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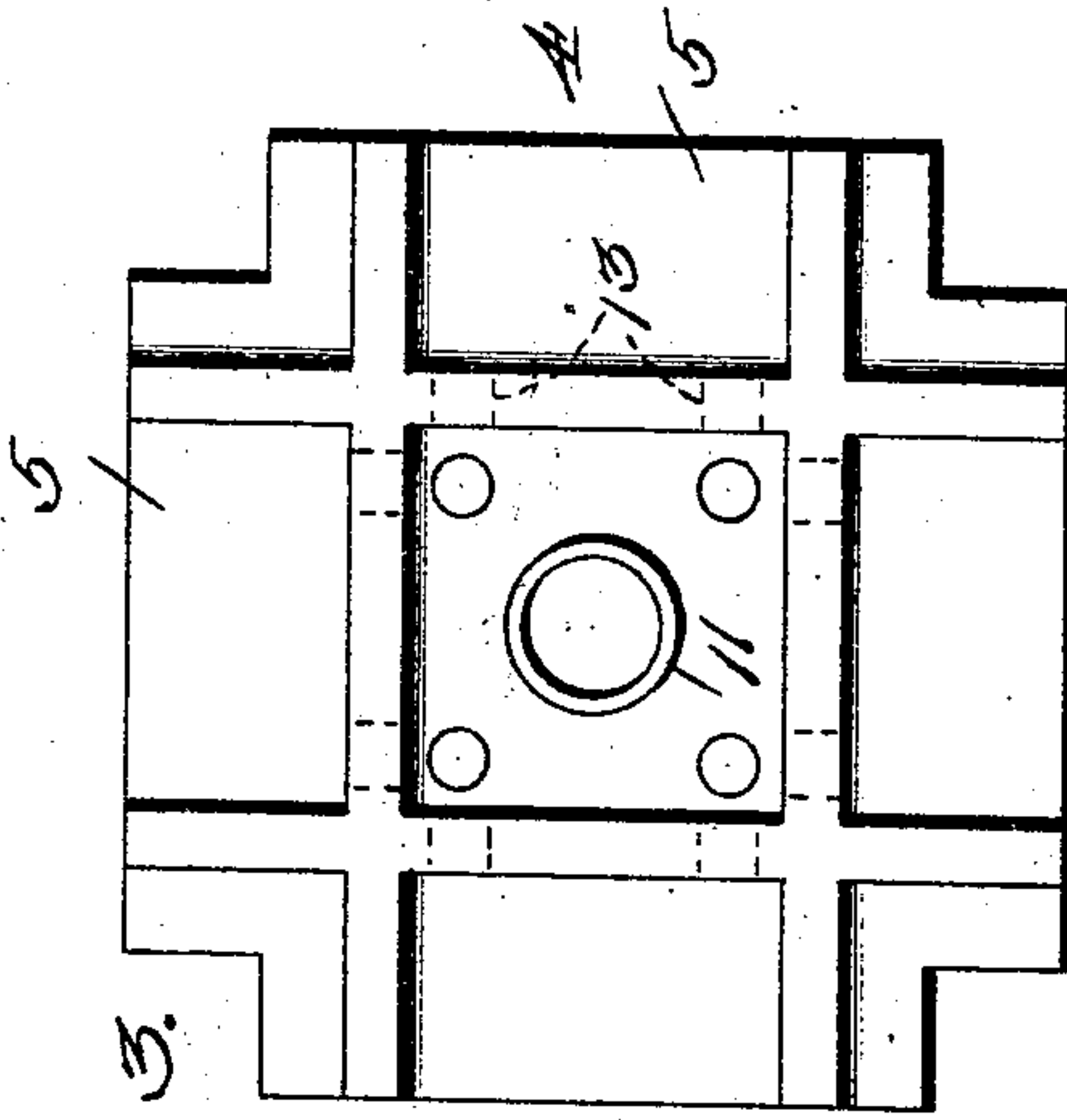
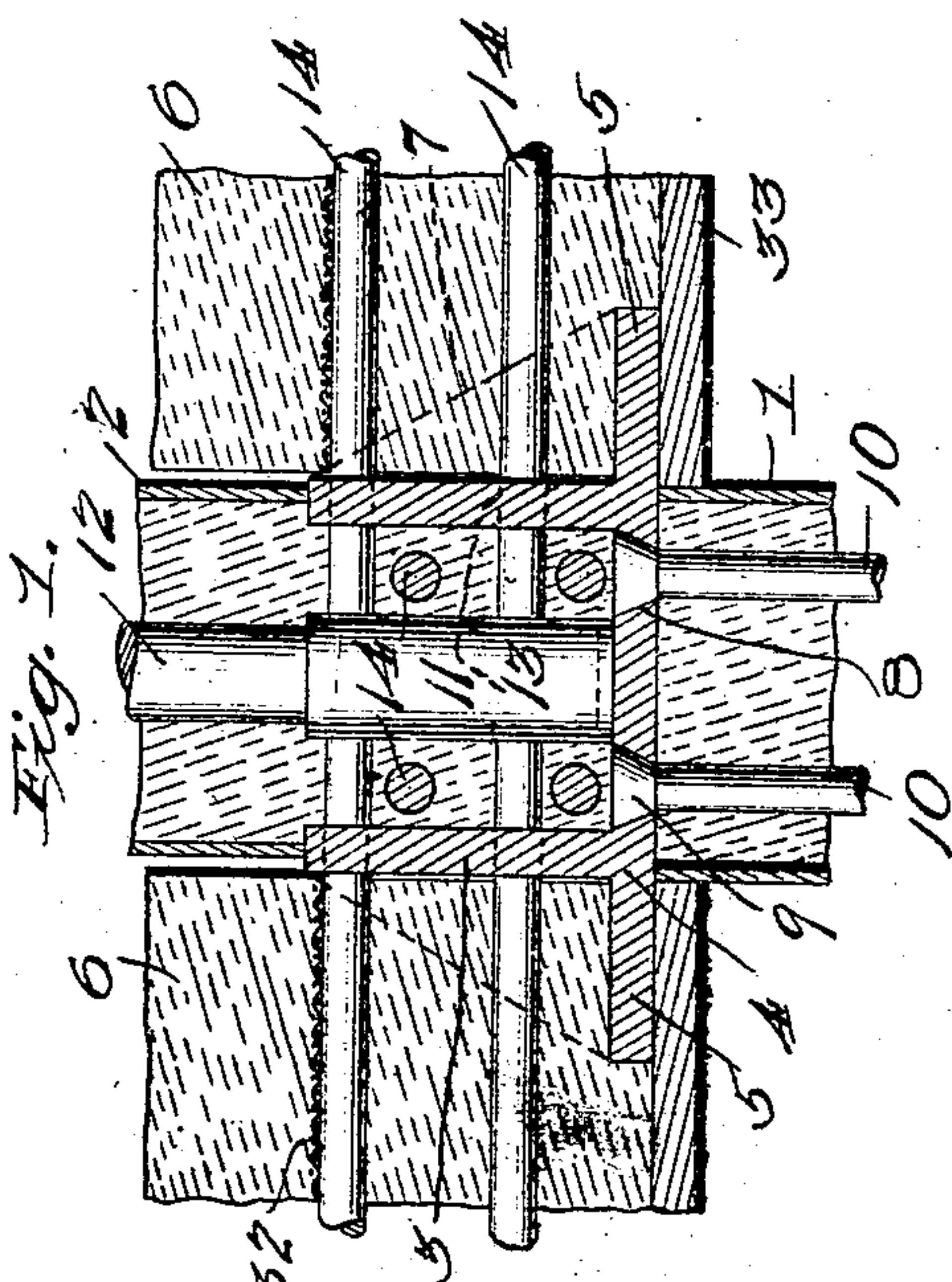
