

(No Model.)

C. F. BRIGHAM.  
JOURNAL BEARING.

No. 320,909.

Patented June 30, 1885.

Fig: 1.

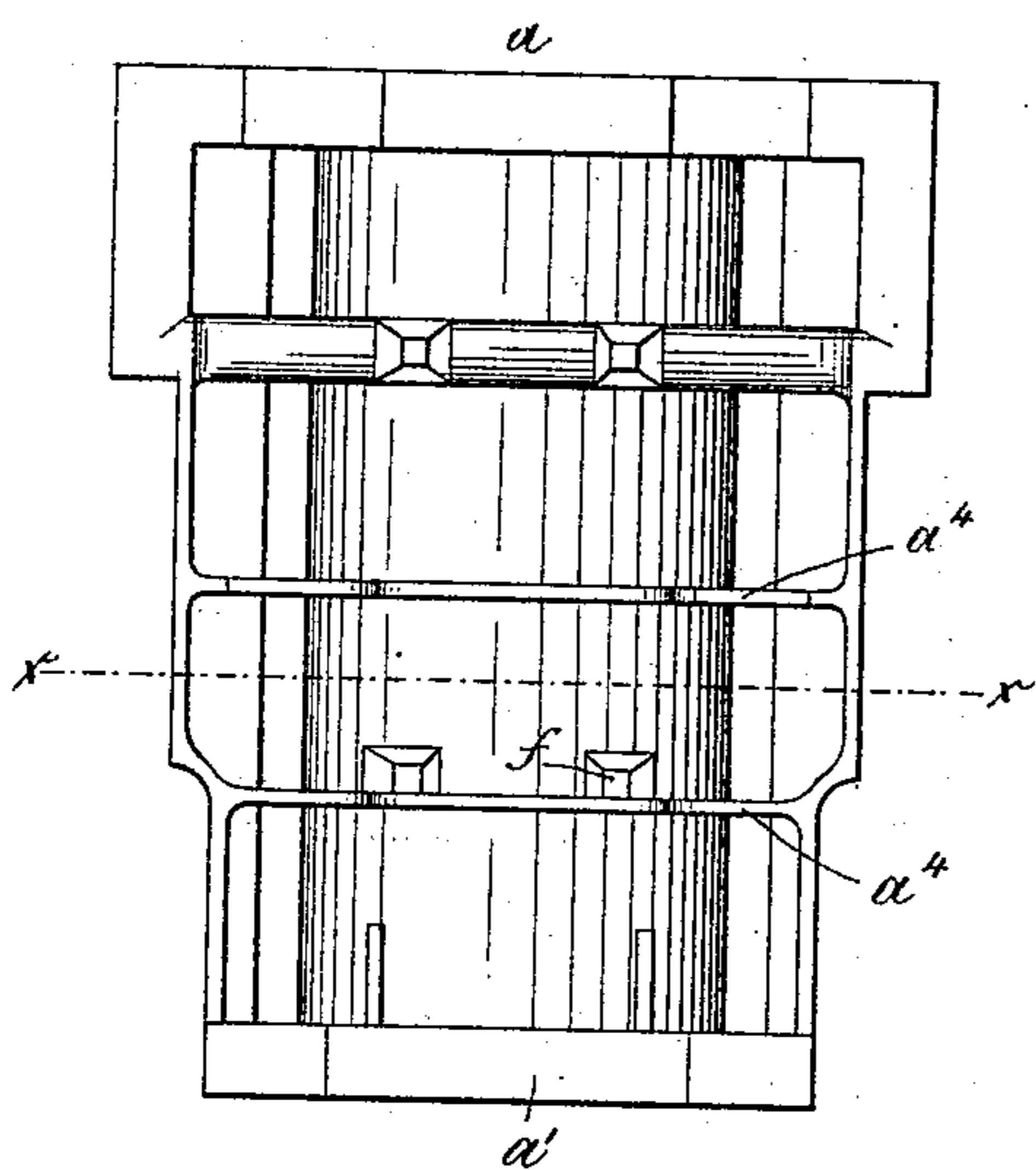


Fig: 2.

