

No. 713,077.

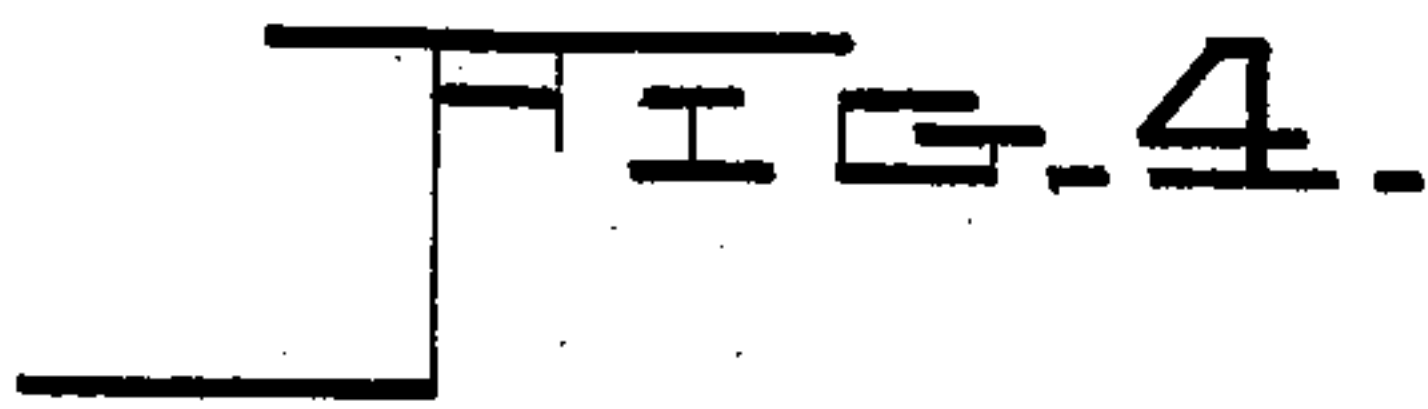
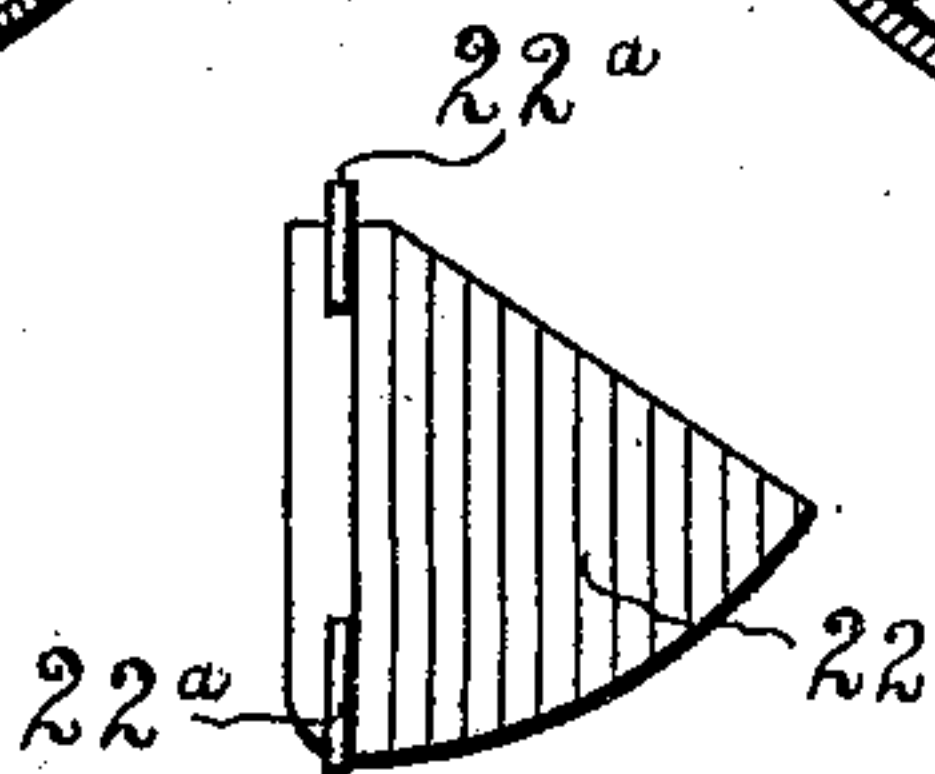
