

No. 614,494.

Patented Nov. 22, 1898.

F. W. BILL, Dec'd.  
J. L. NORRIS, Administrator.  
FIRE AND BURGLAR ALARM.

(Application filed Aug. 20, 1898.)

(No Model.)

Fig. 1.

2 Sheets—Sheet 1.

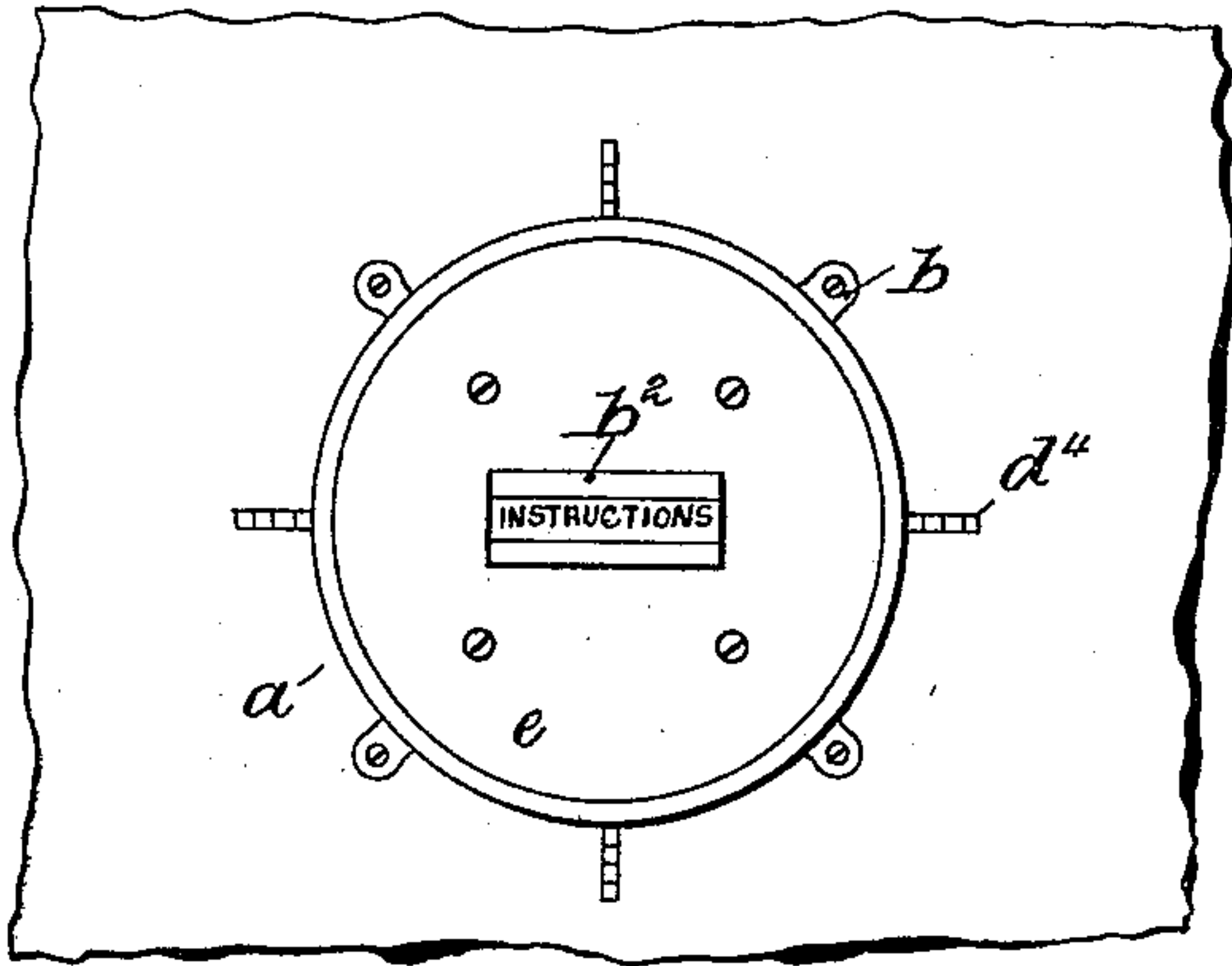


Fig. 3.

