

No. 881,549.

PATENTED MAR. 10, 1908.

G. H. CLEMENTS.
SPRAYER ATTACHMENT FOR FURNACES.

APPLICATION FILED MAY 25, 1907.

Fig. 1.

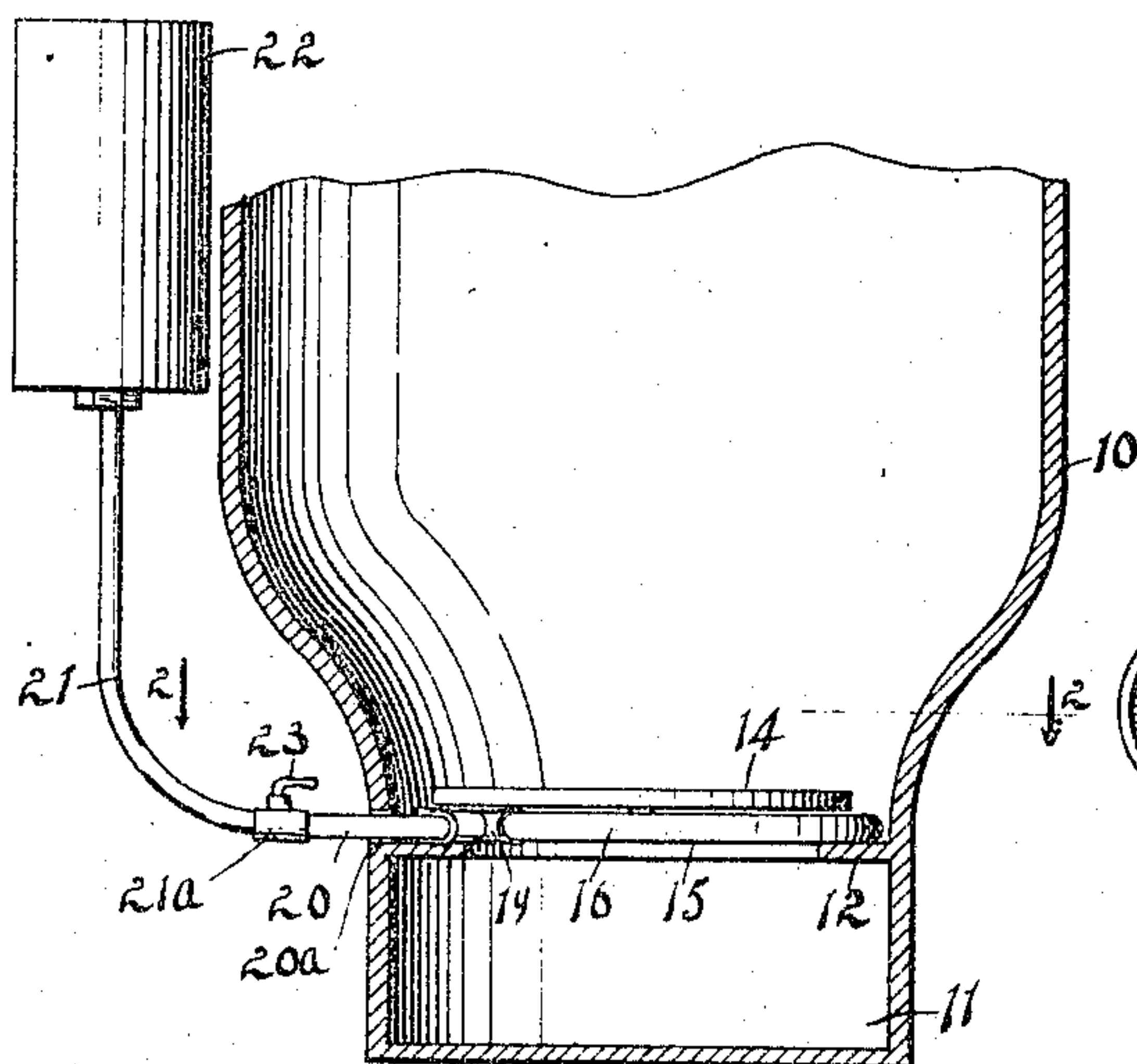


Fig. 2.

