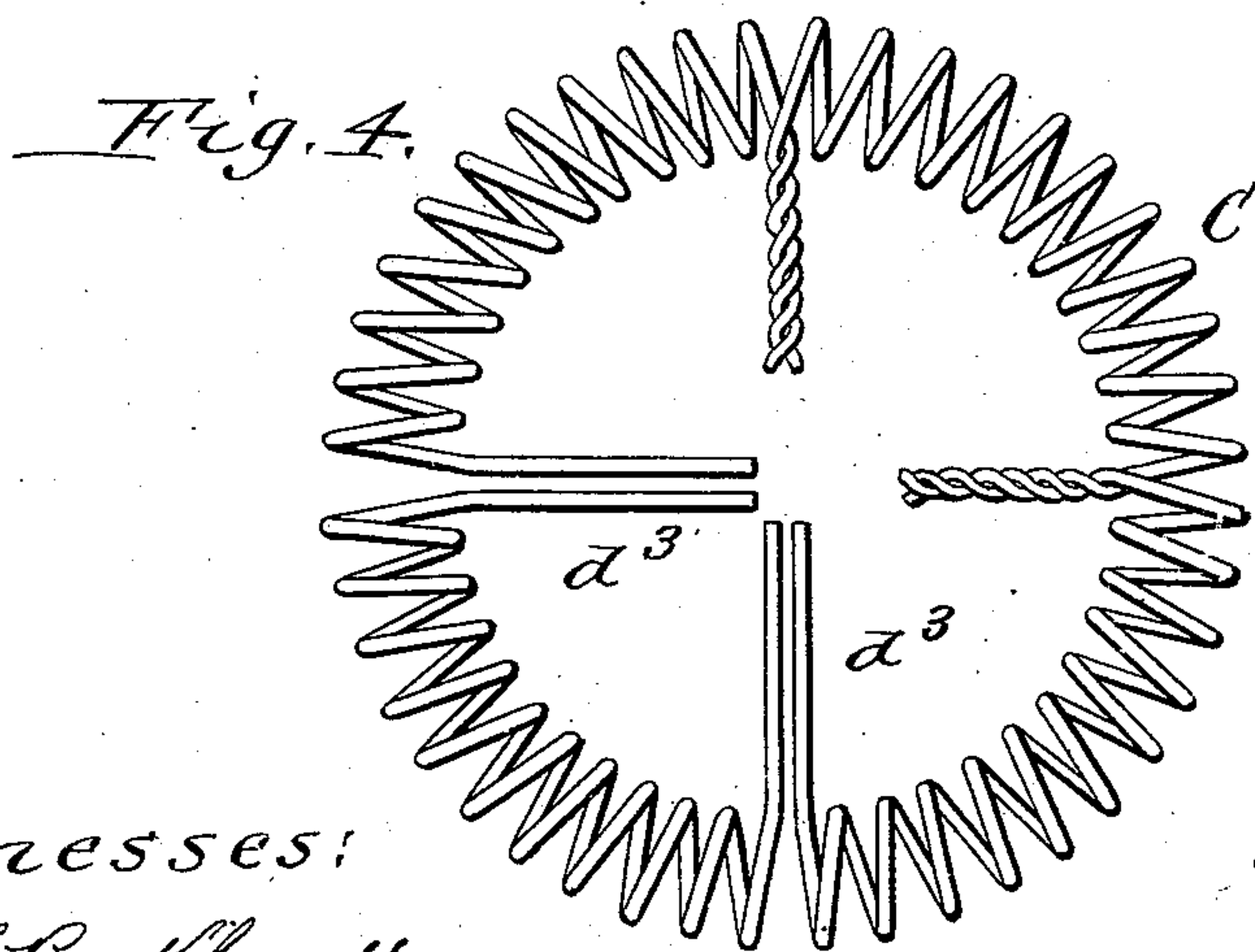
