

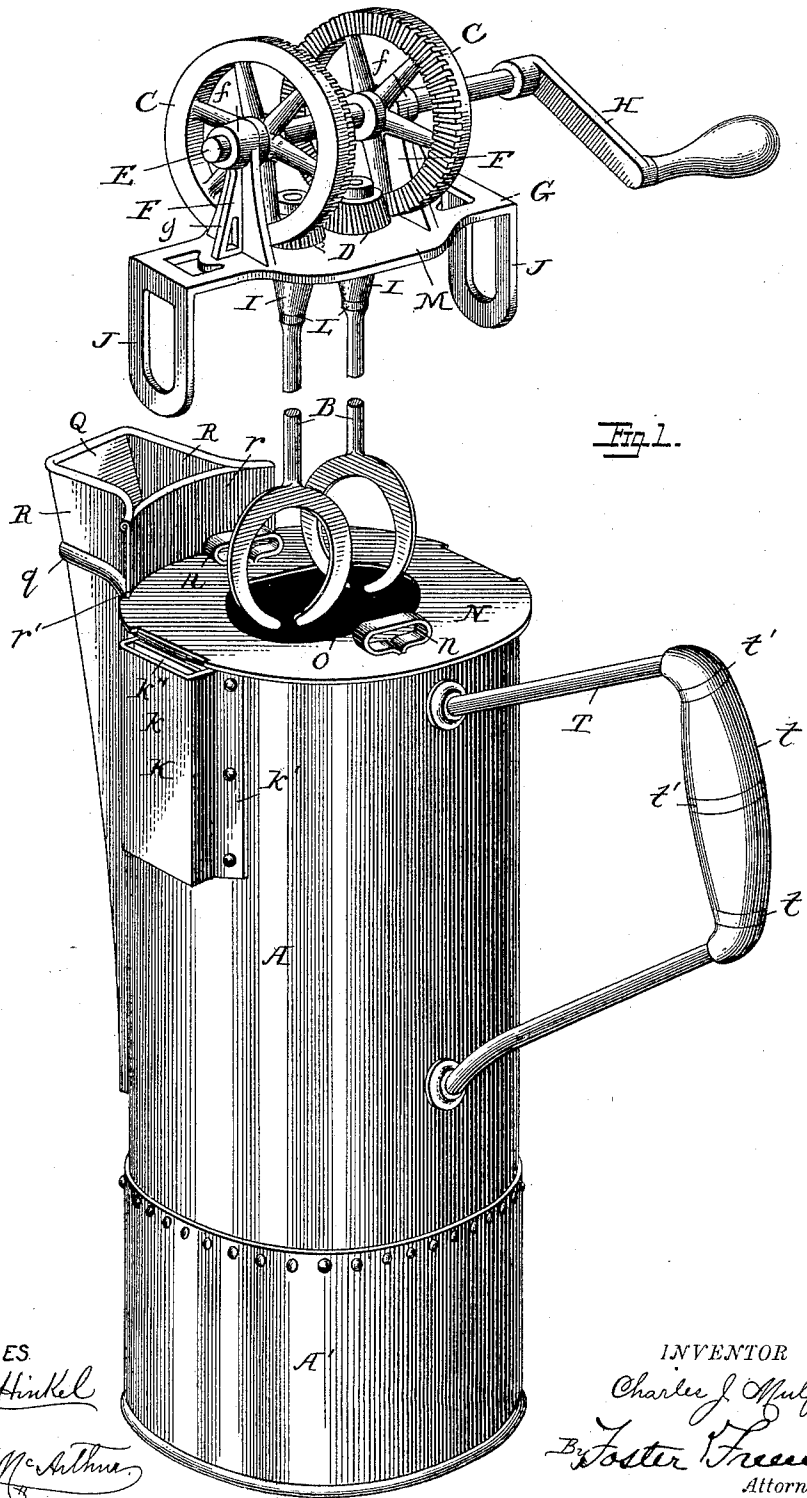
(No Model.)

4 Sheets—Sheet 1.

C. J. MULFORD.
CHOCOLATE POT.

No. 460,265.

Patented Sept. 29, 1891.



WITNESSES.

Geo. G. Hinkel

H. S. McArthur.

INVENTOR

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Attorneys.

