

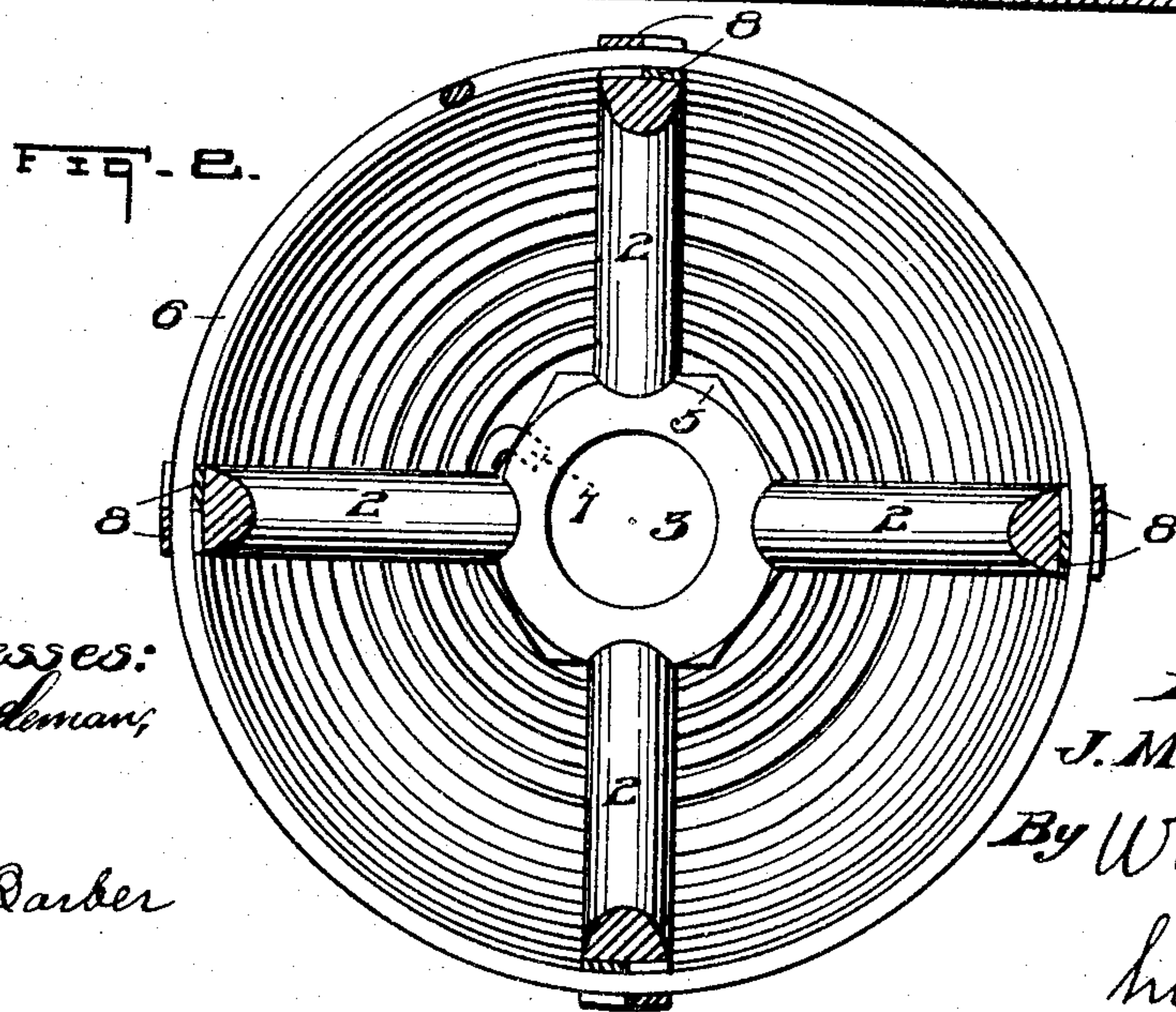