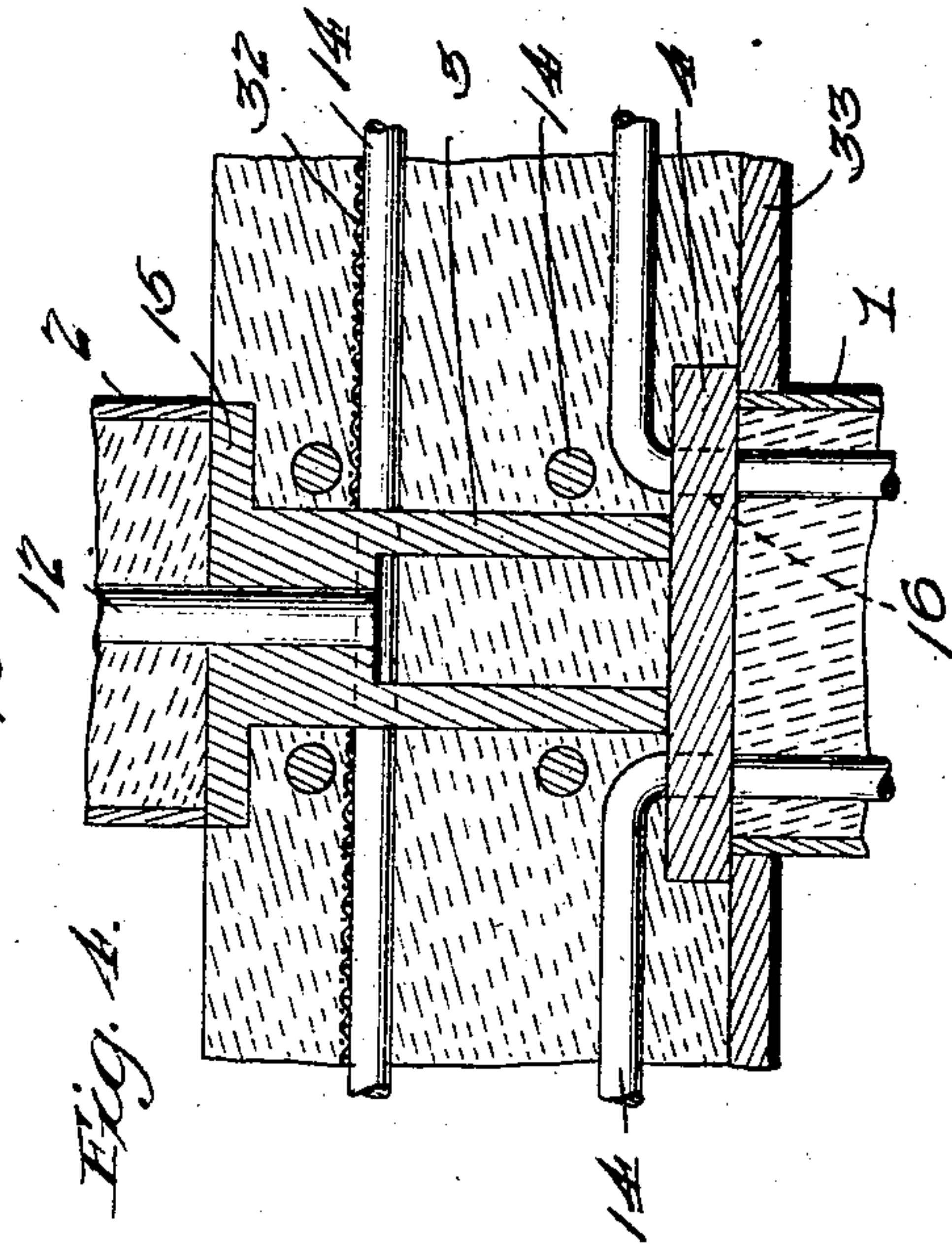
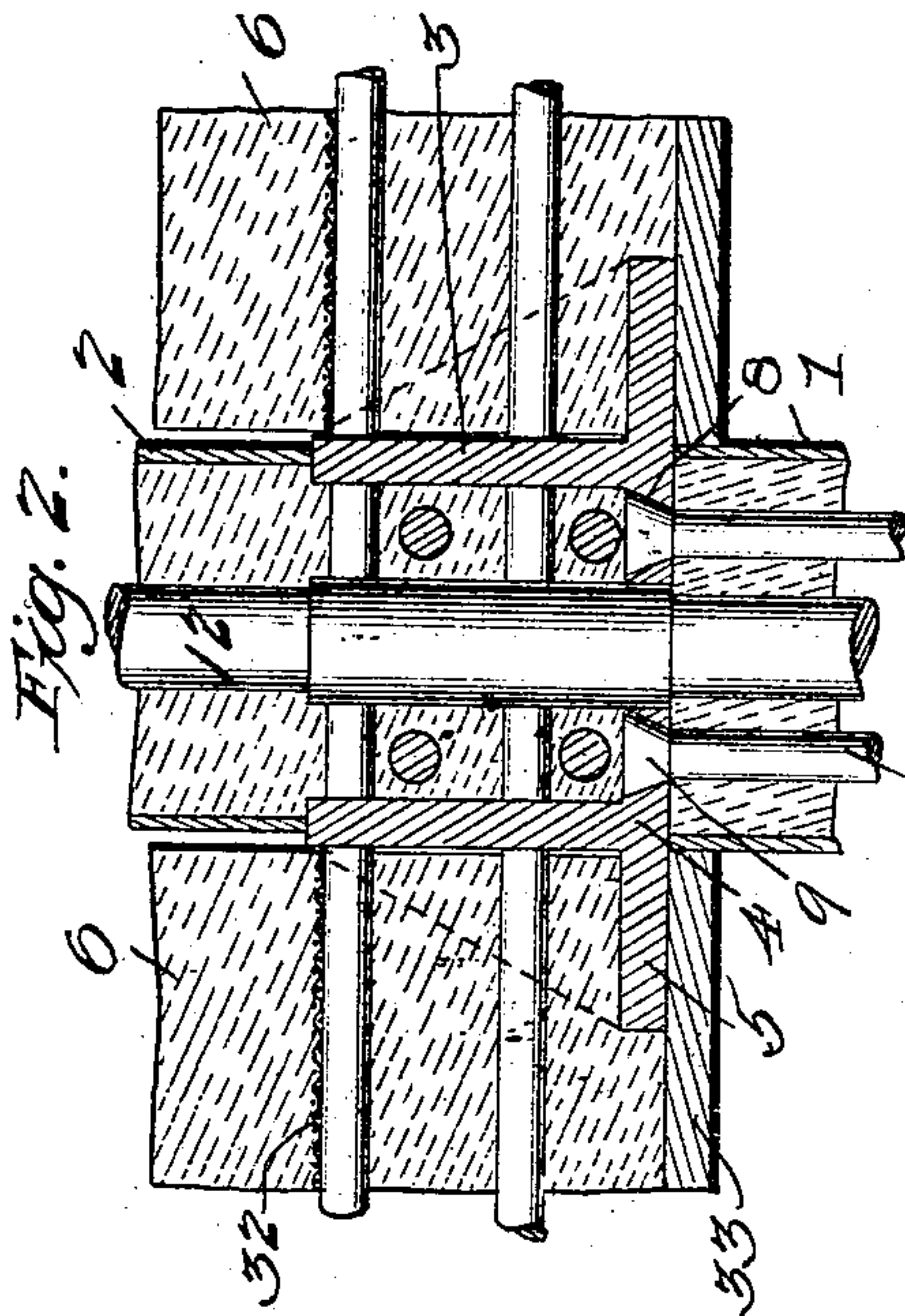
PATENTED OCT. 29, 1907.

