

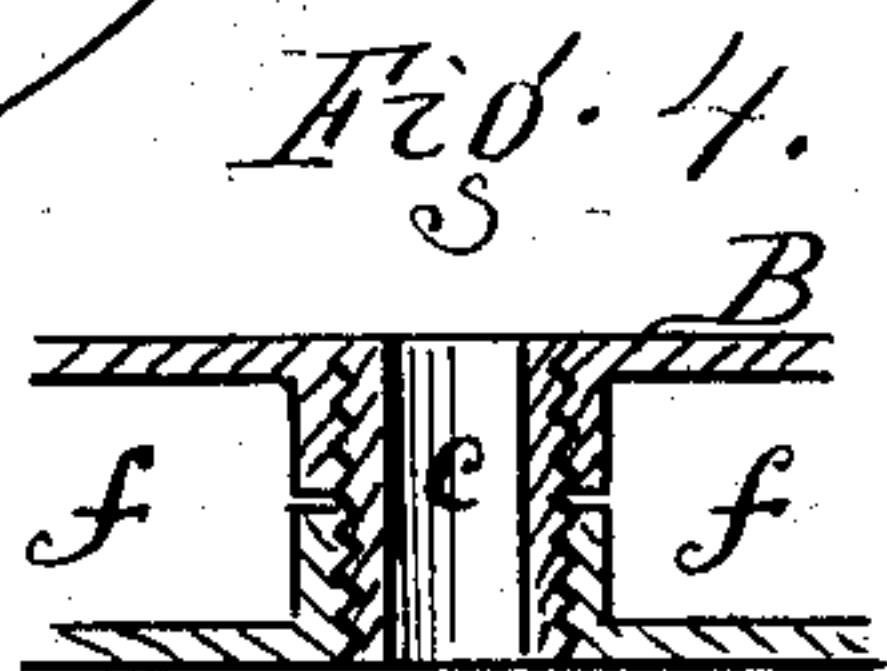