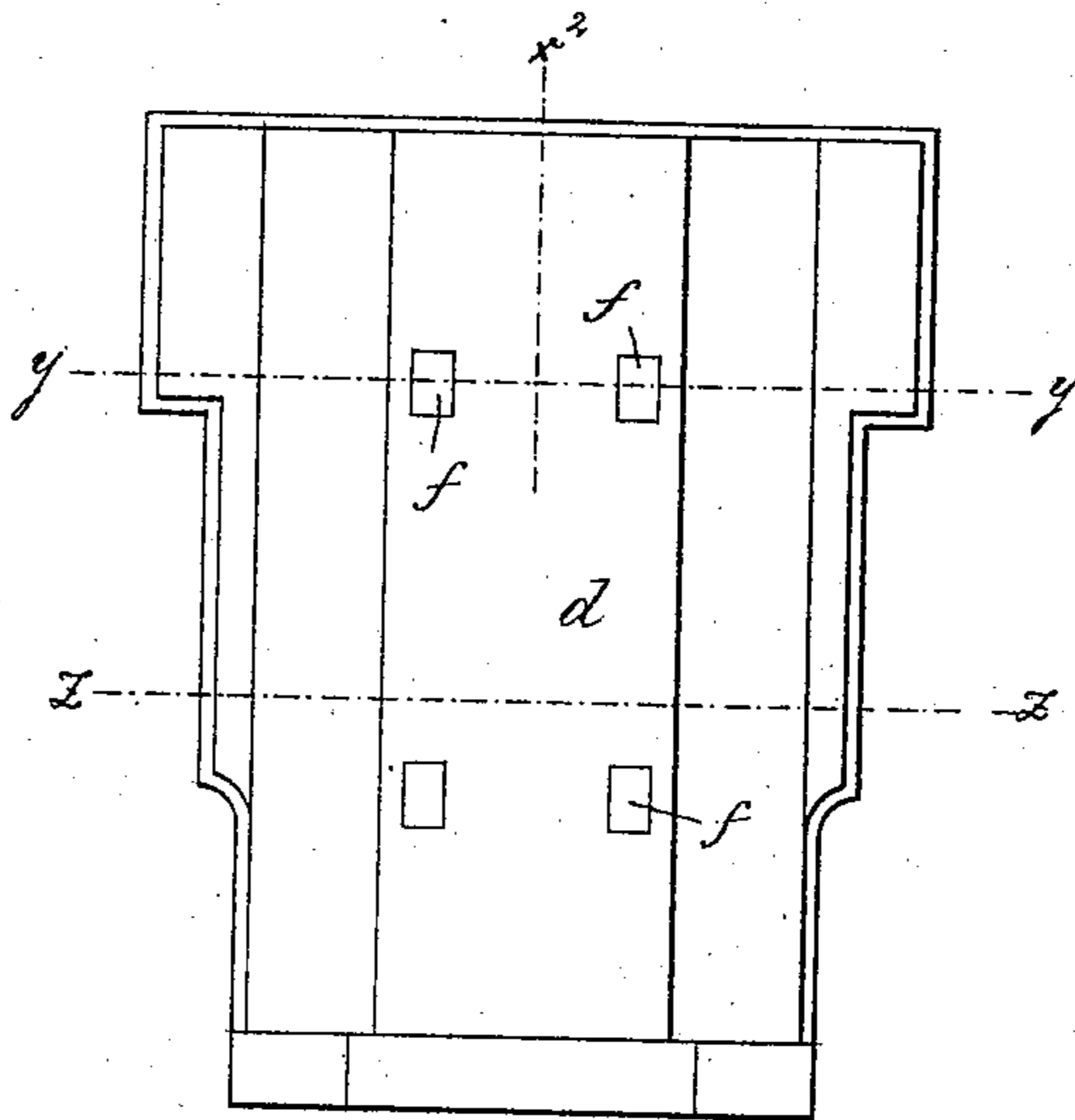


Fig: 3.

