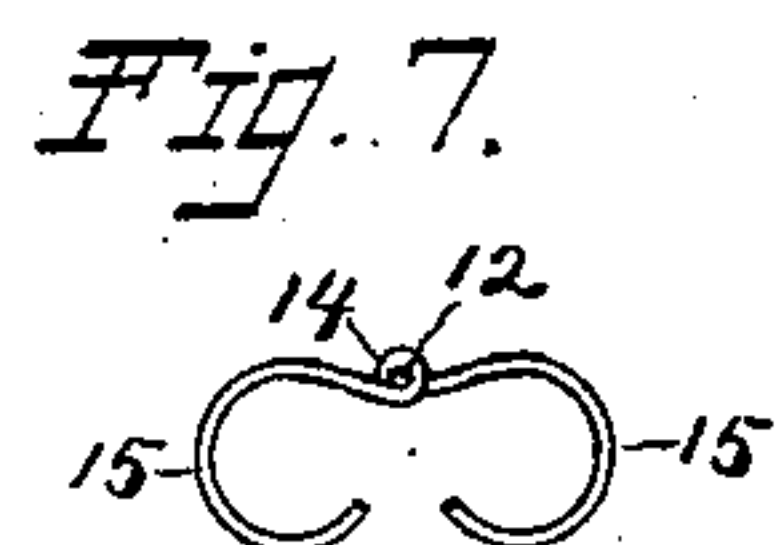
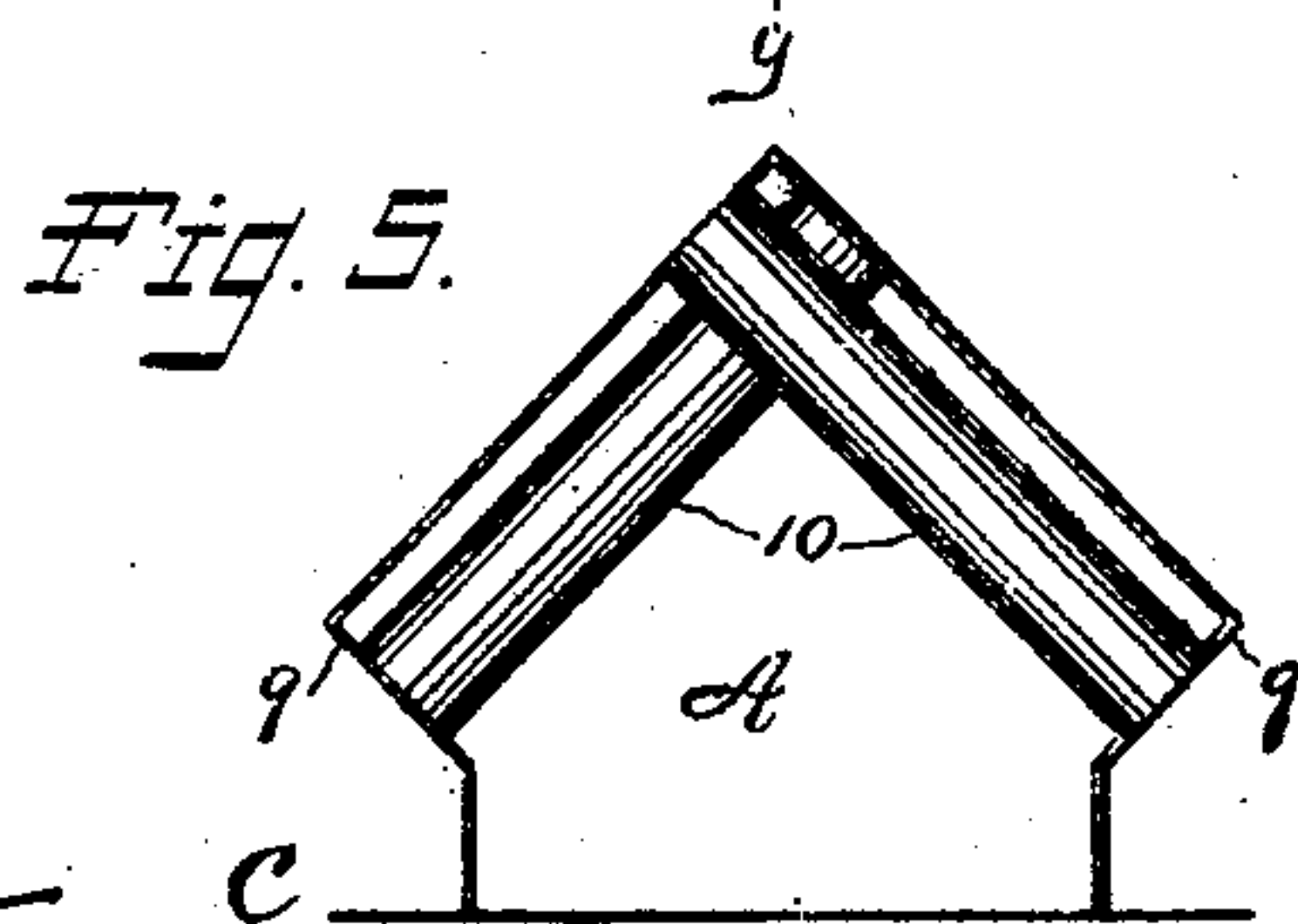