J. LALLY.

COLUMN FOR FIREPROOF CONSTRUCTION.

APPLICATION FILED JAN. 9, 1907.

3 SHEETS—SHEET 1.



Witnesses
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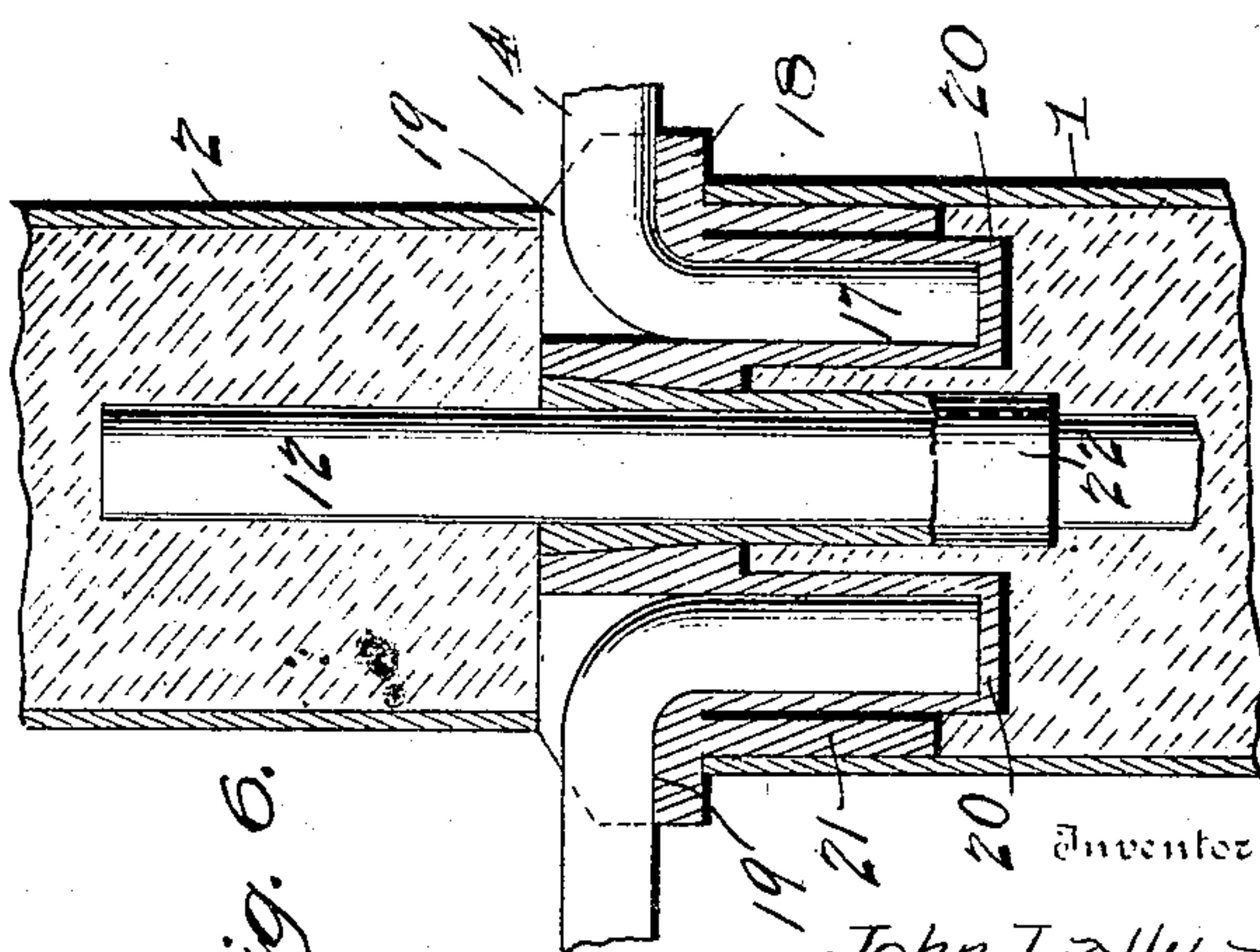