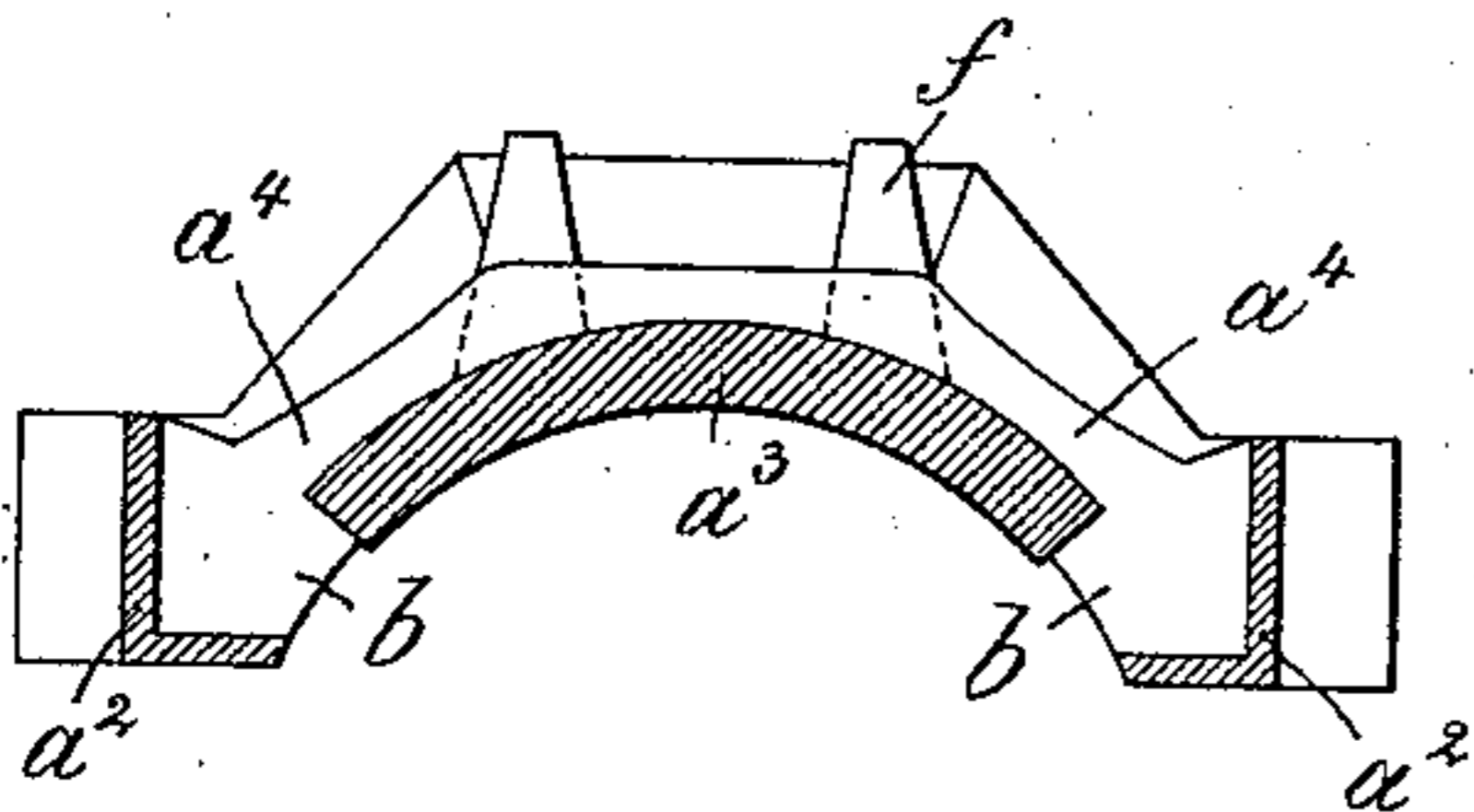


Fig: 4.

