

No. 671,181.

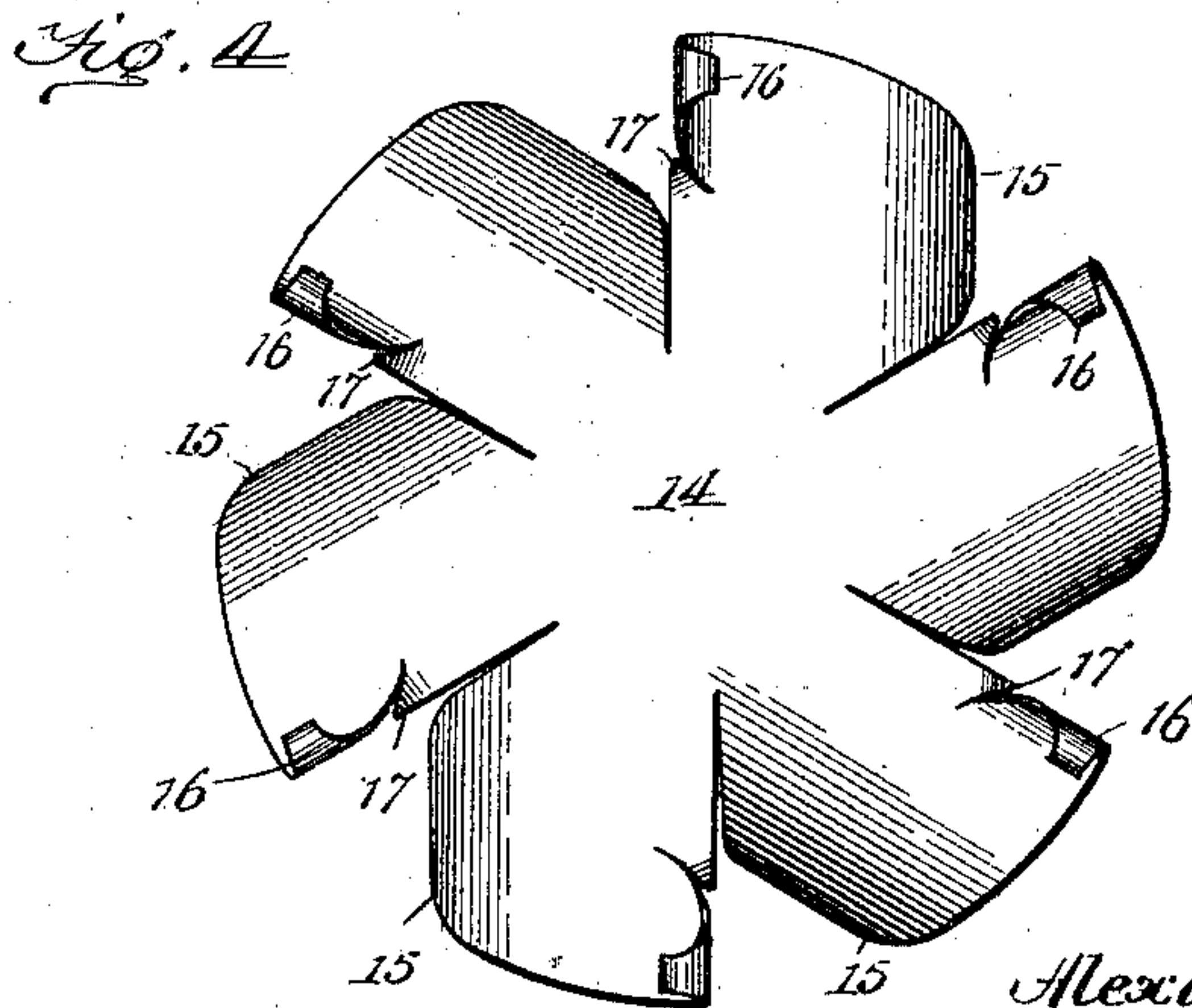