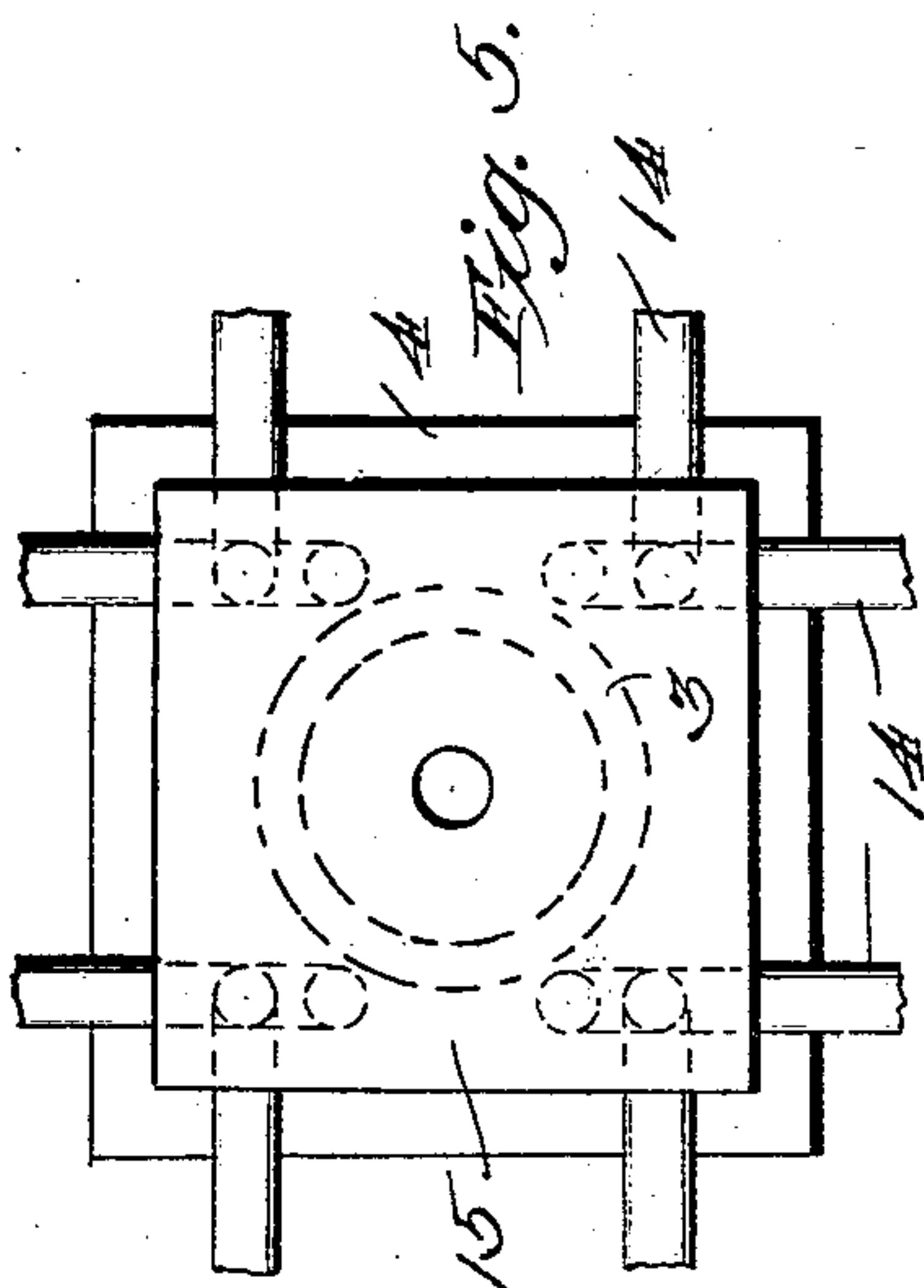
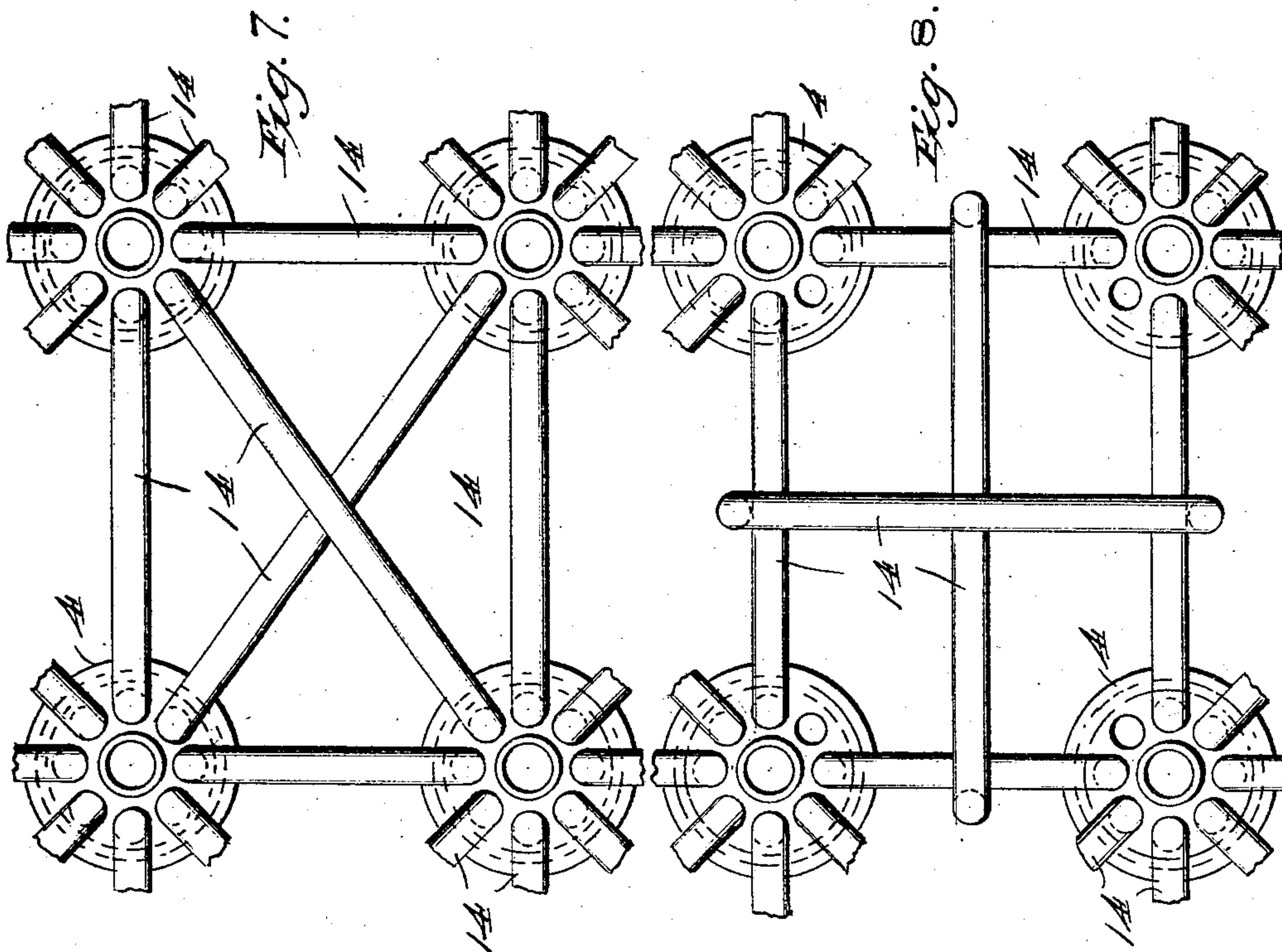
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3 SHEETS—SHEET 2.