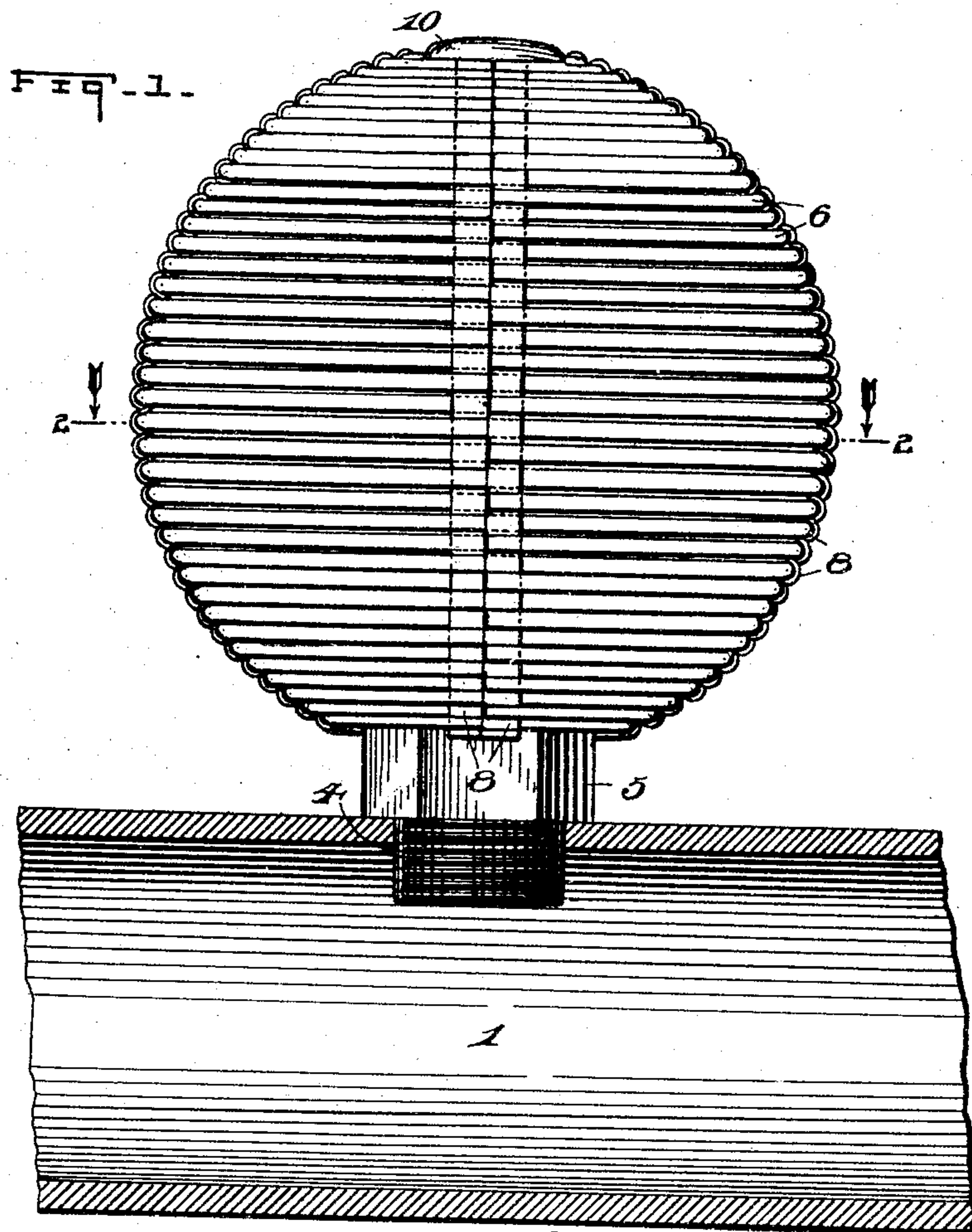
No. 765,334.