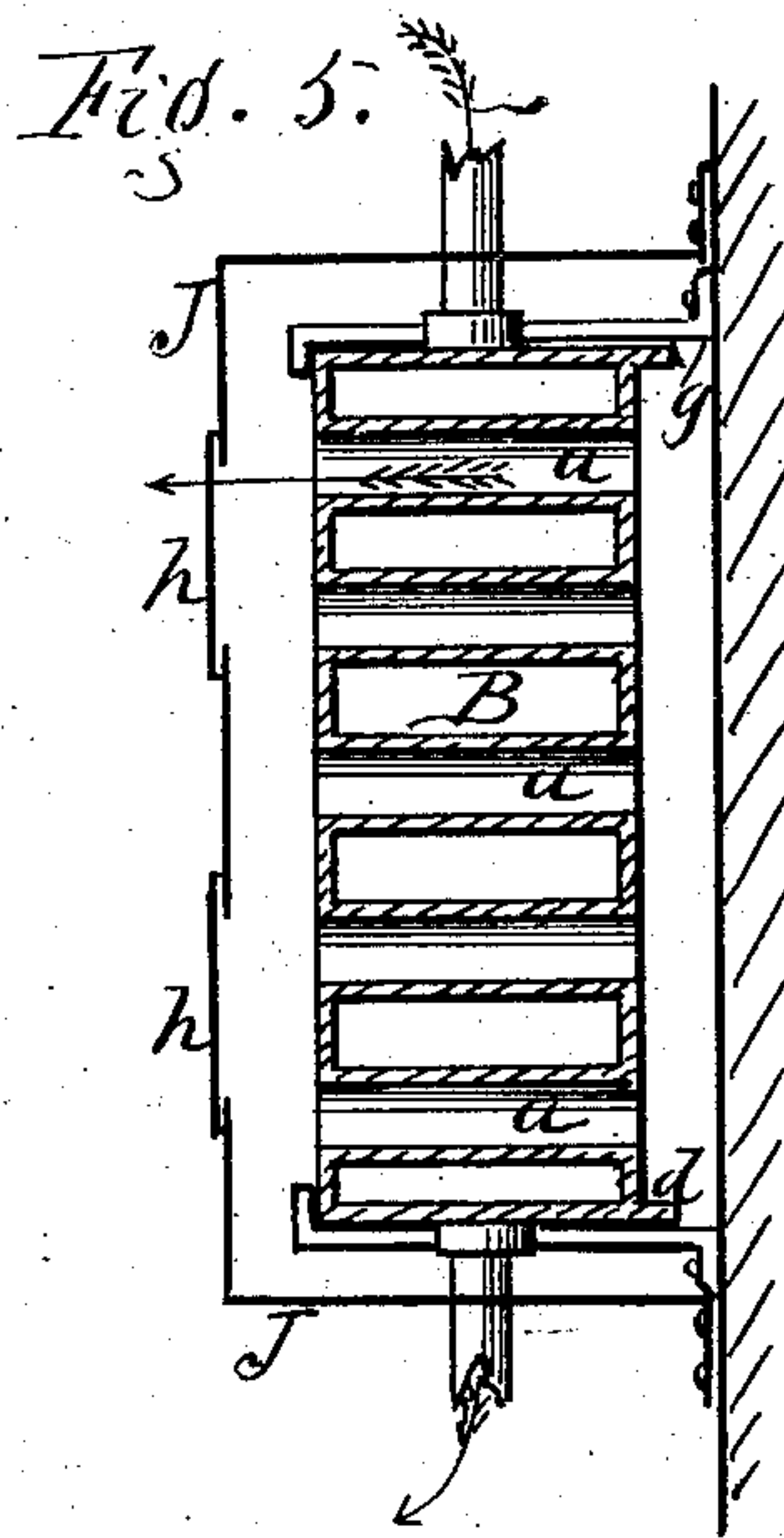
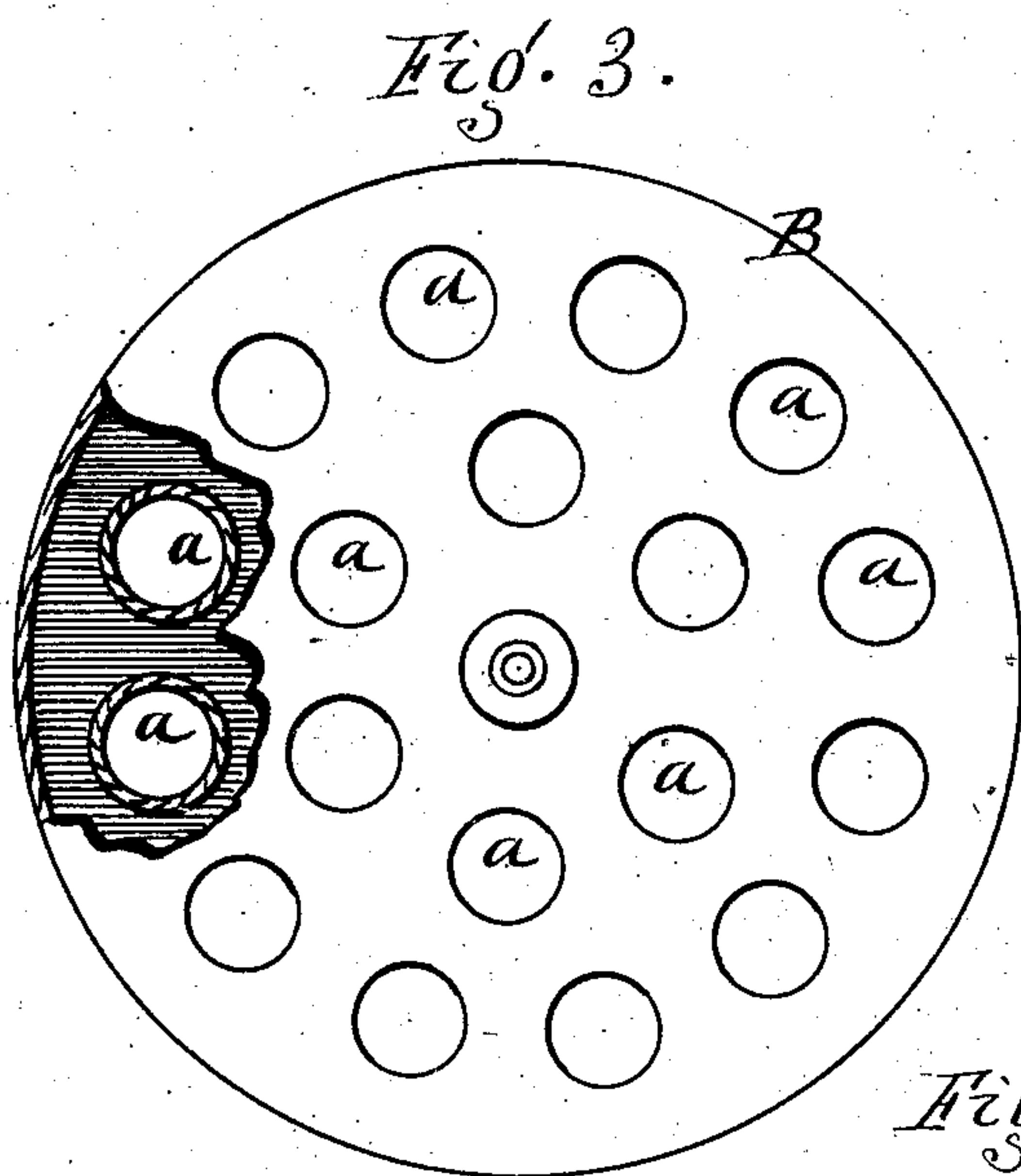