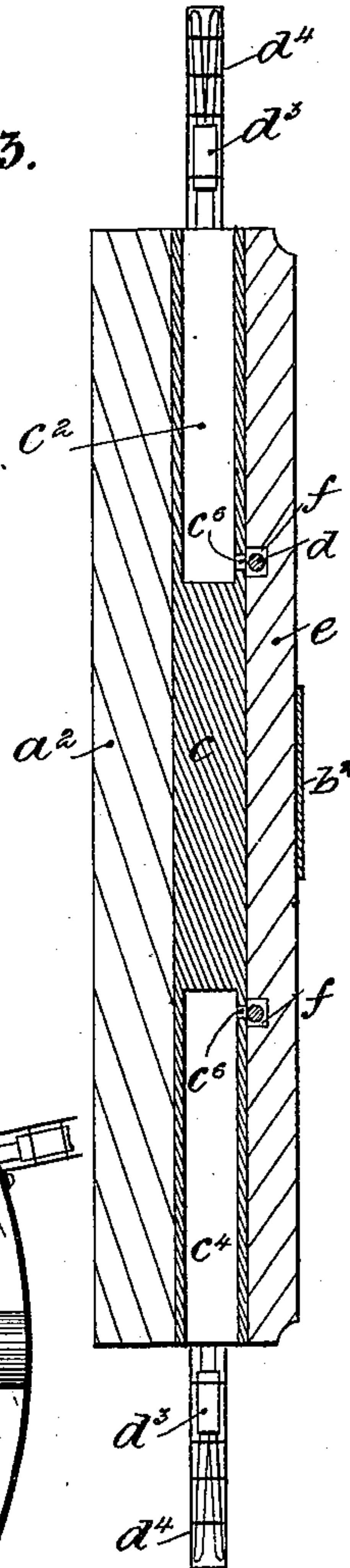
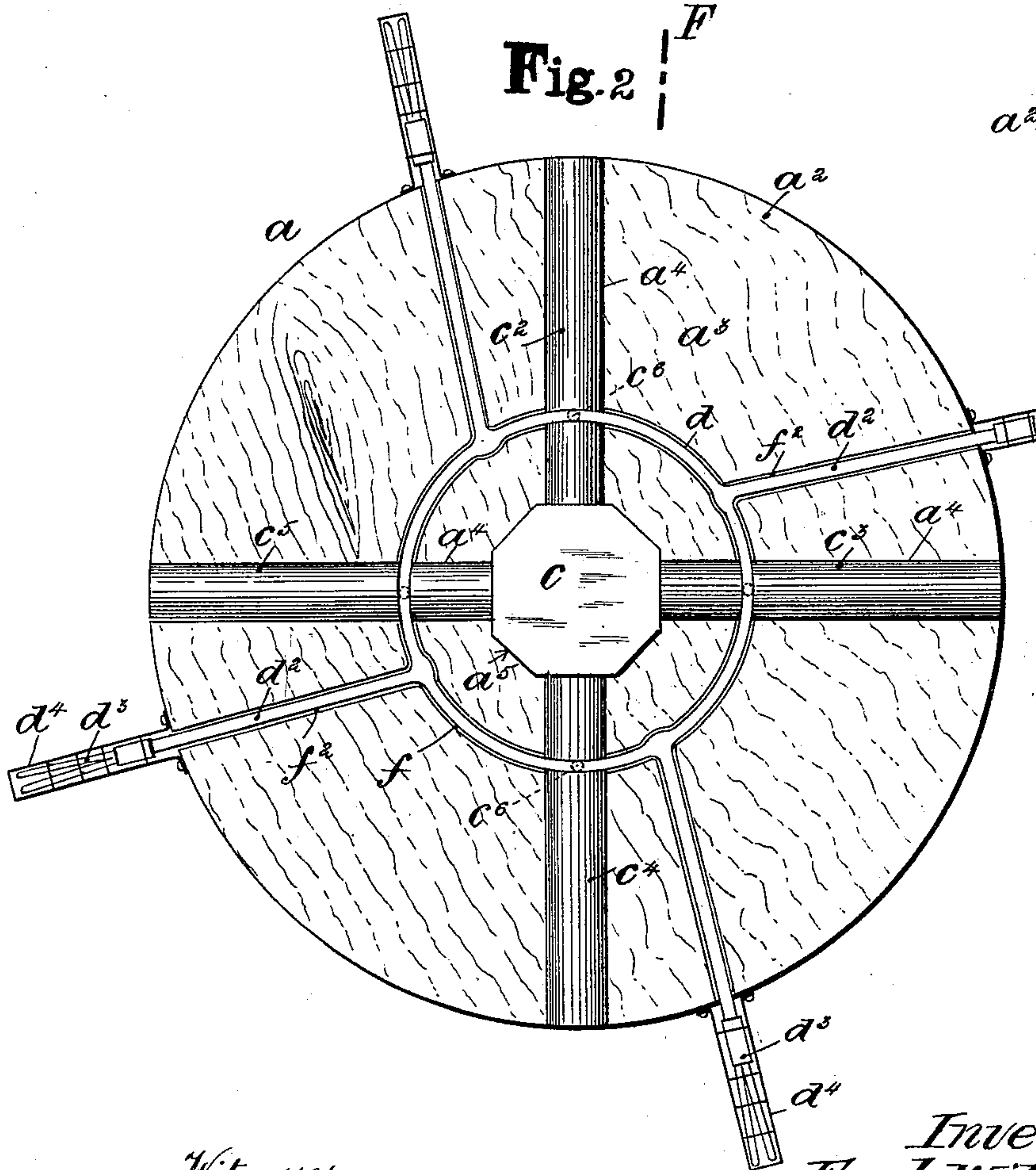


