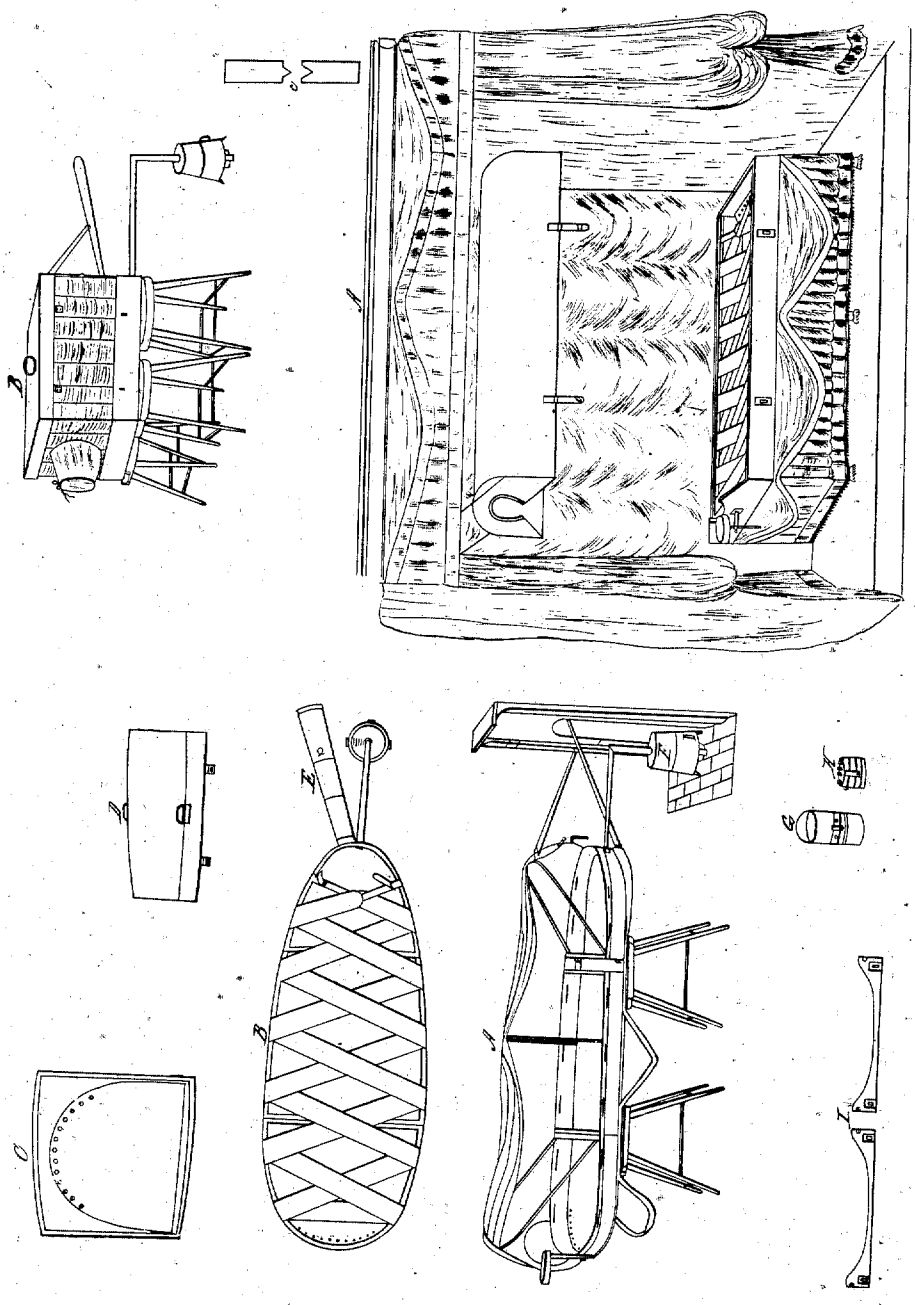
7190X

B. Reilley.

Vapor Bath.

Patented July 31, 1832.