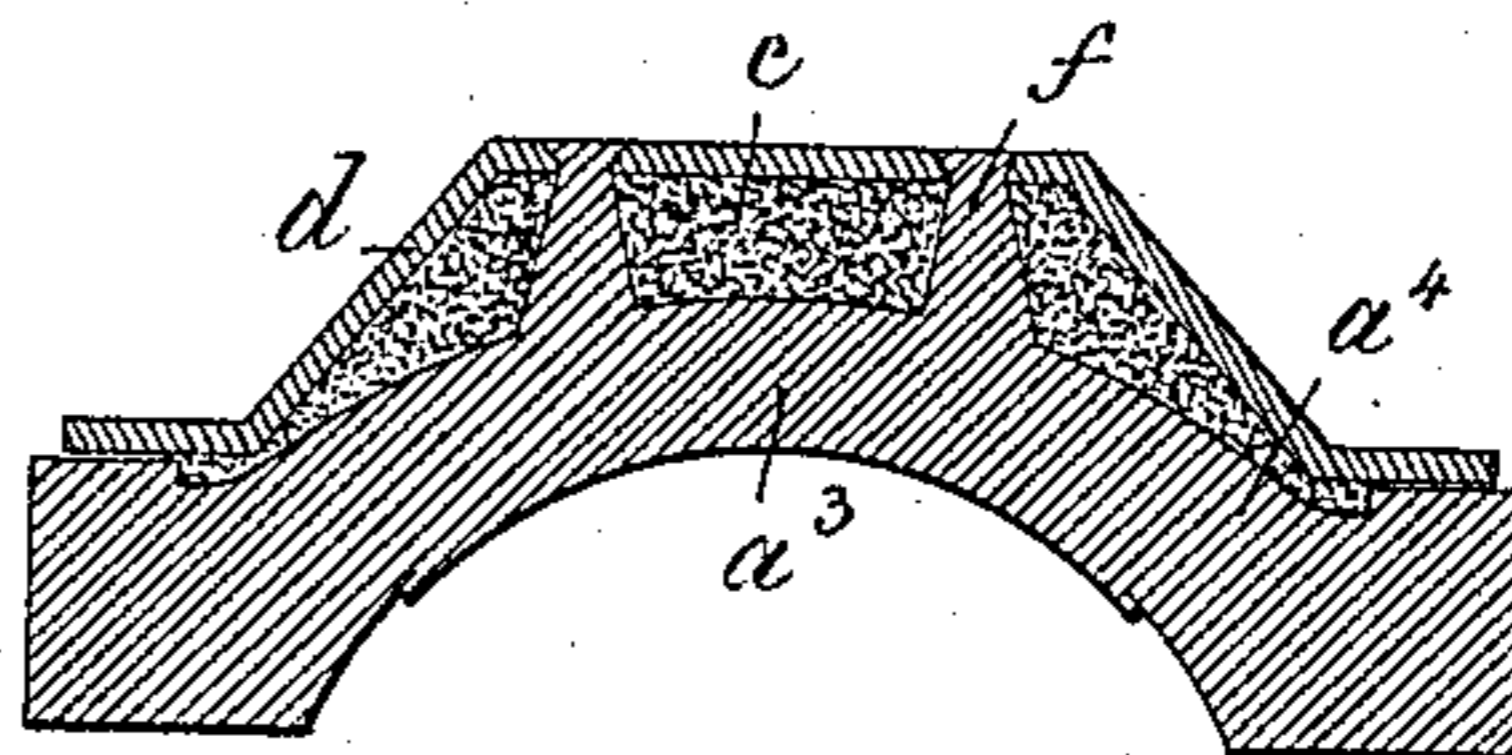


Fig: 5.