Fig. 2



Witnesses  
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*Robert Conell*

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*Fred Will Bill*  
By *James L. Norris*  
Administrator of his  
estate.

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2 Sheets—Sheet 2.

Fig. 4.

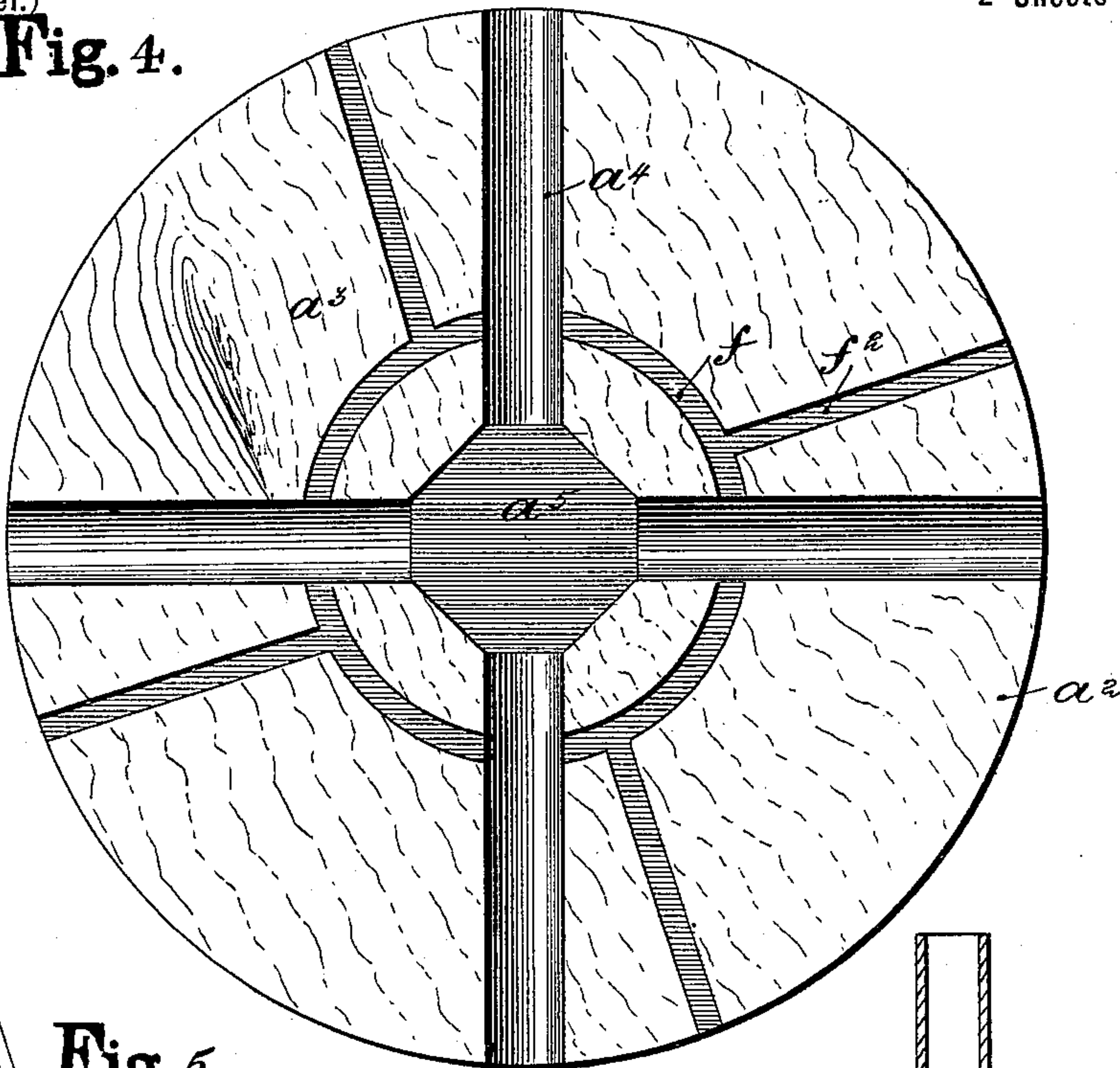


Fig. 5.