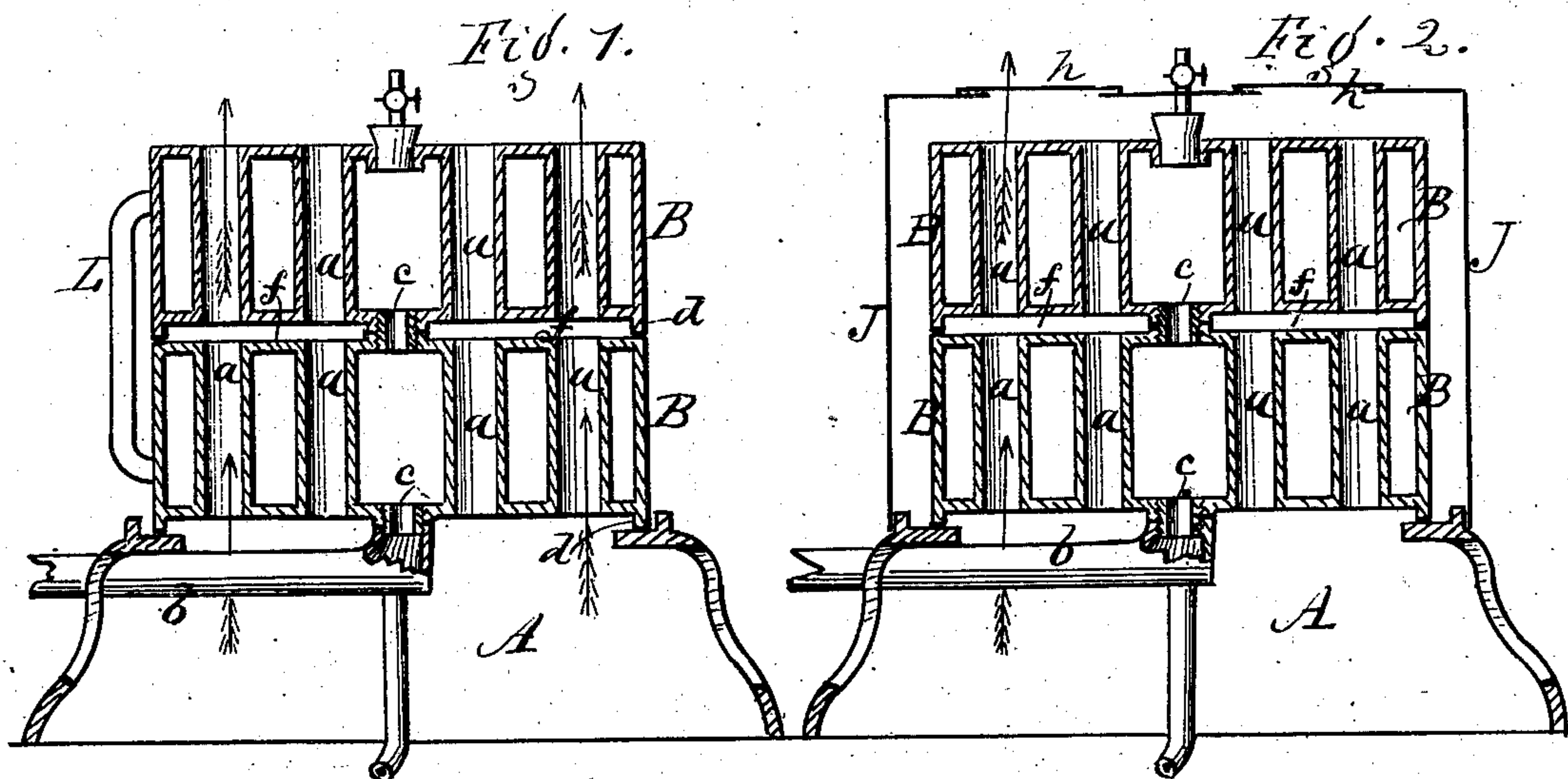
(No Model.)