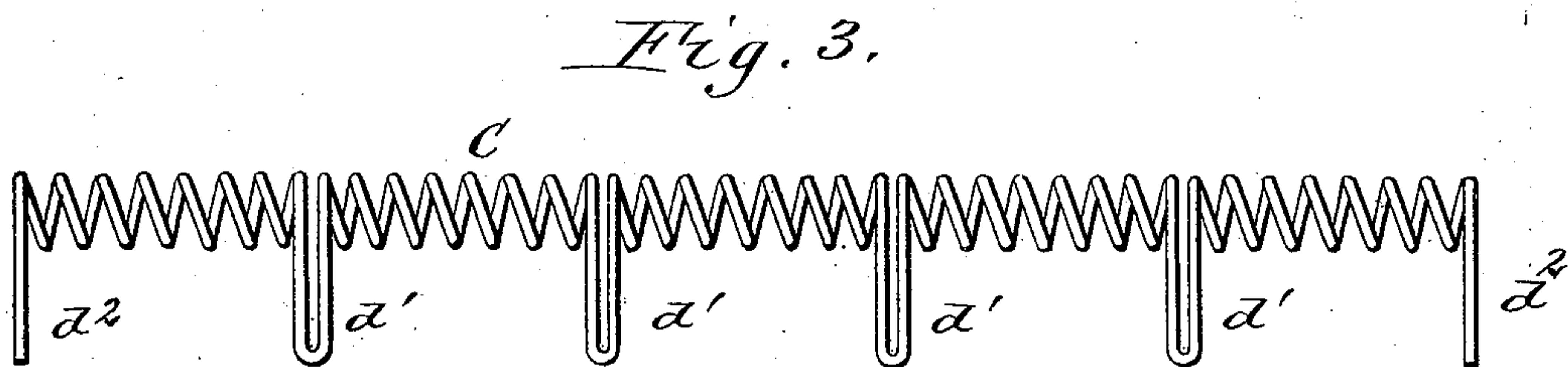
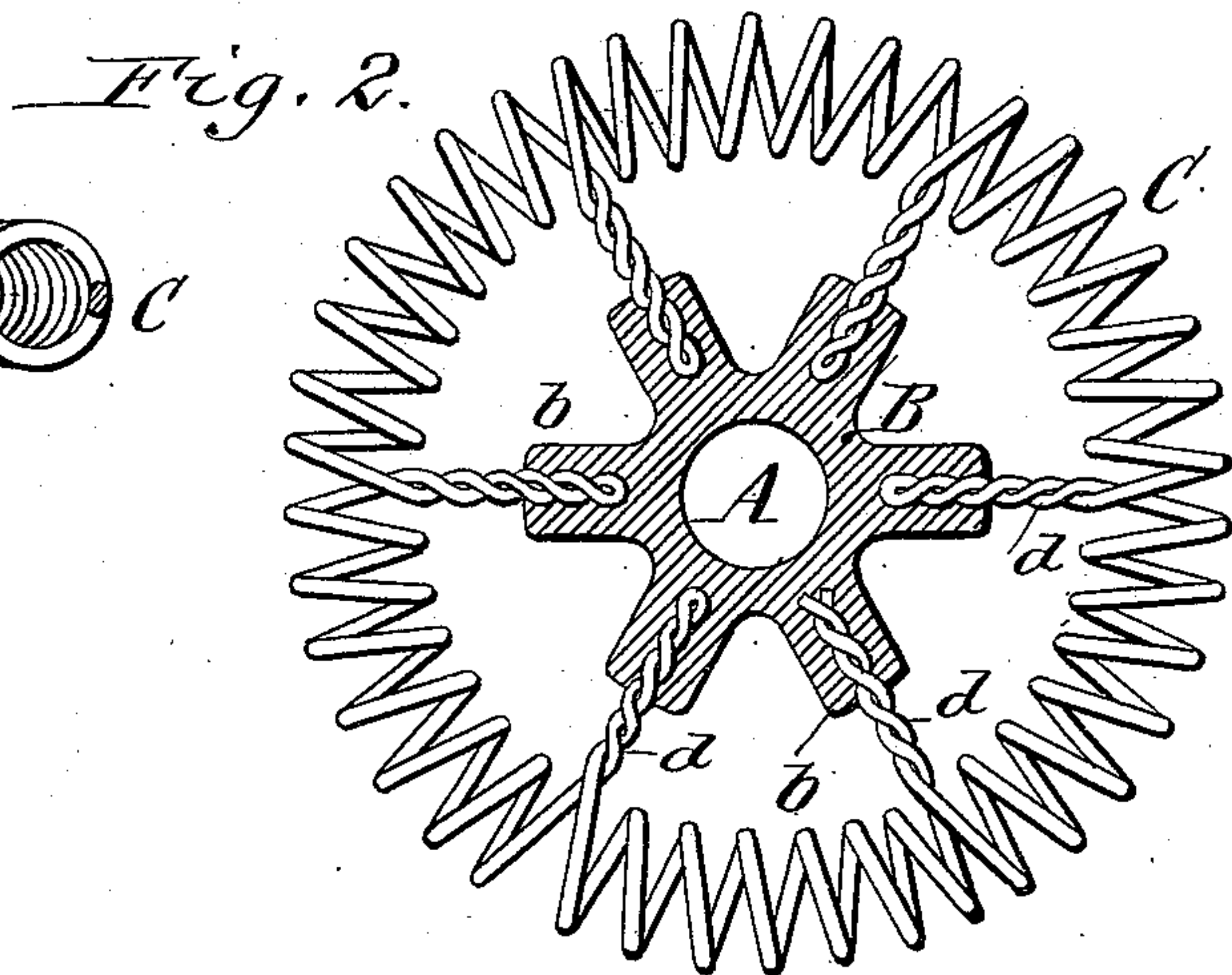