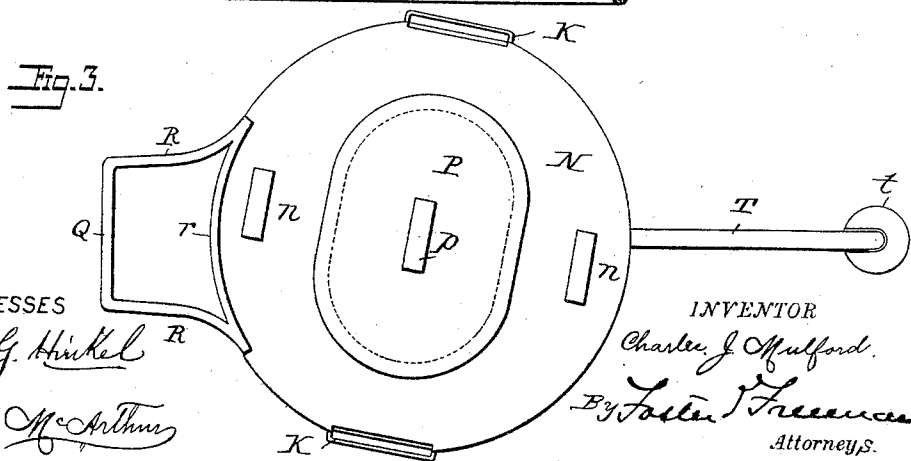
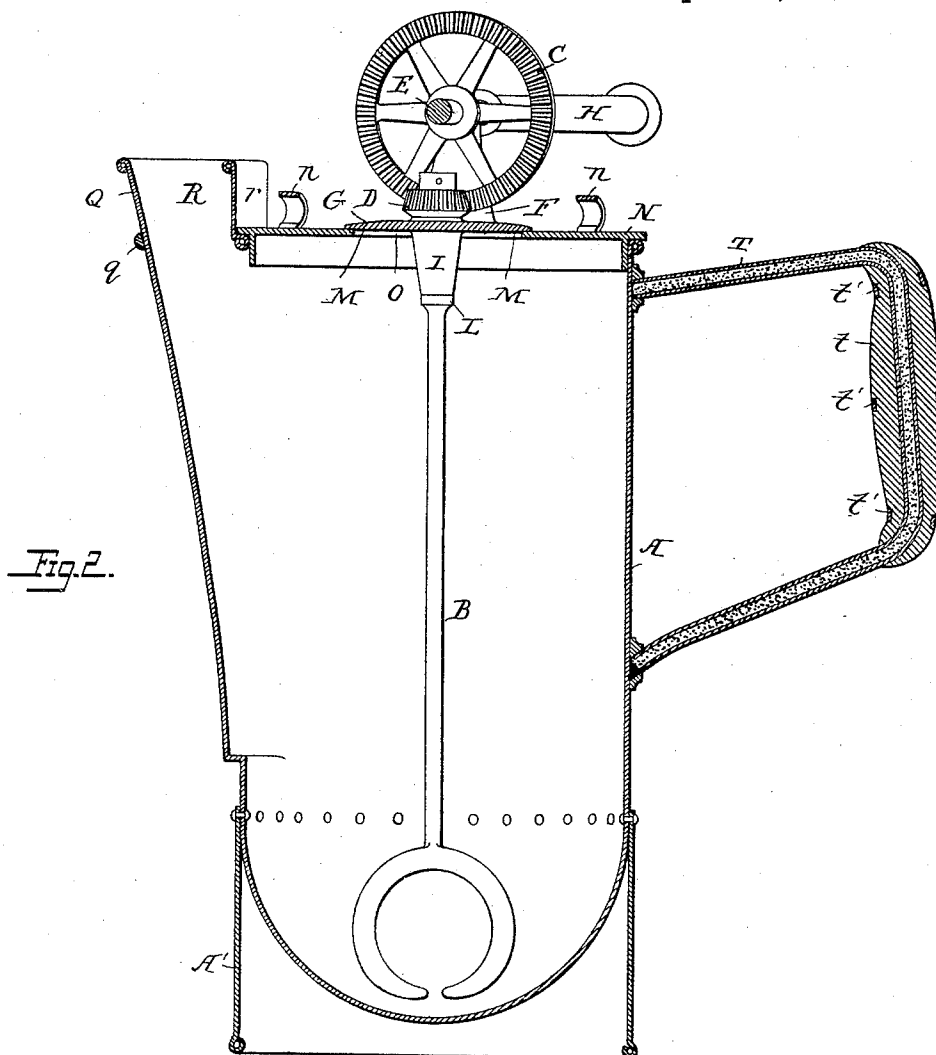
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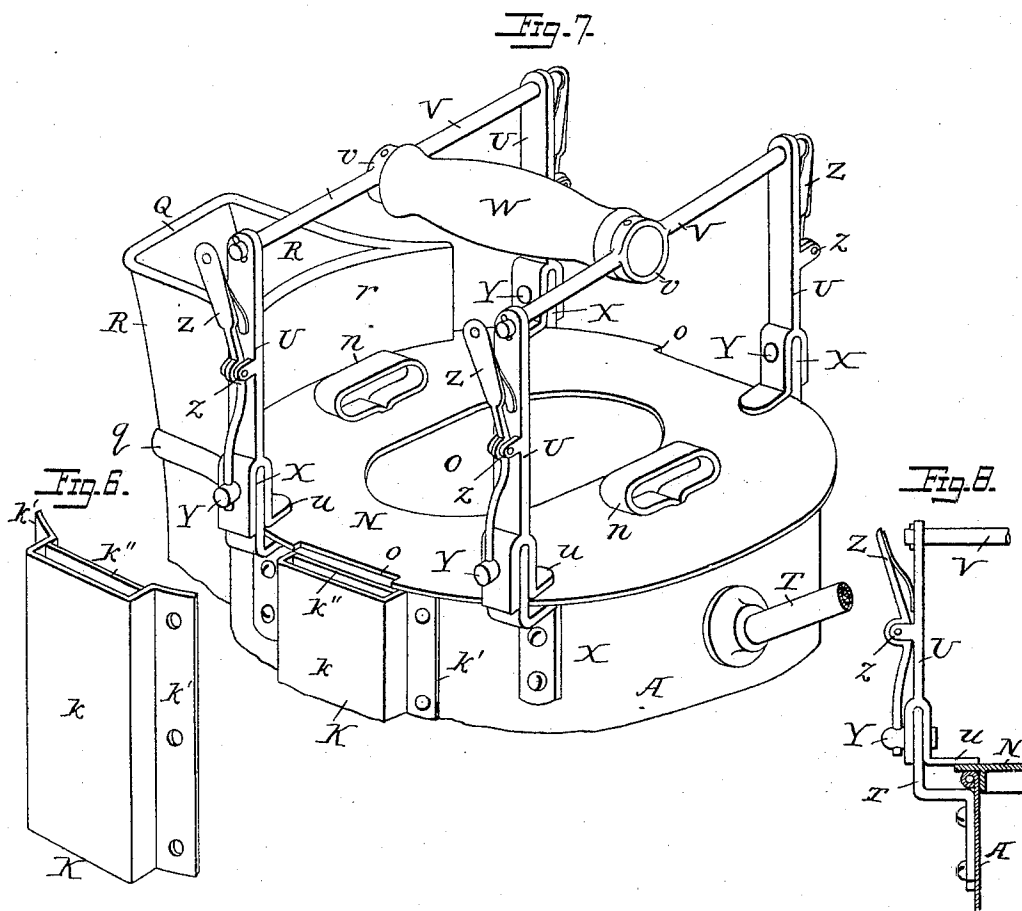
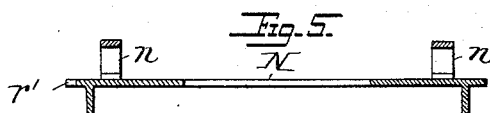
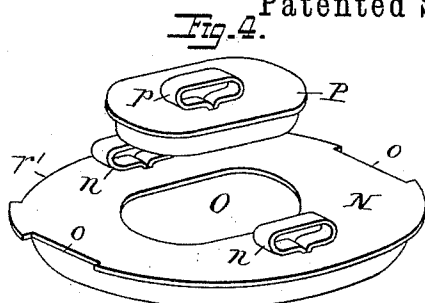
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4 Sheets—Sheet 3.

