

(No Model.)

F. HOOPER.  
CLEAN-OUT FOR SOIL PIPES.

No. 572,114.

Patented Dec. 1, 1896.

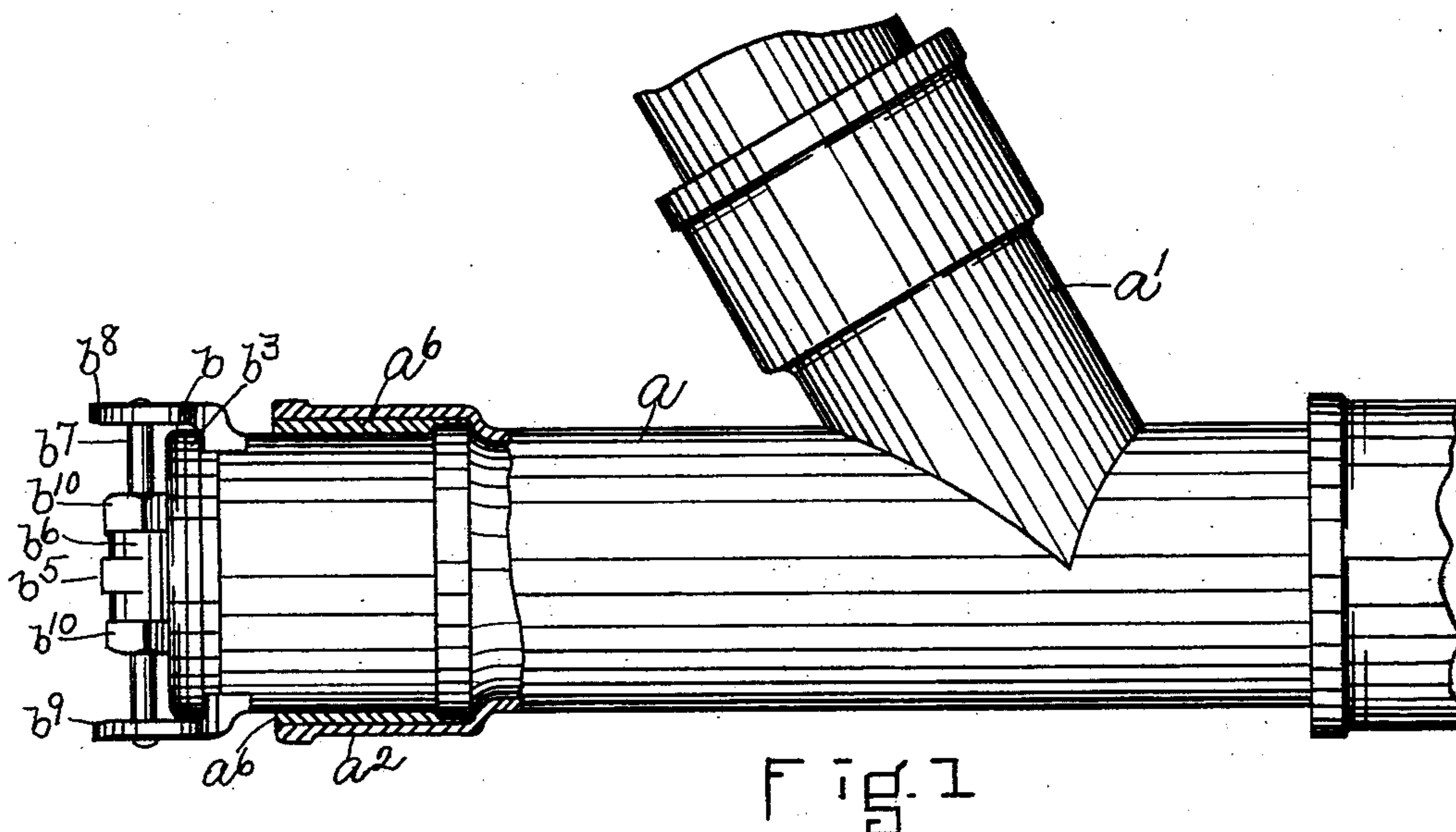


Fig. 1.

