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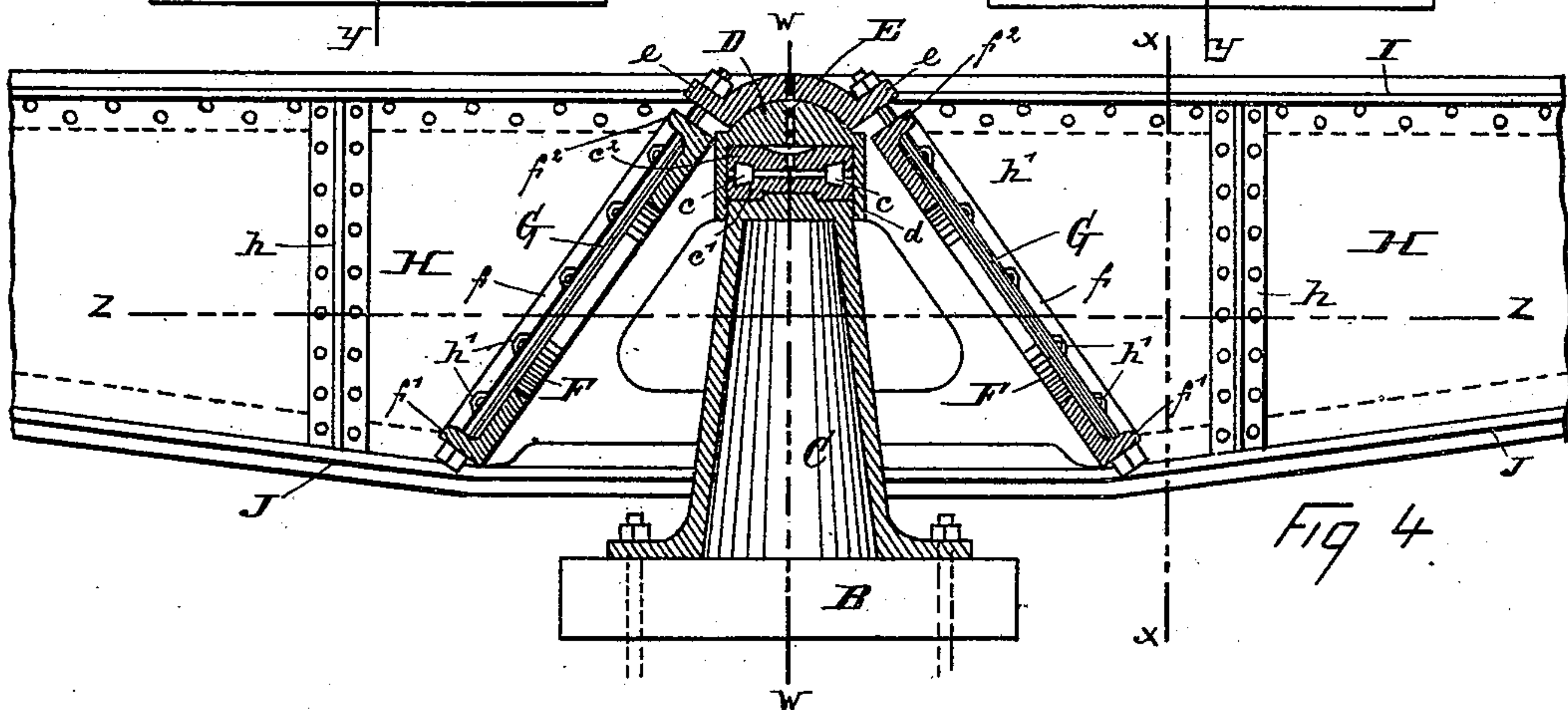
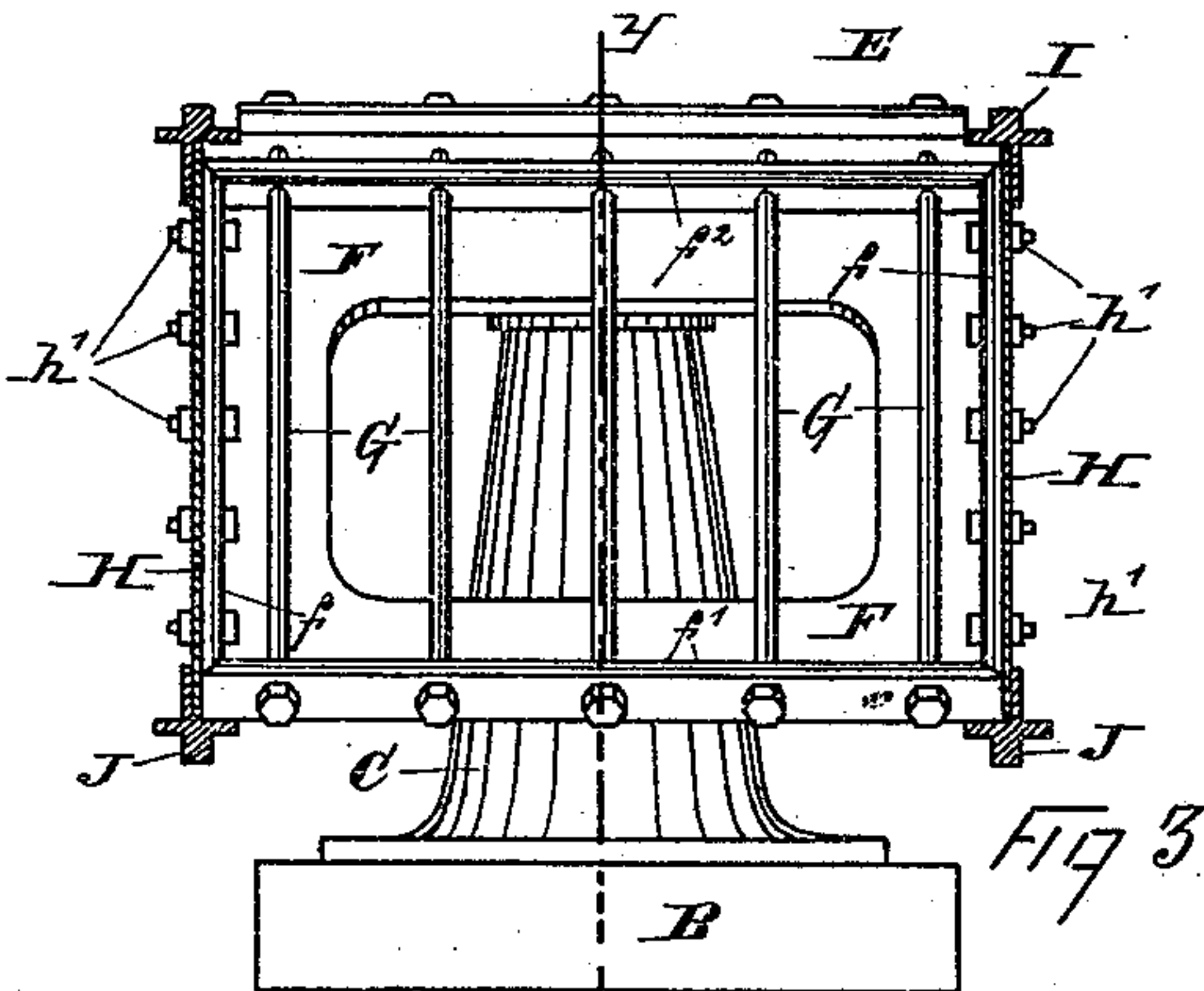
