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PATENTED OCT. 29, 1907.

J. LALLY.
COLUMN.

APPLICATION FILED APR. 28, 1906.

2 SHEETS—SHEET 1.

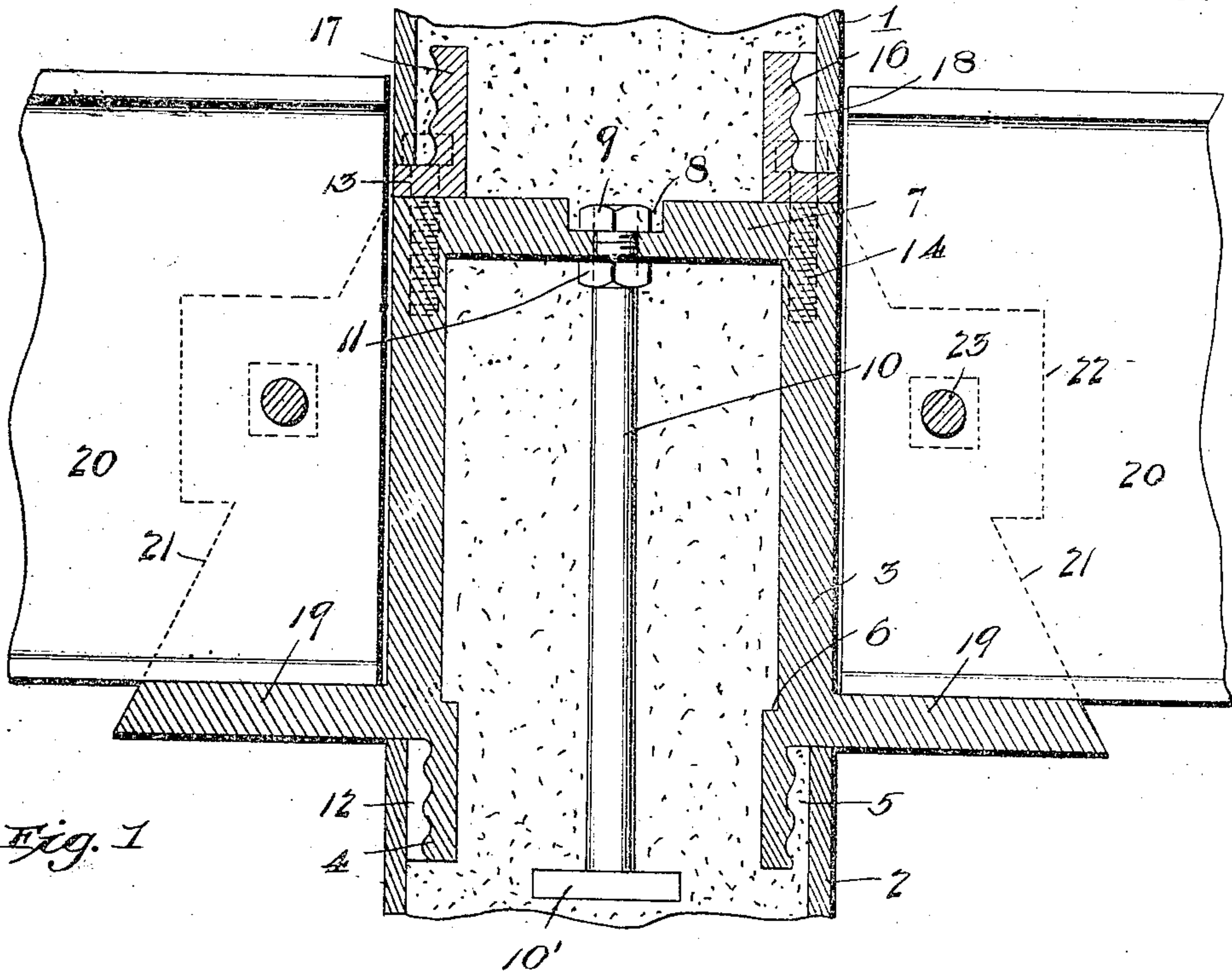


Fig. 1

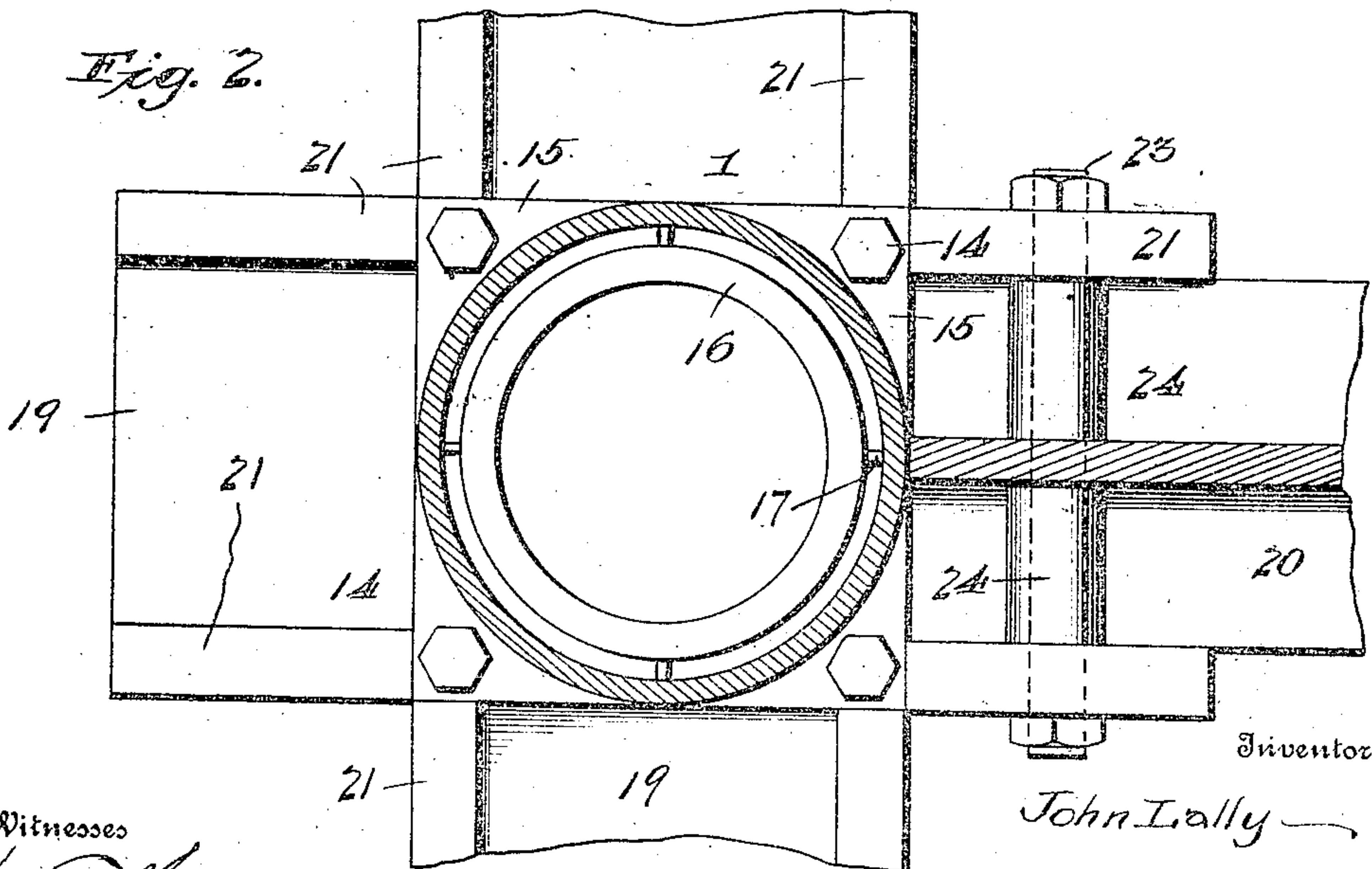


Fig. 2.