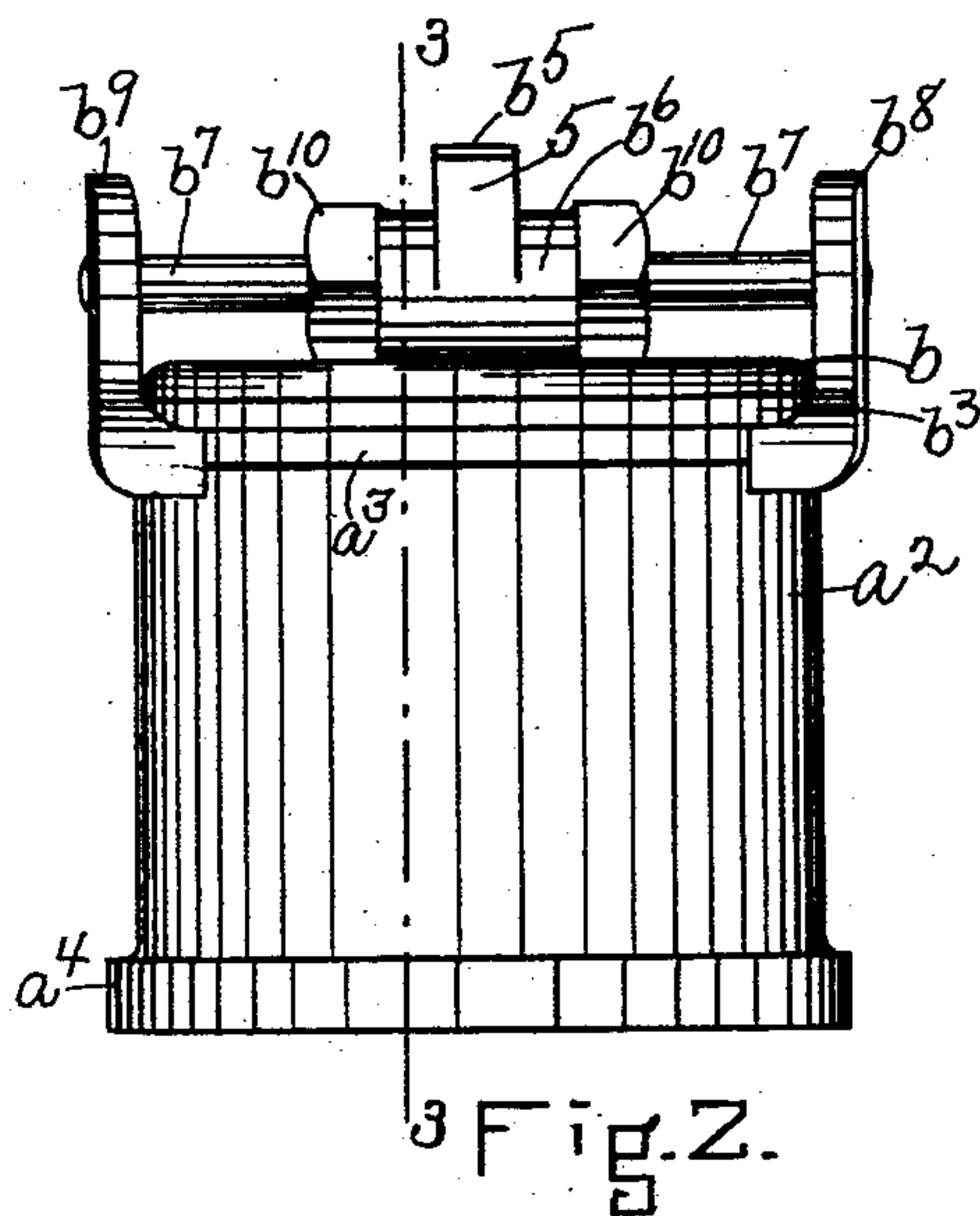


Fig. 2.