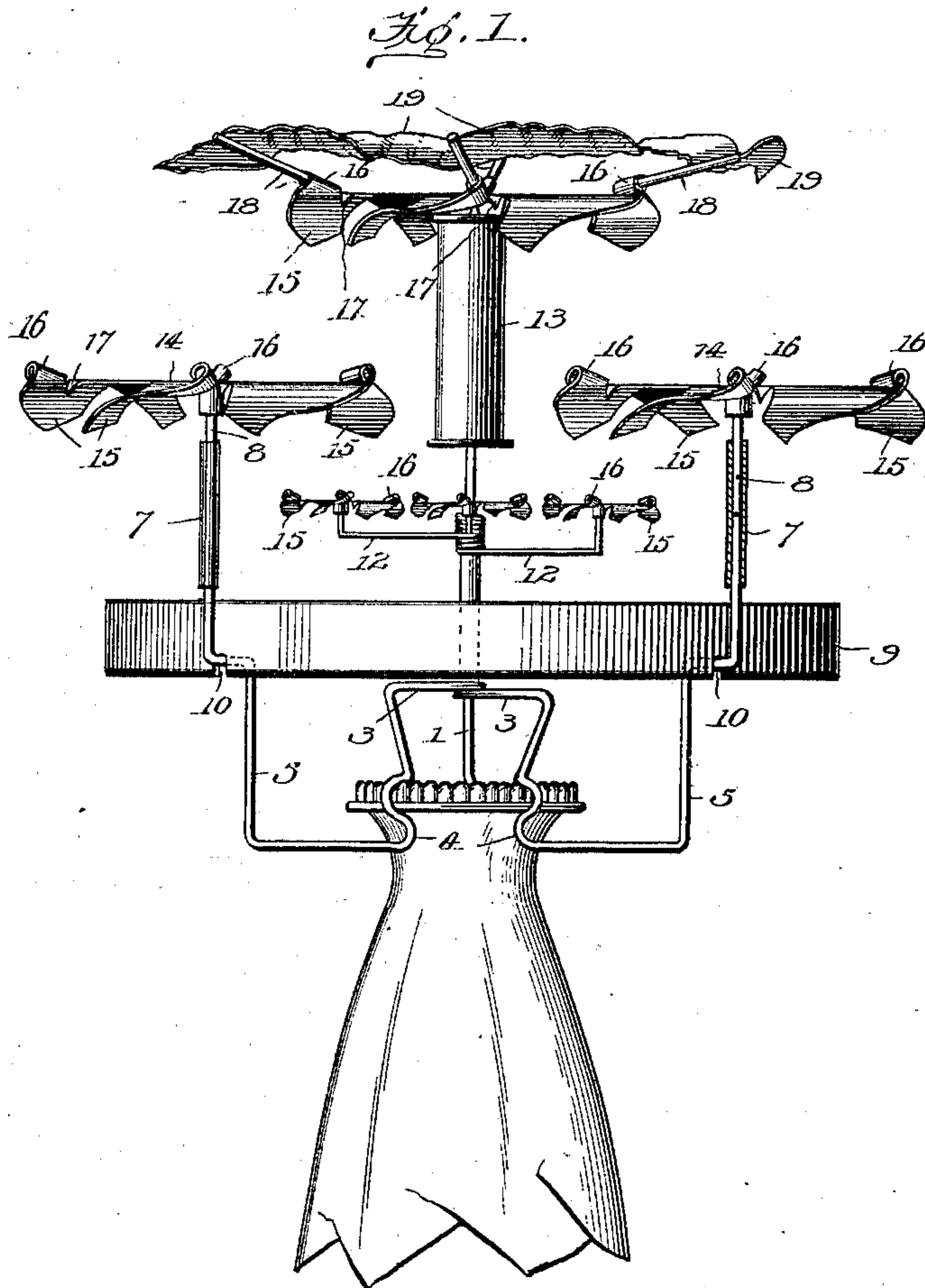
Patented Apr. 2, 1901.

