

2 Sheets—Sheet 1.

Patented Apr. 4, 1893.

Fig. 1.

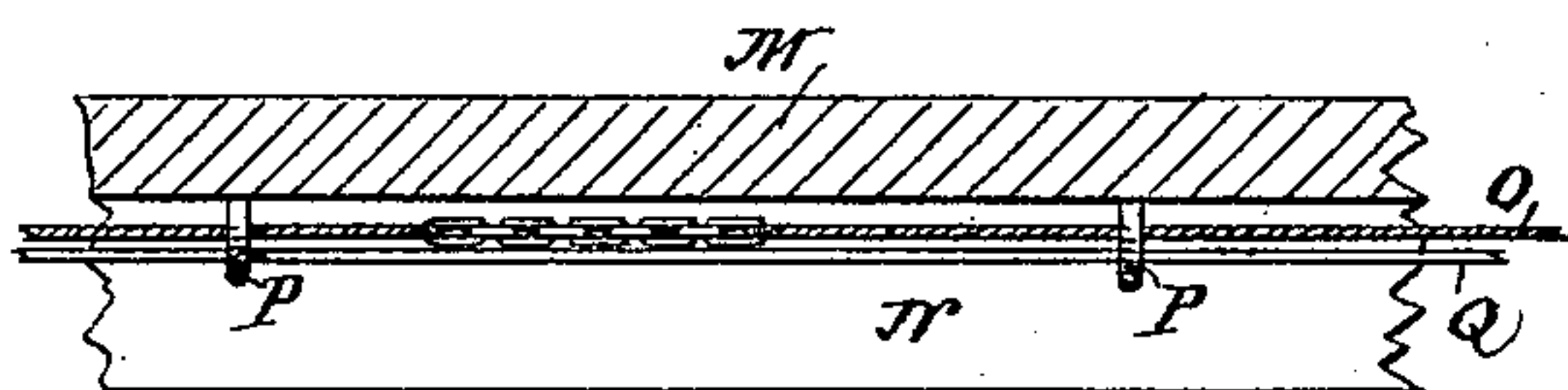
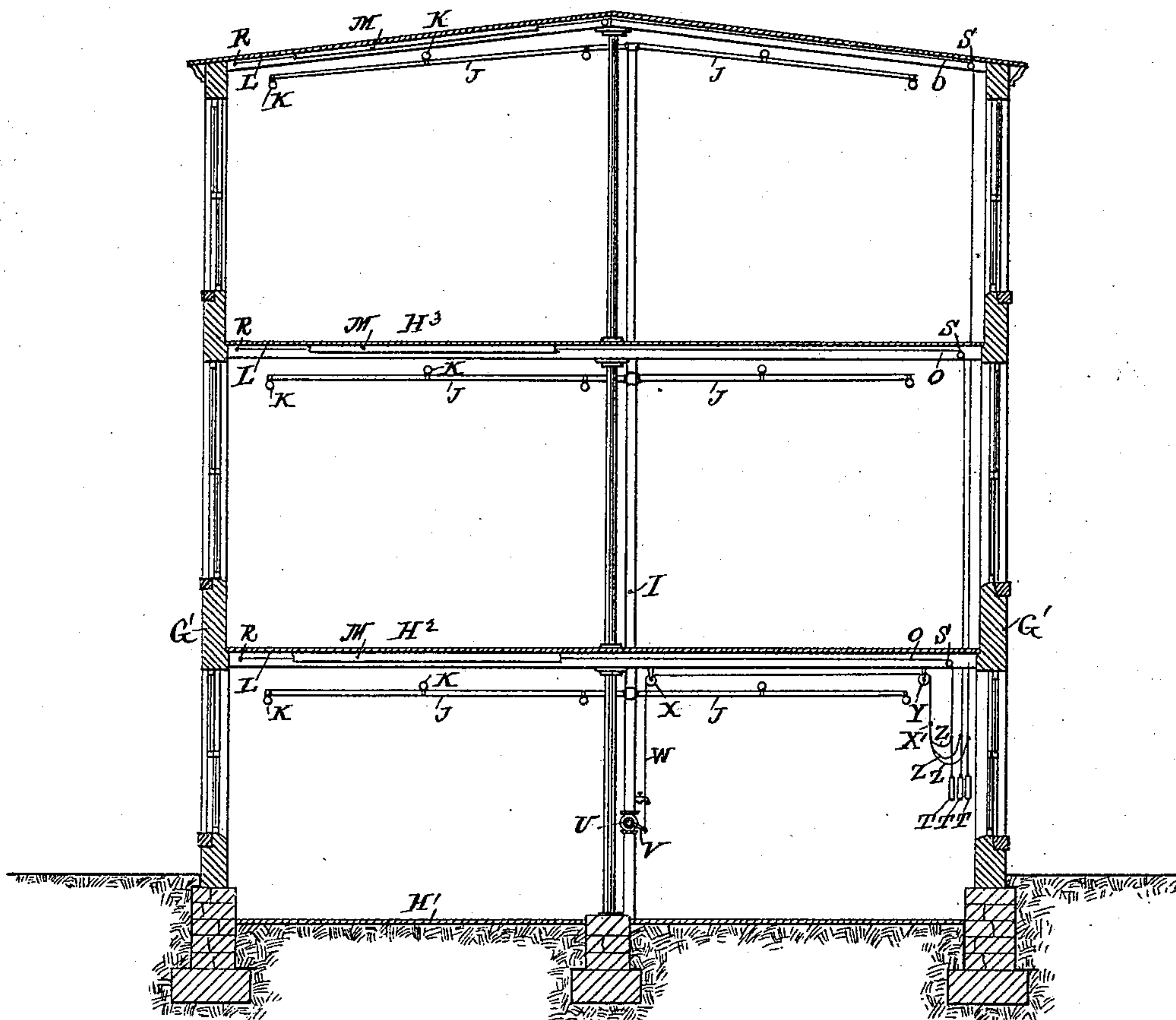