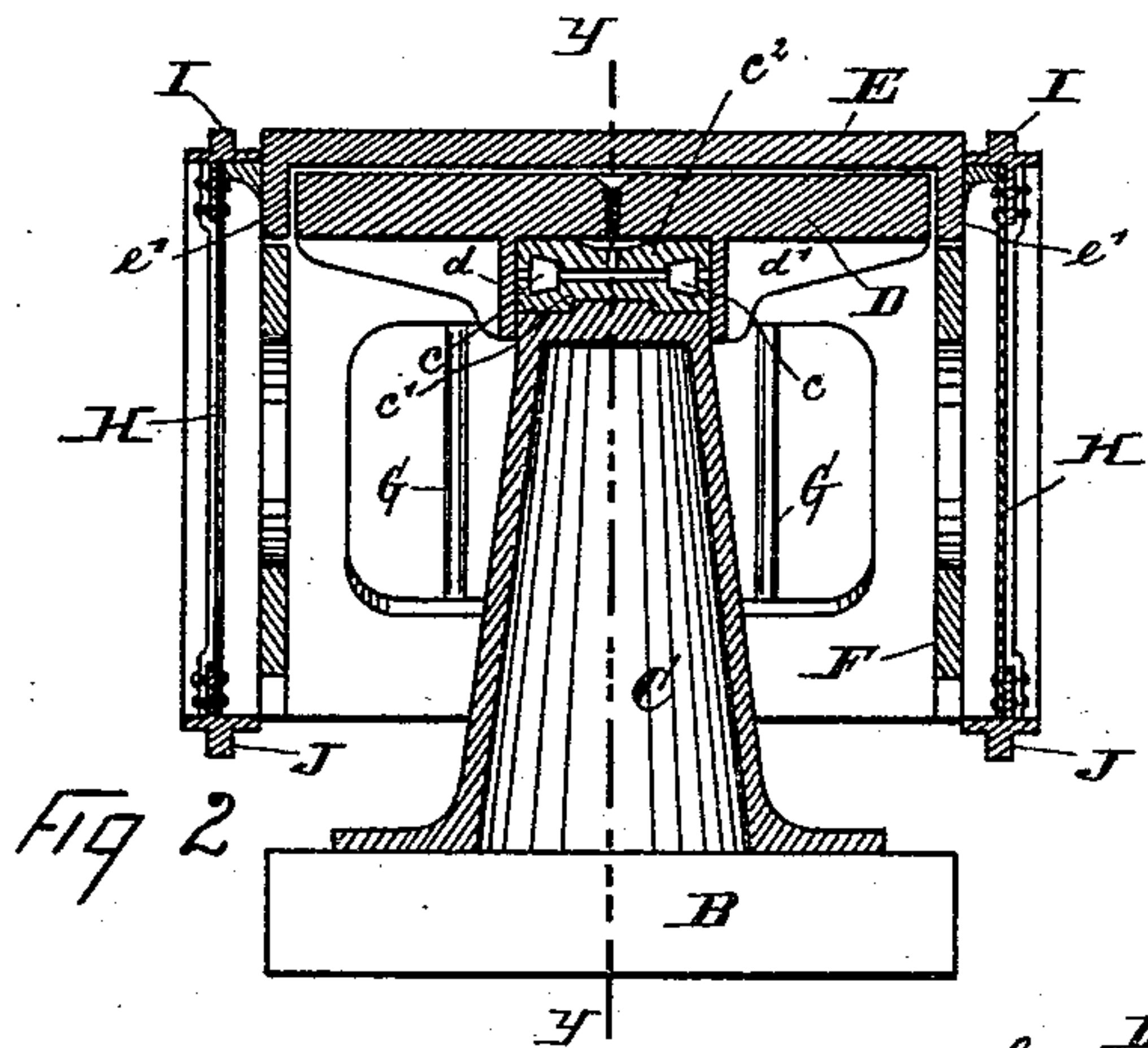