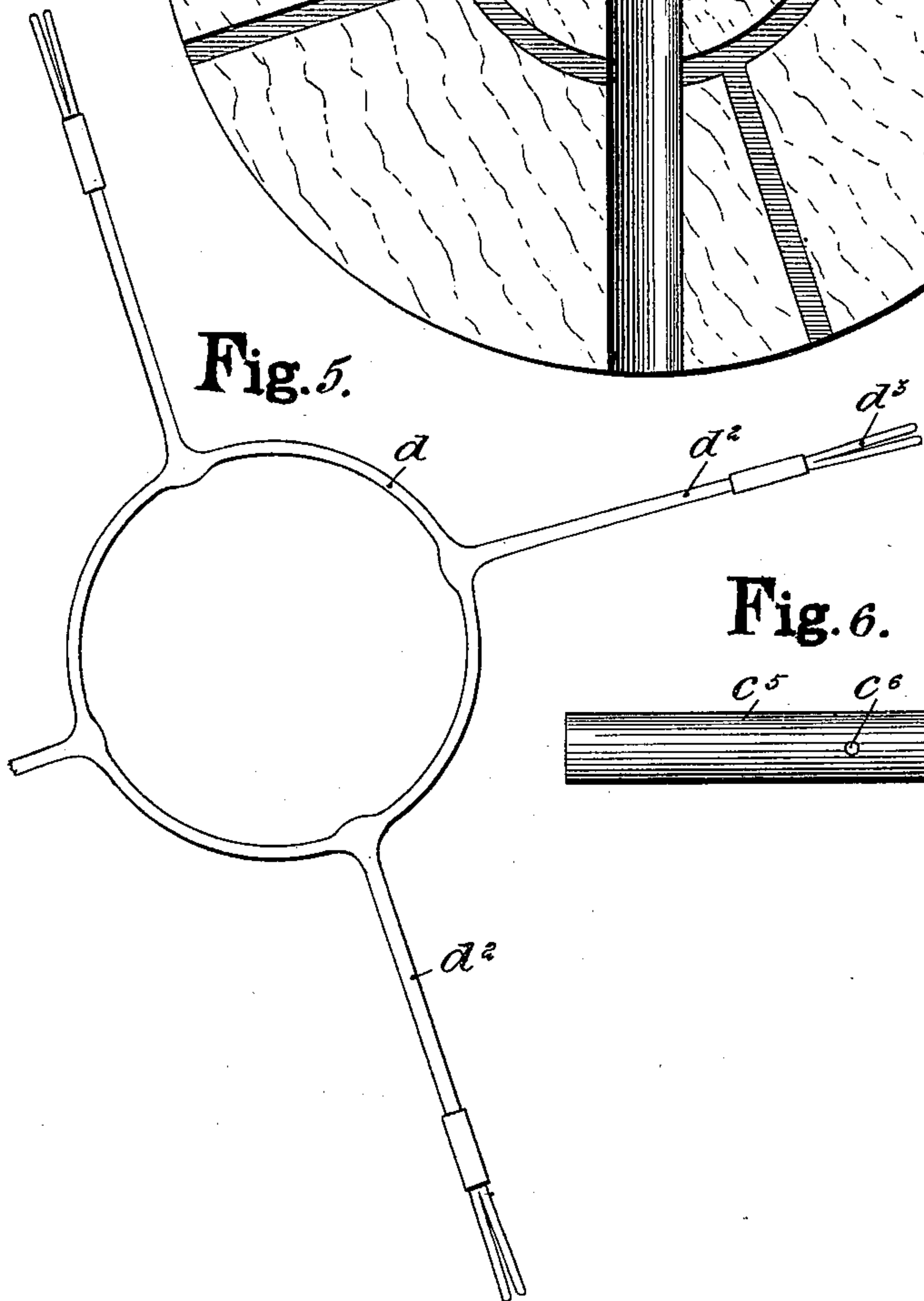