A. S. CARDELLA.  
THERMAL MOTOR.

(Application filed May 23, 1900.)

(No Model.)

2 Sheets—Sheet 1.



Inventor:

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Witnesses:  
Harry S. Rohrer.  
Robert S. Lawson.

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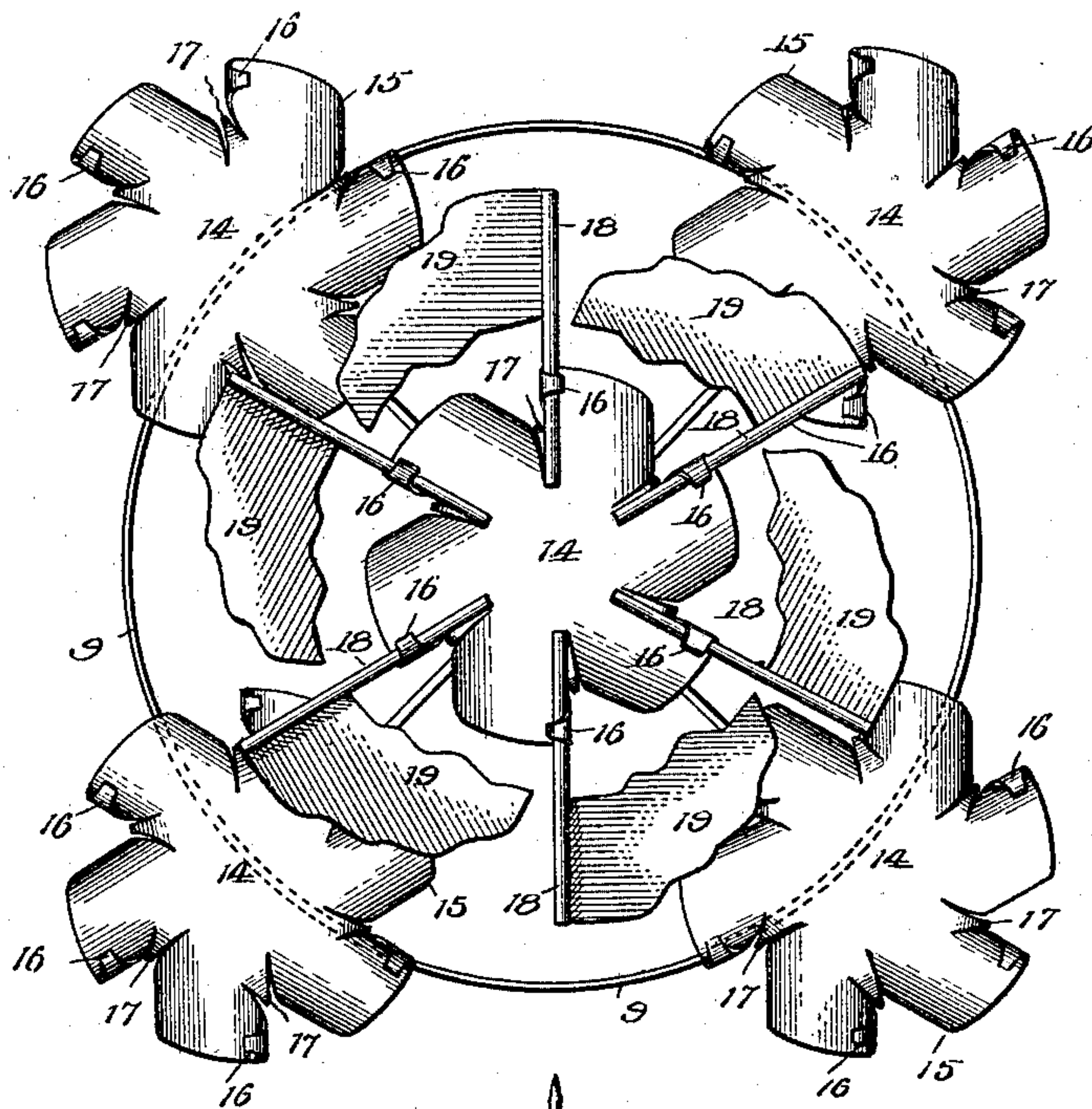
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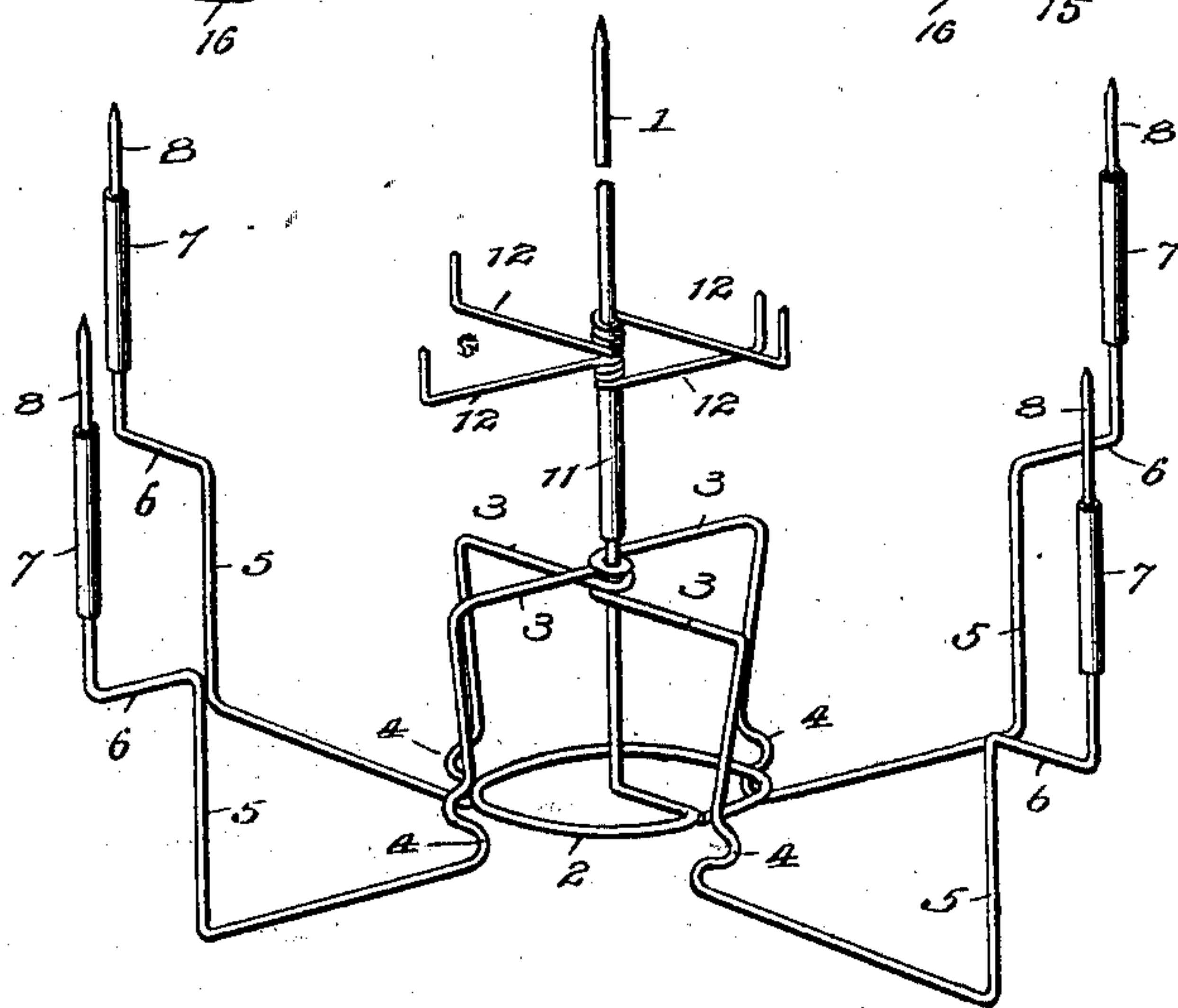
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*Fig. 2.*