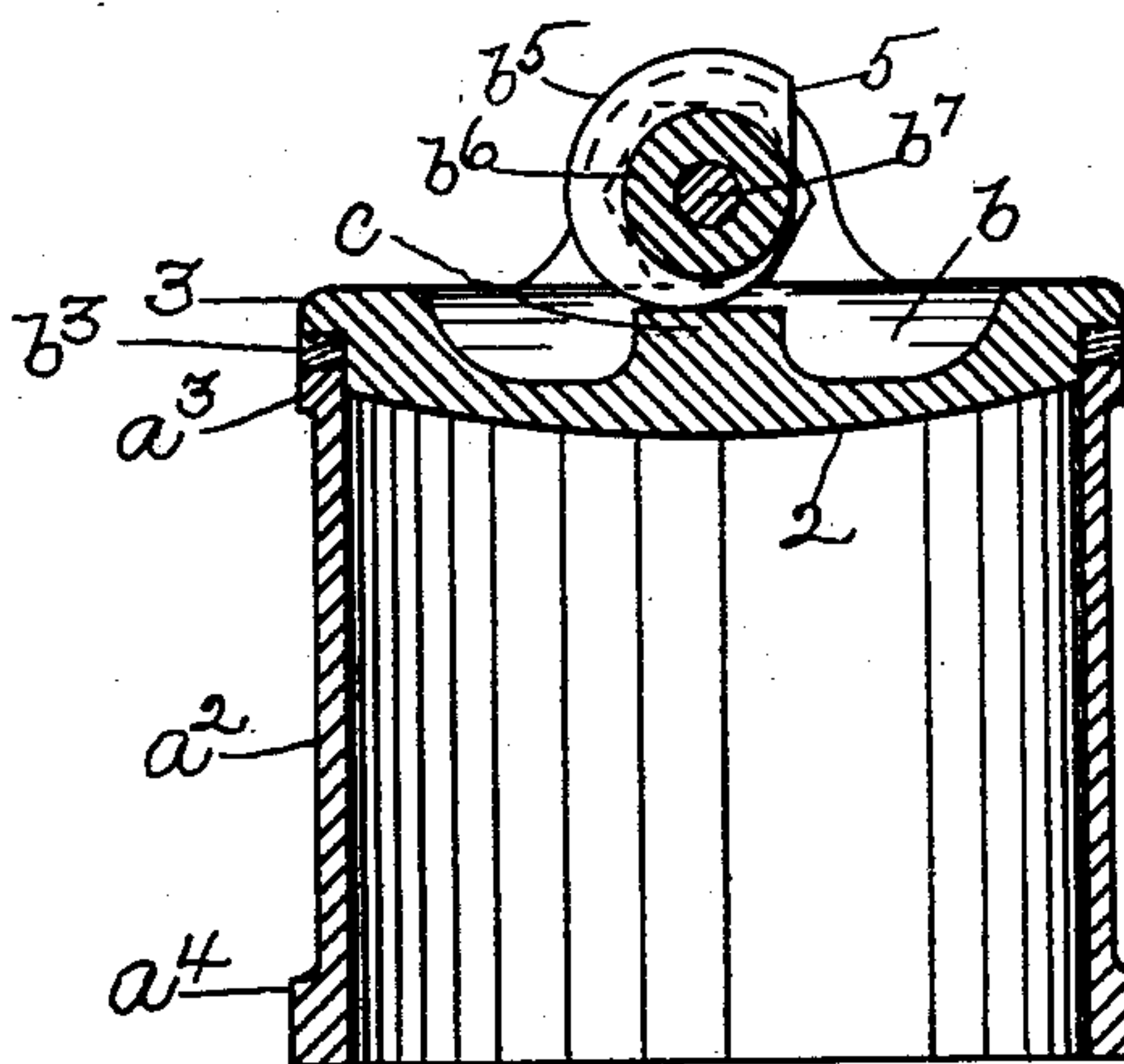


Fig. 3.