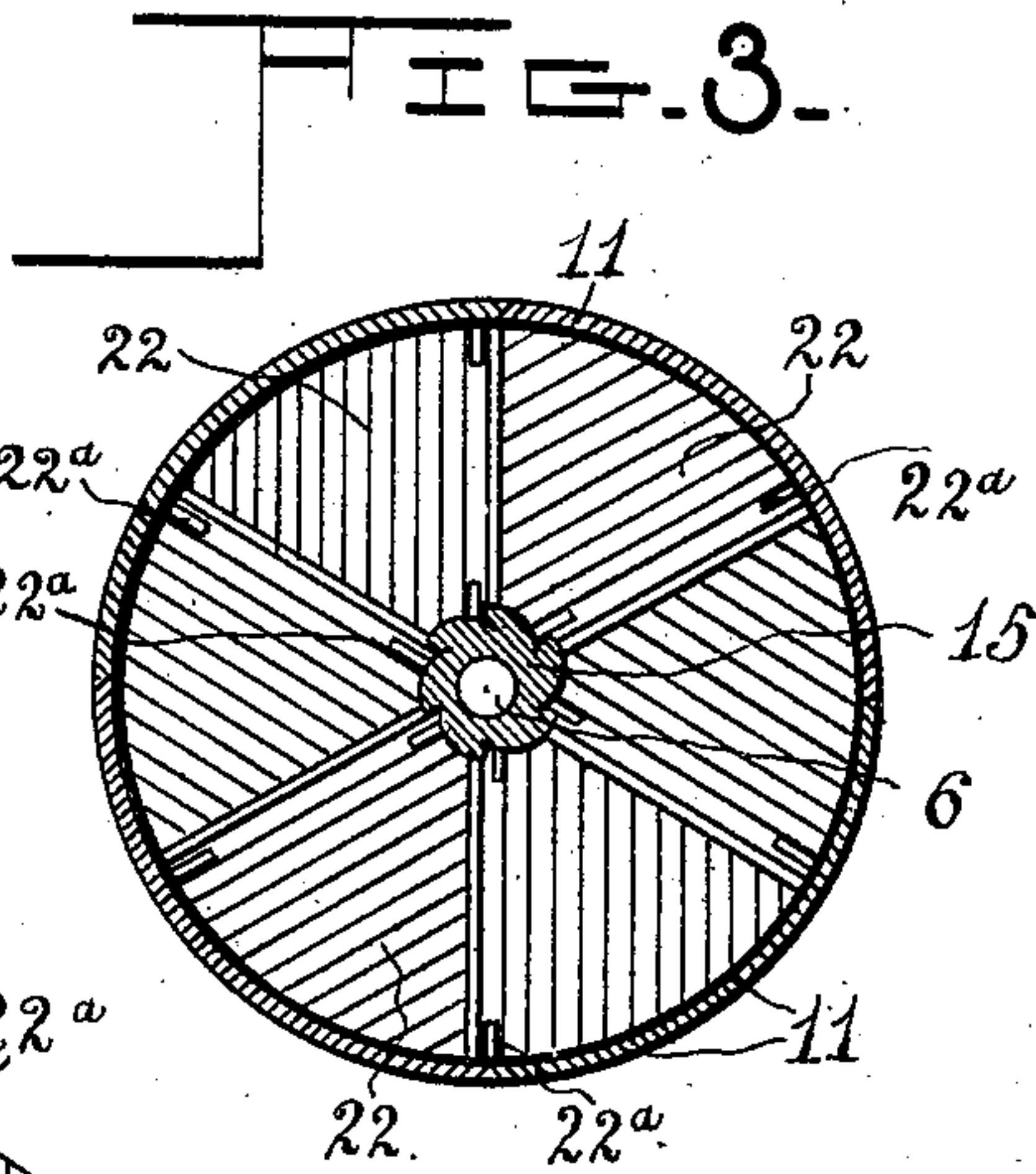
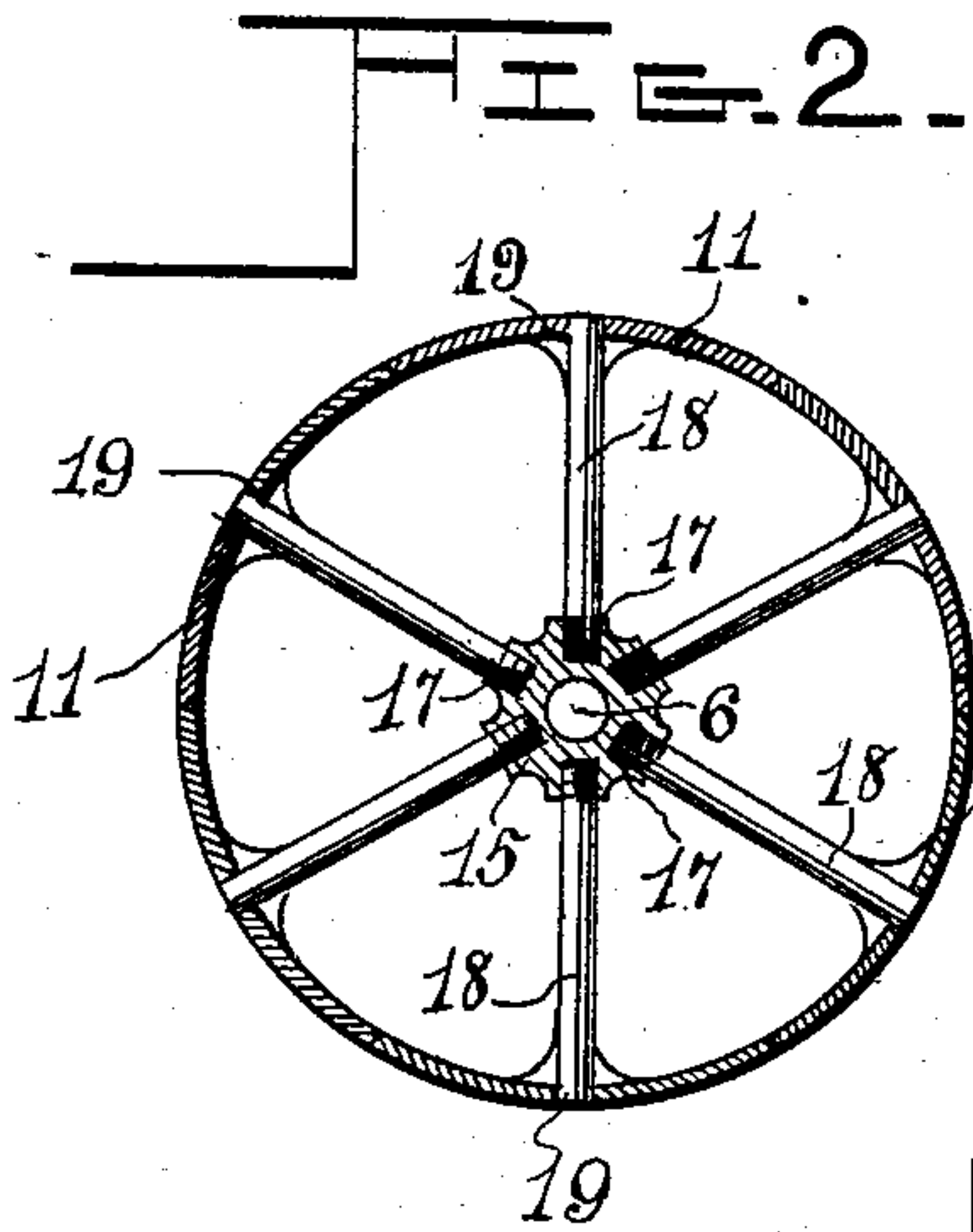