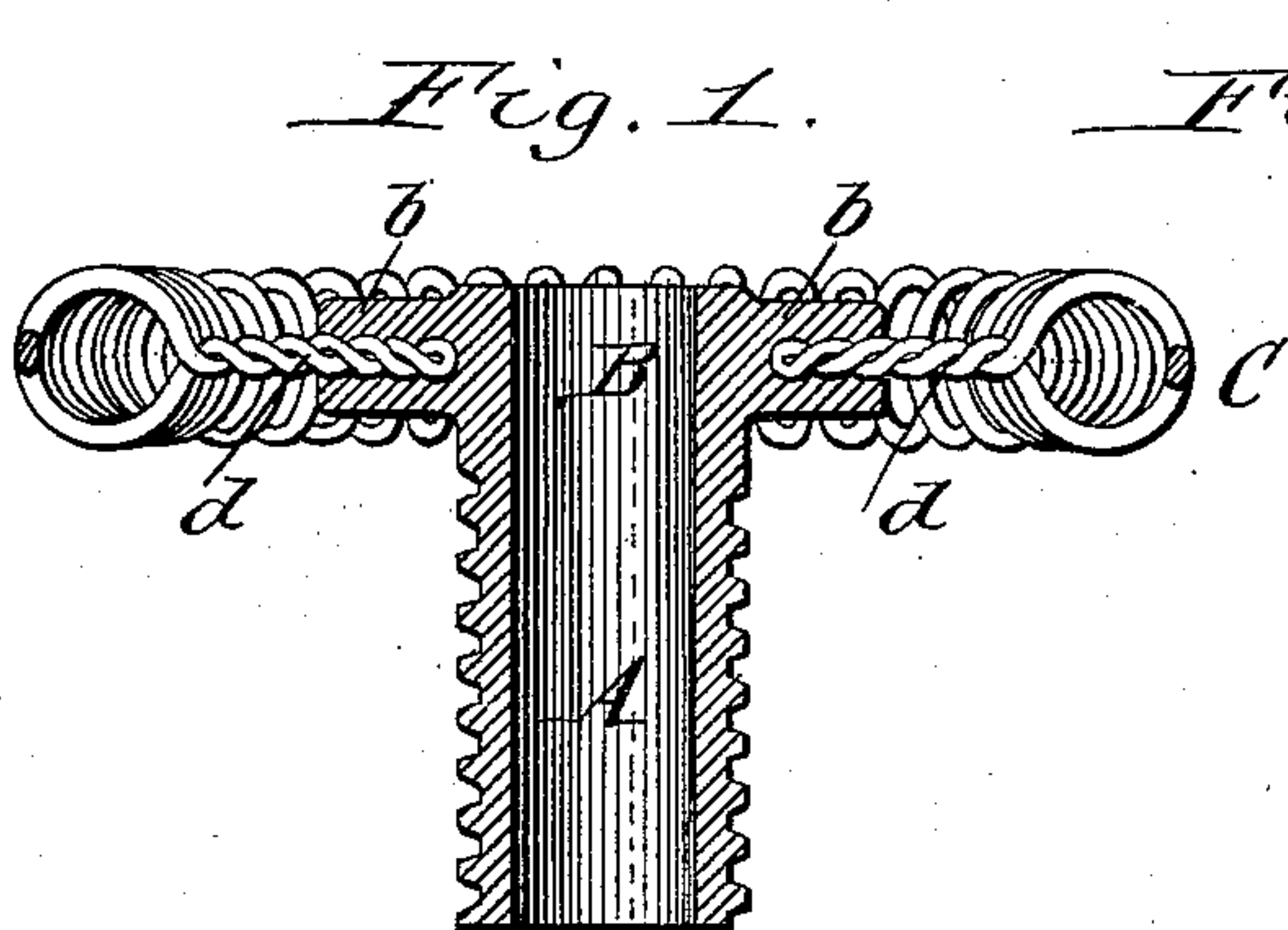