Witnesses
J. L. Ketchum
James F. Crown

Inventor
John Lally
By
Rexford M. Smith Attorney

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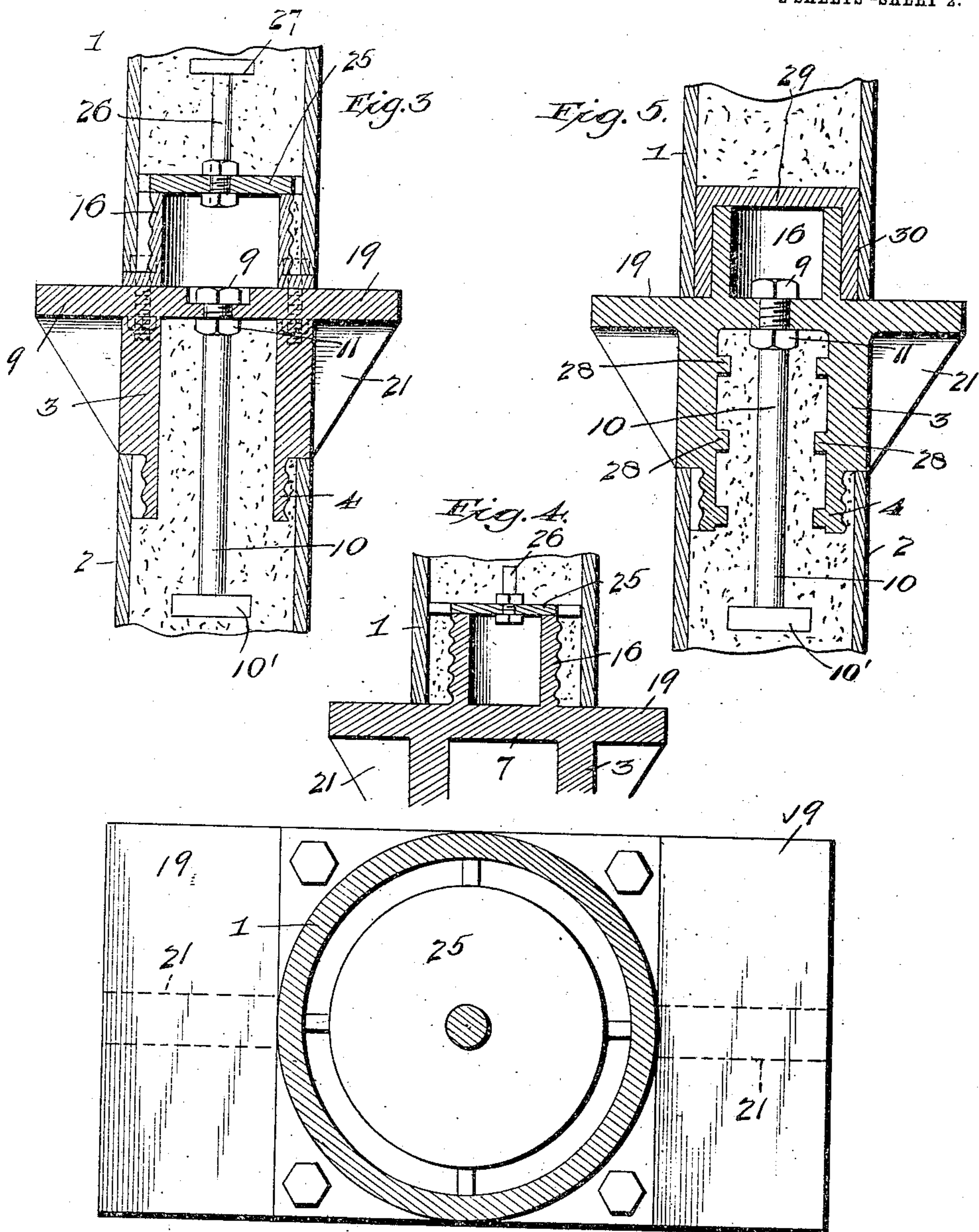


Fig. 6.

Inventor
John Lally

Witnesses
T. L. Morahan
James F. Brown

By
Perford M. Smith
Attorney

UNITED STATES PATENT OFFICE.

JOHN LALLY, OF WALTHAM, MASSACHUSETTS, ASSIGNOR TO UNITED STATES COLUMN COMPANY, OF CAMBRIDGE, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

COLUMN.

No. 869,869.

Specification of Letters Patent.

Patented Oct. 29, 1907.