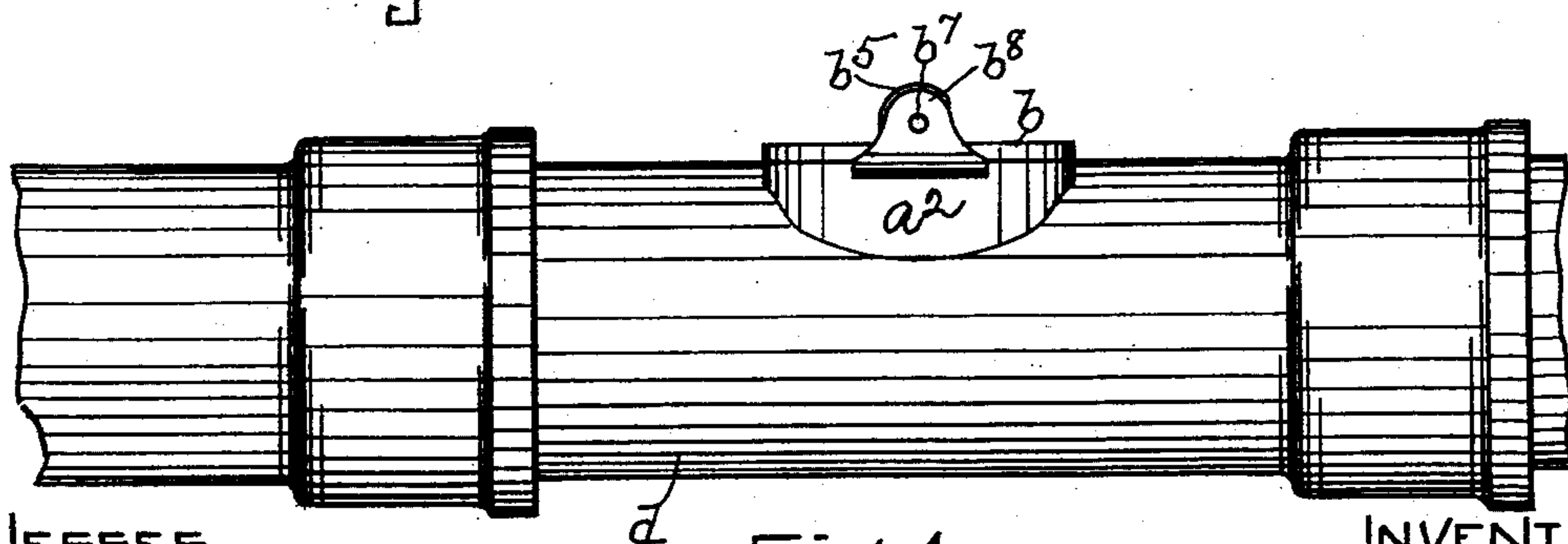


Fig. 4.

WITNESSES.  
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## CLEAN-OUT FOR SOIL-PIPES.

SPECIFICATION forming part of Letters Patent No. 572,114, dated December 1, 1896.

Application filed June 9, 1896. Serial No. 594,823. (No model.)

*To all whom it may concern:*

Be it known that I, FOREST HOOPER, residing in Woburn, county of Middlesex, and State of Massachusetts, have invented an Improvement in Clean-Outs for Soil-Pipes, of which the following description, in connection with the accompanying drawings, is a specification, like letters and figures on the drawings representing like parts.

10 This invention relates to apparatus of that class commonly called a "clean-out," especially adapted, among other uses, to be attached to soil-pipes, and has for its object to provide a simple, cheap, durable, and accessible apparatus which, when applied to the soil-pipe of a house or building, permits of easy and quick access to the soil-pipe when it is desired to clean the same.

20 In accordance with this invention the apparatus or clean-out consists of a body portion adapted to be attached to or connected with the pipe to be cleaned, a cover for said body portion, a rotatable locking device or cam for said cover, supported by the body portion above or beyond the cover, as will be described.

30 Figure 1 represents a sufficient portion of a soil-pipe provided with a clean-out embodying this invention to enable the same to be understood; Fig. 2, an elevation of the clean-out shown in Fig. 1 removed from the soil-pipe; Fig. 3, a vertical section on the line 3 3, Fig. 2, looking toward the right; and Fig. 4, a modification to be referred to.

35 Referring to Fig. 1,  $a$  represents a pipe, and  $a'$  a branch thereof, which pipes may be of any suitable or desired construction, such as now commonly used in buildings and dwelling-houses as soil-pipes. The soil-pipe  $a$  is provided at one end, as shown in Fig. 1, with a clean-out embodying this invention and shown separately in Figs. 2 and 3.

45 The clean-out consists, essentially, of a body portion  $a^2$ , herein shown as of cylindrical shape and open at its opposite ends, the said body portion having at its opposite ends exterior flanges  $a^3 a^4$ , the latter being of a diameter substantially equal to the internal diameter of the end of the pipe into which it is fitted, the said body portion being secured in the pipe  $a$ , as shown in Fig. 1, by suitable calking material  $a^6$ , usually lead and oakum,

by which a liquid-tight joint is obtained between the body portion  $a^2$  and the pipe  $a$ .