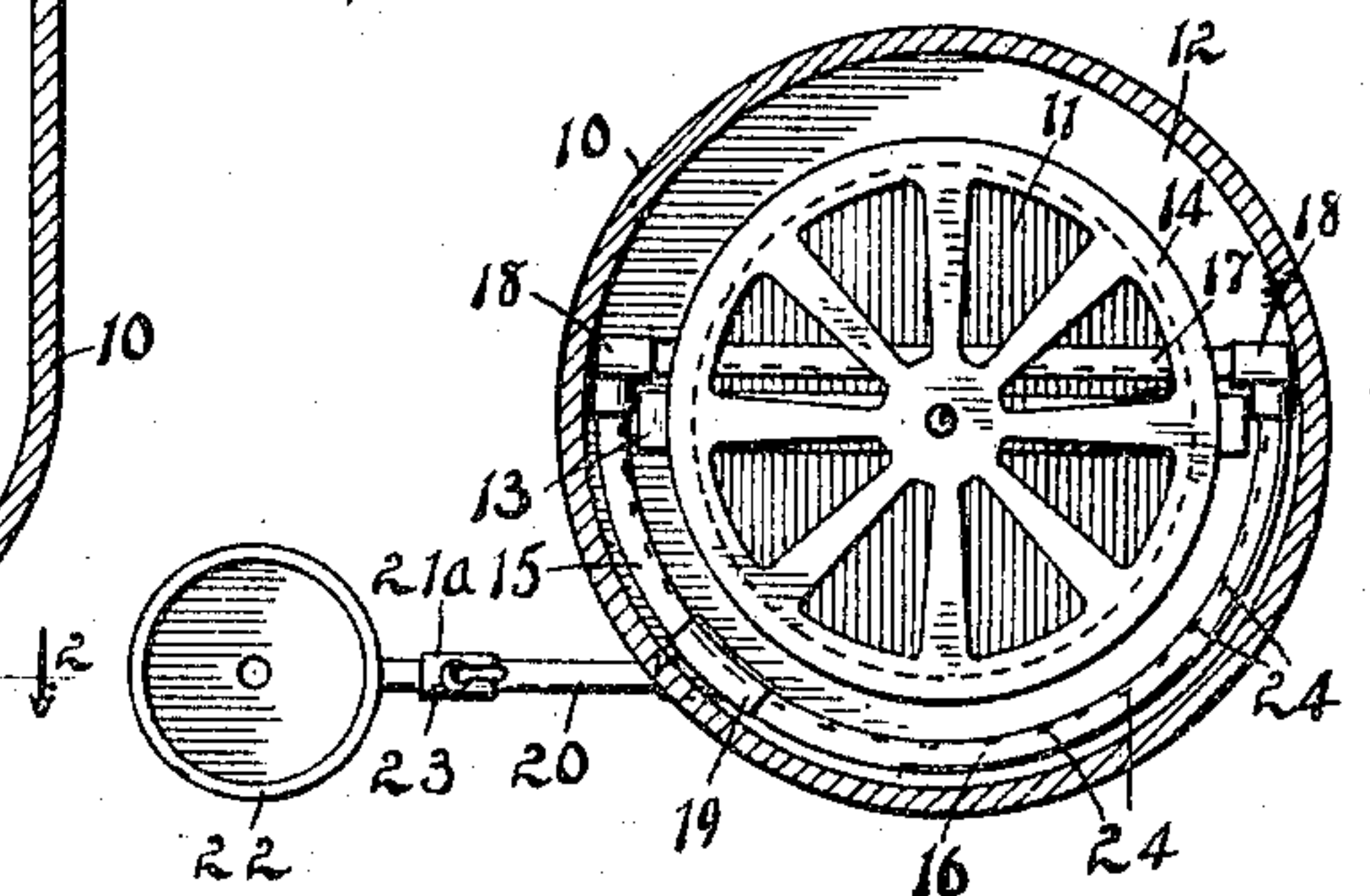