N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

No. 7190X

July 31. 1832

Boyd Reilly

The Schedule referred to in these Letters Patent and making part of the same, containing a description in the words of the said Boyd Reilly himself of his improvement in Apparatus for applying either simple or medicated vapour or steam to the surface of the Human body, being an improvement on his former Patent dated February 5th 1831.

To all whom these Presents may come. Be it known that I Boyd Reilly of the City of Philadelphia in the County of Philadelphia and State of Pennsylvania having obtained Letters Patent on the 6th day of February one thousand eight hundred and thirty one, for a new and useful improvement in Apparatus for applying either simple or Medicated Steam to the surface of the Human body with perfect ease and safety in the chamber of the sick: having made considerable improvements in the same of which the following is a full and exact description. Plate 1st Figure A represents a machine which separates into three divisions, each part calculated to fit easily into the other, by which the length of the Machine, when packed up, is reduced nearly two thirds without adding to the thickness. The top piece is painted on the side, to show the three bows by which it is supported; the foot division is attached to show the fastenings by which it is united to the centre division; the false bottom is also attached, as it necessarily must be to permit the separation of the foot division. The shape of the frame is an egg oval at the head & foot ending, to accommodate the shoulders of the patient: at the foot inside iron rounds for the convenience of packing, & also to afford as much comfort and support to the sides as in order that the top and bottom covers may keep the clothes

half that the centre, the third dimension 9 inches, & the first dimension 18 inches and a half. The frame of the middle compartment is made of seasoned wood, ash, oak or any the thickest pieces of this frame. 4 inches in depth & 2½ of an inch in thickness; the length already given; they are cut square to the part of the coal they belong to. a shackling rail of the same breadth and thickness is dovetailed into each end of the frame, the one at the upper end 25 inches in length, the one at the lower end twenty three, these shackling rails are hollowed out from the upper edge three inches in the centre to make room for the body of the patient, they are glued in & further secured by a wooden pin passing through the dove tails from top to bottom, that is 4 inches. The head dimension is formed by a piece of hickory or white oak (if green or will bend better) 4 inches in depth and three quarters of an inch in thickness, bent to the shape of the head of the frame on a block or frame, after being prepared by boiling or steaming, and three circles in the same with a pin to keep it in shape; the ends are secured by a shackling rail 2½ by an inch in thickness and to correspond in shape with the one in the middle dimension. the foot dimension is formed by a similar bent piece made to the shape of the acute end of the coal & five eighths of an inch in thickness. shackling rail the same; these bent pieces are tightened on the tapering edge, between the dove tails, to a half inch in thickness.

The patient reclines on board quite a "shaving mouth" as described in my former specification, some alterations in the dimension if it necessary in consequence of the dimensions of the frame that is shewn on scale 1st figure 13. the handles are made to receive the webbing, seven eighths of an inch from the upper edge of the frame, it is to be observed that the webbing is invariably entered from the inside of the frame which will prevent the handles like cut to the breadth of the

gusseting. The gusseting being taken out whenever this Machine is stacked up. The ends are fastened with a Hook and buckle of rush and half gusseting or leather. They should be strong with buckles brasses or plated, and attached by a strap to the frame. A piece of strong blanket 12 inches in breadth is cemented along the inside of the gusseting and fastened by the rivets clasping under and taking a large brass button on the outside of the frame. Two circular hollows at each end 9 inches in breadth and one eighth of an inch depth in the centre, except at the head of the frame, where they should be gradually deepened to permit the piece that supports the cushion for the head of the patient to move up and down; the use of these hollows being to receive the edges of the lap and bolster cords. One of these hollows is a full eighth of an inch from the bottom of the gusseting mortices, the other is the same distance from the same edge of the frame. The upper edge of the frame and the gusseting mortices must be made round and smooth so as to keep the gusseting from chafing.