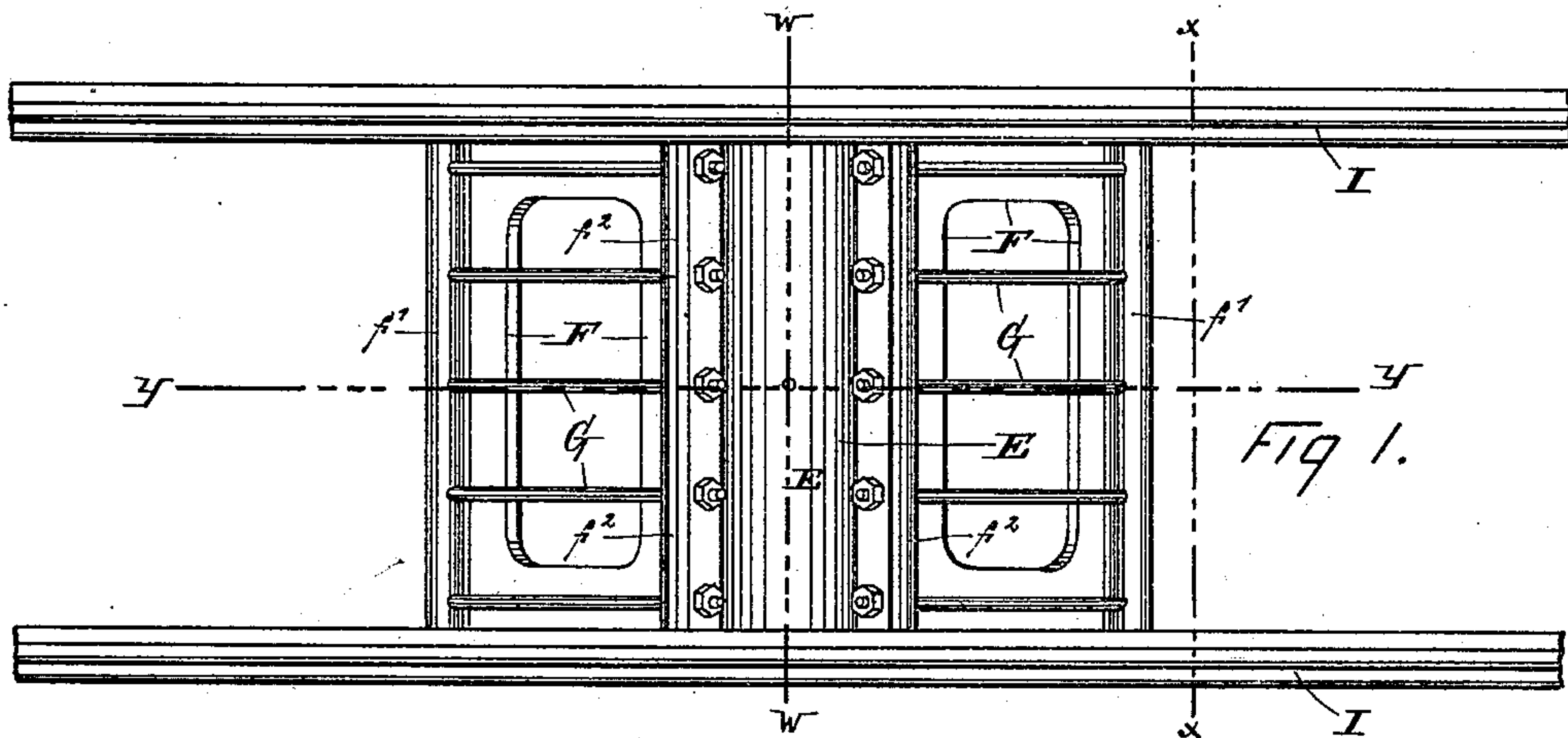
2 Sheets—Sheet 1.