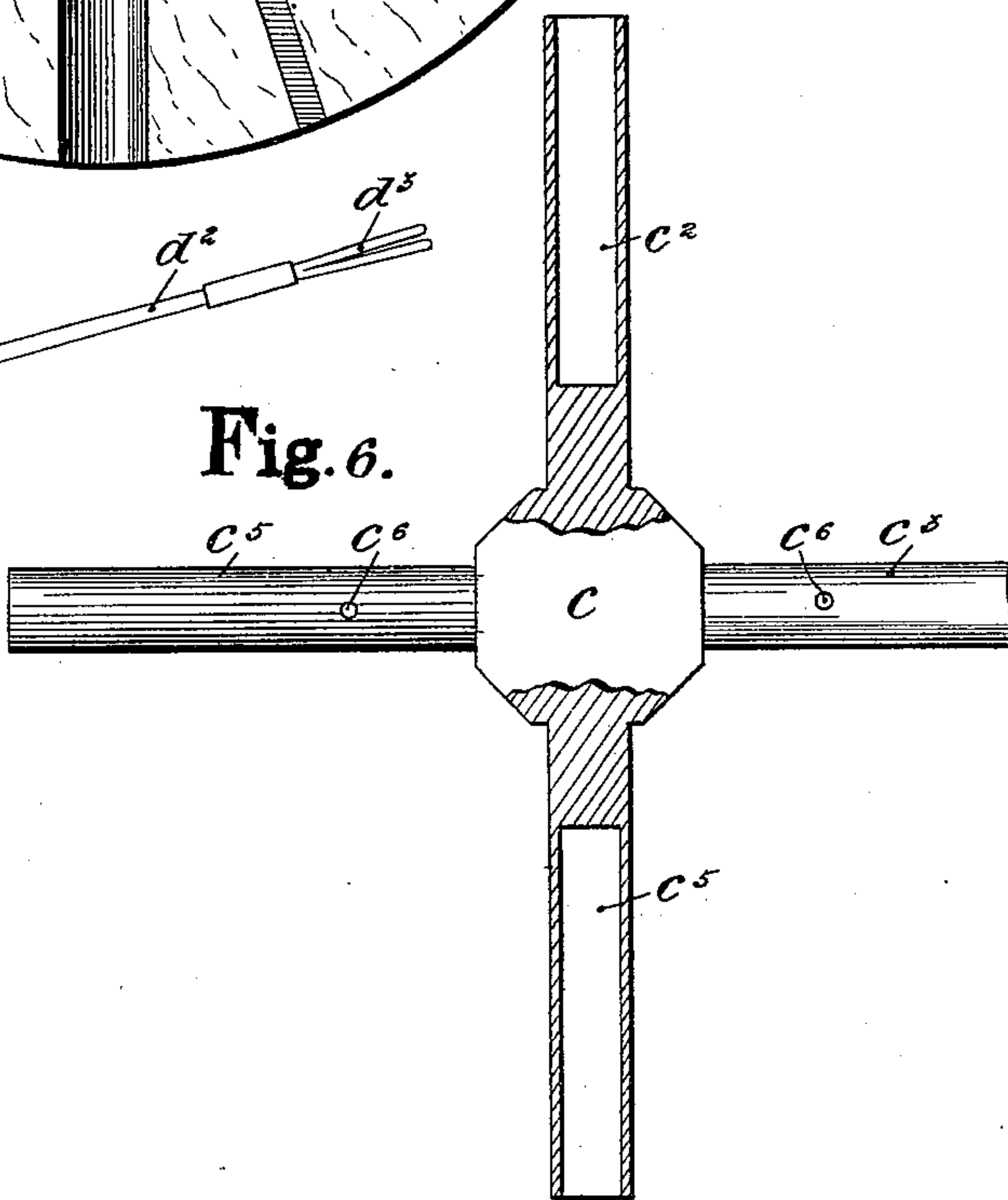