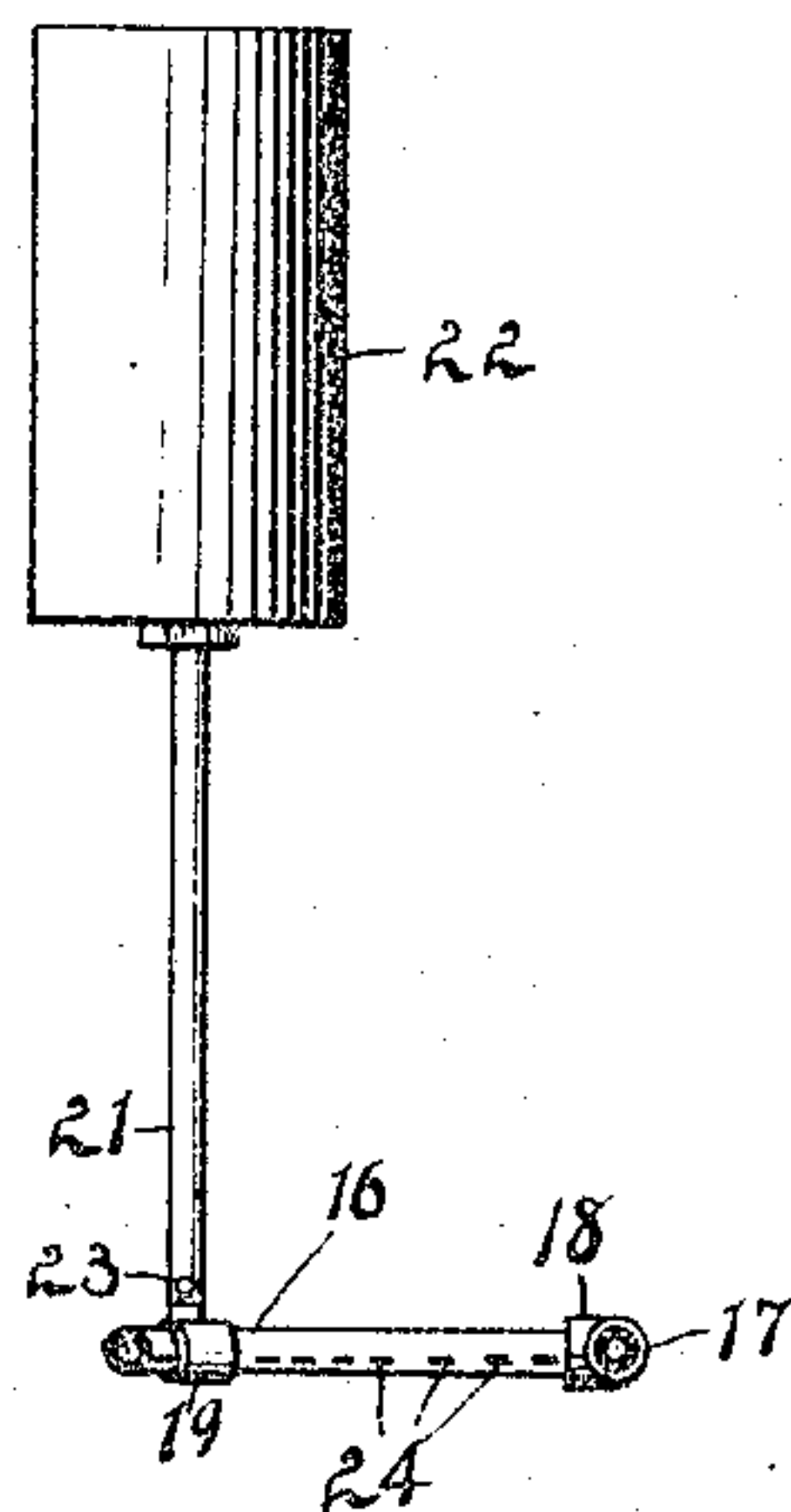