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(No Model.)

4 Sheets—Sheet 4.

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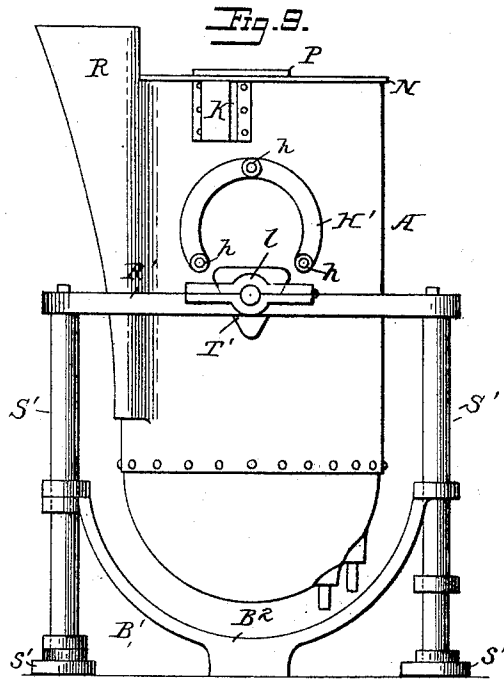


Fig. 10.

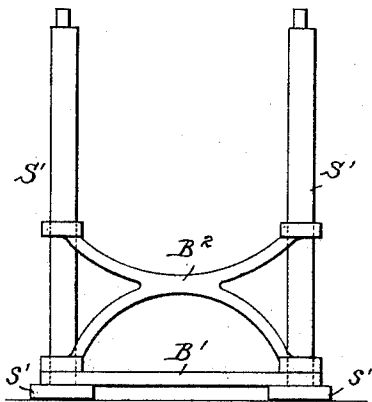


Fig. 11.

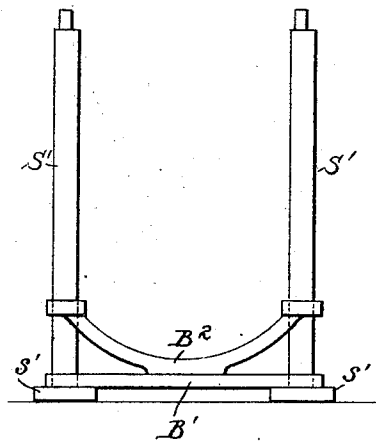
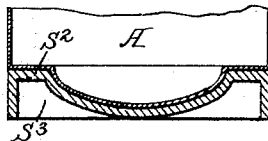


Fig. 12.

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UNITED STATES PATENT OFFICE.

CHARLES J. MULFORD, OF NEW YORK, N. Y.

CHOCOLATE-POT.

SPECIFICATION forming part of Letters Patent No. 460,265, dated September 29, 1891.

Application filed December 19, 1890. Serial No. 375,904. (No model.)

To all whom it may concern:

Be it known that I, CHARLES J. MULFORD, a citizen of the United States, residing at New York, county and State of New York, have
5 invented certain new and useful Improvements in Chocolate-Pots, of which the following is a specification.

My invention relates to chocolate-pots, and has for its objects to improve the construction
10 of its several parts, whereby a more desirable result will be obtained, as will be hereinafter more fully set forth.

Referring to the accompanying drawings, in which the same letters of reference indicate
15 corresponding parts in each of the figures, Figure 1 is a perspective view of my improved chocolate-pot, showing the oval opening in the main or ring cover for the passage of the puddlers, the smaller lid or cover for this
20 opening being removed. Fig. 2 is a vertical sectional view of the same in its operative position. Fig. 3 is a top plan view with the smaller lid in position. Fig. 4 is a perspective view of the lids separated. Fig. 5 is a
25 vertical sectional view of the same. Fig. 6 is a view of one of the ears detached. Fig. 7 is a perspective view of my detachable lift. Fig. 8 are detail views of the same. Fig. 9 is a side view of my improved carriage, and Figs. 10,
30 11, and 12 are detail views of the same.

After fourteen years of experience in preparing chocolate for use as a beverage I have found that a great deal of its excellence depends upon the care with which it is made
35 and upon the kind of a vessel in which it is prepared, as well as upon the quality of the material which is used. Good coffee is known by the smell, good tea by the taste, and good chocolate by the sight, and one of the most important things to see as a test of the excellence
40 of chocolate is a good thick foam on its surface. Without this it is self-evident that something is wrong somewhere, which may be in the quality of the material, in the manner
45 in which it has been prepared, or in the vessel itself, which may either fail to make the foam or fail to deliver it to the smaller vessels, from which it is to be used. With poor
50 material a good result is impossible, although proper care and attention with a suitable vessel will remedy this to a certain extent, while the lack of either or both of them will fail to

give a good result with the best of material. Commencing, then, with good material, I prefer to use a vessel A, having its interior tinned
55 or coated with some desirable metal, as silver or gold, although the vessel itself is preferably of copper or brass. The general shape of the pot is that of a cylinder about twice as long or high as it is wide, and with one end
60 open for the top and the other end or the bottom closed and made dome-shaped, as shown in Fig. 2. The advantages of this construction are many, as the greater depth gives plenty
of room for the foam to rise, hence cooking
65 better, and it also makes the pot balance better, with the heavy spout on one side and the handle extending so far back from the opposite side. By making the bottom of the pot
dome-shaped the chocolate will boil quicker,
70 which is quite important where more than a quart is to be made at a time. It is also better for puddling on account of its being similar to and uniform with the curve described by the convex duplex blades that I prefer
75 using. It will also allow the foam to be emptied more uniformly with the liquid chocolate, and it is better for cleaning, as the chocolate adheres to corners very firmly, and would
80 thereby render a deep narrow flat-bottomed pot quite unhandy to be easily and thoroughly cleansed. The ease of cleansing the pot saves the gold or silver plating upon the interior, as there is less rubbing and scouring
85 required. The dome-shaped bottom is also desirable in manufacturing, whether the pot be spun or stamped, and it can be made separate and be secured to the body by riveting
or brazing, or it can be formed integral with
90 the body; but where the body is made from tubing the dome is preferably spun and sprung into a groove around the lower end of the tube and is tightened or secured with
solder.