Fig. 6.



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Robert Everett

Inventor.  
Fred Will Bill  
By James L. Norris.  
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# UNITED STATES PATENT OFFICE.

JAMES L. NORRIS, OF WASHINGTON, DISTRICT OF COLUMBIA, ADMINISTRATOR OF FRED WILL BILL, DECEASED, ASSIGNOR TO LILIAN AUGUSTAS BILL, OF HANLEY, ENGLAND.

## FIRE AND BURGLAR ALARM.

SPECIFICATION forming part of Letters Patent No. 614,494, dated November 22, 1898.

Application filed August 20, 1898. Serial No. 689,139. (No model.)

*To all whom it may concern:*

Be it known that FRED WILL BILL, deceased, late a subject of the Queen of Great Britain, and a resident of Percy street, Hanley, in the county of Stafford, England, did during his lifetime invent or discover a certain new and useful Improvement in Fire and Burglar Alarms, of which the following is a full, clear, and exact specification.

10 This invention relates to a means for giving an alarm in case of fire or burglary; and it consists in an improved device or appliance which is portable, especially adapted for being placed in almost any position upon a wall, a ceiling, a shelf, or within an inclosure or within or upon any part of a building or place.

15 The said device is constructed upon inexpensive lines and is characterized by a number of explosion-tubes or small cannon arranged upon the face of a portable carrier, so as to be contained within the said carrier, and a particular construction of fuse, also arranged upon the said carrier, and which said fuse is constructed and arranged in combination with the small cannon, as aforesaid, so as to insure the successive firing of the said cannon, either by itself becoming ignited either by contact with flame or through being exposed to an extremely-high temperature, the whole forming an extremely convenient and portable appliance.

20 In the accompanying sheets of drawings the invention is practically illustrated in connection with four explosion-tubes or small cannon and four fuse-terminals or points of ignition.

25 In the said sheets, Figure 1 is a small view to illustrate how easily the device or appliance can be fixed to a support by wood-screws or by nails through eyed plates *b*, and also how a plate *b*<sup>2</sup>, bearing instructions, is carried upon its outer face, it being evident from the said view as to the appliance's portability. Fig. 2 represents an enlarged view of the appliance shown in Fig. 1, but with the cover or lid removed, so that the arrangement of the cannon and the fuses may be viewed; and Fig. 3 is a section of this figure, taken upon the line F, but having the cover or lid in position. Figs. 4, 5, and 6 show certain parts

of the appliance—viz., the carrier-block and fuse and the cannon—separate to illustrate how the said appliance is made.