PATENTED JULY 19, 1904.

J. M. DAVIDSON.  
STRAINER FOR FILTERS.  
APPLICATION FILED NOV. 6, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 3.

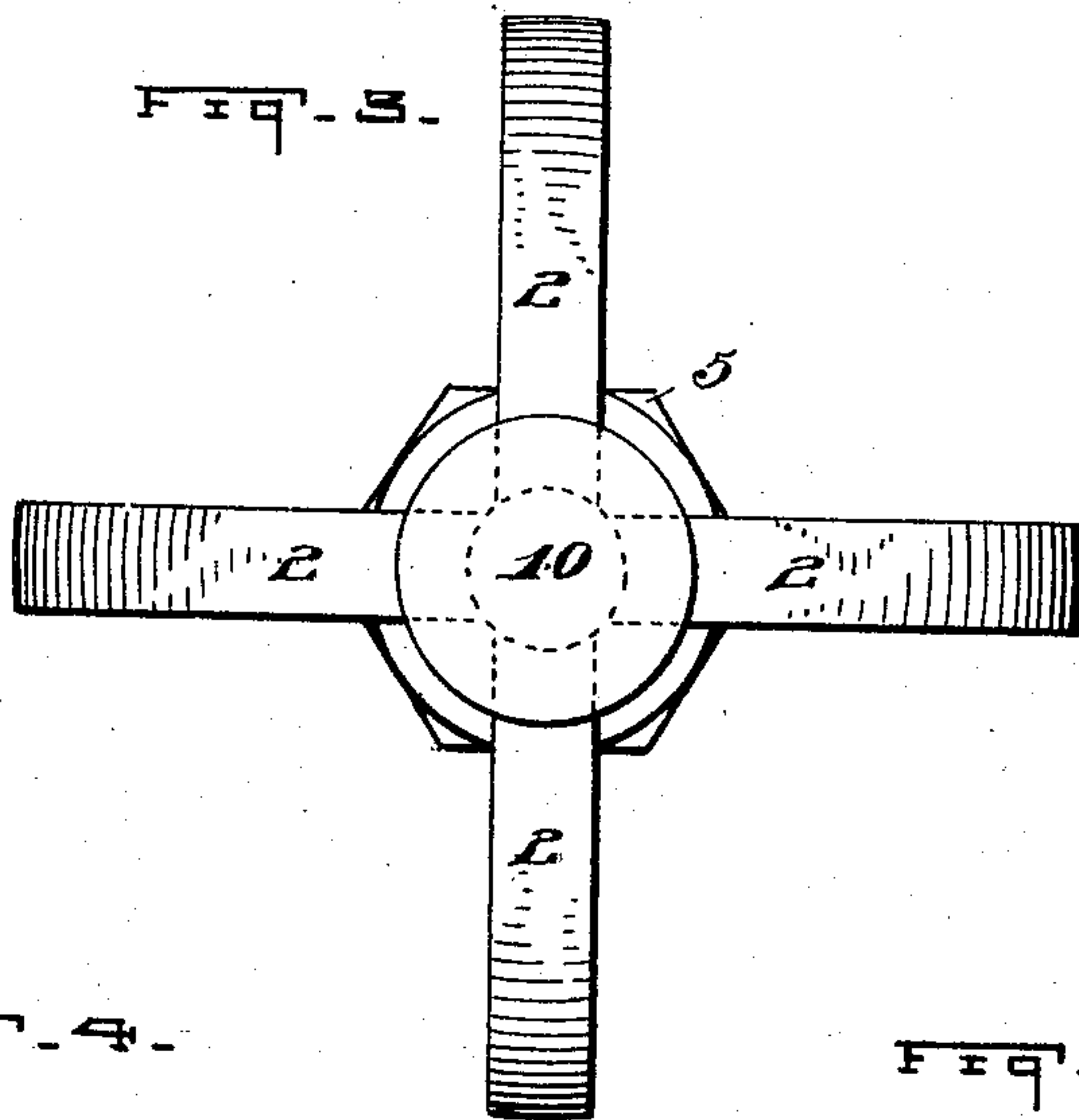


Fig. 4.