Witnesses

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Fig. 6.

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3 SHEETS—SHEET 3.

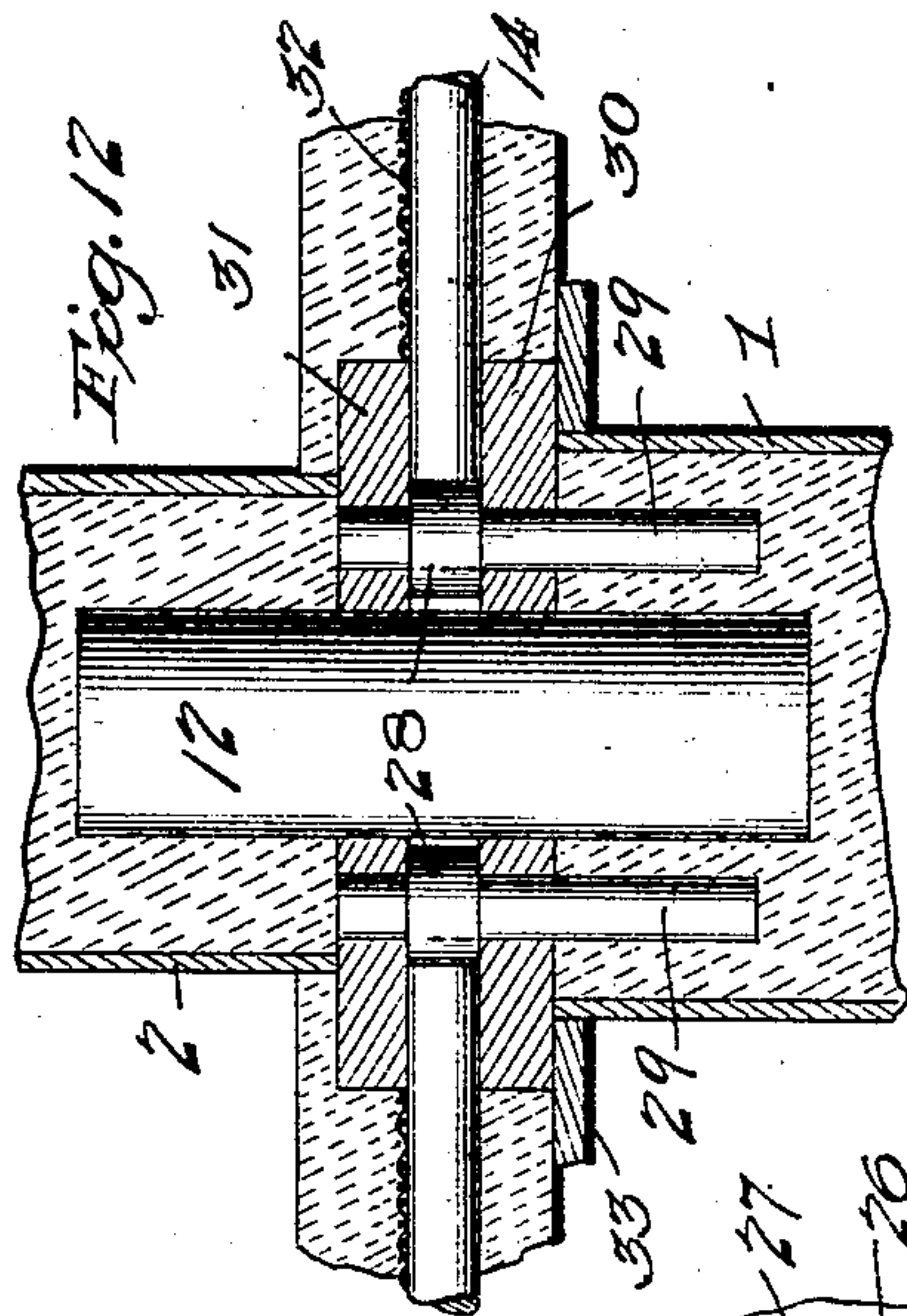


Fig. 13.

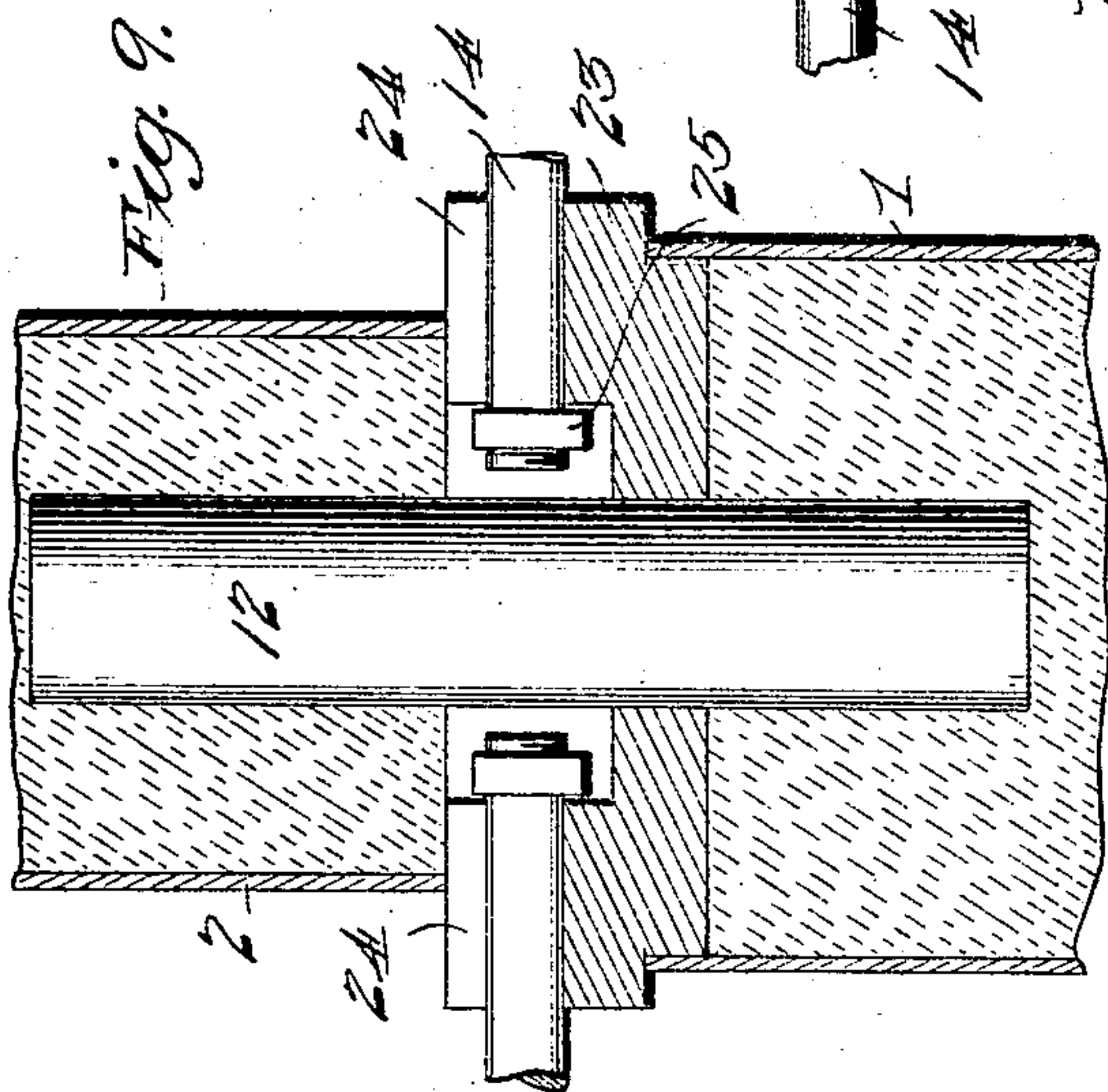
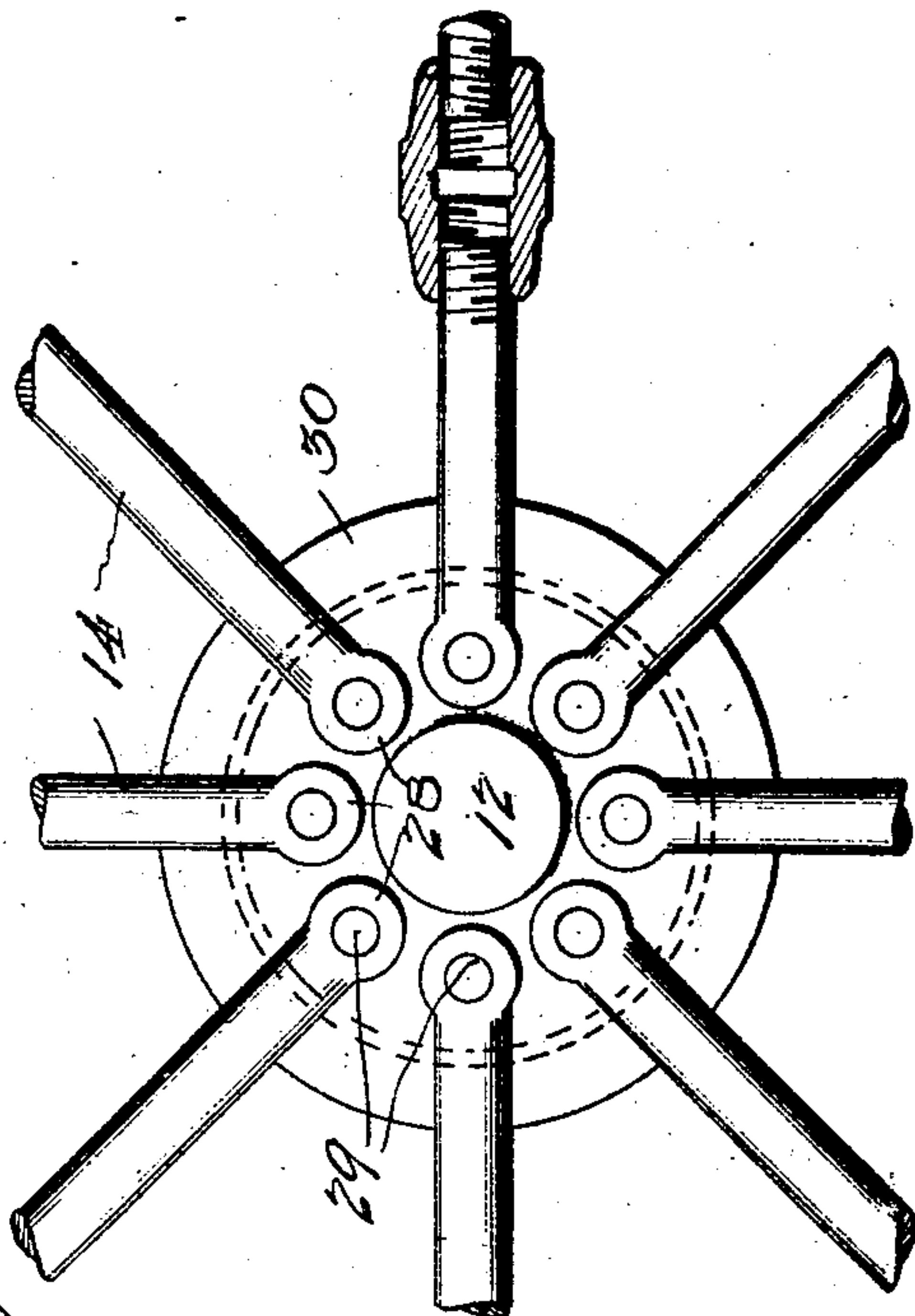