(No Model.)

I. PIERCE.
HANDLE.

No. 534,003.

Patented Feb. 12, 1895.



Witnesses:
Chas. F. Burkhardt.
Theo. L. Popp.

Isaac Pierce
Inventor.

By Wilhelm Bonin, Attorneys

UNITED STATES PATENT OFFICE.

ISAAC PIERCE, OF WEST BAY CITY, MICHIGAN.

HANDLE.

SPECIFICATION forming part of Letters Patent No. 534,003, dated February 12, 1895.

Application filed August 20, 1894. Serial No. 520,775. (No model.)

To all whom it may concern:

Be it known that I, ISAAC PIERCE, a citizen of the United States, residing at West Bay City, in the county of Bay and State of Michigan, have invented a new and useful Improvement in Handles, of which the following is a specification.

This invention relates to that class of handles or hand wheels which are employed more especially in connection with steam valves and which consist of a hub or head and a surrounding wire coil secured thereto.

My invention has for its object to connect the wire coil with the handle-head in a strong and reliable manner and at the same time reduce the area of the heat conducting surface between the head and the coil to a minimum, so as to insure a cool handle.

In the accompanying drawings:—Figure 1 is a sectional elevation of my improved handle, applied to a valve stem. Fig. 2 is a top plan view of the same with the hub shown in section. Fig. 3 is a fragmentary view of the wire coil, showing the form thereof before its carrying arms or spokes are twisted and before its ends are united. Fig. 4 is a plan view of a modified construction of the handle.

Like letters of reference refer to like parts in the several figures.

A is a valve stem or rod and B is the hub or head of the handle secured to the valve stem and having a number of equidistant radial bosses *b*.

C is the wire coil which surrounds the hub B and which is provided with a number of inwardly extending arms or spokes *d*, whereby it is connected with said hub. The hub has as many radial bosses as there are spokes, and the spokes are secured to these bosses, preferably by casting the latter around the inner portions of the spokes in any suitable or well known manner. The spokes may, however, be secured to the hub by any other suitable means, if desired.

The coil, with its arms, is preferably formed of a single piece of wire, and when thus constructed, the same is formed at regular intervals with laterally extending loops *d'* and at its ends with laterally bent branches *d''*, as shown in Fig. 3. The ends of the coil are united by twisting its end branches *d''* together; and the loops *d'* are also preferably twisted, as shown in the drawings, to stiffen the spokes. These twisted end branches thus

form one of the spokes, while the twisted loops 55 from the remaining spokes.

If desired, the annular wire coil may be formed of segments or separate sections, as shown in Fig. 4. In this case each coil section is formed at its ends with inwardly bent 60 arms or branches *d''* and the branches of adjacent sections are twisted together to form the spokes.

In my improved handle, the wire coil has no contact with its supporting hub or head, 65 but is separated therefrom by an intervening air space, thus exposing the inner as well as the outer side of the coil to the air, and permitting a free radiation of heat from all sides of the coil. The cross-sectional area of the 70 wire spokes is comparatively small, and as the conduction of heat can take place only through these spokes, very little heat is transmitted to the coil. This construction produces not only a cool handle, but one which 75 is at the same time light, strong and durable.

I claim as my invention—

1. The combination with the handle head, of a wire coil arranged around the head at a distance therefrom, and wire arms or spokes 80 extending from the coil to the head through the intervening air space and connecting the coil with the head, whereby the coil is supported out of contact with the head and conduction of the heat to the coil, except through 85 the wire spokes, is prevented, and a cooling air space is formed between the coil and the head, substantially as set forth.

2. The combination with a hub or head, of a wire coil surrounding the same and formed 90 with twisted arms or spokes extending inwardly therefrom and secured at their inner portions to said hub or head, substantially as set forth.

3. The combination with a hub or head, of 95 a surrounding wire coil formed at intervals with inwardly extending arms or spokes and at its ends with inwardly extending branches which are twisted together to form a spoke, the several spokes being secured at their in- 100 ner portions to said hub or head, substantially as set forth.

Witness my hand this 13th day of August, 1894.

ISAAC PIERCE.

Witnesses:

T. F. SHEPARD,
GEO. L. MOSHER.