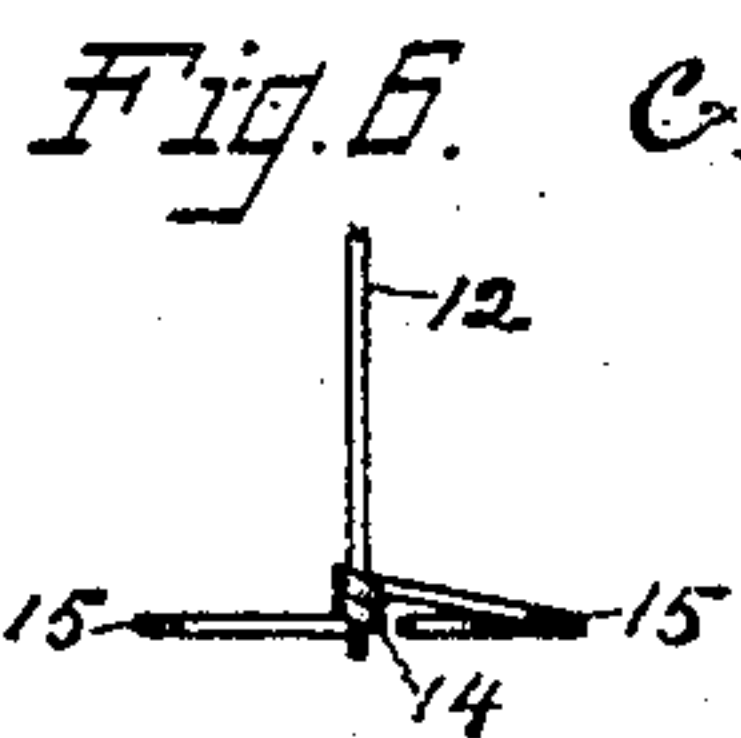
