioned to be driven through the openings of the barrel and engaged and receive pressure from the spring.

2. In a draft-rigging, a barrel provided with openings formed through its walls, annular ribs formed within the barrel, a yoke member disposed and movable longitudinally within the barrel, cushioning members carried by the yoke, and plates proportioned to be driven through the openings of the barrel and engage the cushioning members and to bear against the annular ribs of the barrel.

3. In a draft-rigging, a barrel, a structure beam, means for rigidly securing the barrel to the beam, a yoke disposed within and movable longitudinally of the barrel, and means to permit the removal of the yoke from the barrel, said means being removable laterally through the wall of the barrel.

4. In a draft-rigging, a barrel, a structure beam, means for connecting the barrel to the beam, a yoke disposed and movable longitudinally within the barrel, plates disposed within the barrel, and arranged to receive pressure from the yoke, and means whereby the plates may be driven outwardly through the wall of the barrel.

5. In a draft-rigging, a barrel provided with side openings, a structure beam, means connecting the barrel to the beam, a yoke disposed and movable longitudinally within the barrel, plates disposed within and bearing against the barrel structure, and arranged to receive pressure from the yoke, and means whereby the plates may be driven outwardly through the side openings of the barrel.

6. In a draft-rigging, a barrel provided with side openings, annular ribs formed within the barrel, longitudinal ribs formed within the barrel and between the annular ribs, a yoke disposed and movable longitudinally within the barrel, a cushioning member carried by the yoke, plates arranged to be inserted and removed through the side openings and to bear against the annular ribs and to receive pressure from the cushioning member.

7. In a draft-rigging, a barrel provided with side openings, spaced annular ribs formed within the barrel, longitudinally-extending ribs disposed between the annular ribs, a yoke member disposed within the barrel, a cushioning member carried by the yoke and bearing against the longitudinal ribs, plates proportioned to be driven through and removed from the side openings of the barrel, to bear against the annular ribs and receive pressure from the cushioning member, and means within the barrel to support the plates and permit a limited movement thereof longitudinally of the barrel.

8. In a draft-rigging, a car structure, a

draw-head associated with the car structure, cushioning means disposed within the car structure, and arranged to receive buffing strains from the draw-head, a sleeve having tapered sides secured to the exterior of the car structure, and a cushioning member disposed within the sleeve and arranged to bear against the draw-head.

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

FRANCIS JERDONE, JR.

Witnesses:

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H. W. STEVENSON.