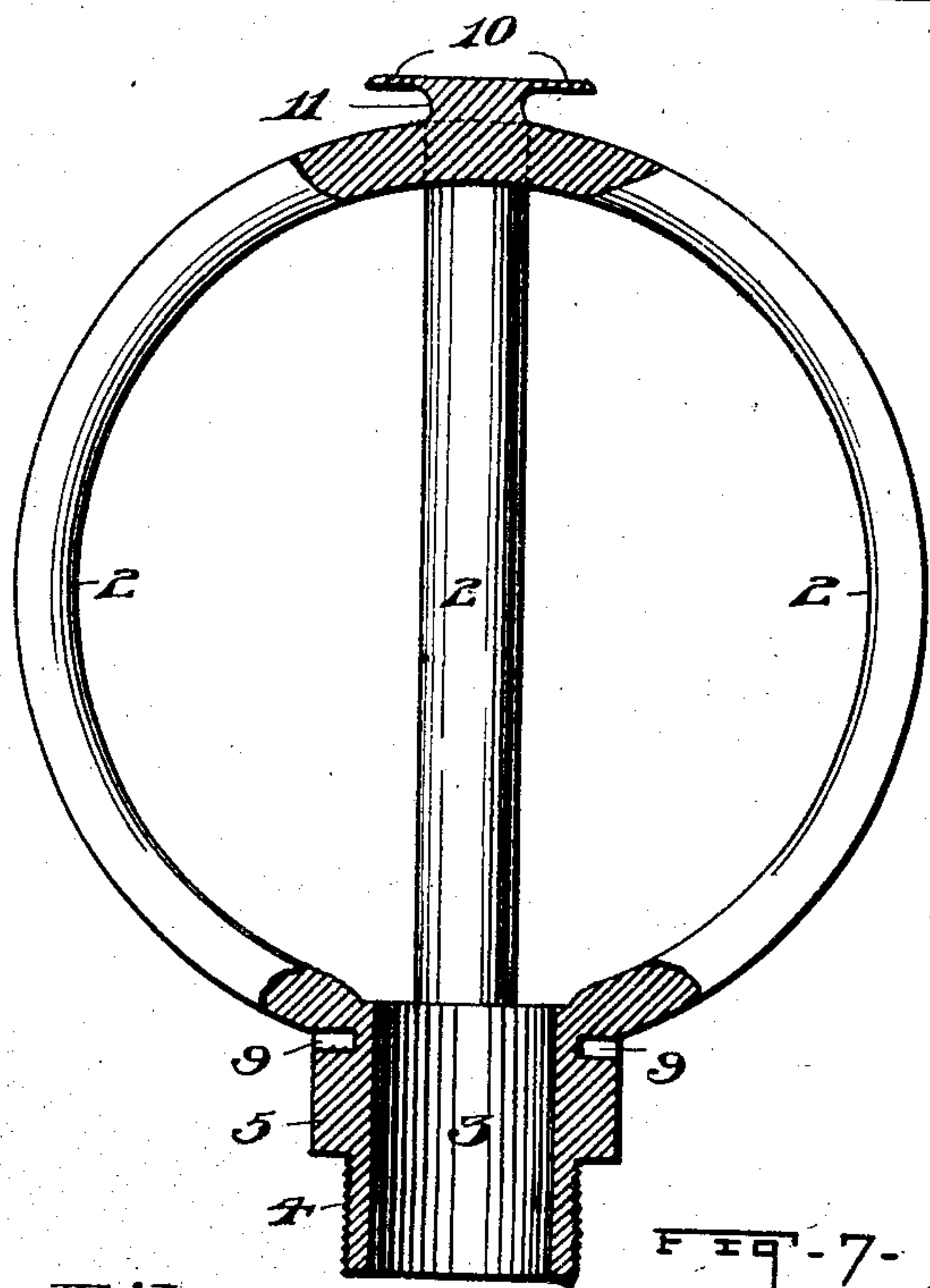


Fig. 5.