Fig. 2.

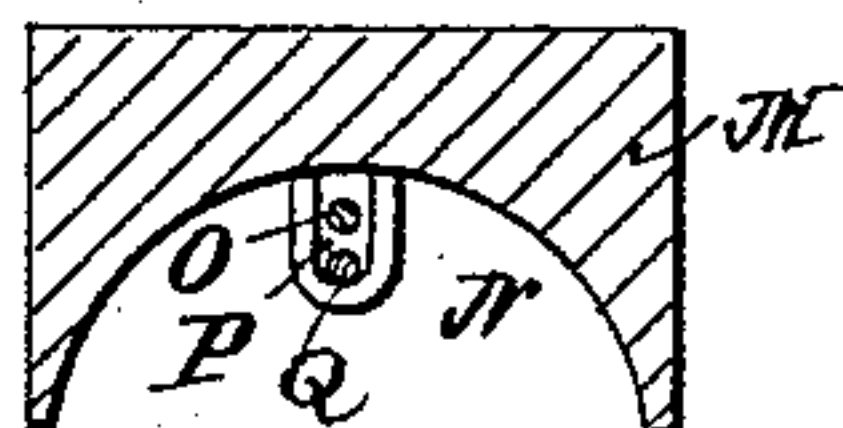


Fig. 3.