Application filed April 28, 1906. Serial No. 314,190

To all whom it may concern:

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

This invention relates to columns, and the object of the invention is to provide a simple and effective union or combined cap and base whereby the members or sections of a sectional column may be securely coupled together.

A further object of the invention is to provide coupling means of the character above referred to which will enable the column sections to be filled with a plastic composition and thereby rendered fire proof and adapted to sustain enormous pressure.

A further object of the invention is to provide coupling means of the character referred to by means of which the sections of the column when filled with plastic composition will be securely and firmly anchored or bolted together.

A further object of the invention is to so construct and arrange the parts of the combined column cap and base that all parts thereof are rendered accessible during the coupling operation and assembling of the column sections, means, in this connection, being provided for protecting the anchoring device or devices.

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 as hereinafter fully described, illustrated and claimed.

In the accompanying drawings: Figure 1 is a vertical diametrical section through a column embodying the present invention. Fig. 2 is a sectional plan view of the same. Fig. 3 is a reduced section similar to Fig. 1 showing some slight changes in construction, but involving the same principle. Fig. 4 is a similar section showing the combined column cap and base formed integrally. Fig. 5 is a similar section showing a modification in the construction of the lower end of the upper column section. Fig. 6 is a sectional plan view of the arrangement shown in Fig. 3.

The preferred embodiment of my invention is clearly illustrated in Figs. 1 and 2 in which 1 designates what we will term the upper column section and 2 the lower column section, while 3 designates the main body portion of the combined cap and base. It may be stated at this point that a column may be made up of any desired number of sections 1 and 2 with the complementary unions consisting of the combined column cap and base to be herein particularly described. Each of said column sections may be of any suitable length and is in the

form of a tubular metallic casing the major portion of which is designed to be filled with a plastic material which subsequently hardens within the column section and renders the same solid throughout and fire proof.

The main body portion of the union is of cylindrical form as indicated at 3 in Fig. 1 and may be of any desired height, but preferably of the same diameter externally as the column section abutting against the same.

At its lower end, the body of the cap for the lower column section is provided with a flange 4 annular in shape and off-set inwardly sufficiently to allow an annular key space 5 between the inner wall of the column section and the outer surface of said flange as clearly shown in Fig. 1, and the outer surface of said flange 4 is corrugated or ribbed and grooved as shown so that when the plastic composition hardens between the column section and said flange, it forms a key or bond which anchors the column cap to the column section 2. By offsetting the flange 4 inwardly as shown, an additional annular shoulder 6 is provided within the cap 3 which also obtains a firm hold on the plastic filling. In this way the cap and underlying column section are firmly bonded and tied together.

In its upper portion and outer face, the head portion 7 of the cap 3 is provided with a recess 8 adapted to receive a nut 9 screwed upon the upper extremities of an anchor 10 which extends downward within the cap 3 and into the underlying column section 2, said anchor being in the form of a bolt or rod as shown in Fig. 1 provided at one end with an enlarged head or flange 10' which becomes embedded in the central portion of the plastic filling and serves as an additional means for fastening the cap on the underlying column section. If desired, a clamping or lock nut 11 may be placed upon the anchor 10 beneath the top 7 thereof so as to hold the anchor fixed and centrally within the cap. It is also contemplated to provide the flange 4 at intervals with outwardly extending centering ribs 12 so that when the cap is slipped into the upper end of the underlying column section, said cap and column section will be properly centered preparatory to introducing the plastic filling which is usually accomplished by turning the section and cap up side down.

Secured firmly to the top 7 of the cap 3 is the base member of the union which comprises a body portion or base 13 preferably secured to the top of the cap by lag screws 14 which pass through openings in the projecting corners 15 of the base 13 and into threaded sockets in the cap as indicated in Fig. 1. Extending upward from the base or body 13 is a flange 16 which is of less diameter externally than the internal diameter of the adjacent column 1, the flange 16 corresponding in all particulars with the flange 4 of the cap 3 hereinabove particularly described, the said flange 16 having its outer