The bottom of the middle division is covered with sheet sheeting tacked close to the bottom on the sides but projecting a quarter of an inch at each end to cover the joints where the end divisions are attached; this for stitching ends should be double, to give them strength and the cut edge should be returned under the frame to protect it from the action of the water. The head and foot divisions may be covered with a lighter tin as all unnecessary additions to the weight of the machine should be avoided; the bottom of the head division should be perforated with twelve half inch holes one inch apart, close to the inside of the head of the frame, these holes are to prevent the escape of the vapour between the bottom; the five bottoms are fastened on with short cut tacks which should be tinned. The frame and bottoms should be painted with drab stone ochre and oil which [illegible]

The end division are attached to the middle division by strong wrought iron Ketches, made of flat bar iron Sheet iron. the long or inner end being made square in order to prevent its turning; the plates with the Ketches attached, are let into the Sheathing rails of the end divisions three inches from the ends or outside of the frame, & as near to the lower edge as the strength of the plates will admit of, as the pitching when pressed by the weight of the platform draws the joints close above; these plates are secured by a steel flat headed screw at each corner; the Ketches should not project more than five eighths of an inch from the plates, lest they should punctuate that the opposite sheathing rail and be exposed to the caisson; these Ketches are received by similar sheet iron plates let into the opposite sheathing rail; over which the Ketch at the bottom is passed, after it has entered the plate, these fastenings should be well tinned. The bars which support the top cover, are made of hickory or White oak they are made round and half an inch in diameter, the bar for the head must not exceed the length of the middle division, as it must be packed up inside of the case. it is fastened by passing a Screw, which should taper a little, thro' the two sheathing rails, near to the head and close to the inside of the end division. which will cause it to be let into the side of the middle division one eighth of an inch being the difference in thickness; the holes are bored thro' the sheathing rails in such a direction as to elevate the centre of the bar 12 inches above the top of the frame; the centre of the bar should stand six inches from a line that would be perpendicular to the outside of the head of the frame. The centre bar is like the head bar in shape, but wider in that as occupying the greater part of the frame, it ranges on the top in straight line with the head and foot bars; it is placed at the upper end of the centre pitching piece and not at the lower end as previously mentioned in the

dressing; it is fastened by being let into the seat frame and
screwed up on each side. The bottom of dressing stands 4in. above
the seat of the bottom; a tin plate in half circular form
covers the ends and is fastened on with tin tacks.
The foot rest is fixed to the staple of the foot of the machine, fas-
tened like the head rest, is elevated 15 inches from the top of
the frame and stands 4½ inches from the perpendicular bar,
which permits the cripple to be put on and taken off with ease
and safety. The head of the patient rests on a circular board, 6 inches
in diameter, covered and softly stuffed with wool or curled
hair; a tin socket is fastened on the bottom of the board one
inch from the edge, this socket is one inch and half in di-
ameter and is made to receive the end of a steel rod which is
in length, one inch and a quarter in breadth and five eighths
of an inch thick, rounded on one side to a half circle. The flat side
rests against the frame of the machine and is kept in its place
by a tin socket, fitting round it & fastened with screws to the
head of the frame; a short thumb screw is let into the centre
of the socket which keeps the cushion elevated or depressed
at the pleasure of the patient. This fastening will be better
understood as the familiar fastening of a barbers chair;
it is much more simple and cheap than the one on my
model. The best material I have found for the cushion, is
light curled Hair, it should be stretched on a frame the
curled side uppermost & secured by a cord of white washed calf
or goat, made of good strength & being neat of such a consider-
ation as not to ruin them, the object of this fixture as being
to prevent the perspiration from the patients head running down
upon the cloth work & persons & dry, & this with a refer-
ence to the following explanation, in the manner described in my first
specification were there either difficulty & pain in a patient
being put in sitting posture as if for common stools, by or a
difficulty in the patient to adapt the frame of the seat