To prevent the pot from tipping over when
95 it is provided with a convex or dome-shaped bottom, I provide it with my improved heat-condensing ring A', which can be secured to it by soldering, riveting, or brazing. The use of the ring economizes heat and also avoids
100 the necessity of using trunnions or other supports for small-sized pots while in use, although I prefer using the trunnions upon the larger-sized pots and kettles. Having the

right kind of a pot, the material is placed in it and subjected to the desired amount of heat to boil or cook it, which may be done as often as desired, preferably three times. During this cooking or boiling it is necessary that it be thoroughly mixed or agitated, and especially during the last boiling; but it is absolutely necessary that this agitation should occur near the bottom in the center, and below the boiling-surface instead of at the top, as this will prevent the settling of the heavier material and will not interfere with the foam which constantly rises to the top from the continued agitation and boiling and which must not be disturbed any more than can possibly be avoided. The best means of producing this agitation that I have discovered are my circular puddlers B B, arranged at right angles to each other and rapidly rotated beneath the surface of the chocolate, as this will produce such counter-currents as to thoroughly and constantly mix and agitate the contents of the vessel and permit the surface to remain comparatively smooth and quiet.

When only a small quantity is to be made, a correspondingly-smaller vessel must be used in order to have the chocolate deep enough in the vessel that its surface may be above the tops of the blades of the puddlers, and I therefore prefer to make the blades in the shape of horseshoes, as this construction will permit of their being placed nearer together. With the larger vessel, however, the blades may be made as round rings, and be smooth or plain, or they can be corrugated and placed farther apart. The mechanism for operating these puddlers consists of two facing bevel gear-wheels C C, meshing with two bevel pinions D D, which are secured to the upper end of the rods of the puddlers B. The wheels C are secured upon a shaft E, which is journaled in bearings at the upper ends of standards F F on the cross-bar G, the shaft being provided at one end with a crank H for operating it. Each of the gear-wheels may be provided with a double hub to add to their appearance and efficiency by giving a longer bearing and a place for the insertion of a set-screw or other means of securement, and by placing the gear-wheels upon the shaft between the standards the longitudinal movement of the shaft is prevented, although additional washers may be used on the outside of the standards, if desired.

The cross-bar has two perforated projections I I, preferably cone-shaped, extending from its under side, in which the upper ends of the puddler-rods are journaled, and the outer ends of the bar are bent down to form legs J J, that will fit in the ears K K upon the sides of the pot A. The upper end of each of the standards F is formed or provided with a small cone-shaped hub or enlargement *f*, and a thin concaved web or strengthening-strip *g* extends from the cross-bar to the hub *f* on the outer side of each of the standards. I prefer to make the edges of the standards

and also of the web beveled or thinned down to add to its appearance, and also to decrease the weight as much as possible without decreasing the strength. The weight may also be further decreased by forming holes or openings in the web and cross-bar, as shown, and even the legs J J may have such large holes or openings in them that they will only be mere skeletons or outlines, having their lower ends rounded to enter the ears K K more readily. The cones I I are of sufficient length to give a good steady bearing for the puddler-rods, each one of them being formed or provided with a collar L, which bears against the lower end of the cone and prevents any upward movement of the puddler in operation, which would cause them to interfere with one another. I prefer to make the rod, blade, and collar comprising the puddlers out of a single piece of malleable casting, although they can be made of separate pieces secured together in any suitable manner. The central portion of the cross-bar G is made wider than the ends or formed or provided with web-extensions M M for a purpose as will be hereinafter set forth, and it also may have the edges of these extensions beveled or feathered to decrease the weight and make a neater appearance when upon the pot.

Although I prefer to make the frame of a single piece, as of malleable cast metal, it is evident that it could be made of several pieces joined or united together, or it may be of metal and be stamped into shape, or even of good suitable hard wood, or partly of wood and partly of metal, the object being to make as light and neat a piece of work as possible and yet have the requisite strength, and especially with the larger sizes, where the puddlers have a sufficient weight without any web, and the web-extensions may be formed by securing a thin flat piece of metal to the under side of the cross-piece by solder or rivets in the ordinary manner.