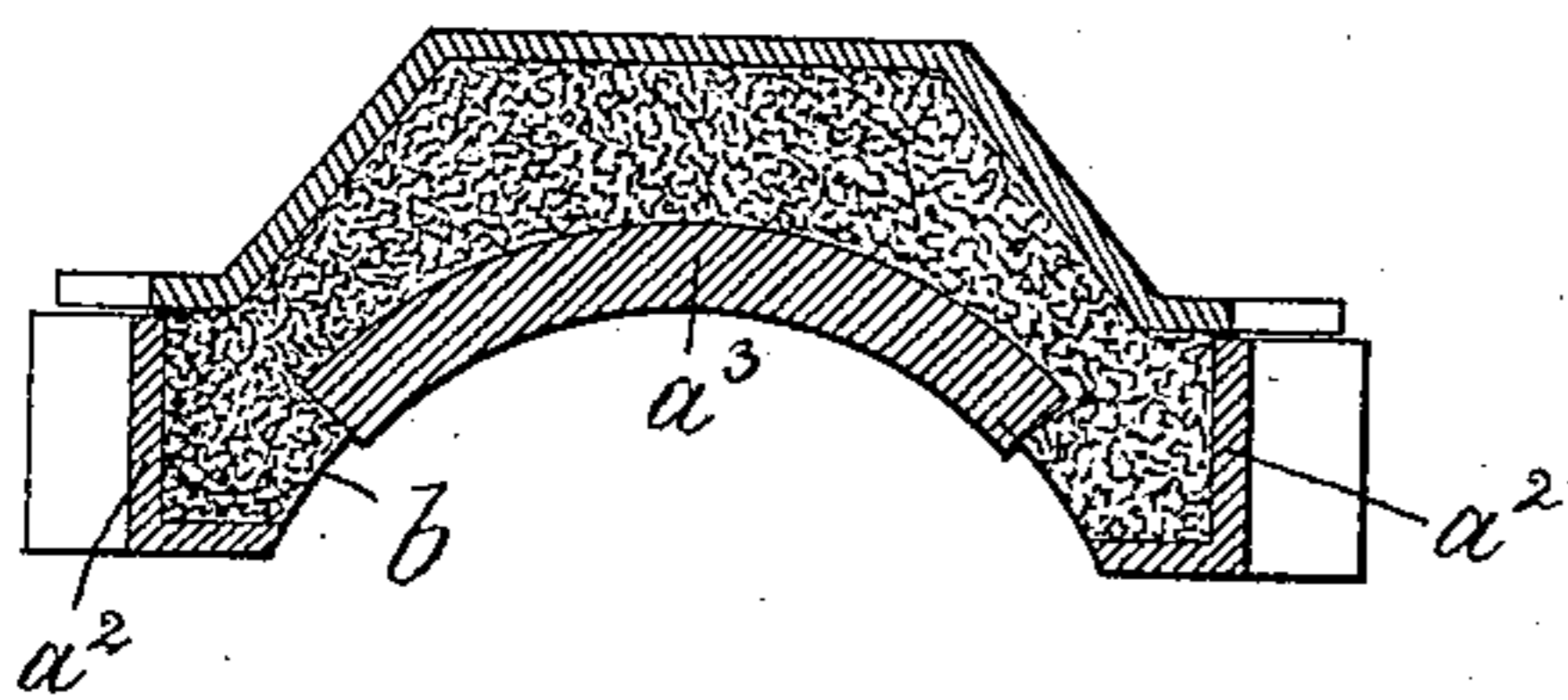
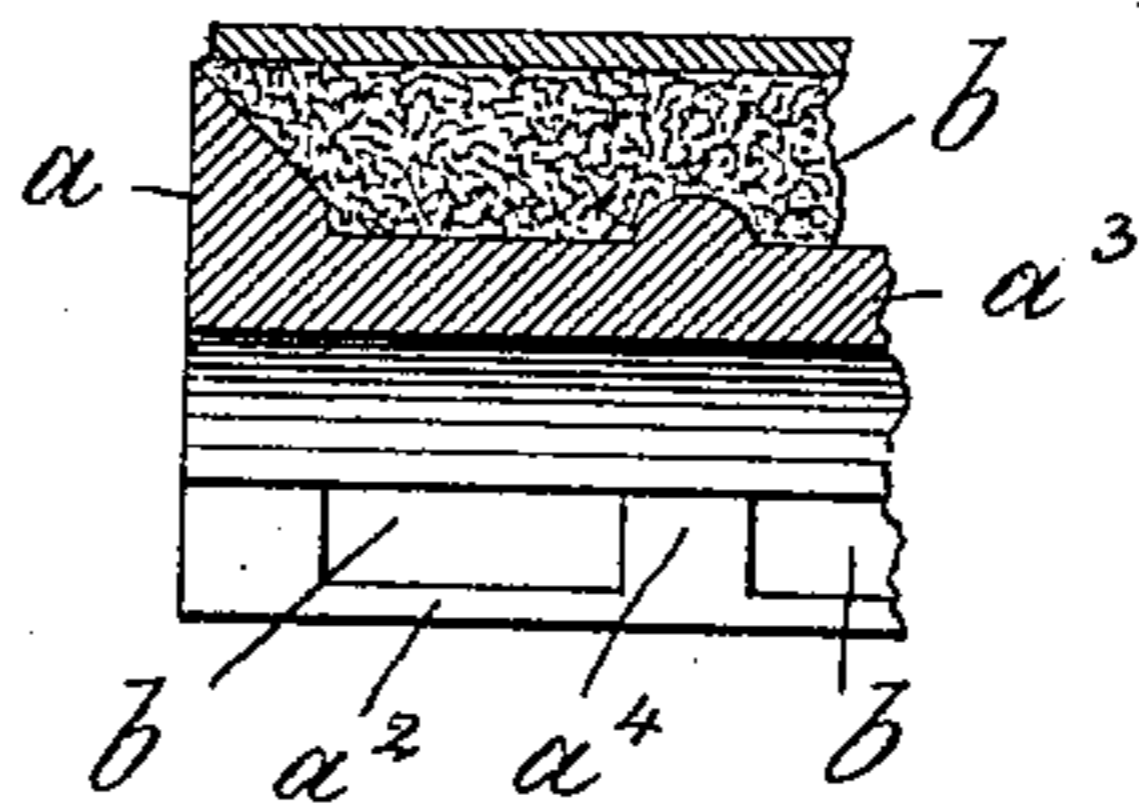


Fig: 6.



Witnesses.

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# UNITED STATES PATENT OFFICE.