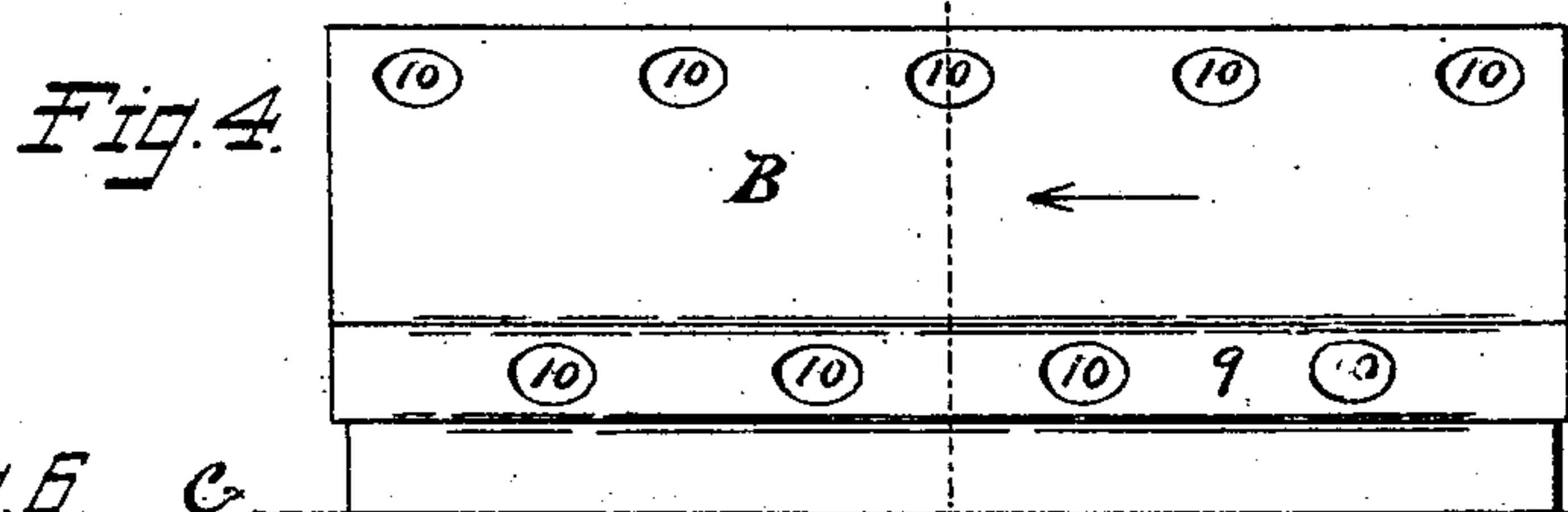
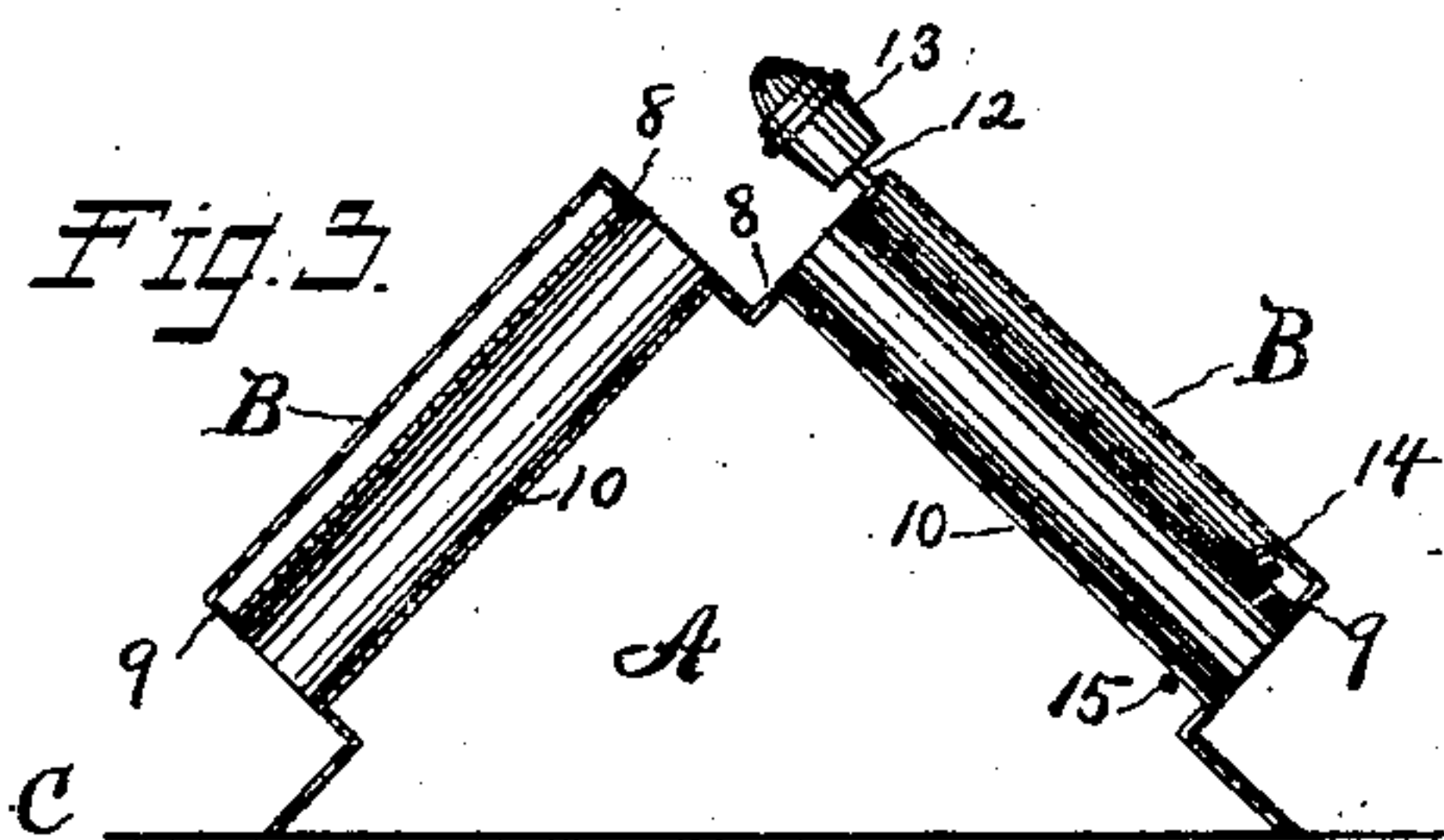