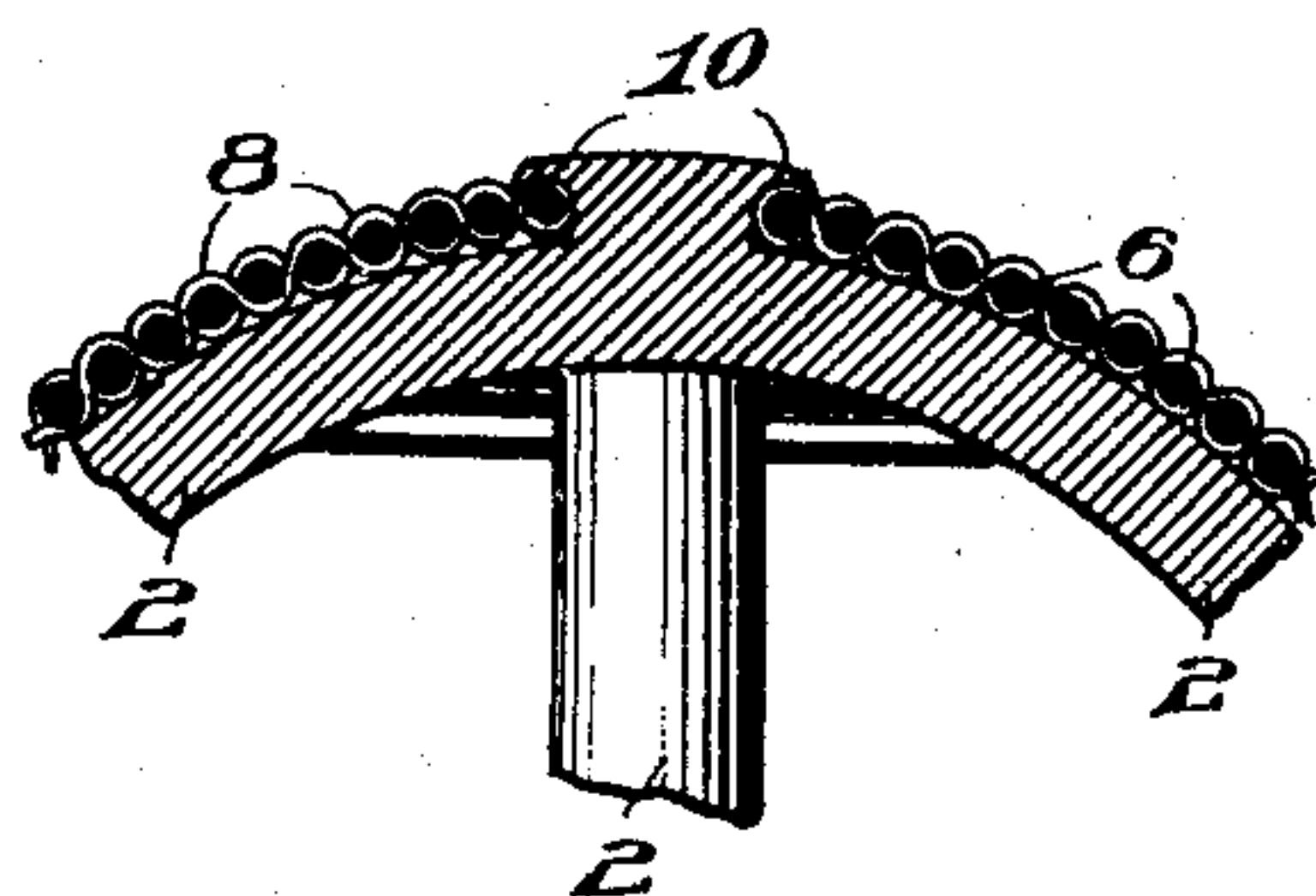


Fig. 6.