55 The body portion  $a^2$  at its opposite end is normally closed by a cover  $b$ , preferably of the construction herein shown, and consisting of the downward-curved central portion 2, preferably of a diameter substantially equal to the internal diameter of the body portion  $a^2$ , so as to fit into the said body portion, as shown in Fig. 3, the said central portion having an annular flange 3, forming a lip which overlaps the edge of the body portion  $a^2$ , and between which lip and edge is placed a packing-ring or washer  $b^3$ .

60 The cover  $b$  is secured to the body portion  $a^2$  by a cam-shaped collar  $b^5$ , secured to or forming part of a hub  $b^6$ , preferably loose on a shaft or arbor  $b^7$ , preferably a steel rod, which is supported in ears  $b^8 b^9$ , attached to the body portion  $a^2$  at substantially diametrically opposite points, and projecting beyond the end of the body portion  $a^2$ , as shown in Fig. 2. The hub  $b^6$  is preferably provided with angular sections  $b^{10}$ , practically forming nuts for the engagement of a suitable wrench or tool by which the hub  $b^6$  may be turned on its shaft or arbor to engage the cam  $b^5$  with the cover and force the said cover tightly against the end of the body portion, and to turn the said hub in the opposite direction to release the said cover and permit it to be readily removed when it is desired to gain access to the pipe.

85 The cover  $b$  is preferably provided with a central projection  $c$ , with which the cam engages, and which projection is elevated above the portion of the cover in line with the nuts  $b^{10}$ , so that the wrench or tool may be given an extended movement, with the cam-hub of minimum diameter and the ears of minimum height or size. The shaft  $b^7$  is loosely supported in the ears  $b^8 b^9$  to permit it to be readily withdrawn from them, if desired.

95 In Fig. 3 the cover  $b$  is shown as closed by the cam  $b^5$  engaging the projection or stud  $c$ , but it will be seen that if the hub  $b^6$  is turned so as to bring the flat or cut-away portion 5 of the cam above the projection  $c$  sufficient space is afforded for quickly and easily removing the said cover.

100 In some instances the body portion  $a^2$  may form an integral part of a pipe-section, as



represented in Fig. 4, in which the body portion  $a^2$  extends at right angles to the pipe-section  $d$ , which in practice may be interposed in the middle of a substantially long piece of the piping. In the construction shown in Fig. 4 the body  $a^2$  is oval in shape and the cover  $b$  is correspondingly shaped.

In the construction of a clean-out for soil-pipes above described it will be noticed that the cover and body portion are not provided with screw-threads, which, after long use, become rusted and practically useless, but, on the other hand, the cover is easily and quickly removed after long use and capable of being easily applied again to close the clean-out.

In practice I prefer to make the body portion  $a^2$ , the cover  $b$ , and hub  $b^6$  of cast-iron and the arbor or shaft  $b^7$  of steel, which latter will spring slightly under the pressure of the cam on the cover and serve to hold the cover firmly on the body of the apparatus.

In Fig. 4 I have represented the cover as locked by one device or cam, but when the body portion  $a^2$  is made substantially long, so as to obtain a large opening into the pipe, two or more locking devices may be used.

I claim—

1. In a clean-out apparatus, the combination with a body portion open at its opposite ends and provided with ears substantially diametrically opposite and attached to the sides of the said body portion, of a cover for one of said ends fitted between said ears and provided with a substantially central cam-engaging projection, a rod supported by said ears and detachable therefrom, a hub loose on said rod and provided with a cam to en-

gage said projection, and with a nut by which the hub may be turned, substantially as described.

2. In a clean-out apparatus, the combination with a body portion open at its ends and provided with ears substantially diametrically opposite and having holes or openings in them, a cover to close one end of the said body portion and provided with a cam-engaging projection, a shaft extended into the holes in said ears above or beyond said cover and removable therefrom, and a hub loose on said shaft and provided with a cam cooperating with said cover, and with a nut, substantially as described.

3. In a clean-out apparatus, the combination with a body portion open at its ends and provided with ears attached to the sides of the body portion substantially diametrically opposite, a cover fitted between said ears to close one end of the said body portion and provided with a cam-engaging projection substantially at its center, a shaft supported in said ears above or beyond said cover and detachable therefrom, a hub loose on said shaft and provided with a cam cooperating with the projection on said cover, and a nut attached to the cam-hub at one side of the said cam, substantially as described.

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

FOREST HOOPER.

Witnesses:

JAS. H. CHURCHILL,  
J. MURPHY.