Fig. 3.



WITNESSES:

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SPRAYER ATTACHMENT FOR FURNACES.

No. 881,549.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, GEORGE H. CLEMENTS, citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Sprayer Attachments for Furnaces, of which the following is a specification.

My invention relates to attachments to furnaces and has special reference to devices for preventing the escape of the finer particles of the ashes when the grate is shaken.

The tendency of the ash dust to become diffused outside of the ash-box during the process of shaking a grate where coal is burned for fuel is a matter of common observation, and the disagreeableness of the procedure as well as detriment to the health when breathed into the lungs render any method of avoiding such results very desirable. In addition to this disposition of the fine dust thus produced to fill the surrounding air when the grate is agitated, the process of removing the ashes from the box even when a sufficient time has been allowed to elapse after the agitation to permit the dust to settle will again cause the ashes to be raised in disagreeable quantities. As hard coal does not require a very heavy draft in order to promote combustion, the natural draft of the chimney will not be sufficient to carry all the dust up the flue, especially as the times during which it is necessary to resort to the cleaning and shaking process is when the fire is low from the clogging of the grate.

The chief objects of my invention are to provide means for preventing the escape of fine ashes when the grate of a furnace is shaken by thoroughly mixing a fine spray of water with the ashes during the agitation of the grate; to produce a simple device for the purpose stated that can be applied to any furnace; and to supply an efficient apparatus for dampening the ashes after they have been shaken down.

Further objects of my invention are to produce a device for the purpose in view that can be constructed with ordinary tools and without the necessity of special machinery and enable the device to be put on the market at a minimum price.

I accomplish the above objects by the use of the appliance illustrated in the accompanying drawing which forms a part of this specification and in which:—

Figure 1 is a side view of my improved ash

sprinkler showing the method of attaching it to a furnace, only so much of the latter being shown as will suffice to show their relation; Fig. 2 is a plan view taken on the line 2—2 of Fig. 1; Fig. 3 is a sectional elevation of the sprinkling device alone taken in a plane transverse to the perforated pipes.

Referring to the drawing in detail the numeral 10 indicates the fire pot of a heating furnace, 12 the ash pit, and 11 the flange or ledge which forms a division between the two and serves as a support for a cross bar 13 upon which is carried a grate 14 of the usual form and capable of being rotated and dumped in the ordinary way.

A semi circular pipe formed of two segments 15, 16, rests upon the ledge 12 externally to said grate and lying below the level of the rotary portion 14 of the grate, and the are thus formed is joined at its extremities by a straight section 17, which forms the chord of the arc or semicircle and is joined to said arc by elbows 18. The said segments 15, 16, are connected by a tee coupling 19, to which is attached a short horizontal pipe 20 which extends at any convenient angle from said tee, and passes through an aperture 20^a in the wall of the pot 10 and is joined to an upwardly curved pipe 21 by a coupling 21^a, the upper end of the pipe 21 terminating in a cylindrical reservoir 22, which is shown open in the drawing but which may be furnished with a cover, and may be of any desired size and shape.

The coupling 21^a is provided with a valve 23 by means of which the water may be turned on or off at will.

The pipes forming the arc, 15, 16, and the chord pipe 17 are supplied with a series of orifices 24. These openings are of comparatively small caliber and I prefer to locate them somewhat downward from the horizontal plane of the segment so that the jets which issue therefrom, may be deflected so as not to strike the grate or reach the hot coals which may lie above. I also find it desirable to make these orifices in the shape of elongated slots with their long diameters lengthwise of the pipes thus tending to spread the liquid in thin films rather than in coarser jets as conducing to a better result.

The method of using my ash sprinkling appliance is as follows: The device having been attached to a furnace in the manner shown, which it will be observed does not interfere with the operation of the grate either in

shaking or dumping, and the requisite quantity of water placed in the reservoir 22, the stop cock or valve 23 being previously closed, the operator will apply the bar or wrench to
5 the grate in readiness to shake it to get rid of the ashes. Before doing this he turns on the water at the valve 23 and immediately proceeds to shake down the ashes, at the same time the water, filling the connecting
10 pipes will be forced out of the orifices 24 to mingle in a fine spray with the ashes as they fall through the grate. In this way the water is thoroughly mixed with the ashes and the quantity of moisture may be regulated by
15 the valve 23 as to give the required results and avoiding an unnecessary wetting of the refuse which would make it disagreeable to handle for removal.

It is evident that the reservoir may be located at a greater height in order to obtain
20 more pressure, or the pipe 21 could be connected with any source of supply besides that shown and other changes may be made in the devices of my invention as herein disclosed without departing from the spirit and scope

thereof and I do not wish, therefore, to be limited to the precise construction set forth.

Having thus described my invention what I claim as new, is:—

In combination with a furnace ash-box 30 having an inwardly projecting ledge below the grate, a sprinkling device consisting of a perforated bent pipe extending part way around said ash box and supported on said ledge, a perforated straight pipe connecting 35 the ends of the bent pipe, a water supply pipe connected with said bent pipe and extending externally of said ash-box, a manually operable valve arranged in said pipe, and means for supplying water to said supply 40 pipe, said means consisting of a reservoir connected with the supply pipe and arranged adjacent to the furnace.

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

GEORGE H. CLEMENTS.

Witnesses:

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T. M. POYNTON.