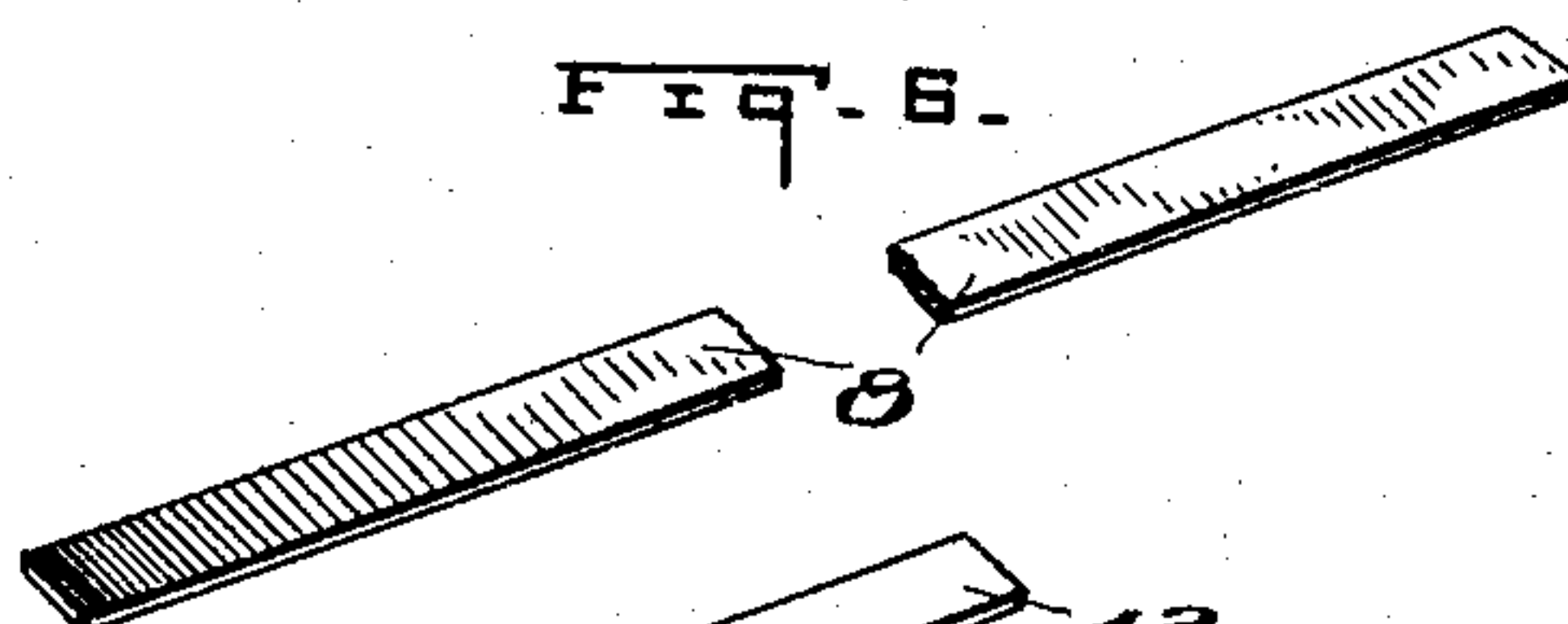
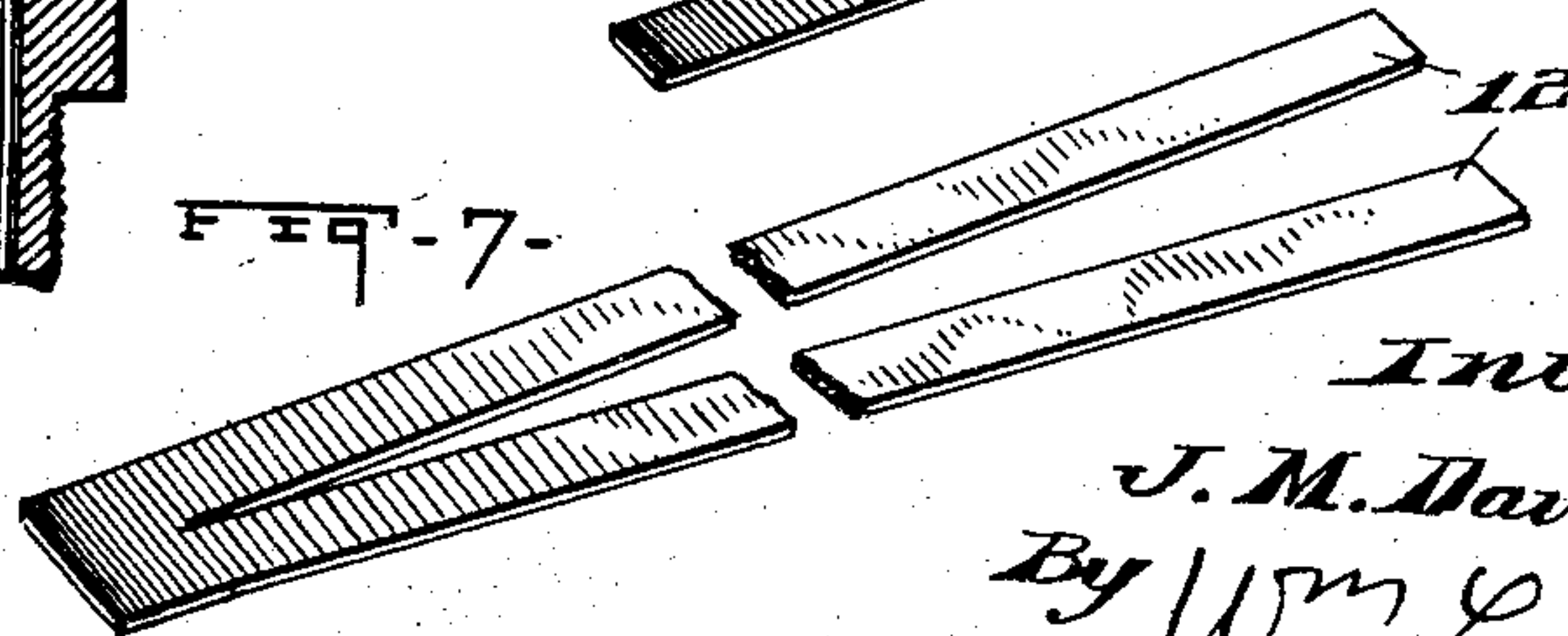