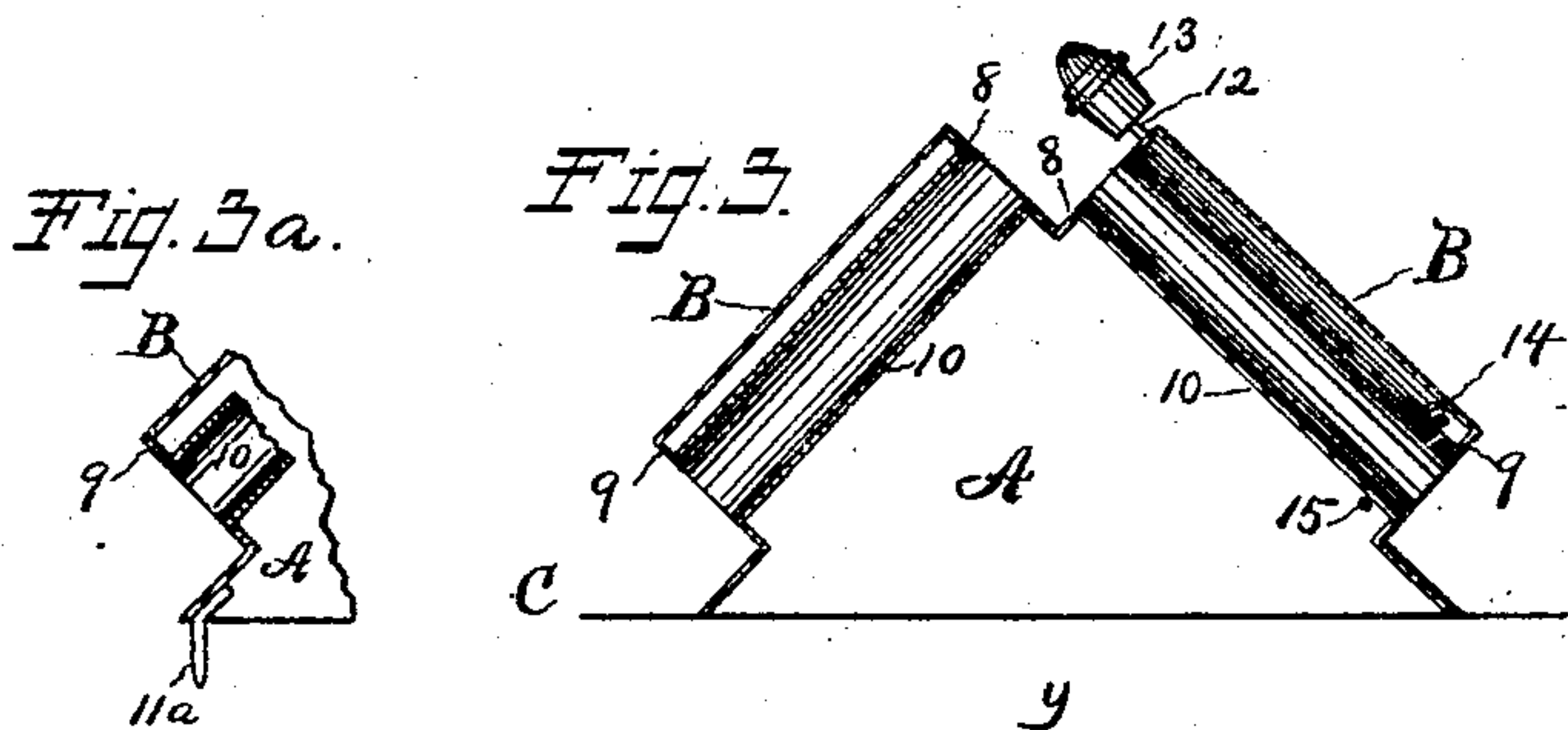