C. WHEAT & A. CATCHPOLE.

RADIATOR.

No. 260,512.

Patented July 4, 1882.



Attest.
Chas. J. J. J.
R. E. White

Inventors.

Leonard Wheat
Alfred Catchpole,
for R. F. Osgood
att'y.

UNITED STATES PATENT OFFICE.

CORYDON WHEAT AND ALFRED CATCHPOLE, OF GENEVA, NEW YORK.

RADIATOR.

SPECIFICATION forming part of Letters Patent No. 260,512, dated July 4, 1882.

Application filed March 13, 1882. (No model.)

To all whom it may concern:

Be it known that we, CORYDON WHEAT and ALFRED CATCHPOLE, of Geneva, Ontario county, New York, have invented a certain new and useful Improvement in Radiators; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

10 Figure 1 is a central vertical section of the radiator. Fig. 2 is a similar view, with the addition of an exterior casing. Fig. 3 is a plan, partially in section, of one of the radiating-drums on an enlarged scale. Fig. 4 is a sectional view of the screw-joint between two of
15 the radiating-drums. Fig. 5 is a sectional view of the radiator as attached to a side wall.

Our improvement relates to steam-radiators for heating buildings; and the invention consists in a series of radiating-drums, constructed each with air-tubes to allow free passage of air through the drum, and a projecting flange at one end extending around the whole perimeter, so that when the drums are placed one upon
25 another a continuous and unbroken exterior surface is presented, while a thin air-space is left between each two of the drums, whereby the air-currents are broken and diffused while passing from one drum to the other, as herein-
30 after more fully described.

In the drawings, A represents a base for supporting the radiators, which base may be of any ornamental form.

B B are the radiators, which may be of any
35 desired form, but preferably circular and cylindrical, as shown. Each of these radiators consists of a hollow steam-chamber having a series of open-ended tubes, *a a*, through which air is allowed to flow freely, being thereby sub-
40 jected to the action of the steam-heat which radiates through the casing.

The base A is provided with a pipe-section, *b*, which connects with the live-steam pipe and supplies the radiators with steam. The first
45 radiator is screwed thereon or connected therewith by a screw-nipple, *c*, as shown in the enlarged sectional view, Fig. 4. The second radiator is secured on top of the first in the same manner, and so on till the necessary number
50 of radiators has been built up. The screw-con-

nection is in the center, each of the radiators having a hollow hub for the purpose, and by this means the steam passes from one radiator to another clear to the top. The opening at the top of the upper radiator is closed, and is
55 provided with a pet-cock.

At the bottom of each radiator is a circular projecting flange, *d*, extending beyond the closed bottom, so that when one radiator is attached to another, as described, a space, *f*, will
60 be left between the two radiators, said space serving as a distributor to the air. The air passing through the tubes of the lower radiator enters this space *f* and is spread over its whole surface; thence it enters the tubes of the
65 next radiator, and so on till it escapes at the top. By this means the air is not only heated in passing the tubes *a a*, but when it reaches the space *f* it is spread over a large surface in a thin body, and is subjected to heat from the
70 ends of both radiators, by which the maximum effect is produced. One great advantage is that the air in passing has a circuitous route, which enables it to extract all the heat. In putting up any capacity may be attained by
75 simply building higher.

In Fig. 5 the radiator is shown as attached to a side wall, being suspended by hooks *g g* or otherwise. Any desired number of the drums may be used in this way. In such case
80 the live-steam pipe enters at the top, and an exit-pipe is provided at the bottom for the escape of the waters of condensation. The radiator is in convenient form, not only for standing upright on a floor, but also for being at-
85 tached to side walls in rooms, or on cars, vessels, &c.

In Figs. 2 and 5 an exterior casing, *J*, is shown, leaving a jacket-space between itself and the radiators. The apparatus may be used
90 either with or without this casing. The casing is provided with one or more registers, *h*, at the end, by which the flow of the heated air may be controlled. By the use of the casing the heat may be controlled without controlling
95 it by cutting off the steam.

We do not wish to confine ourselves to the particular form of radiators shown, as they may be made of any other form with a similar effect.

In some cases it may be necessary to use extra steam-passages connecting the radiators, and under such circumstances a pipe, L, is employed, connecting the sides of the upper and lower radiators, as shown in Fig. 1.

If desired, the tubes *a a* may be made square or of other form in cross-section, instead of round, and where the radiators are attached to side walls vertical tubes may also be employed.

Having thus described our invention, we do not claim broadly a radiator made of separate drum-sections.

We claim—

1. The radiator-section consisting of the drum B, made flat on top, provided with the projecting flange *d* on its bottom, extending around the whole perimeter, and having the air-tubes *a a*, whereby when the drums are placed one upon another a continuous exterior surface is produced and air-spaces *f* are

formed between the drums, as shown and described, and for the purpose specified.

2. A steam-radiator consisting of a series of drums placed one upon another and united by screw-joints, said drums being constructed with flat tops, projecting flanged bottoms, and with air-tubes extending through the drums, whereby the exterior surface of the radiator is continuous and unbroken from bottom to top, and air spaces are formed between the drums for breaking the continuity of the air-currents as they pass from one drum to another, as set forth.

In testimony whereof we have hereunto signed our names in presence of two subscribing witnesses.

CORYDON WHEAT.
ALFRED CATCHPOLE.

Witnesses:

R. F. OSGOOD,
C. S. BURRALL.