which can be ascertained by holding it against the light.
A Rushia three quarters of a yard wide is the proper breadth when
it is thoroughly dry it should be pasted round the frame drawn
at the head and foot and then the cords if an outer cover
is used the seam may be on the outside, the cover should fit easy
as it will shrink a little. The lower edge of the cover is secured
by a stout cord such as that used for sash weights, it should
be well stitched, a leather strap sewed at one end and a three
quarter rolled buckle to the other, the cord is sewed loosely into
the edge of the cover the strap and buckle at the foot the centre of
the cord sewed fast at the centre of the head, this end draw the
edge of the cover into the circular hollow already described.
A circular hole 12 inches in diameter, is cut in the centre of
the lower of the cover, a piece of the same diameter one inch
broader with a stout wire in each edge to keep it from slipping
is sewed in this opening by a seam made of a single thickness
of flannel with silk cloth which is sewed with silk or thin thread
silk and one edge sewed round the opening, the other edge in
which is a drawing string, is placed thro' the hem of the cover being
returned on the outside is drawn tight with the string,
the hand being made just deep enough for this purpose which
will be about one inch and a half. This hem also covers
the edge of a bag, which is placed round the neck of the stations
and described in my first right. For the folding portable
machine. This top cover should have an outer cover of silk, or
some light woollen fabric, as being folded up with warm it
may adhere together. The false bottom is made of the strainer
must be cut to the shape of the bottom, allowance being made
for the seam. It has a border two inches wide or deep, in the
manner first but widening gradually towards the feet,
in order to receive the seat of the couch hole, a circular
round hole is cut in the border in the side of the corner of the
feet, one to be on each side of the hole from the corners a
hand

hemp with a drawing string is passed around the edge of the hole to secure the end of the escape pipe in the same manner as the tin hoop is described above. The escape pipe is made of three pieces of tin 12 inches in length folding one within the other so as to occupy only the space of one; one sufficiently tapering to keep them from separating when drawn out; the smallest end of this pipe should be double the capacity of the pipe which admits the vapour, this end should be flattened to an oval form of about an inch wide, so as not to cut away too much of the border of the false bottom, the wide end of this escape pipe is put up the chimney of the fire chamber. It is kept up against the breast of the chimney by a double string which is fastened to the outside of the top cover of the pot, a loop being fastened to the outer division of the escape pipe to receive this string. It should have been observed that the upper edge of the false bottom border has one strap & buckle sewed in it like the top cover. The manner of managing the vapour is described in the first specification. The folding portable apparatus however requires a few alterations, it is premised that the heating apparatus is packed up within the frame, which is 4 inches in depth, the pot must be put up in this space the lamp is found to burn better with wicks and pure alcohol, it should therefore have four sockets for wicks in the lid, the wicks large one in the center, the other divided round it. these wicks should be always singed and after using or they will not burn well, the lamp, including the lid, & wick sockets should measure 4 inches square in depth and be of capacity to hold a pint; the apparatus for the vessel containing the material to be raised instead of being riveted to the lamp must be riveted to a band which fits round the top of the lamp, and has projections at the ends of it riveted on the sides thro' these pieces should pass the bent above the lamp one with a wire bolt, to keep the vessel from

stripping off. they should be set off and turned square up.
Where the canop is to be stacked up there a room is to
have off the top of the canop and stripped on the bottom and
then sloped inside of the line wipes or corner pins which con-
tains the material to be carried in vapors; the breadth
& depth of this wipes being regulated by the size of the canop
when this stacked up. The cap under which the canop be
are placed is made tapering and divided in the centre, so
that the upper division should go inside of the lower division
and both be placed over the canop when stacked up. The lower
division of the cap is of rather diameter at bottom than
the upper deck. it is made of light sheet iron upper part thereof
by the solder, turned inside and has a handle riveted to the
side, it stands on three feet, which raise it three inches from
the ground. these feet are made of sheet iron with the edges turn-
ed over to give them strength, they also have wipes inside with
a hinge, so as to prevent the cloth of stretches; the upper division
is made of tin. it fits over the lower division when the
cap is used, but face inside of it when stacked up, for which
purpose the cap is made just sufficiently tapering, it is also
the deep including the half circle projection on the top which
goes into the fuse. The tin fuse which covers the ta-
per into the machine is one inch in diameter, and
two feet in length a joint in the middle with an elbow
sufficiently long to bring it nearly level, the end which goes
into the part of the machine between the two bellows is flat-
tened to half an inch, so as not to cut away the frame the touch,
a tin fuse receives it which passes thro' the part of the frame
the board is cut away a little over this fuse, so that the bar
may not scratch it. this fuse is kept in its place by a tin
plate 4 inches long one inch and half wide, the end of the
plate is turned over this fuse at the edges of the plate to
fit it, with the frame, a similar plate fixes over the end

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of the strap in middle of the frame, it is fastened with brass tacks. The strap should project over this plate one inch to keep the hair of the patient touching the wood. The strap is secured from coming further out by a brass plate somewhat longer than the first which is fastened by four small wood screws.