Fig. 11.

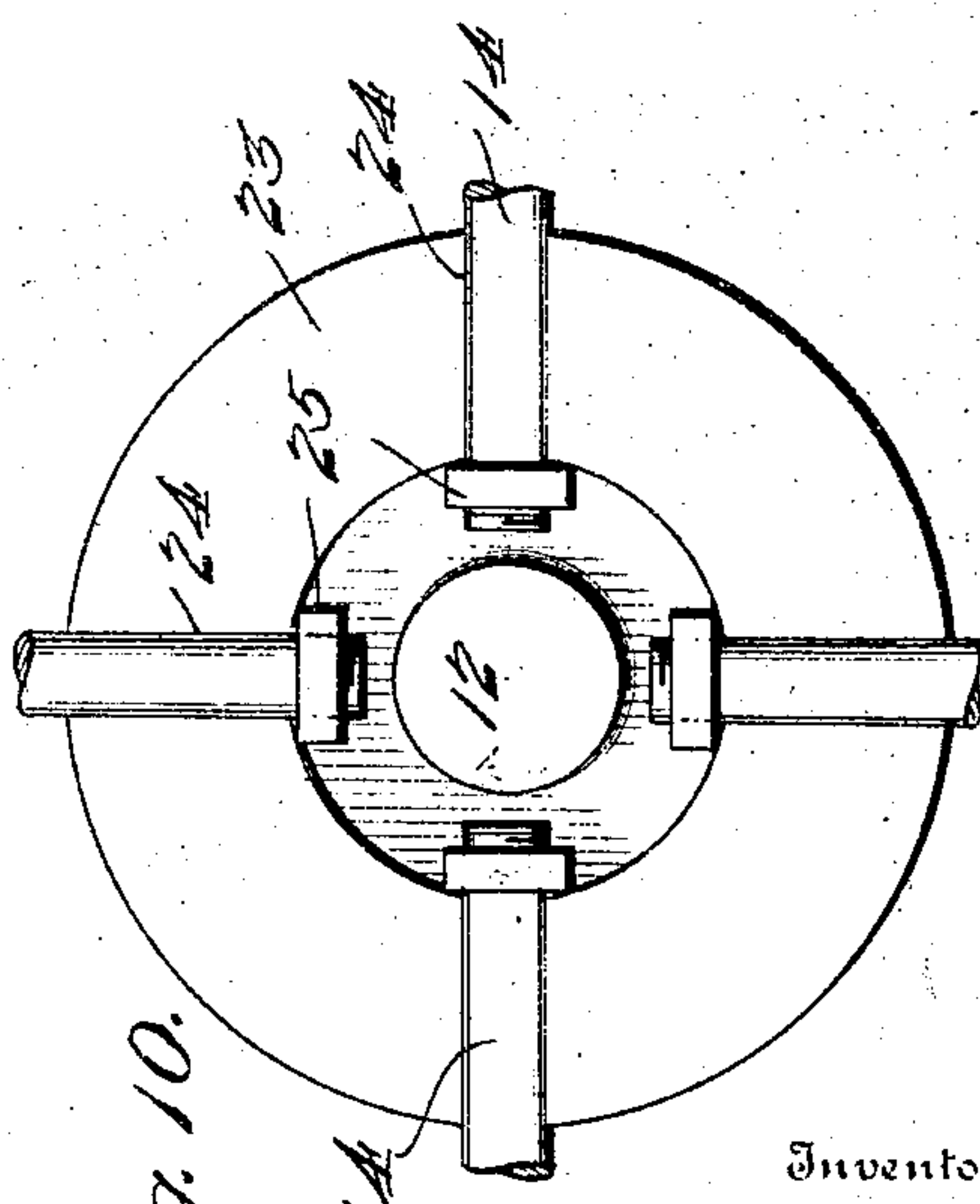
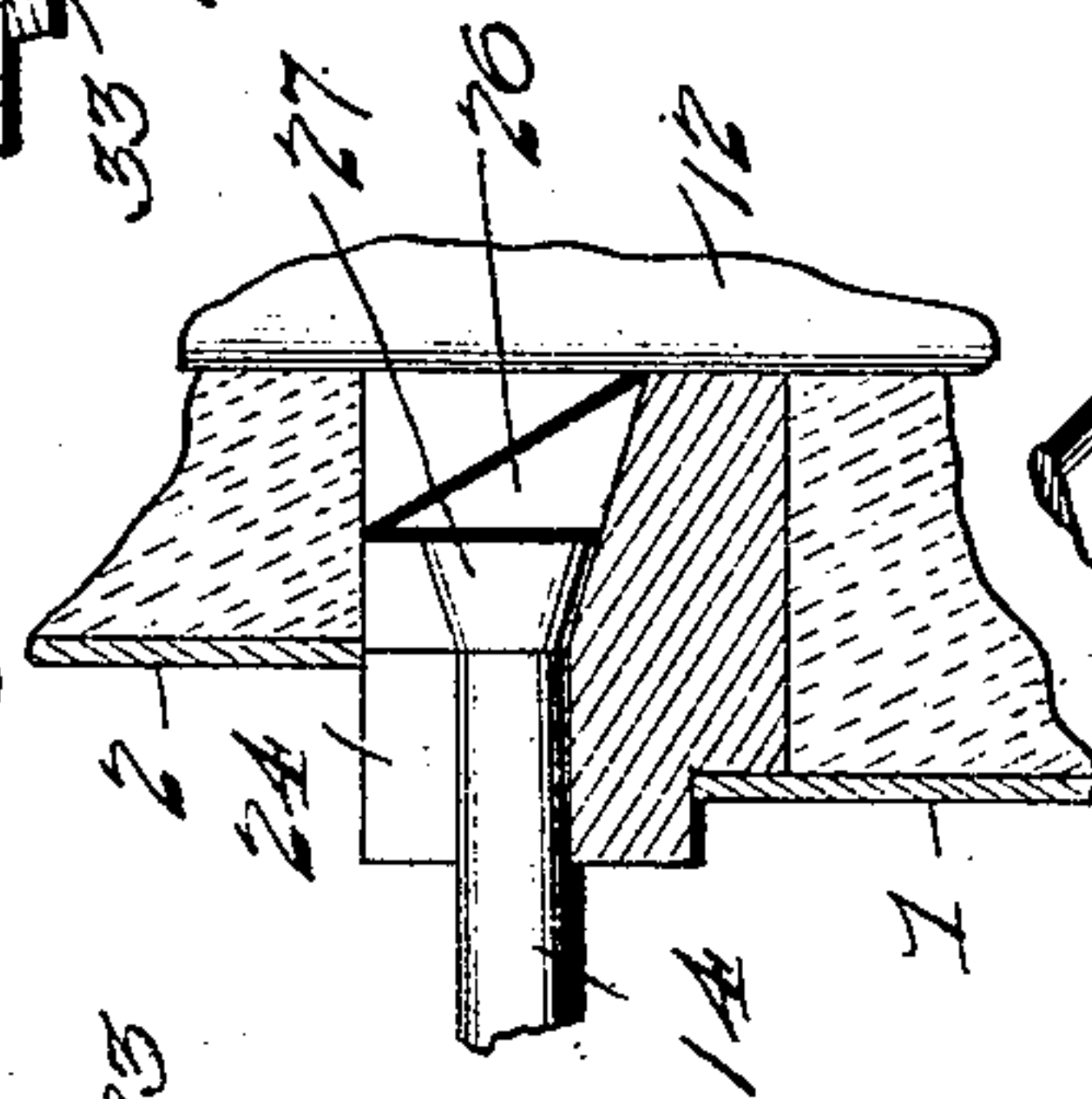