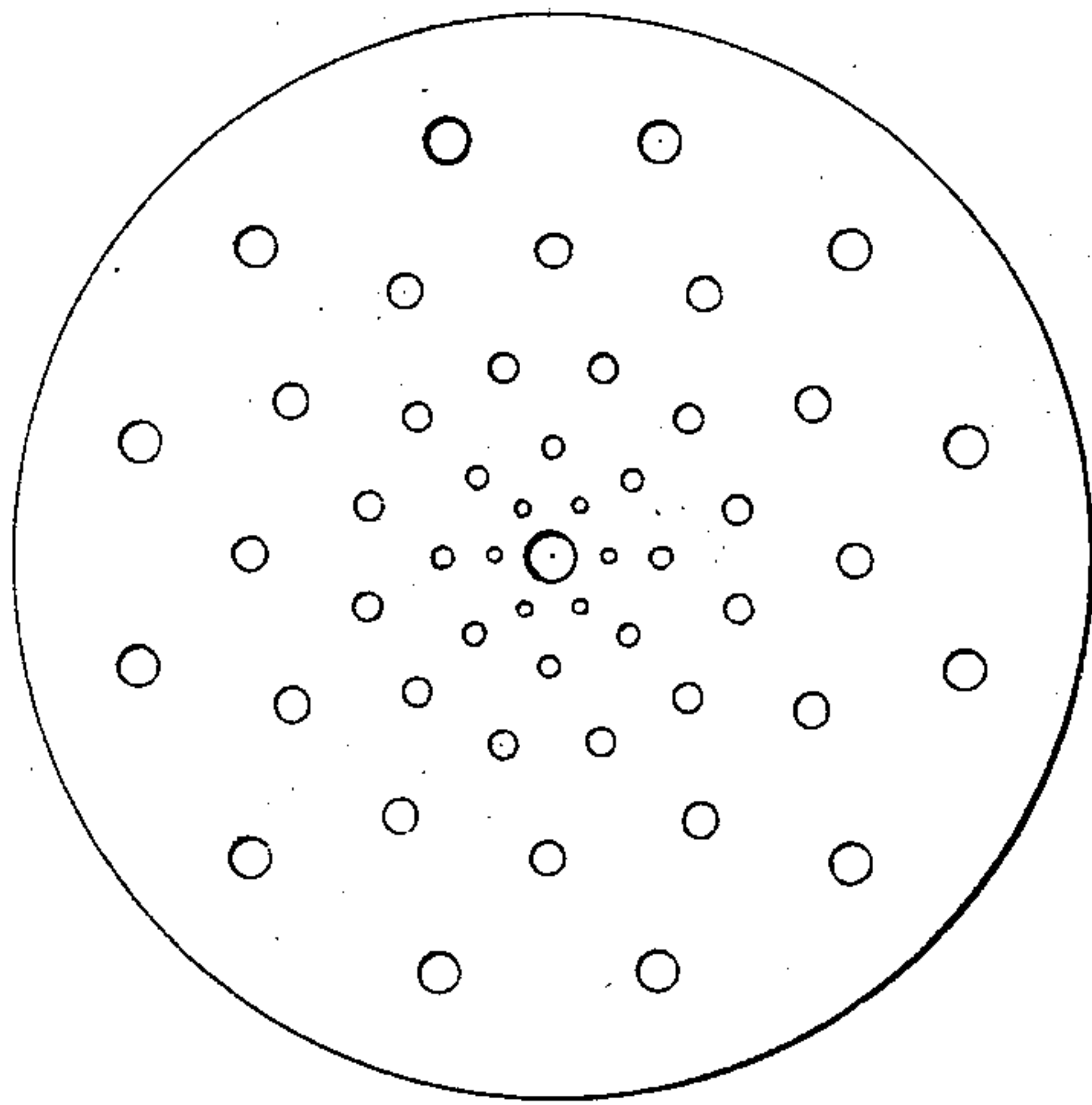
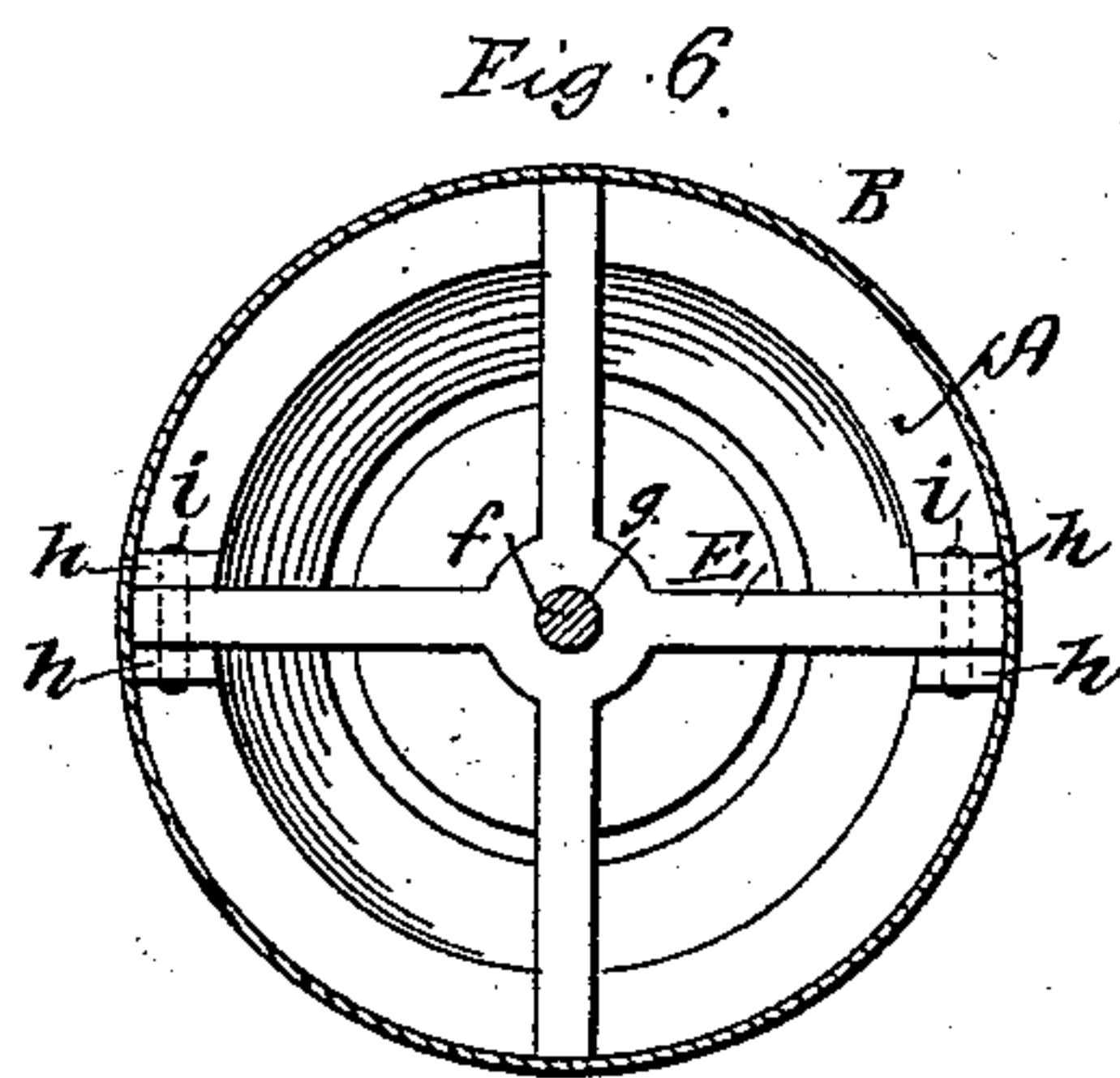
