Sheet 1-2 Sheets.

8006X

W. Hunt.

Heating Stove.

Patented Feb. 8, 1834.

Fig. 2.

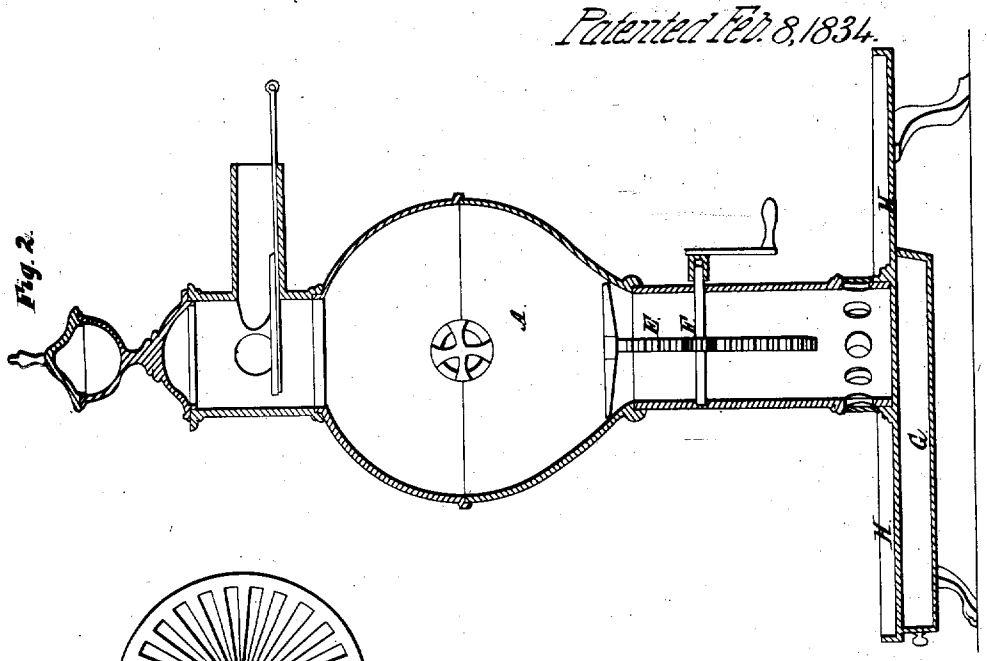


Fig. 3.

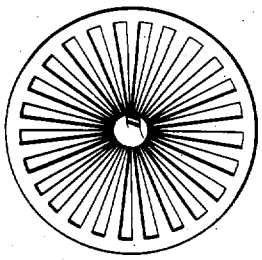
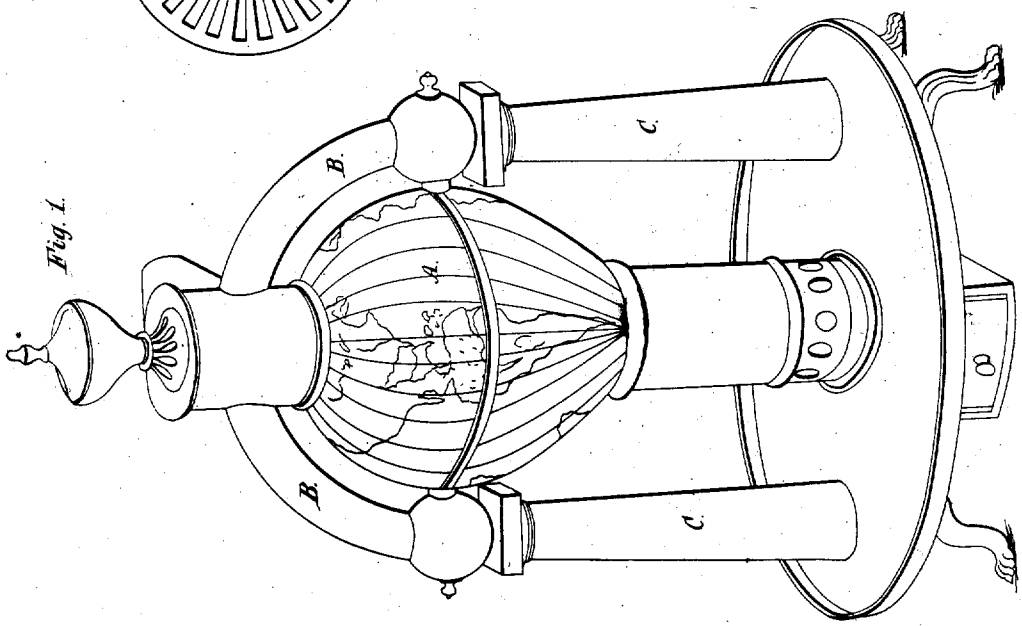


Fig. 1.