Fig. 7.



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# UNITED STATES PATENT OFFICE.

JOHN M. DAVIDSON, OF PITTSBURG, PENNSYLVANIA.

## STRAINER FOR FILTERS.

SPECIFICATION forming part of Letters Patent No. 765,334, dated July 19, 1904.

Application filed November 6, 1903. Serial No. 180,002. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN M. DAVIDSON, a citizen of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented or discovered new and useful Improvements in Strainers for Filters, of which the following is a specification.

My invention relates to filter-strainers. Large filters are built with an open top and three or four feet of sand or quartz in the bottom. During filtration the matter suspended in the water accumulates on top of the filter-bed. The weight of the sand and the water causes the bed to pack very solid, and a great many devices have been invented for loosening the bed and washing out the foreign matter caught by the bed. In order to properly clean the bed, it is necessary that every portion of the bed from top to bottom be thoroughly washed. This has been impossible with such devices as I am acquainted with. Some strainers throw the washing-water upward only, others sidewise only. Some are horizontal cylinders, which cannot wash the bed at all at the ends of the strainer. Some are made of pipes with saw slits or kerfs in them, and therefore throw streams also directly upward or sidewise. I have provided a wire-wound globular or similarly-shaped strainer, the water being strained between the rounds or parallel members of the wire, whereby the water will be thrown in every direction.