face corrugated as shown at 17 and provided with centering ribs 18; thus the plastic filling of the superimposed column section enters between said column section and the corresponding face of the flange 16, forming a bond or key which secures such column section to the column cap and base. In this way the adjacent column sections are securely fastened together by the interposed combined column cap and base. Extending laterally and horizontally outward from the caps 3 at one, two or more points are beam rests 19 upon which the inner adjacent ends of floor beams or rafters 20 are supported as shown in Figs. 1 and 2. The rests 19 are reinforced by bracing webs 21 which, in Figs. 1 and 2, are shown as extending from the rests 19 upward, being connected to the cap 3 or formed integrally therewith. The bracing webs 21 are also shown as preferably provided with extensions or lugs 22 through each pair of which is inserted a bolt 23 which passes through the web of the adjacent eye beam 20 as best shown in Fig. 2, spacing sleeves or washers 24 being interposed between the bracing webs 21 and the web of the beam 20 and around the bolt 23, thus securely holding the beam to the column and preventing the possibility of any lateral movement or vibration of said beam relatively to the column.

The construction illustrated in Figs. 3 and 6 embodies the same principle as that hereinabove described differing therefrom only in certain details of construction. For instance, the bracing webs 21 are shown as extending downwardly instead of upwardly. Another difference resides in placing the cap plate 25 upon the upper edge of the flange 16 for the purpose of preventing the plastic filling from passing around and holding the nut 9 of the anchor 10. In order to secure the cap plate 25 in place, another anchor 26 similar in every respect to the anchor 10 hereinabove described, may be associated with the cap plate 25 as clearly shown in Fig. 3, anchor 26 being disposed reversely to the anchor 10, with the enlarged head thereof upward. Instead of forming the flange 16 separate from the cap 3 and securing said parts together, the said parts may be integrally formed as shown in Fig. 4. An additional fastening means is illustrated in Fig. 5 in which the inner face of the cap is shown as provided at intervals with inwardly extending key projections 28 which become embedded in the plastic filling. It is also contemplated to secure a reinforcing cup in the lower end of the superimposed column section 2 as shown in said Fig. 5, said cup embodying the imperforate base portion 29 and the annular side portion 30 which fits snugly within the lower end of the column section 2 and over

the flange 16 and is secured to the column section 2 in any approved manner. This cup substantially reinforces the lower end of the upper column section, keeping the same true, preventing the same from bending, and at the same time serving as a guard to prevent the plastic filling from covering and burying the nut 9 of the anchor 10. Preferably the cup fits snugly around the flange 16 and thereby acts to center the upper column section with reference to the combined column cap and base.

I claim:

1. The combination with adjacent hollow column sections, and a plastic filling therefor, of a coupling for connecting said sections, an anchor for holding said coupling to one section, and a flange projecting upward from said coupling and embedded in the filling of the adjacent section.
2. The combination with adjacent hollow column sections, and a plastic filling therefor, of a cap interposed between the sections and provided with a flange which is provided on its outer side with corrugations and centering projections.
3. The combination with adjacent hollow column sections, and a plastic filling therefor, of a combined column cap and base provided with oppositely projecting flanges having corrugated annular outer faces embedded in the filling a portion of which is introduced between said flanges and the inner surfaces of the column sections.
4. The combination with adjacent hollow column sections, and a plastic filling therefor, of a cap fitted to one of the sections and having a recessed or countersunk head, and an anchor embedded in the filling and passing through the recessed portion of the head and fastened by a nut arranged in the recess.
5. The combination with adjacent hollow column sections, and a plastic filling therefor, of a connection between said sections having portions thereof embedded in the filling, beam rests projecting outward from the cap, bracing webs connecting the rests and cap, beam ends supported on said rests, bolts passing through the webs of the rests and beams, and sleeves or washers on said bolts interposed between the webs of the rests and beams.
6. The combination with adjacent hollow column sections, and a plastic filling therefor, of a connection between said sections having a flange entering one of the sections, and a cap or guard fitted to said flange to prevent the filling from entering the space within the flange.
7. The combination with adjacent hollow column sections, and a plastic filling therefor, of a connection between said sections having a flange entering one of the sections, a cap or guard covering said flange and the space within the same, and anchoring means connected with said cap or guard and embedded in the filling.

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

JOHN LALLY.

Witnesses:

FREDERICK J. McVEY,
THOMAS F. FINNEGAN.