8006X

W. Hunt.

Sheet 2-2 Sheets.

Heating Stove.

Patented Feb. 8, 1834.

Fig. 6.

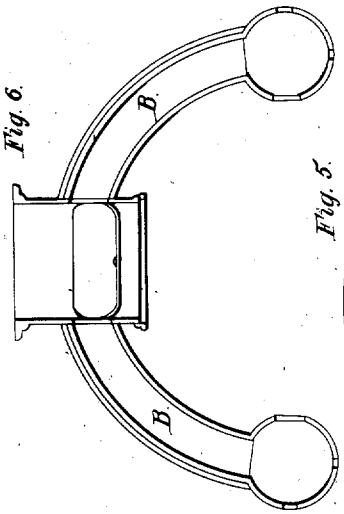


Fig. 5.

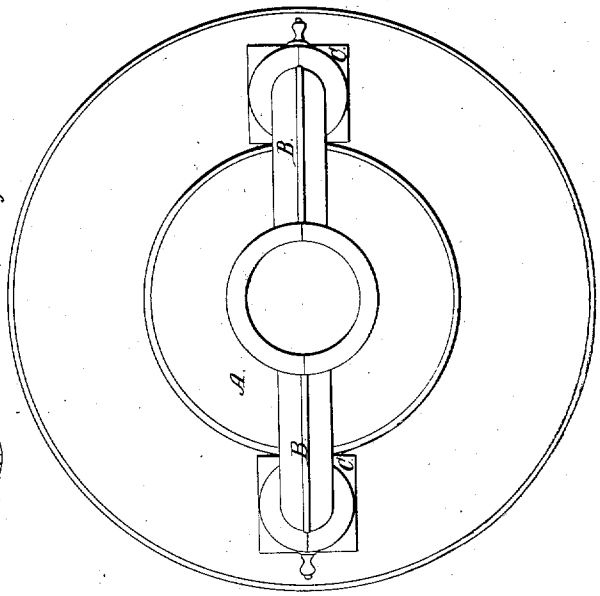


Fig. 7.

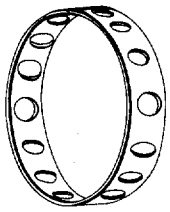
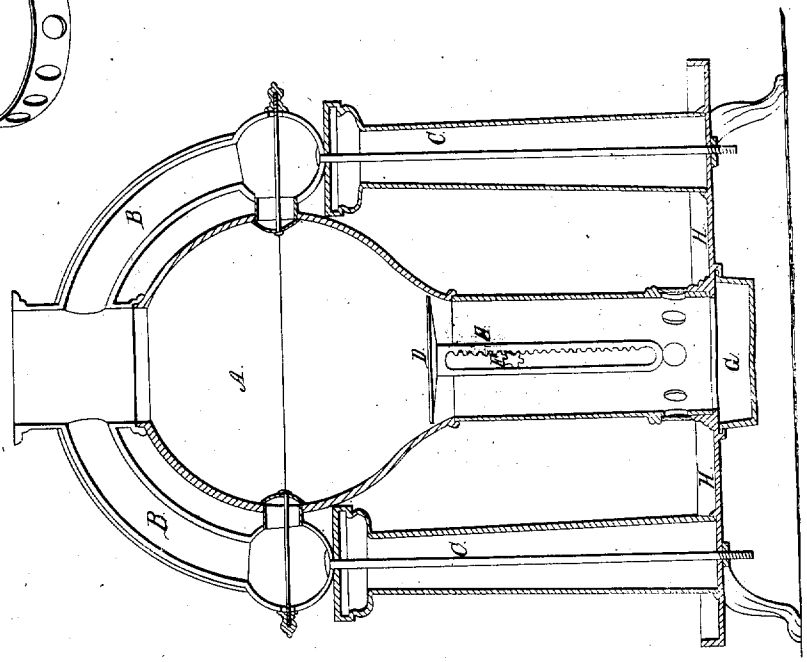


Fig. 4.



Walter Hunt a Citizen of the United States
Improvement in the Construction & Manufacturing of Cast Iron Stoves for burning Anthracite Coal & other fuel which is denominated the Radiator or Globe Stove

Date of Patent Feby 8 1834
Certificate of Attorney Genl Feby 8 1834

The Schedule referred to in these Letters Patent and making part of the same containing a description in the words of the said Walter Hunt himself of his improvement in the construction and manufacturing of Cast Iron Stoves for burning Anthracite coal and other fuel which is denominated the Radiator or Globe Stove.