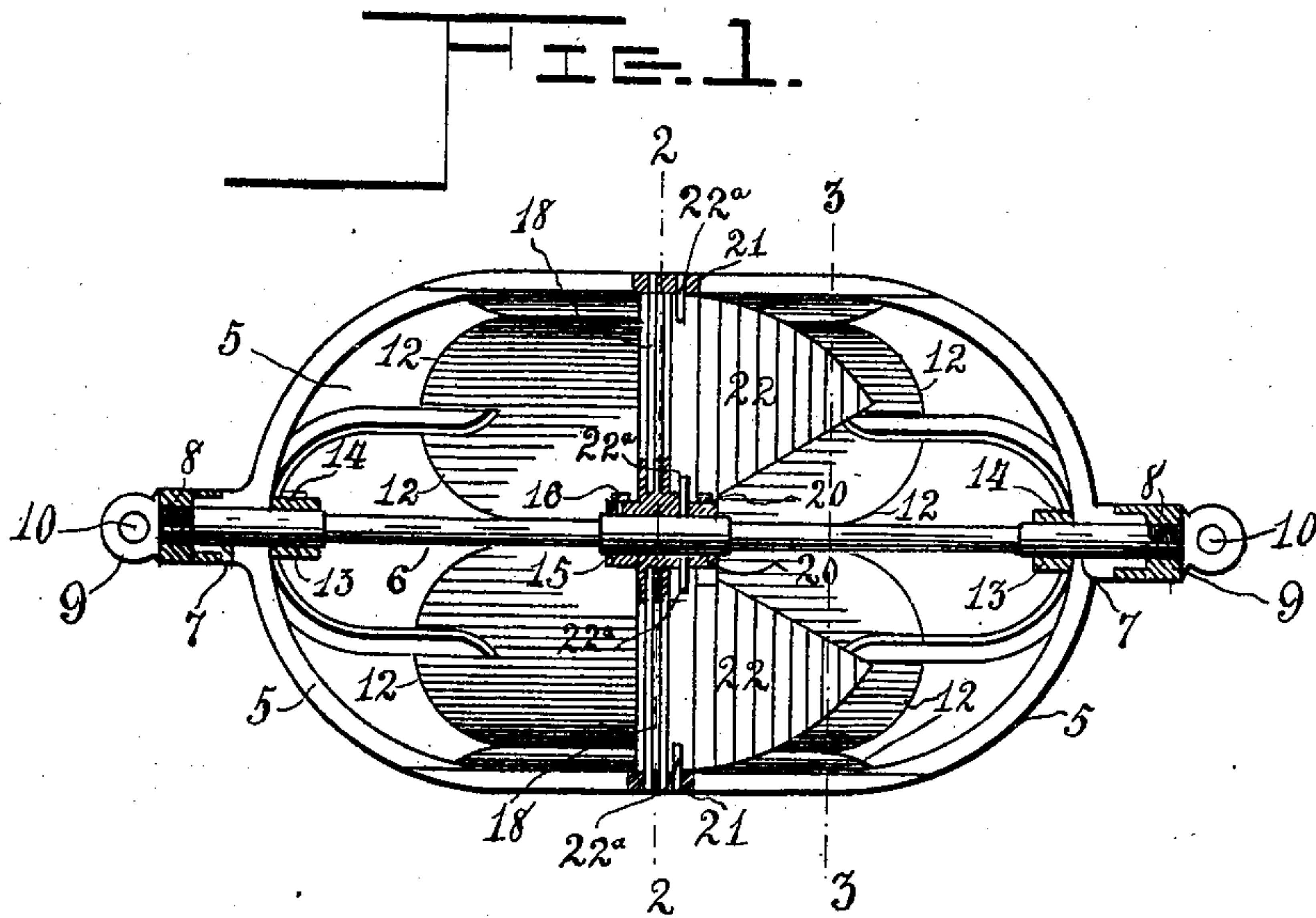
Patented Nov. 11, 1902.