The machine is prepared for use by first attaching the two dirigeons, putting on the pulley bottom, drawing the strap and buckle tight at the foot, place the four chairs under the joints, taking care not to put them under the bottom further than necessary to make it steady, as they will obstruct the surface of the reclining board. It is a good way to place the patient first, then fix the chairs. The centre of the reclining board should be marked, so that the cords may come out even. The reclining board should be lightened by degrees, like a washing bottom board; a sheep's wool blanket 12 inches wide, goes on the centre of the reclining board from head to foot and is fastened by a strap of narrow webbing, and a large bone button sewed on the bottom of the blanket at both ends. The tin hook which is round the patients neck should be fastened on its place in the arm, and the loose edge of the arm rest in its place at the head of the machine, so that the cushion for the head of the patient may be screwed in its place. The canvas is then laid on the floor at the head of the machine, until the loops or eyes are put in their places over the pulleys, when the canvas is turned over the edges placed in the bottom of the strap and buckle drawn tight. The bag which have been previously placed round the patients neck is then secured round the tin hook by fastening the drawing string carefully between the two edges. The escape pipe is then attached and the lamp lighted. When the patient leaves [illegible] it had better be taken off. When the patient is at all tall her feet will come over the opening at the foot, he should be directed to stand on them. The machine is fastened by pressing the foot dirigeon accross the middle of the

division, place the lamps and case packed up as already described, inside of it: slip the cushion off the rack that supports it. place them both inside; the cramp pipe also. offix shewing ... the joints together; after which the fastening &c in a little practice will soon make the packing up easy. the lead division is then turned bottom upwards over all the loops or bows laid on the top. the corners folded as thin as possible and laid between the bows. a tin flask containing aether may be fitted to one of the corners, a tin case which may be black japanned, is fitted to it, a string, wire should go round the lower edge of this case: it has no bottom. the bottom of the middle division answering the purpose: the case is fastened on by two hasps on each side, which fit on a tinned iron staple screwed into the lower edge of the middle division. the staples have holes in them thro' which a spring key passes. which keeps the hasp in its place; these keys are fastened to the case with small chains.

Apparatus for Hospitals and families

For these purposes the machine need not take apart. they may be made with five pieces, of the same depth and thickness as the three divisions, bent to the shape of the head and feet & left long enough to be jointed at each side in the cranks by having clasped 6 or 8 inches, the legs united by carpenters the same called cast joint is the (best) thin glued and secured; three stretching rails of the same thickness but coming in higher up than the fastening rails. one of these stretching rails let in one eighth of an inch in the centre of the frame; each of the others midway between the centre & the ends. fastened by glueing and nailing thro' the sides: the false bottom may be cushioned on the frame; the cramp made without the moving bands; the cork need not be made tapering nor to shrink in the cranks. one fin the feet to turn up with a hinge; a fastening legs or fenders towards the

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be fixed to the centre of each side; and the pitching thereto may be brought at least one inch nearer together and an additional thread cut on each side.

A fixed apparatus.