Fig. 10.

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COLUMN FOR FIREPROOF CONSTRUCTION.

No. 869,789.

Specification of Letters Patent.

Patented Oct. 29, 1907.

Application filed January 9, 1907. Serial No. 351,518.

To all whom it may concern:

Be it known that I, JOHN LALLY, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Columns for Fireproof Construction, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to columns for fireproof building construction and the object of the invention is to provide effective and reliable means for connecting and supporting and tying together columns, including the sections thereof, and the beams girders or floor and ceiling supports, whereby the parts referred to are rendered capable of mutually supporting and bracing each other.

A further object of the invention is to so construct and arrange the parts above referred to that they are adapted to be easily and readily assembled in the building operation.

One of the principal objects of the invention is to provide a thorough and effective metal contact between the column sections and the interposed union or unions so as to obtain a practically continuous metallic support capable of upholding the entire structure, including the concrete floors ceilings, partitions, etc.

With the above and other objects in view, the nature of which will more fully appear as the description proceeds, the invention consists in the novel construction, combination and arrangement of parts hereinafter fully illustrated and described.

In the accompanying drawings:—Figure 1 is a vertical section through one of the unions, showing upper and lower column sections, beams or floor sections, and the other parts associated therewith. Fig. 2 is a similar view, illustrating a slight modification in the arrangement of the steady pin socket. Fig. 3 is a plan view of the same. Fig. 4 is a vertical section, similar to Fig. 1, showing a modified form of union and its connections. Fig. 5 is a diagrammatic plan view of the same. Fig. 6 is a vertical section, similar to Fig. 1, showing a simplified form of union and connections. Fig. 7 is a general plan view, showing several columns and the manner of connecting and bracing the same. Fig. 8 is a similar view showing another arrangement of rods. Fig. 9 is a vertical section through a column joint, showing a modified way of fastening the rods to the union. Fig. 10 is a plan view of the same. Fig. 11 is a vertical section similar to Fig. 9, showing another way of securing the rods to the union. Fig. 12 is a vertical section through the union and adjacent parts, showing another way of fastening the rods to the union. Fig. 13 is a plan view of the arrangement shown in Fig. 12.

Under the present plan of constructing fireproof buildings, the supporting columns are made in sections superimposed one upon another until the desired height is attained. It is necessary to provide reliable means for coupling together or connecting the adjoining ends of

the column sections and to provide also for the support of the horizontal beams or girders and rafters, and also the rods or bars now in common use which form the support for the concrete of which the floors, ceilings and beams are composed.

Referring to Fig. 1 1, designates the lower column section casing and 2 the superimposed column section casing, which casings are tubular in form, constructed of metal and filled with cement and broken stone or concrete. Said casings may be either square or round or of other suitable shape in cross section as may be found expedient in practice.

The union for the column sections, shown in Figs. 1 and 2, embodies a hollow or centrally recessed body of suitable height, and a cap plate 4 which rests directly upon the lower casing 1 and is extended sufficiently beyond the sides of said casing to provide beam rests which support the ends of the beams or floor sections 6, as the case may be. Reinforcing flanges or webs connect the plate 4 with the body 3 to give additional strength to the union as a whole. The body 3 forms a supporting base for the upper casing 2 which rests directly thereon as shown in Fig. 1. The upper casing, the lower casing and the union are all provided with a concrete filling, as shown.

The cap plate 4 is provided with countersunk holes 8 in which fit the enlarged flared heads 9 of anchors 10 in the form of rods or bolts which are thus secured to the cap plate and extend down into the filling of the lower casing in which they are embedded and securely held, the union, in this way, being fastened upon the lower column section. Within the center of the union is a tubular socket piece 11 in which is inserted a steady pin or dowel 12 which extends upward into the casing 2 and is embedded in the filling thereof as shown. In Fig. 1 the socket piece 11 is shown as closed at the bottom, but it may pass through the cap plate as shown in Fig. 2 so that the steady pin 12 may also extend down into the lower casing and be embedded in the filling thereof as shown in said Fig. 2.