L. DUBOIS.

SEWER CLEANER.

(Application filed Apr. 14, 1902.)

(No Model.)



Witnesses :

Don't Indulge
Her Sages

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UNITED STATES PATENT OFFICE.

LOUIS DUBOIS, OF MONTREAL, CANADA.

SEWER-CLEANER.

SPECIFICATION forming part of Letters Patent No. 713,077, dated November 11, 1902.

Application filed April 14, 1902. Serial No. 102,703. (No model.)

To all whom it may concern:

Be it known that I, LOUIS DUBOIS, a subject of the King of Great Britain, residing in the city and district of Montreal, Province of Quebec, Canada, have invented certain new and useful Improvements in Sewer-Cleaners; and I do hereby declare that the following is a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an apparatus for cleaning sewers; and the object in view is to provide a device which may be drawn through a sewer from end to end, the same being provided with blades or plates adapted to scrape the wall of the sewer and also equipped with valves which serve to collect and remove the sediment and accumulation of filth which are not ordinarily carried away by the flow of the water.

With these ends in view my invention consists of the novel construction and arrangement of parts, which will be hereinafter described and claimed.

In the drawings hereto annexed, forming a part of this specification, Figure 1 is a longitudinal axial section of a cleaning apparatus embodying my invention. Fig. 2 is a transverse section on the line 2-2 of Fig. 1. Fig. 3 is another transverse section taken in the plane of the line 3-3 on Fig. 1 and showing the valves in their closed positions. Fig. 4 is a detached detail view of one of the valves.

The same numerals of reference denote like parts in all the figures of the drawings.

The frame of the cleaner is elliptical in longitudinal section and circular in cross-section, and said frame consists of the radially and longitudinally disposed trusses or ribs 5, of which six are shown in the drawings, although any desired number, more or less, may be employed.