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## JOURNAL-BEARING.

SPECIFICATION forming part of Letters Patent No. 320,909, dated June 30, 1885.

Application filed December 29, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES F. BRIGHAM, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Journal-Bearings, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

The object of my invention is to provide a bearing that will produce but little friction and be somewhat yielding or elastic, so as to transmit less jar to the car or body supported on it than the usual boxes composed of solid metal.

My improved journal-box consists, essentially, of a metallic frame or shell having a metallic face or bearing portion to engage the journal, and a filling of fibrous or pulp material, preferably composed mainly of asbestos, chemically treated to harden it and render it resistant to the action of oil or lubricant, the said material being subjected to great pressure, by which it is formed into a hard compact mass, filling the metal frame or skeleton, and forming therewith a solid box of the usual shape, but of a more elastic and yielding nature than the usual boxes composed wholly of metal. The metal frame or skeleton is preferably so constructed that portions of the fibrous filling pass through to the wearing-face and afford a portion of the bearing upon the journal. The fibrous filling is preferably inclosed in a metal cover firmly secured to the metal frame or skeleton.

Figure 1 is a plan view of the metal frame or skeleton; Fig. 2, a plan view of the complete box; Fig. 3, a transverse section on line  $xx$ , Fig. 1; Fig. 4, a transverse section on line  $yy$ , Fig. 2; Fig. 5, a transverse section on line  $zz$ , Fig. 2; and Fig. 6, a partial longitudinal section on line  $x^2$ , Fig. 2.

The frame or skeleton consists of stout end pieces,  $a$   $a'$ , of substantially the outline of the usual metallic box, and connected by flanged side pieces,  $a^2$ , and of a bearing portion,  $a^3$ , extending from one to the other of the end pieces,  $a$   $a'$ , the said bearing portion  $a^3$  affording the main portion of the bearing-surface of the box, and being of sufficient thickness, as shown in Figs. 2, 3, 6, to wear for a great length of time. The bearing portion  $a^3$  is also connected with the side pieces,  $a^2$ , of the box

by a number of ribs,  $a^4$ , and does not extend wholly to the side pieces,  $a'$ , so that spaces are left, as at  $b$ , for the reception of the material which is to be the vehicle to hold the oil.

The frame or skeleton thus far described is filled with a composition of pulpy or fibrous material, which may be substantially such as described in Letters Patent No. 299,109, dated May 27, 1884, it consisting, mainly, of asbestos chemically treated to increase its hardness and to render it capable of holding, yet resisting, the softening action of the lubricating material employed. This filling  $c$  is subjected to a very great pressure—several tons to the inch—between dies, thus rendering it a solid compact mass, and filling the spaces within the metal frame  $a$  and around the bearing portion  $a^3$ , it entering the spaces  $b$  in the said metallic portion, as shown in Fig. 5, so as to form a part of the wearing-surface of the bearing. The filling  $c$  is preferably covered with a wrought or malleable cover,  $d$ , which is fastened to the frame-work or skeleton by means of lugs  $f$ , rising from the bearing portion  $a^3$ , and riveted or headed in openings in the cover  $d$ , as best shown in Figs. 2 and 3. The filling  $c$  is more elastic and yielding than metal, and thus absorbs to a considerable extent the shocks which would be transmitted by a metal bearing, and at the same time accommodates itself to an uneven bearing in the housing-box. The said filling material produces but little friction, and a box composed as described partly of metal and partly of filling material is not liable to become heated, and is very desirable.

If desired, the skeleton bearing may be used to advantage even without the filling described, for the space left therein forms pockets to catch and hold oil at different points along the length of the bearing, such skeleton boxes being light, and therefore much cheaper to make than the ordinary solid box. The solid box has sufficient strength by reason of the ribs.

I claim—

1. The metallic skeleton or frame having a metallic bearing portion, combined with a filling of fibrous or pulp material molded into the said frame and around the said bearing portion, substantially as described.

2. The metallic skeleton or frame having a

metallic bearing portion, combined with a filling of fibrous or pulp material molded into the said frame and around the said bearing portion, and a metallic cover fastened to the said  
5 frame, substantially as described.

3. The metallic frame consisting of end and side portions, and a bearing portion extending between the ends and separated from the side portions by ribs, thus leaving spaces between

the bearing and side portions of the frame, 10 substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES F. BRIGHAM.

Witnesses:

G. W. GREGORY,  
W. H. SIGSTON.