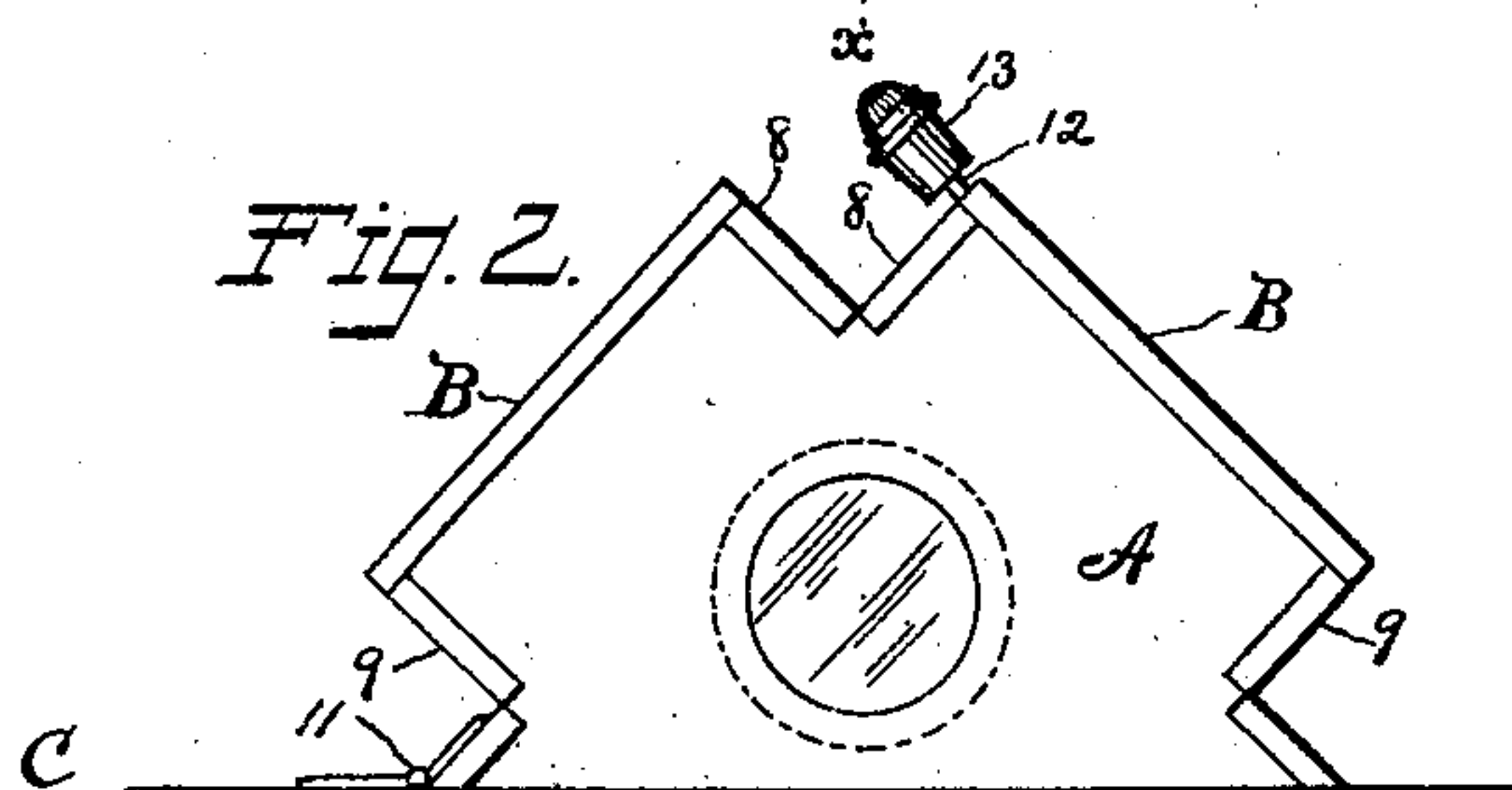
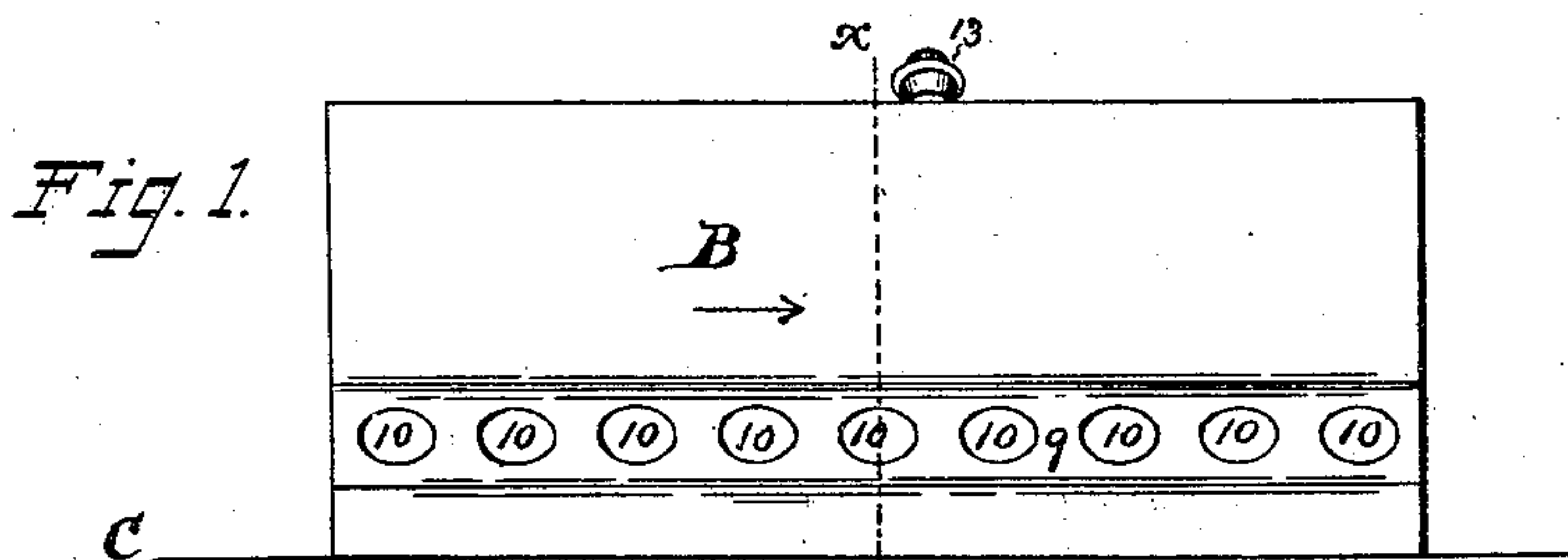