As shewn on plate 2, it is an oblong frame 6 feet long from out to out by two feet six inches wide & 8 inches deep; the frame is made of five thicknesses of seven eighth White pine stuff glued together, the end and heart edge being carefully put together, to keep it from springing. It may be lapped glued and nailed at the ends & dovetailed. the circle round the neck 14 inches in diameter: a projecting boarder rim receives the bag round the neck, the rim projects one inch, is three quarters thick, should be slightly hollowed on the outer edge to receive the drawing string and keep the bag from slipping; the inner edge should be rounded smooth. the bag should be increased in depth in proportion to the increase of diameter; the head of the frame should be carried up by a bevel five inches into the circle. the rim separated accordingly to leave a space for the neck to pass through corresponding on the corner, A covering or rim receiving 4 inches deep from the upper edge is put round the frame, leaving an inch at the lower edge to form a festoon in balance to. A ledge of Mahogany three quarters of an inch thick one inch wide enough to cover the edge and shaped to form a moulding, is fastened all round the upper edge of the frame and mitred of course at the corners, The cover is circular, it may be covered or made entirely of tin 8 inches high from the straight line at the ends; the ends of the cover made of seven eighth White pine in two thicknesses the grain of inside thickness running up and down; these ends connected by side pieces made like the two side pieces of the frame below, and secured at the corners in the same manner; the circular top is covered by strips of half inch pine running from head to foot;

&c.

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the breadths of which will vary according to the form of the article they cover; the edges, of course, curved so as to joint. A recurring of strong linen is drawn over these slips glued & basted and pasted on the outside, the whole top being neatly covered with any tapestry that the fancy may suggest. The escape of the gas is prevented by a cone groove the shape of which is seen on the drawing. the cone is one inch wide and three eighths deep. the hollow is worked in the edge on the upper edge of the frame, a fine tongue is fitted into that hollow. the upper part is then glued and the cover being immediately secured thereon. When the glue dries the cone will be exactly in its place; the whole lower edge of the cover including the cone, is covered with some soft cloth, and the cover is made fast when in use by two brass hasps one each side made on the same principle as the hasp of a trunk lock the hasp being attached to the cover, the receiving plate let in to the side of the frame. The drawing shows the top suspended by cords and counter weights. the cords pass thro' pulleys fixed directly over them in the ceiling & are then fastened to weights which are contained within four hollow pillars which support the cornice and contains. the cover may attached by hinges on the back part like the lid of a chest. The bottom of this apparatus is seen by it rests on six legs 18 inches long three on each side. the tap is admitted thro' a two inch hole running up thro' the leg at the back part of the foot of the machine, the tap passes out thro' both the legs at the base of the machine. these legs may be made of such size & inches square. which will leave a cavity of two inches. they are covered by the decoration which are round of the bottom & may have the same neat finish on the part of the leg that is seen. the upright stems are 4 feet from the floor high, the plat-

form

form projects beyond the appendages at the front side and at each end, so as to leave room for a person to walk round, the distance is left to the taste of the maker, the platform extends to the wall or partition at the back side of the machine, leaving a space to pass behind and adjust the cranes, the platform also affords in lowering the columns which sustain the curtains, The two legs at the head are attached to a wooden pipe of the same size which passes under the platform thro' the wall or partition in the rear & communicates with a chimney or perpendicular spout of same height out of doors, the tin pipe which runs thro' the leg at the foot of the machine passes by an elbow under the platform & communicates with the furnace which may be in the cellar or out of doors, should there however be a fire place in the room so situated as to answer, it will save trouble, the furnace is heated by charcoal which is burned in a small sheet iron stove, similar to that used by tin manufacturers to heat their soldering irons, a circular sheet iron stove is placed over this with a door large enough to receive a vessel containing the materials to be raised in vapour, this door slides upwards to be raised or lowered at pleasure so as to admit a greater or less quantity of air; a flange and short pipe is attached to the back of this stove or to the top of it, as the case may be, which communicates with the tin pipe already mentioned, the furnace of the charcoal should have a vent back and not be permitted to enter the machine on account of the smoke, The patient reclines on a frame made of two pieces of sheeting or similar cloth & another side and one end. Which the length of the middle of the machine these pieces placed on cords on each side of the machine are secured by pins stretching pieces of the same thickness and reaching up to a range of pricking mortises placed one

finished like the edge of the apparatus last described, the sliding piece at the head and foot framed 6 inches from each end; the other two equally divided, the sliding pieces tightened & followed out to within one inch and half of the bottom; this frame can be taken out as to dry the finishing after using. Holes must of course be made thro' the tin bottom to communicate with the legs that are used for the support, the bottom is made fast to the legs by nailing; these openings in the bottom are covered by a piece of tin at each end 6 inches wide and extending across the bottom, these pieces are edged with strong wire and punched full of holes, in the wire of one edge several hinge pieces are placed, which are fastened by tinned nails or screws to the end pieces of the frame, so far up as to make the tins form an angle with the corner. The head cushion and support of this apparatus are made like the heap one on my model, the cushion may be made larger and trimmed with more taste, this apparatus is painted with color.