B. F. HAUGH & P. LEEDS.

TURN TABLE.

No. 251,341.

Patented Dec. 20, 1881.



WITNESSES.

James B. Liggins.
R. P. Daggett.

INVENTORS.

Benjamin F. Haugh,
and Pulaski Leeds,

PER
C. Bradford.
ATTORNEY.

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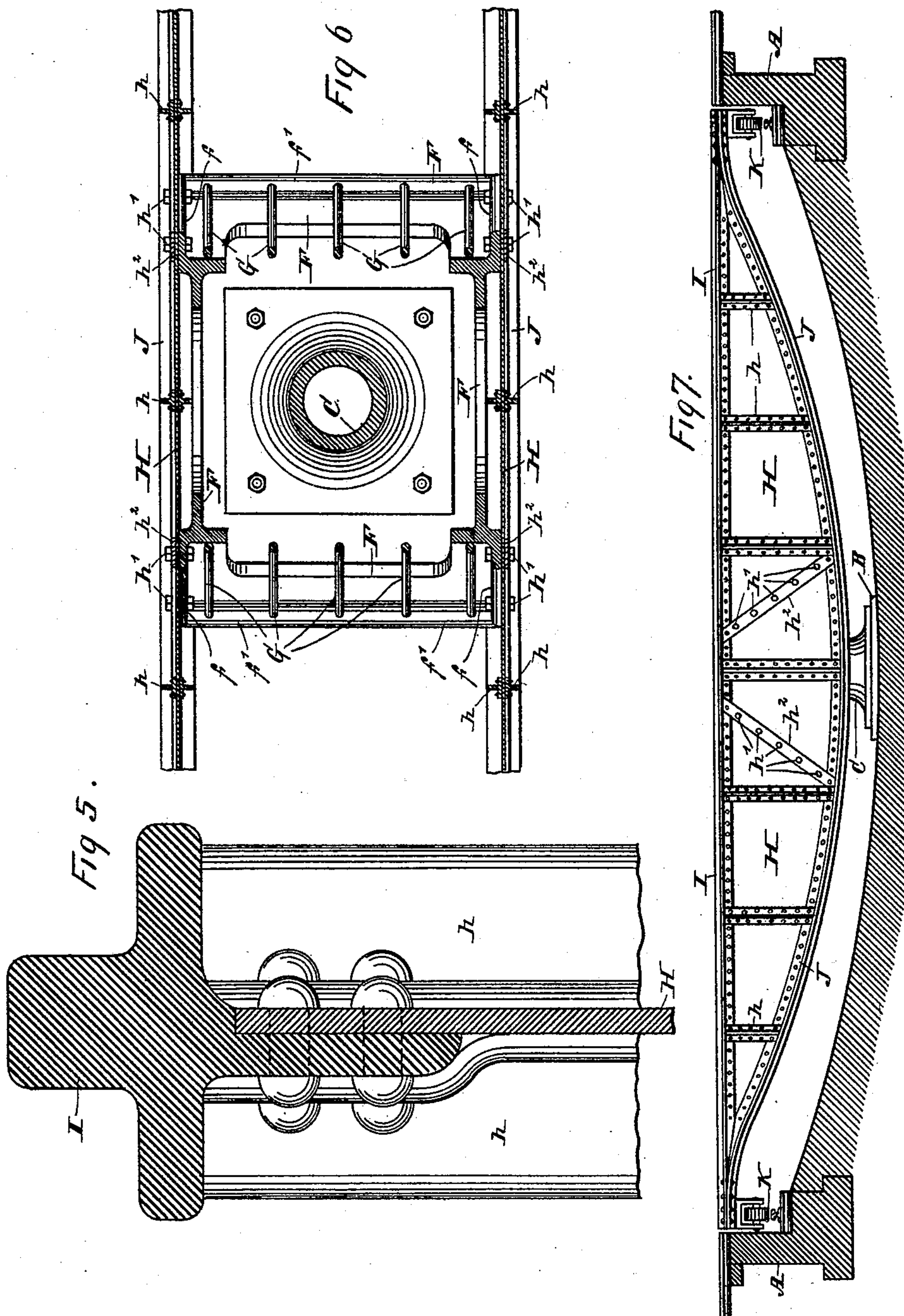
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UNITED STATES PATENT OFFICE.

BENJAMIN F. HAUGH AND PULASKI LEEDS, OF INDIANAPOLIS, INDIANA,
ASSIGNORS TO HAUGH, KETCHAM & CO., OF SAME PLACE.

TURN-TABLE.

SPECIFICATION forming part of Letters Patent No. 251,341, dated December 20, 1881.

Application filed October 1, 1881. (No model.)

To all whom it may concern:

Be it known that we, BENJAMIN F. HAUGH and PULASKI LEEDS, of the city of Indianapolis, county of Marion, and State of Indiana, have invented certain new and useful Improvements in Turn-Tables, of which the following is a specification.