No. 859,269.

PATENTED JULY 9, 1907.

O. E. WAIT.
RADIATOR.

APPLICATION FILED DEC. 26, 1901.



WITNESSES.
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OSCAR E. WAIT, OF ST. ALBANS, VERMONT.

RADIATOR.

No. 859,269.

Specification of Letters Patent.

Patented July 9, 1907.

Application filed December 26, 1901. Serial No. 87,161.

To all whom it may concern:

Be it known that I, OSCAR E. WAIT, a citizen of the United States, residing at St. Albans, in the county of Franklin and State of Vermont, have invented certain new and useful Improvements in Radiators, of which the following is a specification.

My invention relates to improvements in radiators and the main object of my improvement is to increase the efficiency of this class of radiators.

10 In the accompanying drawings—Figure 1 is a side elevation of one form of my radiator. Fig. 2 is an end view thereof. Fig. 3 is a transverse section of the same on the line *xx* of Fig. 1. Fig. 3^a is a detached sectional portion showing a modification of one part. Fig. 4 is
15 a side elevation of my radiator in a somewhat different form. Fig. 5 is a transverse section of the same on the line *yy* of Fig. 4. Fig. 6 is an edge view of a portion of a cleaner or scraper for the flues, and—Fig. 7 is a side view of the same.

20 My improvement is of the class of box or drum radiators in which the hot air enters into and flows out of the lower end in contradistinction to the class where the hot air enters at one end and passes out at the other. In most forms of my improvement I employ but a single opening for the entry and exit of the hot air or in
25 other words I provide for the proper circulation of air within the drum without any effluent opening in the upper part thereof. In both of the particular forms shown, the radiator is designed for box stoves or cook
30 stoves and is in effect a radiating dome as a separate and distinct article from a stove or fire box, adapted to be placed on the flat top of a stove and over a hole in said top above the fire box. These radiators thus shown, are formed mainly of two ends, A and two
35 slanting roofs B B. In the form shown in Figs. 1 to 3 there is a short wall 8 and 9 at the top and bottom of the main roof B and at about a right angle thereto, the extent of the said short walls as seen in an end view of the radiator being a little in excess of the diameter of
40 the circulating flues or cross tubes 10. The said tubes are open at both ends and extend in two close series along the under face of both roofs B B as shown. By thus making the two short walls 8 at the top of the roof forming a double ridge, and arranging the upper ends
45 of the flues 10 therein, I am enabled to employ two series of tubes set as closely together as it is desirable to place them, a result that could not be attained with straight tubes if the two roofs met in a single ridge and the upper ends of the flues were arranged in the said
50 roofs.