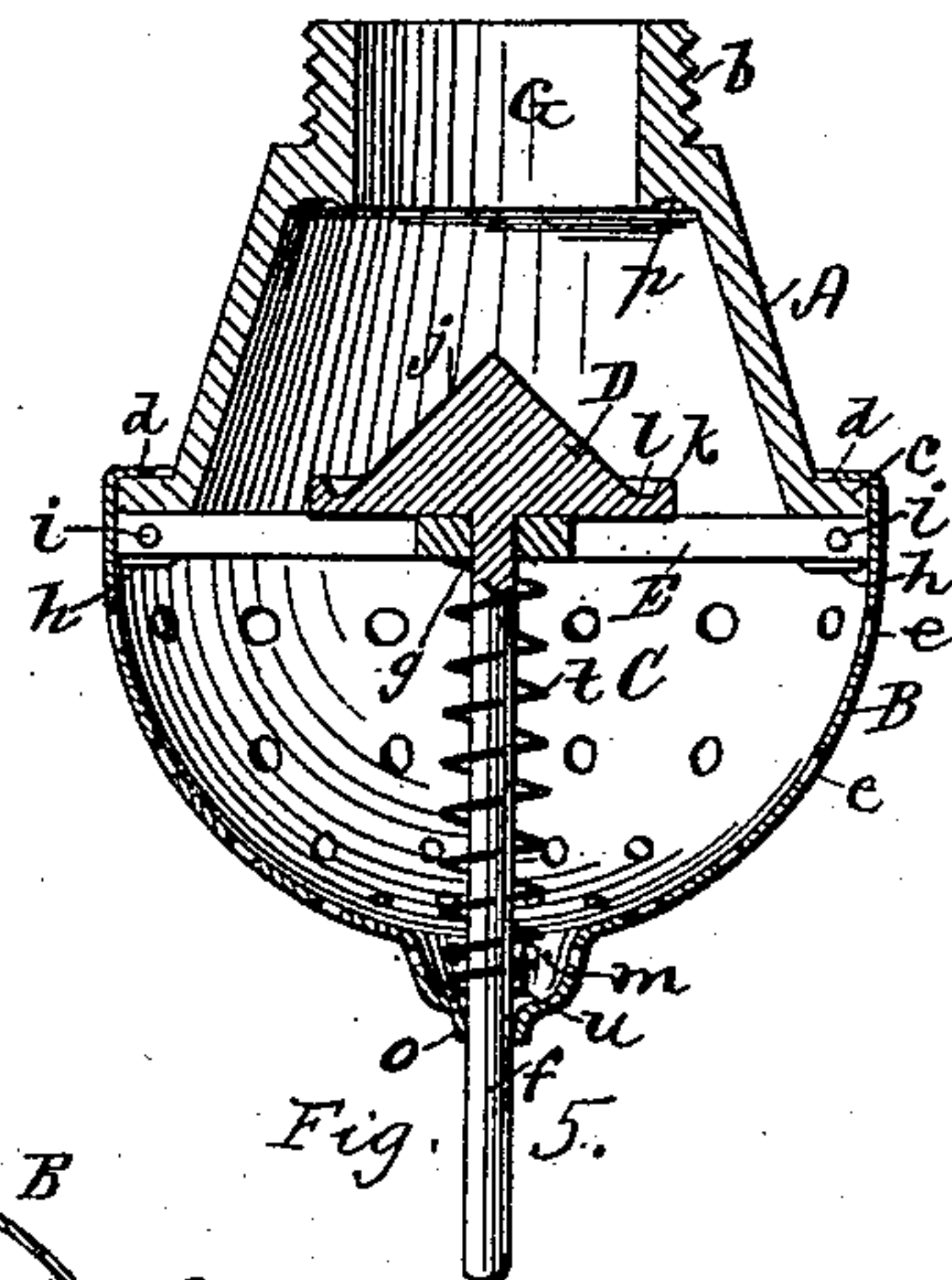
Frederick P. Abbott
John S. Lynch.