The object of our said invention is to improve the construction of railway turn-tables.

It consists in adapting the railroad-rails on which the engine runs to use as the top chords of the side girders of the table, thus making said rails serve, in addition to their usual purpose, as a part of the table structure.

It further consists in making said rails of a peculiar form, whereby they are better adapted to this service.

It further consists in bringing the said rails down to about a level with the top of the bearing whereon the table rests, thus causing the end-thrust of the locomotive as it comes onto the table to be received more directly by said bearing, thus avoiding a portion of the strain on the table structure, and enabling it to be made of somewhat less weight.

It further consists in the construction of the bearing, as shown, which prevents the table from tipping laterally, while freely permitting the usual movement longitudinally.

It further consists in suspending the table structure by rods connected to the cap of the bearing, as shown, so that said structure may be adjusted to the proper height without altering or disturbing any permanent portion.

It further consists in some details of construction whereby the cost of building the table is lessened or its efficiency increased.

Referring to the accompanying drawings, which are made a part hereof, and on which similar letters of reference indicate similar parts, Figure 1 is a top or plan view of the central portion of our improved table; Fig. 2, a transverse vertical section thereof on the dotted line *w w*; Fig. 3, a section on the dotted line *x x*; Fig. 4, a longitudinal section thereof on the dotted line *y y*; Fig. 5, a cross-section of one of the rails and adjacent parts on an enlarged scale; Fig. 6, a horizontal section, looking downwardly from the dotted line *z z*; and

Fig. 7, a section through the pit in which the table is placed, and showing said table in side elevation, but on a smaller scale than that to which the other figures are drawn.

In said drawings, the portions marked A represent the masonry surrounding the pit where the table is located; B, the bed-rock for the central supporting-pivot; C, said pivot; D, a head-piece thereto; E, a cap resting on said head-piece; F, a center-piece for the table structure; G, rods connecting said center-piece and the cap E; H, the girders of the table structure; I, the rails thereon, which also form the upper chords thereof; J, the lower chords, and K the trucks which support the outer ends of the table.

The portions A and B are the usual brick or stone work commonly employed in such places.

While the pivot C is not dissimilar from other pivots in itself, it may be necessary to describe some features connected therewith to give a thorough understanding of our invention. Two plates, *c' c'*, in which are annular grooves containing conical rollers *c*, are mounted thereon in position, as shown, which constitute the bearing which supports the table structure.

The head-piece D extends nearly across the whole width of the table between the girders, and its cross-section is substantially the segment of a circle. It has an annular downward projection, *d*, in the center, which encircles the plates *c' c'* and the top of the pivot C, thus securing itself and said several parts at all times in like relative positions. A web or brace, *d'*, may be formed thereon for the purpose of securing greater strength and rigidity.

The cap E is formed to fit over the top of the head-piece D and rests thereon. It is provided with flanges *e e* upon its sides, through which the bolts G may pass. A web, *e'*, is preferably formed in each end, as shown, to inclose the ends of the head-piece D, to secure this cap from any endwise movement.

The center-piece F of the table structure is preferably a single casting and rectangular in horizontal section. The two sides thereof which come against the girders H are parallel, and when in position for use in a table are

substantially vertical. The other two sides should be sloping and farthest apart at base. Each of the two vertical sides is provided with flanges $f f$, through which the bolts $h' h'$ pass, whereby this center-piece and the girders are secured together to form the table structure. The other two sides are each provided with the flanges $f' f^2$, through which the bolts G pass, which suspend said table structure to the cap E.

The girders are composed of plates of iron H, which occupy a central position. The upper and lower rails, I J, and T-shaped struts or stiffeners $h h$ and the several parts are preferably secured together by rivets, as shown, thus making a solid structure which is not easily separable. Where the bolts h' pass through these girders diagonally-placed plates h^2 are employed.