The bottom of the radiator has straight edges all in one plane to fit the flat top of a stove and is open while all other portions are closed excepting as the air may pass through the flues or cross tubes without any

opening of the said tubes into the interior of the radiator. C designates a straight base line on which the open bottom of the radiator is placed and if said base line is the top of a stove the radiator may be hinged thereto by hinges 11 so that it may be turned back when desired to furnish access to the fire box. In-
60 stead of hinges a pin 11^a may be secured to the radiator near one corner as shown in Fig. 3^a, and extending into a hole in the top of the stove, may serve as a swivel for the radiator to turn on and furnish access to the stove box.

65 In Figs. 4 and 5, I employ the same general construction excepting that the two roofs meet in a common ridge and the upper ends of the flues are secured therein as shown, whereby the said flues cross each other at their upper ends and it is necessary to arrange them in
70 alternation. This obviously prevents each series of tubes from being placed as closely together as is desirable or as closely together as they can be and are in the construction first described.

I am aware that it is old to employ a heating drum
75 with cross tubes or flues when circulation is provided for by a passage through the drum to a discharge opening above the flues as for example in my patent of March 20, 1900, and I hereby disclaim the same. I am
80 also aware that prior patents show scrapers or cleaners attached to a sliding rod provided with a handle, as employed in radiators for cleaning the cross tubes or flues, also that prior patents show and describe furnaces
85 or heaters with the roof of the fire box formed by two slanting sides and vertical ends, forming a chamber with cross flues arranged parallel to the slanting sides of the roof within the said chamber, which chamber
90 has one opening through which the products of combustion flow from the fire box thereto and another separate opening or openings for the products of combustion to flow through in moving out of the said chamber. All of the said prior art is hereby disclaimed.

A cleaner in the class of radiators to which my improvement relates is of much more importance than it is in any other class because with no effluent opening
95 above the cross tubes the circulation within the radiator is dependent upon the cross tubes or flues and if the said tubes are not clean or have a deposit of non conducting material the circulation will either be too sluggish to be effective or stop entirely.

100 In Figs. 1 to 3 I have shown a double cleaner on one pair of the flues and similar or like cleaners may be provided for all of the flues or tubes. I make this double cleaner of wire with a central spiral hub 14 and two rings or partial rings 15 for embracing a pair
105 of the flues. The sliding rod 12 with handle 13 may be secured to the hub 14 in any proper manner, the rod extending through the wall of the radiator to the

outside so that pulling or pushing on the handle will force the cleaner over the tubes to clean or scrape them as often as may be desired. I prefer however to connect the sliding rod to the hub of the cleaner by means
5 of a screw thread on the end of the rod and a thread in the hub so that after placing the cleaner on a pair of the flues, the sliding rod may be screwed in. By this construction the cleaner is cheaply made, is effective in use and by reason of its elasticity it will not cramp and
10 bind on the tubes as a solid ring or plate cleaner almost invariably will.

It is apparent that some changes from the specific construction herein disclosed may be made and therefore I do not wish to be understood as limiting myself
15 to the precise form of construction shown and described, but desire the liberty to make such changes,

in working my invention, as may fairly come within the spirit and scope of the same.

I claim as my invention—

1. The combination of a radiator having a series of
20 cross tubes, with cleaners consisting of the coiled hub and ring for embracing the tubes on the inside of the radiator, an operating rod extending from the said coiled hub to the outside of the radiator, and a handle on the
25 outer end of the said rod, substantially as described.

2. The combination of a radiator having a series of
30 cross tubes with the cleaner having the coiled hub internally threaded, the rings extending from the said hub and an operating rod arranged to extend from the outside of the radiator to the said hub on the inside of the radiator
and to screw into the said hub, substantially as described.

OSCAR E. WAIT.

Witnesses:

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JNO. PLOW.