Portable Machine for the Sick.

The bottom part is made of sheet tin, it is two feet long by one foot wide and four inches deep, it has a tinned wire in the edge turned on the inside, the lid or top is two inches deep and when closed laps over the bottom one inch and is fastened by two hasps on each side like a carriage, where it is on the top is stiffened by a light strap joint in each corner, similar to a table which when stuck fast towards the centre stiffens the sides of the machine. The support is carried and converged off in the same manner as the portable machine for the body, the length and size may be made smaller, the support is extended thro a slide close to the bottom and the end of the machine after

side to which the hand is admitted, a flat piece or passage, four inches wide and half an inch high is allowed on the bottom from this hole to the front of the machine, a range of small holes are punched in the half inch edge of this passage by which the vapour is spread thro' the machine without causing it to be in contact with the cloth by which it might be destroyed.

When the machine is in use a space of 12 inches is preserved by the outer joints between the edges of the top and bottom; the vapour is confined by an oil cloth prepared in the usual manner as the cover of the portable Bath, which a circular opening is made in thereof 10 inches in diameter; the bottom of the cradle being even with the edge of the bottom, to the edge of which a bag is sewed, similar to those just round the neck of the patient in the other machine, like that cord tied round the hand and secured by a handkerchief. This oil cloth is secured at the bottom by being tacked round the outside of a wooden frame, which is made of pieces one inch wide and half an inch thick; these pieces are fitted (with their edges up and down) to the inside of the bottom; allowance being made for the thickness of the oil cloth and for pieces of the same breadth (one inch) and the thickness of the wire projecting on the inner edge of the bottom.

This frame is done tacked at the corners and fastened by round headed screws, which pass thro' the sides and cradle thro' the filling up strips the thickness of the wire already mentioned in to the frame, the inner edge of which is one inch from the bottom, and half an inch from the passage which receives the vapour. The top edge of the oil cloth is tacked to the edge of a frame of the same breadth and thickness, which is fitted up flat against the inside of the top of the cradle in some such fast-

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and with round headed screws thro' the top the frame is stopped half and half at the corners allowance has only to be made for the thickness of the linen or oil cloth as the stiffening wire lays is on the out side of the cover.

The escape pipe is made in joints and goes into the back part of the oil cloth, over the furnace pipe and close to the upper edge of the bottom screwed in the same manner as that of the large machine. A handle is fixed in the centre of the top. A support for the limb is made of sheet iron attached by a hinge to the wire in the edge of the bottom, and under the opening for the limb, this support may be 8 inches long and 4 wide; to stiffen on the top, and turned inside of the machine when closed up; a cushion covered with oil cloth is also made for the heel to rest on, it is attached to a iron stand in the form of a hook; the feet going on each side of the vapour receiver, and one with legs, which keeps it half an inch from the hot pipe. The inside well painted with ochre the outside black japanned. the machine rests on three brass screws.

References to improvement.

Plate 1st figure A. large portable apparatus.
ditto .. .. B. another view of the same.
ditto .. ditto C. Machine packed up.
ditto .. ditto D. Iron case for ditto.
ditto .. ditto E. Escape pipe ornamented
ditto .. ditto F. Improved cap.
ditto .. ditto G. Stand fixed for use.
ditto .. ditto H. ditto packed up.
ditto .. ditto I. Metallic rod with screwing ends holes for many sizes
Plate 2nd figure A. Fixed apparatus.
ditto .. ditto B. Portable ditto for the limbs
ditto .. ditto C. Iron joints.

Witness William Hall William Hall Jr. Thomas Hall