The rails I are star-shaped or cruciform in cross-section, and are so formed that the central plate, H, which is the principal member in the construction of the girders, shall be directly under the center thereof and capable of being securely attached thereto by rivets or otherwise, as is most plainly shown in Fig. 5. This construction enables the rail I to serve both as the ordinary track-rails and as the top chords of the girders. By reason of this double use the usual superstructure, consisting of the common cross-ties and track-rails, is dispensed with, and several inches of space are saved, as well as a large amount of material.

The rails J are like the rails I, except that they are bent to conform to the shape of the bottom side of the girder, and only serve the one purpose of bottom chords therefor.

The trucks K are not different from other trucks in form, but we prefer to mount each one in a frame by itself upon an end of a girder instead of mounting two in a frame which shall extend across the end of the whole table, as is common. We thus bring the pressure directly above the axis of the truck.

The advantages of our invention may be recapitulated as follows:

The rails I are of a form which gives the greatest strength for this use and adapts them for service both as railroad-rails and as a part of the table structure. This saves in the height of the table the combined height of the ordinary cross-ties and railroad-rails less the height of the top wing of said rail, or a net saving over the ordinary construction of from five to seven inches. This brings the point of suspension so much nearer the top of the entire structure, and causes the thrust of the locomotive to be received almost directly upon the immovable sustaining part, (in this case the pivot C,) and thus relieves the structure of a very considerable strain.

In the usual construction of turn tables the structure has been free to tilt in any direction—laterally as well as longitudinally. The lateral tipping of the table is prevented in this

case by extending the head-piece nearly across the table and rounding it only in the longitudinal direction, thus permitting the cap E to move only one way on the head-piece D.

The whole table structure is supported from the bottom by the rods G, which are connected at one end with the lower side of the center-piece F and at the other with the cap E. The center-piece and cap are left somewhat apart from each other, as shown, so that the height of the table may be adjusted by turning the nuts on the rods. When the table is properly adjusted the interstices which would otherwise be left by this arrangement should be filled in such manner (preferably with wood) as to keep dirt from getting through them into the bearings.

Having thus fully described our said invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the girders of a turn-table, of the rails I, which serve both as the upper chords of said girders and as track-rails, substantially as set forth.

2. In a railway turn-table, the star-shaped rail I, the lower flange of which is adapted to be fastened to the body of the girder, and the upper flange of which is adapted for use as a track-rail, substantially as set forth.

3. A railway turn-table in which the girders are secured to a center-piece, the cap of which extends above the top of said girders and is supported by a central pivot, and in which the track-rails rest directly upon the girders without the interposition of cross-ties, whereby said rails are brought down to substantially a level with the top of said pivot, and the thrust of the cars or engine as it comes upon said rail is received nearly directly by said pivot, substantially as shown and specified.

4. In a railway turn-table, the combination, with the sustaining-pivot and table structure, of a head-piece to the pivot, which extends across the table, the top of which is a section of a cylinder, and a cap connected to the table structure, which rests thereon, whereby a longitudinal oscillation is permitted to said structure, but the lateral is prevented, substantially as set forth.

5. The combination of the girders, the center-piece F, a sustaining-pivot, the cap E, and the bolts G, which extend from the top of said cap to the bottom of said center-piece, whereby the weight of the table structure is sustained from the bottom by said bolts, substantially as shown and described, and for the purposes specified.

6. The combination of the pivot C, anti-friction rollers $c c$, head-piece D, cap or saddle E, bolts G, and table structure, together forming a turn-table, substantially as shown and specified.

7. The table structure of a turn-table, composed essentially of two girders and a center-piece secured thereto, two sides of which are

parallel and two sides of which are flaring, substantially as shown and specified.

8. The combination of central plates, struts, or stiffeners and star-shaped rails forming the
5 girders of a railway turn-table, said rails serving both the purpose of chords for the girders and of track-rails, all substantially as set forth.

In witness whereof we have hereunto set our

hands and seals, at Indianapolis, Indiana, this 27th day of September, A. D. 1881.

BENJAMIN F. HAUGH. [L. S.]
PULASKI LEEDS. [L. S.]

In presence of—

C. BRADFORD,
JAMES L. GILLET.