At opposite points the sides of the hollow body 3 of the union are provided with openings 13 for the reception of the rods 14 which extend horizontally and pass through and are embedded in the concrete of the floor or beams or girders. In Figs. 1 and 2, these rods are shown as passing straight through the union, without bending the same, and are located at different heights so as to dodge each other by passing one above another.

It will be seen that each and every part of the metal portion of the structure is embedded in and securely held by the concrete filling; furthermore a continuous metallic support is obtained for the entire height of the column, no matter how many sections may be used.

As shown in Fig. 4, the cap plate 4 may be separate from the body 3 of the union, said body simply resting directly on the plate 4, while the upper end of the body

is provided with an annular flange 15 which forms the support for the upper casing 2. The upper part of the body 3 is shown as closed with the exception of an opening extending vertically therethrough in which the steady pin is placed. This pin serves to steady the upper column section and keep the same securely in proper place.

It will also be noted that the body 3 is made smaller than that shown in Figs. 1 and 2, and the rods 14 pass to opposite sides thereof instead of through the same; furthermore some of the rods 14 have their inner end portions bent substantially at right angles and inserted downward through openings 16 in the cap plate, the said downwardly bent ends forming stays or retainers for the rods. These stays extend down into the filling of the casing 1 far enough to be thoroughly embedded in the filling and in this way the rods are securely anchored to the column and also serve to fasten the cap plate 4 down. As in the arrangement previously described an all metal contact support for the column sections from top to bottom is obtained.

A union especially adapted for floors without beams is shown in Fig. 6, in which said union is illustrated in the form of a recessed block 18 which rests directly upon the casing 1 and is solid with the exception of recesses or grooves 19 in the upper side thereof which receive the bent inner ends of the rods 14. The block union is also provided with depending sockets 20 on the bottom thereof in which the stays 17 consisting of the downbent ends of the rods 14 are stepped. Extending around the sockets 20 is a reinforcing sleeve or collar 21 which is arranged within the upper end of the casing 1 and serves to strengthen such portion of the casing where the greatest stress comes.

The block union is centrally apertured to receive a tubular anchor 22, said aperture being flared to agree with the shape of the upper end of said anchor which thus obtains a hold on the union, the anchor extending down into the filling of the casing 1 in which it is firmly embedded as shown. The steady pin 12 passes through the tubular anchor and the opposite ends thereof are embedded in the filling of the upper and lower casings, as shown. The upper casing rests directly upon the block union and provides the continuous metal support above referred to.

In Figs. 7 and 8 several columns are shown, together with the arrangement of rods 14, which pass from column to column and thoroughly brace and stay the same. Certain of these rods may extend diagonally across the space between the columns as shown in Fig. 7, or they may extend parallel with some of the rods and at right angles to the rest as shown in Fig. 8; in the latter case some of the rods will form supports for others.

Another way of securing the rods 14 to the unions is illustrated in Figs. 9 and 10, in which the block form of union is illustrated and designated 23. The upper face of the union is shown as centrally recessed and provided with openings 24 through the sides thereof, through which the inner ends of the rods 14 are inserted, such ends being screw threaded and provided with retaining nuts 25 which act in the same capacity as the stays or retainers above described.

Instead of using the nuts 25, the inner ends of the openings 24 may be countersunk as shown at 26 and the inner ends of the rods will be correspondingly upset

or headed as shown at 27 to fit tightly therein and thus be held by the union.

Still another way of securing the inner ends of the rods 14 is illustrated in Figs. 12 and 13, where the rods are shown as provided at their inner ends with eyes 28 which receive stays or retainers in the form of pins 29, the latter passing also through a cap plate 30, corresponding with the cap plate 4 above described, and into or through a superimposed plate 31, corresponding with the plate 30, located over and resting upon the inner ends of the rods 14. These stay pins 29 extend down into the filling of the lower casing in which they are firmly embedded and held as shown. The upper casing 2 rests directly upon the upper plate 31. The steady pin 12 passes through the center of the plates 30 and 31, as shown and is embedded in the filling as before.

32 represents meshed wire which is laid upon the rods 14 to form a support and binder for the concrete of the floor or ceiling, as the case may be, while 33 designates a coat of plaster applied to the surface of the concrete to give the required finish.

I claim:—

1. A column comprising a casing, a filling therefor, a union means for securing the union upon the casing, a superimposed casing resting upon the union, a filling for the union and the superimposed casing, and floor-supporting rods entering the union and secured therein.

2. A column comprising a casing, a filling therefor, a union resting upon the casing, a filling therefor, and floor-supporting rods passing inward through the union and secured within the same.

3. A column comprising a casing, a filling therefor, a union resting upon said casing, a filling therefor, and floor-supporting rods passing through opposite sides of the union and secured therein.

4. A column comprising a casing, a filling therefor, a union resting upon said casing, a filling therefor, and floor-supporting rods passing through opposite sides of the union and secured therein, some of said rods entering at different angles from other rods.

5. A column comprising a casing, a filling therefor, a union resting on said casing, a filling therefor, floor-supporting rods passing through opposite sides of the union, and means within the union for fastening said rods.

6. A column comprising a casing, a filling therefor, a union resting on said casing, a filling therefor, floor-supporting rods passing through the sides of the union, and stays engaging within the union for securing said rods.

7. A column comprising a casing, a filling therefor, a union resting on said casing, a filling therefor, and floor-supporting rods passing through the sides of the union and having their ends bent within the union, forming stays which secure the rods in place.

8. A column comprising a casing, a filling therefor, a union resting on said casing, a filling therefor, a reinforcing sleeve within the end of said casing, and floor-supporting rods passing through the sides of the union and having their ends secured therein.

9. A column comprising a casing, a filling therefor, a union resting on said casing, a filling therefor, a superimposed column casing, a filling therefor, and a stay or steady pin having a portion thereof held within the union and the end portions thereof embedded in the filling of the casings.

10. A column comprising a casing, a filling therefor, a union resting on said casing, a filling therefor, a superimposed column casing, a filling therefor, a stay pin socket within the union, and a steady pin fitted in said socket and projecting upward into the filling of the column casing above in which it is embedded.

11. A column comprising a casing, a union resting thereon, a superimposed column casing resting on the union, a filling for the union and the column casings, a steady pin

socket within the union, and a steady pin having its lower end held in said socket and its upper end embedded in the filling of the column casing.

5 12. A plurality of sectional columns embodying unions, in combination with floor-supporting rods interposed between and connecting the column unions.

10 13. A plurality of columns embodying unions, in combination with floor-supporting rods interposed between and connecting the unions, and means associated with the unions for securing the rods thereto.

14. A plurality of sectional columns embodying unions, in combination with floor-supporting rods extending be-

tween said unions in parallel and diagonal planes and connected with said unions.

15. A plurality of columns arranged in rows running at angles to each other, in combination with floor-supporting rods running from column to column and connected therewith to brace the columns relatively to each other. 15

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

JOHN LALLY.

Witnesses:

ARTHUR KEACH,

WILLIAM R. LEBARTON.