6 indicates the axial draft-rod, to which the trusses or ribs are united or attached, as clearly shown by Fig. 1. The end portions of the trusses are curved inwardly on converging lines, so that they will meet one with the other and provide collars 7, which are fitted on the end portions of the draft-rod, and these collars are held in place by means of the rings 8, which are screw-threaded to receive the

caps 9, which are provided with the draft-eyes 10, to which may be fastened the draft-cable that is adapted to draw the cleaner through the sewer-pipe. The trusses or ribs are tapered laterally and are thickened vertically toward their ends in order to add strength and rigidity to the structure. These trusses are provided at points intermediate of their length with the segmental blades or plates 11, which are arranged to have abutting engagement about the middle of the skeleton frame that is formed by the series of trusses or ribs, such abutting engagement of the plates or blades being clearly shown by Fig. 2 of the drawings. The outer convex edges of the curved portions of the trusses or ribs are beveled or sharpened, so as to form a plurality of cutting edges at each end of the skeleton frame, and each plate or blade 11 of the series is provided with the curved end edges 12, that are also beveled or sharpened to form the cutting edges, whereby the series of plates or blades and the series of truss bars or ribs may scrape the walls of the sewer, so as to remove any sediment or filth that may lodge upon the inner surface of the sewer.

It will be noted that the collars 7 formed by the union of the converging ends of the plurality of truss bars or ribs are engaged with the end portions of the draft-rod and by the caps which are screwed on the draft-rod; but to contribute to the stability and strength of the structure I have also provided the collars 13, which are held by the clamping-screws 14 on the draft-rod, said collars 13 engaging with the inner portion of the collars 7 of the skeleton frame and being thereby disposed within the limits of said skeleton frame.

15 designates a hub which is fitted on the middle portion of the draft-rod and is secured firmly thereto by the set-screw 16. This hub is provided with a series of radial screw-threaded sockets 17, adapted to receive the inner threaded ends of the series of radial braces 18, the outer ends of which are also screw-threaded, so that they may be screwed into tapped openings 19, which are provided in the blades or scrapers 11 of the skeleton frame. This hub is extended in front of the radial brace-bars, and it is provided with bearings or sockets 20, which are in aline-

ment with similar bearings or sockets 21, that are provided in the scrapers or plates 11. A single series of sectoral or triangular valves 22 is provided within the skeleton frame 6 formed by the truss-bars and the scraper-blades, each valve having at opposite ends the pintles 22^a, which are adapted to fit into the radial sockets that are provided in the hub 15 and the scraper-blades. The aligned sockets in the hub and the scraper-blades are so arranged that when the valves are mounted therein the pivoted edges of said valves are directly in front of the radial braces 18, one of said valves being provided for each brace, as shown by the drawings. The valves are adapted to swing on the radial pivots, and when closed their free edges lie in contact with adjacent brace-bars.

When the device is in service, by drawing it through a sewer the cutting edges of the blades and the truss-bars are adapted to scrape the walls of the sewer, and the valves are made to close together in the position shown by Fig. 3, so as to gather the sediment, filth, &c., whereby it may be brought within the reach of a person who is prepared to remove it. By drawing the cleaner backward through the sewer the valve will open automatically, and thereby prevent clogging of the cleaner in the sewer.

I claim—

1. An apparatus for cleaning sewers comprising a skeleton frame consisting of longitudinal ribs lying in a radial plane and connected together at their ends by suitable hubs, a central draft-rod connecting said hubs, and a series of flattened blades at the central portion of the ribs, said blades being of arcuate section and combining at their

edges to form a tube of circular section externally, the forward edges of said blades being set at an angle to the direction of motion and being sharpened to form cutting edges, substantially as described.

2. An apparatus for cleaning sewers comprising a skeleton frame consisting of longitudinal ribs lying in a radial plane and connected together at their ends by suitable hubs, a central draft-rod connecting said hubs, a series of flattened blades at the central portion of the ribs, said blades being of arcuate section and combining at their edges to form a tube of circular section externally, the forward edges of said blades being set at an angle to the direction of motion and being sharpened to form cutting edges, and said ribs having also cutting edges formed thereon, and a series of self-closing valves pivotally supported on radial axes about the draft-rod and adapted to completely close the tube formed by the meeting edges of the said blades at approximately the central portion thereof, substantially as described.

3. An apparatus for cleaning sewers comprising a skeleton frame having segmental scraper blades or plates arranged in permanent contact with each other, a draft-rod, a hub mounted on the draft-rod, and a single series of valves pivotally supported on the hub and within the scraper blades or plates, substantially as described.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

LOUIS DUBOIS.

Witnesses:

J. A. MARION,
T. MYNARD.