Eason L. Hecum

S. Scholfield

2 Sheets—Sheet 2.

Patented Apr. 4, 1893.



Inventor
Eason L. Slocum
By his Attorney
S. Scholfield.

UNITED STATES PATENT OFFICE.

EASON L. SLOCUM, OF PAWTUCKET, RHODE ISLAND.

AUTOMATIC FIRE-EXTINGUISHING SPRINKLER.

SPECIFICATION forming part of Letters Patent No. 494,604, dated April 4, 1893.

Application filed October 5, 1891. Serial No. 407,750. (No model.)

To all whom it may concern:

Be it known that I, EASON L. SLOCUM, a citizen of the United States, residing at Pawtucket, in the State of Rhode Island, have invented a new and useful Improvement in Automatic Fire - Extinguishing Sprinklers, of which the following is a specification.

My invention consists in the improved construction of the sprinkler, and in the means for operating the same in case of fire, as hereinafter fully set forth.

Figure 1, is a sectional view representing the several rooms of a building provided with my improvement. Fig. 2, represents an under side view of the protecting cleat for the fusible or combustible cable. Fig. 3, represents a transverse section of the same. Fig. 4, represents an axial section of my improved sprinkler, showing the valve in its closed position. Fig. 5, represents the same with the valve in its opened position. Fig. 6, represents a transverse section taken in the line x, x , of Fig. 4. Fig. 7, represents a face view of the perforated plate which is to be struck up to form the cap of the sprinkler.

In the accompanying drawings, A represents the cast metal attaching base of the sprinkler, which is provided with a screw thread b , adapted for engagement with the fittings of the water supply pipe, and with the rim c , adapted for the attachment of the perforated sheet metal cap B, the edge d of which is closed over the rim c , thus forming a distributing chamber C, from which the water will pass outward through the openings e, e , of the cap. The valve D is provided with a stem f , which passes loosely through the perforation g in the guide rest E, which may be secured to the base A by means of the ears h, h , and pin i or otherwise. The valve D is provided with the conical face j , and the annular ridge k , thus forming an annular recess l . A recess m , is also formed in the perforated cap B, to receive any gravel or scales brought from the supplying pipes, by the rapid flow of water therein, and at the bottom of the recess m is formed the short neck o , loosely fitting the stem f of the valve D, the said valve being held to its seat p as shown in Fig. 1, by means of the fusible solder q at the neck o .