30 In describing the invention with reference to the said figures the appliance *a* is built up of a circular carrier-block *a*<sup>2</sup>, composed of wood or other suitable material and of about six or seven inches in diameter, within the upper face *a*<sup>3</sup> of which are let four explosion-tubes or small cannon *c*<sup>2</sup>, *c*<sup>3</sup>, *c*<sup>4</sup>, and *c*<sup>5</sup> and a ring-fuse *d* and straight-line branch fuses *d*<sup>2</sup>. The said explosion-tubes or small cannon form one rigid cruciform-shaped part, as they are all connected to a center part or junction *c*, and the whole of this may and is preferably made of gun-metal. The said tubes or cannon are adapted to lie within grooves *a*<sup>4</sup>, formed within the face *a*<sup>3</sup> of the carrier-block and their junction part *c*, to lie within a central cut-away part *a*<sup>5</sup>, also formed in the carrier's face, and each tube is provided with a touch-hole *c*<sup>6</sup>, by which they are fired. A ring-fuse *d* is arranged to lie within a similar-shaped sinking *f* within the carrier's face, so as to connect the touch-hole of each tube, and from it branch straight-line fuses *d*<sup>2</sup>, which also lie in branch sinkings *f*<sup>2</sup> in the said face. The said line-fuses *d*<sup>2</sup> communicate to the ring-fuse *d* from the boundary of the carrier-block, as their ends *d*<sup>3</sup> protrude from the said block for contact with any flame or high temperature; but the said ends are protected from damp and moisture by damp-proof caps and from damage by small open-wire-work covers *d*<sup>4</sup>. The explosion-tubes and the major portion of the fuses are closed up from view or interference by a cover or lid *e*, also preferably composed of wood, the same being fixed to the carrier-block by simple wood-screws, so that only the outer ends *d*<sup>3</sup> of the straight-line fuses *d*<sup>2</sup> are visible and these, it is preferably arranged, shall ignite at a temperature of 120° or by contact with flame.

35 The explosion-tubes are fully charged with gunpowder and wads are rammed in their mouths, so that a loud report will be given by them on being fired, which will give the necessary signal or alarm.

40 It will be obvious that by the aid of the ring-fuse the alarm device can be recognized



from any other firearm that may have been discharged, as the explosion-tubes are only successively fired thereby and a pause is given between each firing.

5 If necessary, the outer terminations of the straight-line fuses may extend from the alarm appliance to different parts of a building, and this would dispense with the use of a number of appliances.

10 The appliance in the case of burglars would be operated by an electrical sparking device, which would be sufficient to ignite the fuse, and to accomplish this it would only be necessary to carry to the said fuse electrical wires  
15 which are put in circuit with the opening of a door, window, or the like.

Having now described the invention of the said FRED WILL BILL, what I claim, and desire to secure by Letters Patent, is—

20 1. In a fire and burglar alarm the combination of a carrier-block forming a mounting to the essential parts of the appliance a number of explosion-tubes or small cannon adapted to be carried rigidly within or upon the  
25 said block and which have their touch-holes of an ordinary construction and a ring-fuse carried by the said carrier-block and which is adapted to connect the touch-holes of the respective cannon and which has extensions  
30 or branch fuses which extend beyond the boundary of the carrier-block to form ignition-tips in communication therewith substantially as set forth.

2. In combination in a fire and burglar alarm a carrier-block the one face of which 35 is formed with channels and sinkings and which is closed by a cover or lid, a number of small explosion-tubes or cannon adapted to lie within the said channels or sinkings in the said carrier-block so that their open ends 40 are outward and an ignition-fuse comprehending a ring part and radiating branches the former part of which is adapted to surround and connect the touch-holes of the cannon, and the latter parts of which are adapted 45 to protrude from the boundary of the carrier-block and to communicate ignition therefrom to the ring-fuse, substantially as set forth.

3. In a fire or burglar alarm the combination with a number of radially-arranged explosion tubes or small cannon of a ring-fuse 50 connecting their touch-holes in common and having a number of ignition-terminals extended in different directions and provided with damp-proof caps, substantially as described and set forth. 55

In testimony whereof I have hereunto affixed my hand and seal this 20th day of August, 1898.

JAMES L. NORRIS, [L. s.]  
*Administrator of the estate of Fred Will Bill, deceased.*

In presence of—  
GEO. W. REA,  
VINTON COOMBS.