The ears K K upon the sides of the pot may each be made of one piece, if desired, but are preferably made of two pieces, the outer one *k* being formed or provided with a rectangular depression for the reception of the legs J J, and has slightly-concaved wings *k'* *k'* for securing them to the sides of the pot, either with solder or by means of rivets through holes in them. A flat rectangular inner piece *k''* is fitted within the depression in the outer piece, and thereby affords a vertical rectangular recess or opening upon each side of the pot just the size, and for the reception of the legs J J, although the side of the pot itself is circular. If desired, however, the wings of the ears could be omitted and the ears be secured to the sides of the pot by means of solder or brazing; and the ears can also be formed or provided with holes or figures to make them as light and ornamental as desired, and if made by casting, the rivet holes can be bored out by ordinary drills. As the puddlers cannot be turned so as to lie

in the same plane, and thus pass down through a narrow slot in the cover N of the pot, and as they will sometimes occupy the position shown in Fig. 1, in which position one of the puddlers will stand directly across the opening in the cover, the opening O must be enough wider than the diameter of the puddlers to permit of the free passage of the puddlers in putting them into or taking them out of the pot. Owing to the fact that only one of the puddlers can ever be lengthwise of the opening at a time, the length of the opening need only be a trifle more than once and a half of its width, or the diameter of one of the puddlers, thus making an oval opening instead of a long narrow slot, as in my former patents; but as the diameter of the puddlers is greater than it is desirable to have the width of the cross-piece G a portion of the oval opening in the cover would be left uncovered unless otherwise provided for; but by providing it with the web extensions M M, hereinbefore mentioned, when the agitator is in place the extensions will cover the opening and prevent the contents from spattering through the uncovered portion, and will also prevent foreign substances from falling into the pot, as well as facilitating the boiling by excluding the air. The central portion of the attachment may be oval, and is wide enough to cover the opening O at all points, and thus secures a good broad bearing, as the lower surface of the cross-piece and the web-extensions are flat and rests upon the top of the flat cover N. An oval false cover P is placed over the opening in the main or ring cover N when the puddlers are not in position, and is removed and placed to one side when the puddlers are being used. Flat or oval loops or rings *n n* and *p* are secured or attached to the main and false covers, respectively, by means of which they can be removed by the insertion of two fingers in the loops. Notches or niches *o o* are formed in the projecting portion of the ring-cover, so that when the cross-piece is used the notches will register with the ears and the legs can pass down into the ears. After the chocolate has been thus properly prepared it is necessary to pour it from the pot into smaller vessels for use; but owing to the nature of the foam on top the least obstruction will stop it and prevent its passing out with the liquid portion at the bottom. With an ordinary oval-shaped spout on the vessel the foam is almost entirely prevented from running out, owing to the narrow or contracted top; but by making the spout flat and substantially rectangular in cross-section this trouble is virtually avoided, and the foam will gradually pass out of the vessel with the broad stream of the liquid as it runs out of the spout. I therefore make my improved chocolate-pot with the front portion Q of the spout flat and attach it to the vessel by means of sides or wings R R, which are preferably made slightly concave, as shown more par-

ticularly in Fig. 3, so that the least possible resistance will be given to the passage of the foam, as there will not be any sharp angles where the sides of the spout are joined onto the side of the vessel. The bottom of the front portion of the spout Q must be curved to conform to the shape of the outside of the vessel.

As I prefer to have the interior of the vessel tinned or plated, so I prefer to coat the outside of the spout with the same material to prevent the chocolate from coming in contact with the least particle of copper; but to avoid the necessity of coating the exterior of the entire spout I extend the end of the spout above the top of the vessel, so that only the extended portion need be immersed in the bath, which can be done by simply turning the vessel upside down and dipping the extended portion of the spout into the bath, which will thus coat or plate both inside and outside of the end of the spout at the same operation. The body of the pot is preferably made of copper or other similar material, and it must be scoured frequently to keep it clean and bright; but such scouring would soon remove or destroy the silver plating of the spout-extension unless some means be adopted to prevent it. Therefore I make use of a protector, which consists of a band or rim *q*, placed or secured upon the outside of the spout on a line with the top of the pot. In this manner the pot and the spout below the protector may be scoured without any danger of the scouring material getting on or above the protector and onto the more costly plating of the spout-extension. When the protector is formed by stamping a crease upon the inside of the spout and then filled, the crease will indicate when the foam is in danger of running over. Where the spout-extension is not plated, the protector may be dispensed with. As it is necessary to know just when the chocolate boils, I prefer to leave the spout open, or without a cover, so that the operator can see it, and thus avoid the use of a troublesome or expensive gage for that purpose, as would be necessary if the spout were closed. I find that the extension of the spout also forms a very valuable feature for preventing the contents from boiling over, which might occur if it were only of the ordinary height or up even with the top of the pot. It adds to the beauty of the pot, and will also tend to keep the larger or ring cover from jumping off when the puddler has been lifted off, and also enables the operator to adjust the cover without peeping around to see exactly when the niches tally with the ears to admit the puddlers being lowered into position. The back or rear portion *r* of this extension is formed or built above and slightly in front of the usual strengthening-wire around the top of the pot. It also follows the general curvature of the pot, and is as high as the sides of the spout. By cutting a slight niche or notch *r'* in the projecting por-