To all to whom these Presents shall come

Be it known that I Walter Hunt of the City County and State of New York have invented a new and useful improvement in the arrangement and construction of a stove designed for burning coal or other fuel but more particularly adapted to the use of anthracite coal for the common purposes of heating rooms &c which I distinguish by the name of the Radiator or Globe Stove and that the following is a full and exact description of the construction and operation of said Radiator or Globe Stove as invented or improved by me—

Upon a cast Iron circular hearth of about thirty inches in diameter stands two cast or sheet Iron hollow columns about three inches in average diameter, twenty inches in height and about the same distance apart. Upon these columns stands a semicircular arch of cast Iron made hollow and round of about three inches in diameter. The feet of said arch which rest upon the caps of said columns are formed into hollow globes about five inches in diameter which are cast in halves united with each half of the arch and are joined perpendicularly through the centre with the arch – The

joint being covered by a fillet about three eighths of an inch
wide cast into upon the edge of one half of the arch
which opposite with upon the edge of the other half. The
inverted crown of said arch is formed into a hollow cyl-
inder about eight inches in height and five in diameter
open at top and bottom with a pipe about three or four
inches in length and the same in diameter projecting at
right angles from the centre of said cylinder in a hor-
izontal position and forms the tube which receives the first
end of the sheet iron pipe. Upon the tube and round
sides of said small globe which forms the foot of said
arch as before described are planished openings about three
and a half inches in diameter. Upon the outer planished
and filled hemispherical cylinder and caps which covers said
outer openings and binds the feet of said arch together.
A ring forming a cap surrounding is filled upon the top
of said crown cylinder which performs the office of keep
to bind the arch and crown cylinder together and form
also a band to support the water urn which stands cen-
trally upon said crown cylinder covering with its
base the upper head with opening of the same. The
sides of urn are from about eight inches in height of ordina-
ry form and in size about one gallon capacity. The
upper portion which forms a cover is to be removed at
pleasure. The principle use of said urn is to con-
tain water for evaporation. It also assists in giving
a symmetrical finish to the more elevated portion
of the stove. I would here recapitulate that the arch
with its figures pasted is composed of only two Hundred pieces
exclusive of the rings and caps before mentioned which
are to bind said arch cylinder globe together. It is
further secured by two screw rods as before shewn through
the arch and the joints all to be cemented. Through

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each of said hollow columns passes a rod or bolt of about half inch round iron having a firm suitable head within the globular feet of said arch which being placed regularly upon said columns the bottom end of said rods pass down through holes in the earth made centrally under the columns and having screws cut upon their ends upon which suitable nuts are placed which on being suffeciently turned the said columns and earth are all firmly bound together in their proper positions centrally under the arch is suspended a hollow cast iron globe or spheroid made in two hemispheres and joined horizontally near the centre with flanches opening at the top bottom and sides as before. The said openings are the same diameter and exactly opposite of those on the inner sides of the small globes as before described. Through which openings (at) two thimbles or short tubes as large as the aforesaid openings will admit with the inner ends flanched and grated are passed from the globe into the feet of said arch where they are secured by bolts having their heads in the large globe passing horizontally and centrally through said tube and cylindrical caps as before mentioned having screws cut upon their ends upon which screw nuts are placed which on being properly screwed up the said small grates designed to keep the fuel from falling into the said small globes are brought joine to their places at the same time binding the said thimbles and cylindrical caps firmly upon said small globes leaving them and the hollow section of said arch free the possibility of spreading at the same time suspending the aforesaid large globe in a proper position by means of the above mentioned thimbles which are pierced three through which a portion of the draughts passes to the small globes through the arch to the crown cylinder and pipe

as before mentioned. The upper hemisphere of said globe is cast with a small flanch upon its edge which fits closely over that of the under one covering the joint and giving it strength to which is added cast Brackets or ears on the inner side or edge of the hollow section of said globe by which means the two sections are firmly and rivetted firmly together.

The base of the crown cylinder fits upon a corresponding recess or flanch around the opening on the top of the globe in which situation it is held and the joint concealed by the ornamental cast Iron collar forming a loop for the base of the crown cylinder and the flanch of the globe. Six thin screws nearly at right angles outward and forming a spread nine inches wide and two inches deep filled to and encircling the upper section of the globe said outer crown cylinder forms the curved plinth of the stove and also the feeding recess through which the fuel is introduced. The under hemisphere of the globe is long and about four inches below the regular curve of the globe in form of the lower section of a balloon for the purpose of aiding the descent of the ashes and accumulation of the grate &c. The opening is about six inches in diameter and precisely covers ponds with the top of outer cylinder which is about one foot high and resting on the same smooth with a suitable shoulding encircling it has from which extends a flanch about one half inch wide perforated with ventilating holes about one and a quarter inch in diameter which is designed to admit atmospheric currents to supply combustion. Directly over this perforated row of flanch is placed a corresponding cast Iron row of flanch so placed as to correspond with the perforations of the lower row of flanch. The object of this and which Deals the ventilator is to conduct the com-

bottom of the fuel in the stove which is effected by giving it a slight circular movement to the right or left by which the ventilating holes are thrown open partially or entirely closed. Which is designed to suppress entirely the draught of the stove and regulate its temperature of the heat. The ash pan which is under the hearth is about inches wide by fourteen in length to be drawn out sideways it is enclosed and closed in every direction except fully supply to the pan open only on the side from which the pan is drawn. This ash may be cast entirely with the hearth or separately or made of sheet iron in two and its upper edges riveted to the bottom or under side of the hearth which is about six inches from the floor supported on feet of ordinary construction.