*Fig. 3.*



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Witnesses:

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# UNITED STATES PATENT OFFICE.

ALEXANDER SANCHEZ CARDELLA, OF KINMUNDY, ILLINOIS.

## THERMAL MOTOR.

SPECIFICATION forming part of Letters Patent No. 671,181, dated April 2, 1901.

Application filed May 23, 1900. Serial No. 17,738. (No model.)

*To all whom it may concern:*

Be it known that I, ALEXANDER SANCHEZ CARDELLA, a citizen of Mexico, residing at Kinmundy, in the county of Marion and State of Illinois, have invented new and useful Improvements in Thermal Motors, of which the following is a specification.

This invention relates to certain new and useful improvements in thermal motors; and its primary object is to provide a device requiring but the minimum amount of heat to operate the same.

To this end the invention consists in the novel construction and combination of parts hereinafter more fully described and claimed, and illustrated in the accompanying drawings, showing the preferred form of my invention, and in which—

Figure 1 is an elevation of the invention. Fig. 2 is a plan view. Fig. 3 is a detail view of the frame, and Fig. 4 is a detail view of one of the wheels detached.

Referring to the figures of the drawings by numerals of reference, 1 is a standard, preferably formed of wire and having a circular base 2, which may, if desired, rest upon the end of a lamp-chimney. Angular arms 3 extend from this standard at a point between its ends and are each indented, as at 4, these recesses being adapted to receive the upper flared end of a lamp-chimney. The arms then project outwardly in a horizontal plane for a suitable distance and each terminates in an upright portion 5, provided with a shoulder 6 at a point between its ends. A sleeve, as 7, incloses the end of each arm and is adapted to clamp upon the end of a pointed rod or stem 8, permitting the same to be adjusted vertically therein. I preferably provide four of these arms 3; but I do not limit myself to the number thereof. A hoop or band 9, of suitable material, as sheet-iron, is provided at regular intervals with recesses 10 in its lower edge, which are adapted to receive the shoulders 6. A sleeve 11 incloses the standard 1 above its point of connection with the arms and serves as a bearing for arms 12, which extend from the standard and have upwardly-turned ends, for the purpose hereinafter more fully described. A drum 13 is loosely mounted upon the standard and is secured at its upper end preferably by means

of wires (not shown) to a wheel 14, of peculiar construction, the end of the standard projecting through the drum and bearing upon the under surface of said wheel. This wheel, as shown in Fig. 4, is provided with a suitable number of downwardly-curved blades 15, the opposite edges of said blades having loops 16 and pointed downwardly-curved projections 17 adjacent thereto. These loops 16 are each adapted to receive a stem 18 of a blade 19, which is preferably of the peculiar construction shown in the drawings.

A wheel similar to that above described is mounted upon the end of each of the arms 3 and 12.

The arms 3 are preferably of spring metal and are adapted to be sprung over the end of the lamp-chimney and will, as is obvious, clamp the same therebetween. It will be seen that heat arising from the lighted lamp will then cause the wheels to rapidly revolve, the peculiar construction of said wheels necessitating the use of but the minimum amount of heat for propelling the same. It will be seen that the band or hoop 9 serves to keep the arms 3 at the proper distance from each other.

In the foregoing description I have shown the preferred form of my invention; but I do not limit myself thereto, as I am aware that modifications may be made therein without departing from the spirit or sacrificing the advantages thereof, and I therefore reserve the right to make such changes as fairly fall within the scope of my invention.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. In a thermal motor, the combination with a standard having a suitable base, of a wheel mounted thereon and formed in a single piece, said wheel having blades downwardly curved at one edge, a loop at the opposite edge, a downwardly-curved projection adjacent to said loop, a stem within the loop, and a blade at the end of the stem.

2. The combination with a standard having a circular base formed therewith; of arms projecting therefrom and having indentations therein adjacent to the base for the reception of the flange of a chimney, loops formed with said arms, shoulders thereto, a slotted ring

inclosing the standard, said slots adapted to receive the shoulders, a sleeve inclosing the end of each of the loops, a stem detachably and adjustably secured within each sleeve, a sleeve upon the standard at a point above the arms, coiled arms loosely mounted upon the standard and bearing upon the sleeve, said arms being revoluble upon the standard, and a wheel revoluble upon the standard and each of the arms and stems. 10

In testimony whereof I affix my signature in presence of two witnesses.

ALEXANDER SANCHEZ CARDELLA.

Witnesses:

ASHER B. HADLEY,  
EARL C. HUGGINS.