tion of the lid or cover N to correspond with this extension the cover will fit nicely in place. If desired, however, the top of the spout need only be as high as the top of the pot; but I prefer it with the extension, as above described.

For the purpose of manipulating the pot easily and conveniently, without any danger of the heat being conveyed to the hand through the handle, I make use of a hollow tube T, which is filled with some good non-heat-conducting material, as plaster-of-paris, asbestos, &c., and then bending it over a wooden block into the desired shape to make the handle and then securing it to the side of the vessel. It is best to secure it opposite the spout and with the ears arranged at an angle thereto, as shown in Fig. 3, as this will throw the crank of the agitator into such a position in relation to the handle that the operator can conveniently grasp the handle with one hand and the crank with the other, and can then readily watch the foam in the spout, which always rises suddenly. To further assist in preventing the transmission of heat to the hand of the operator, I place a grip or ferrule *t* upon the handle, which can be made of wood, gutta-percha, ivory, or other non-conductor of heat. Although it can be made of one piece and be slipped on the handle before it is secured to the pot, I prefer to make it of two pieces, which may be secured together by means of bands *t't'*, placed around them and let into them so as to make a smooth even surface. The middle or central portion of each of the pieces must be hollowed out to correspond with the handle, and both ends of the hollow are curved to fit around the two bent portions of the handle that join onto the vessel; so that the pot cannot wobble or turn to either side when it is being manipulated by the operator. Where the ferrule is straight and made of one piece, the upper end may be provided with a slot, as shown in Fig. 3, about half an inch deep, which engages with the handle when it is slipped up in lifting the pot. By making the ferrule in this manner it cannot rotate or slide on the handle, and it gives a good grip for the hand, and it can be made as cheap or expensive as desired by using different material. It can also be provided with any degree of ornamentation, and, if desired, it can be quickly and easily taken off or put on, and especially when made of the two pieces, which is the more desirable handle.

In addition to the handle, as above described, for manipulating the pot, a detachable lift may be provided, as shown in Fig. 7. This lift is composed of four standards U, two rods V, and a handle or grip W, and is secured to the pot by means of the brackets X X, which are riveted to the sides of the pot at such points as that the standards will engage with them when in position upon the pot. The lower end of each of the brackets X is slightly concave to fit the side of the pot, while the

middle portion is bent like an elbow to extend out beyond the strengthening-wire and also to admit of the rim of the cover N passing down onto the top of the pot. The upper end or arm of each of the brackets is provided with a hole for the attachment of the detachable lift. The lower end of each of the standards is preferably slotted to fit over the top of the arms X and is provided with a hole to register with the hole in the arm. A pin Y is passed through the holes and secures the standards to the arms. In order to manipulate the pins readily in removing and replacing the entire lift, each one of them is preferably connected with the brackets by means of a spring-snap consisting of a flat lever or handle Z, which is pivotally connected to the side of the standard by means of a projection or fulcrum *z*. Whenever it is desired to attach the lift to the arms, the upper end of each of the levers Z is pressed in toward the standard, which draws the pin out and permits of the slotted end of the standard being slipped over the top of the arm of the bracket. The lever is then released, and the spring forces the top of the lever outward, which in turn forces the lower end inward and passes the pin through the holes. By pressing upon the levers Z the pins may be withdrawn and the standards detached from the arms and the lift can be removed. The lower end of each of the standards is preferably bent inward a short distance, as shown at *u*, which will engage with the top of the cover N when on the pot and keep it from coming off. The ends of the rods V are passed through holes in the upper ends of the standards U and secured therein by means of ordinary screws or rivets, and the middle portion of each rod is enlarged or formed into a ring *v*. The ends of the grip or handle W, which is preferably made of wood or other poor heat-conducting material, are provided with metal tips or ferrules, which fit within the rings of the rods and are secured there by pins passing through them and through the rings. The standards are so placed upon the pot that this grip or handle W is from two to three inches above the top of the pot and extends on a line from the handle of the pot to the center of the spout-extension. As above described, the lift can be applied to different sizes and styles of pots, whereby the pot can be lifted and tilted forward to empty its contents without any possibility of burning the hand or of having the pot tip or tilt to one side or the other. After the lift has been detached from the pot the standards can be swung upon the rods like a pendulum until they are all in the same plane with the grip, and may also be slipped in until they lie close to it, and can thus be made to occupy but little space for shipping or storage.