The horizontal pipe which passes from the crown cylinder is flattened or elliptical longitudinally so as readily to correspond in width with the diameter of the crown cylinder. In the bottom of this pipe is fitted a longitudinal damper made to slide inward and close the draught of the crown cylinder when necessary in which case it passes wholly through the pipe into the side pulling in the crown cylinder above said damper by which it is partly diminished and the combustion proportionally reduced. I have varied the form and arrangement of the ash pan of said stove by passing it horizontally around the globe forming a circular platform in which the draught passes from the globe ascending through certain holes to the pipe by which the structure of the stove is more elevated and fuel has discharged immediately in contiguous of an increased surface. I have in this case dispensed with the side column and have varied the form of the hearth in the style of a fashionable centre table for which I have reserved the form of my grates to accommodate

date the different sizes of my stoves although of similar form may answer both purposes. The rack and pinion gate is constructed as follows. It is made of cast iron of a circular form about eight inches in diameter in form of a grate which with ... the ears omitted. The centre bars is about one inch thick but not elevated, or projecting above the spokes or radiating bars of the grate which are deepest in the centre but grow thinner and wider as they approach the circumference. This grate is placed horizontally in a horizontal position in the bottom section of the globe and to its centre is firmly secured a rack about one foot in length, quarter of an inch thick and two inches wide with a slit in its centre nearly its whole length about three quarters of an inch wide with cogs on one side of proper dimensions to work in a pinion which passes horizontally through the centre column and said rack and by means of a crank-handle on the outer end of the axle and grate is raised up and down slightly or the grate may be raised into the centre of the globe by the vibrating or slight movement the ashes only are discharged and in the latter movement when the pinion is turned several times around the coal is precipitated into the ash pan as planned. The bottom of the rack may be inclosed in a sheet iron case to screen the cog work from being clogged with the coal when the centre column is small. Instead of the rack a straight stem is cast on the grate centrally about eight inches long the bottom end of which fits loosely in the end of a horizontal lever suspended through one side of the centre cylinder by moving this lever horizontally the ashes are shaken out perpendicularly and by working the said lever perpendicularly the grate is elevated in the stove when it is large and consequently allows the coal to fall around its sides into the ash pan. This open-

tion is only necessary when there is an accumulation of cinders or slate in the stove

The mode of operation or manner of filling and managing said stove is as follows. The iron being removed and shut and funnel taken off is furnished with a stove is inverted into the top of the crown opening through which the coal is thrown from the shuttle into the large globe a suitable quantity of ignited charcoal or light wood may first be introduced in the said coal may first be put in and the kindling put upon the top by making a small opening in the centre of the coal and in the kindling is well ignited put small hard coal upon the top and replace the iron with a common draught the whole mass will become thoroughly ignited The same process may be observed with success in kindling when there remains a considerable quantity of extinguished coal in the stove which may frequently occur in the morning — Care should be taken to keep the ashes well shaken out to prevent the fire from clogging, and when burning low briskly the ventilator may be closed and the entire damper shut as before mentioned by which means the fire may be perfectly controlled — The ashes and cinders being discharged as above described.

The improvements claimed in my invention are as follows viz. First I claim the style, general arrangement and fashion of the above described Radiator or Globe Stove believing the peculiar advantages of such arrangements in the generating and equal diffusion of heat exclusively confined to the globe or spherical form as a receiver of fuel for the following reasons viz. As the only form from which heat can be equally radiated and circulated it has the greatest advantage of expanding and keeping up the heat downwards warming the floor and lower

region of atmospheric which cannot be effected by the angular or cylindrical flues.

Secondly I claim the spherical or hollow globe, or inverted hollow cone for the bottom section and reservoir of fuel and radiator of heat, in combination with the vibrating and hoisting grate as before specified together with the said centre hollow column which prevents the escape of ashes into the room in its descent from the globe to the ash pan.

Third and lastly. I claim as my improvement the particular and as a part thereof the manner of uniting the vibrating and hoisting grate as before specified.

In witness whereof I have hereunto set my hand this eleventh day of December 1833.

Witnesses
Wm A Sowles
R C Hinckley

Walter Hunt

Drawing

(2552 words)