On the drawings, Figure 1 is an elevation of my strainer screwed into a pipe, shown in longitudinal section; Fig. 2, a section on the line 2 2 of Fig. 1 looking in the direction of the arrow, the pipe being omitted; Fig. 3, a top plan of the frame on which I secure the strainer-wire; Fig. 4, a vertical section of the frame, the section extending along a portion only of the ribs thereof; Fig. 5, a vertical section of a fragment of the strainer, showing the method by which the wire is wound and secured and the rounds or members are spaced; Fig. 6, a broken perspective of one of the wire-securing spacing-strips, and Fig. 7 a perspective of a modified form of strip.

Referring to the drawings which form a part

of this specification, 1 designates a pipe into which I screw the lower end of my strainer, as shown in Fig. 1. The strainer-head consists, first, of a metal frame all cast in a single piece and composed preferably of brass, though other metal might be used; second, of a wire wound spirally about the frame, and, third, of strips of brass or other metal interlaced between the rounds of the spiral to space the rounds and hold the wire in place on the frame. The frame has four or any desired number of arms or ribs 2, which are shown as semicircles, though they may be somewhat varied therefrom, it being, however, essential that the ribs be so shaped that when the wire is wound thereon the water passing out from the strainer will be thrown in every direction. The ribs all rise from the hollow pipe-like portion or member 3, which has the screw-threads 4 and the angular portion 5 for the application of a wrench, by which the member 3 may be screwed into or out of the pipe 1.

A wire 6, of suitable size, shape, and material, has one end secured to the member 3 in any manner, as by inserting the same in a hole therein, as shown at 7 on Fig. 2. The wire 6 is then wound spirally around the ribs 2 from bottom to top, and during the winding the thin brass or other metallic strips 8 or 12, which have their lower ends secured in the member 3, as by insertion in the holes 9, are interlaced between the rounds or members of the spiral. I place two strips side by side on each rib, as shown on Figs. 1 and 2, each strip passing under one round and over the next, and so on from bottom to top. The two strips are so interlaced with the rounds of the wire that each passes above the rounds under which the other passes and under the rounds above which the other passes, as shown on Figs. 1 and 2. The upper ends of the wire and the strips pass beneath the annular flange 10, which is supported on a post or neck 11 on the top portion of the frame at the junction of the ribs. The flange is bent or hammered down over the upper round or rounds of the wire, as shown in Fig. 5, whereby the wire and the strips are securely held in place. Of course other means may be devised to hold



the wire and strips in place. The strips will be of the proper thickness to space the rounds of the wire properly to prevent the passage of sand into the interior of the strainer-head.

5 The strips must be of such strength and be so secured at their ends that when the water passes upward under pressure to wash the filter-bed the wire and strips will not be disturbed in any manner.

10 The strips 12 (shown in Fig. 7) may be used instead of the strips 8. In this form the strips are left connected together at one end, this end being inserted in a hole 9. The strips 12 will be more tightly held together than the  
15 separate strips 8.

While I have shown the specific form of device and of its parts which I prefer, I do not desire to be limited to the exact construction shown, as the size, shape, and number of parts  
20 may be changed, while still retaining the spirit of my invention.

Having described my invention, I claim—

1. A strainer-head having a hollow member, a series of outwardly-curved ribs secured  
25 thereto and rising therefrom, a wire wound spirally thereon, and strips interlaced with the rounds of the wire to space the rounds of wire and hold the wire in place.

2. A strainer-head having a hollow member, a series of ribs rising therefrom, each rib being curved so as to extend, at first outwardly from said member and to finally extend inwardly to a common upper connection, a wire wound spirally on said ribs, and strips interlaced with the rounds of the wire to space  
35 the rounds of the wire and hold the wire in place.

3. A strainer-head having a hollow member, a series of ribs rising therefrom, each rib being curved so as to extend at first outwardly from said member and to finally extend inwardly to a common upper connection, and spaced wire members secured to said head.  
40

4. A convex strainer-head, having a frame, a wire wound spirally thereon and means for spacing the rounds of the wire and restraining them from outward movement, the said strainer-head being convex in a direction transverse of the windings of the wire.  
45

Signed at Pittsburg this 2d day of November, 1903.  
50

JOHN M. DAVIDSON.

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