Over the perforated cap B is placed the pro-

tecting sheet metal cover F, which is perforated at r to receive the neck o of the cap B, and is frictionally held upon the cap B, by means of its close fitting edge s .

When the sprinkler is attached to the branch pipes in a building, the water will be prevented from entering the chamber C, by means of the valve D, which is firmly held to its seat p by the fusible solder q , and the sediment in the water in the chamber G will settle in the annular recess l , and upon the occurrence of a fire in the vicinity of the sprinkler head, the heat will first melt the fusible solder q , thus loosening the valve so that the head of water in the chamber G, will force the valve downward to its position upon the guide rest E, as shown in Fig. 5. Upon the stem f is placed the compression spiral spring t , which presses against the pin u , inserted in the stem f , the said spring serving to assist in raising the valve from its seat, in case of low pressure in the pipe, and also serving to hold the valve in its fully opened condition, against the guide rest E, as shown in Fig. 5, when the sprinkler is in a reversed position.

In Fig. 1, G' represents the walls, and H^1, H^2, H^3 , the floors of a building. I is the stand pipe, through which water is conducted to the several floors, and J, J, are branch pipes, to which are connected the several sprinklers K, which may be directed either downward, upward, or laterally, as preferred. To the ceiling L, in the vicinity of the branch pipes J, are placed the protecting strips or cleats M in the downwardly turned groove N of which is placed the fusible or combustible cable O, the said cable being held within the groove N, by means of the eyes P, and the cable O being still further protected, from accident by means of the wire Q, arranged parallel with the cable. The cables O, O, O, are each fastened at the end R, and passing over a pulley S, are provided at their lower ends with a weight T, the said weights and downwardly extending cables being preferably cased up, so as to be free from liability of accident or of being tampered with. The valve U in the stand pipe I, is operated by means of the lever V, to the outer end of which is attached the cord W, the said cord passing from the lever V, upward, over the pulley X, thence horizontally over the pulley Y, and

thence downward to an eye X', at the end of the cord W, from which slack connection is made to each of the several cables O, O, O, by means of the cords Z, Z, Z.

5 It is evident that upon the occurrence of a fire in either of the rooms of the building, and the consequent separation of one of the several cables, the weight attached to the end of the said cable will drop, thus causing the
10 opening of the valve U to let the water into the pipes; and then, as fast as the valve stems are unsoldered, the water will escape from the branch pipes onto the fire.

It is also evident, with my improvements
15 that, upon the accidental parting of the cable whereby the water will be let into the branch pipes, no damage will accrue by the overflow of water onto the goods in the building while the valves of the sprinklers remain intact;
20 and that any accidental injury to either of the sprinklers will not result in damage, as long as the cables are not separated so as to let the water into the branch pipes; but upon the occurrence of a fire, the cables will be
25 parted, and the valves opened as required.

The object of making a slack connection between the several cables, and the end of the cord W, is to allow the cables to expand or contract, without danger of opening the
30 valve U.

I claim as my invention—

1. The combination with the spreading base A, the perforated cap B, and the guide rest E, of the valve D provided with the stem *f*,
35 soldered to the cap B, and the cover F perfo-

rated to receive the neck of the cap B, substantially as described.

2. The combination with the stand pipe, provided with the inlet valve, the valve operating lever and cord, and the branch pipe 40 provided with the sprinklers having a valve secured to its seat by means of fusible solder, of the fusible or combustible cable, provided with a weight and a slack fastening to the cord for opening the valve in the stand pipe, 45 and the protecting strip for the cable, substantially as described.

3. The combination with the stand pipe, provided with the inlet valve, the valve operating lever and cord, and the branch pipe 50 provided with the sprinklers having a valve secured to its seat by means of fusible solder, of the fusible or combustible cable provided with a weight and a slack fastening to the cord for opening the valve in the stand pipe, 55 the protecting strip for the cable, and the protecting wire, substantially as described.

4. The combination with the spreading base A, the guide rest E, and the perforated cap B, provided with the neck *o*, of the valve D, pro- 60 vided with the stem *f* soldered to the cap B, the spring *t* adapted to move the valve from its seat, and the cover F provided with a perforation *r* adapted to receive the neck *o*, substantially as described.

EASON L. SLOCUM.

Witnesses:

SOCRATES SCHOLFIELD,
DANIEL B. CLAPP.