The foregoing description, relating to the collar, &c., for keeping the dome-bottomed pot from tilting over and for manipulating it, relates more particularly to small vessels or

such as can be lifted easily; but on larger vessels or kettles it is desirable to have some other means of supporting it than the collar around the bottom; or, in other words, it is necessary to support the vessel upon a frame or carriage by means of the trunnions T', the base of which is preferably made heart-shaped, with the back concaved to fit the side of the vessel to which they are riveted; or they may be secured to a band around the kettle or caldron. The projecting portions of the trunnions may be cast solid or as thick hollow cylinders, and are strong enough to support the vessel even if it be provided with a steam-jacket, &c. These trunnions rest in bearings in cross-pieces R', of which there are two, one on each side of the vessel. The cross-pieces are supported by the shoulders at the upper ends of four uprights or standards S' S', having feet s', and are secured in position by the base-pieces B' B' and the braces B² B², both lateral and longitudinal. By providing the ends of the cross-pieces and the braces with eyes or perforated collars they may be slipped on or off the standards and the entire carriage made to fold up for storage or transportation. It can also be made very cheaply, either of metal or wood, or both, and can be easily and quickly put up or taken down. With this style of carriage and kettle another form of my non-heat-conducting handle can also be used, which is preferably made semicircular or horseshoe-shaped, as shown at H', and can be secured to the side of the pot by the lugs h h h, which will cause the handle to stand out from the side of the kettle about three inches.

In using a kettle which is suspended upon a carriage, as above described, it is so nearly balanced that a very little power is required to tip it forward sufficiently to pour its contents out at the spout.

In order to prevent any possibility of the trunnions getting out of the bearings in the cross-pieces of the carriage, I prefer to employ caps or heavy latches l, which can be hinged to the cross-piece and be made to fasten or unfasten, so that the kettle may be removed and replaced, as desired. The dome-shaped bottom may also be utilized without using either the heat-collar A' or the trunnions and carriage by providing it with a shelf or shoulder S², Fig. 12, whereby it may be set over a hole in a stove with the shoulder of the bottom resting on the top of the stove and the dome portion of it projecting down through the hole, and when off the hole it may rest upon a holder or support S³, which is shaped to conform to the outline of the bottom of the pot.

Having thus described my invention, I claim—

1. A chocolate-pot the spout of which is extended above the top of the pot and has a wide flat front, concaved sides, and a back or rear portion which follows the curve of the pot and is built above and in front of the top of the pot, and a cover for the pot, having a notch or niche to correspond and engage with the extended portion of the spout, substantially as described.

2. A chocolate-pot the spout of which is extended above the top of the pot and is plated or tinned inside and outside, the spout being provided with a protector-band q, as and for the purposes specified.

3. The combination, with a chocolate-pot, of a cross-bar carrying the puddlers B, having curved blades arranged in different planes with respect to each other, a main cover having a large opening in its center of a width equal to the diameter of one of the puddlers and a length equal to once and a half the width of the diameter of one of the puddlers, the cross-bar being provided with laterally-extended sides near its center, whereby the opening in the cover will be closed when the puddlers are in position, substantially as described.

4. A chocolate-pot the handle of which is formed of a bent tube filled with non-heat-conducting material, and a two-part grip or ferrule secured thereto by means of bands let into and encircling the same, the ends of the ferrules being curved and recessed to fit the bend in the tube to prevent the ferrule turning, substantially as described.

5. The combination, with a chocolate-pot provided with four elbow-brackets, of a detachable lift consisting of a grip, two rods connected to the grip, and four standards adapted to engage the brackets, each standard being provided with a securing-pin and spring-lever for actuating the pin, substantially as described.

6. A chocolate-pot provided with a puddler having curved blades, the pot being provided with a dome-shaped bottom and having a heat-saving and pot-supporting collar secured to the bottom, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES J. MULFORD.

Witnesses:

LOUIS F. GOLDMANN,
EDWD. K. ANDERTON.