

## Chapter 6 of Category III

*It is the basin of the two scribes for blood-letting, from which the quantity of blood which it holds can be ascertained. It is divided into two sections*

### Section 1

#### *Description of its outside appearance and functioning*

It is a basin resting on a pedestal and on the floor of the basin are four columns upon which is a platform with two scribes on it. One of them is sitting inside a circle upon which are the numbers from one to one hundred and twenty and he is holding a pen whose tip is outside the first number. The other scribe is sitting at the corner of the platform. In his left sleeve one can see the end of a board upon which a single mark [is visible]. In his right hand is a pen whose tip is on the board above the first number. The basin is placed in front of the patient, the scribes facing him, and about two *dirhams* of water are poured into the floor of the basin. He is bled, and when one *dirham* of blood has run into the basin the pen of the [first] scribe moves to the first number, upon which '*dirham*' is written. The board rises from the sleeve of the second scribe until the tip of the pen is opposite the first mark, upon which *dirham* is written. So it goes on, *dirham* after *dirham* until the tip of the [first] scribe's pen is opposite the ten-*dirham* mark, and until the board has lifted from the sleeve of the second scribe and the tip of his pen is opposite the ten-*dirham* mark. This continues until 120 *dirhams* of blood, or less if desired, have collected in the basin. Then the basin is lifted, the receiver with the blood in it is removed, drained, and washed, together with the basin. The receiver is put back in its place.

Its construction: a basin is made from brass, not having vertical sides but being [dished] like a plate – when water is poured into it then it collects in the centre. A 1 sp. high pedestal is made for it as previously. A hole in which a finger can be inserted is made in the centre of the basin. Over this hole something is placed to conceal it, such as a small dome with much openwork, which does not impede the flow of blood into the hole. On the centrepoint of the dome, which is [also] the centrepoint of the basin, a circle is drawn of the same width as the basin's pedestal and on this circle two marks are made which divide the circle into two halves. At these marks, inside the circle, two holes are made which penetrate to the interior of the pedestal. The width of each hole is such that a finger can be inserted in it. Two columns, each about 1 sp. long, are erected on these holes. Near them, on the floor of the basin, two other similar columns are erected, so that the four columns are positioned in a long quadrilateral [i.e. a trapezium]. A kind of hollow, long quadrilateral, platform is placed on the four columns, with a balustrade of fine workmanship around its perimeter. The platform has a cover like a deck. The length of the cover is divided into two halves. A centre point is made on one of these upon which the largest circle possible is drawn. Inside it another circle is drawn, and the space between the circles is divided into 120 divisions; or one writes *dirham* in the first division, 'ten' on the tenth division, and so on at similar intervals up to one hundred and twenty. As mentioned below, a hole is made at the centre point.

Then on the corner of the other half of the cover, on the half of the basin clear of the columns, is placed a handsome hollow man made up from copper [plates]. His left knee is raised and the palm of the left hand rests on it. Part of the palm is above the top of the knee, with the fingers outspread. The thumb is placed between the forefinger and middle finger. There is a gap between the forefinger and the [other] two [digits] in which is a light board of beaten [brass] which moves freely. Vertically beneath the gap between the fingers a slit is made in the side of the knee, and this appears to be in the hollow of the man's sleeve, because his sleeve is wide and part of it hangs down over the side of his knee. Then in the [cover] plate below the slit in the knee a slit is made which is wider than the slit in the knee. The cover is placed in position on top of the platform. Below the slit in the [cover] plate a slit is made in the floor of the platform which penetrates to the right-hand column of the two columns on the circle.

I have shown the picture of the floor of the basin [Fig. 114] and the circle with the two columns on it: the right-hand one *a*, the left-hand one *b*, the two other columns *m*, the small dome *j* on the pierced centre point of the circle.

When a board like a sword is passed through the scribe's knee and the gap between the fingers, it goes down through the slit in the platform's cover, and the slit in its floor, into the column, through the slit in the basin down into the interior of the pedestal. A right hand is made for him holding a pen, the tip of which is opposite the left thumb and almost touches a board,

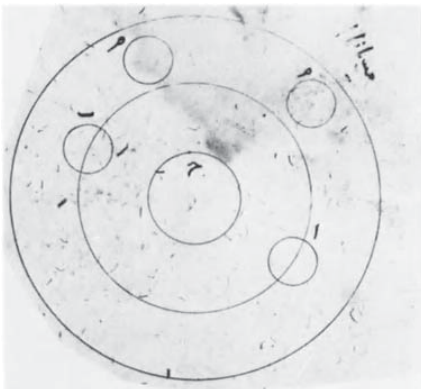


Fig. 114.

which is mentioned below. Then another scribe is positioned as [described] above, holding a downward pointing pen in his right hand. A non-circular hole is made in his underside.

Section 2

*The mechanisms for the scribes*

To the underside of the basin below the right-hand column a sheath is fixed inside the pedestal as before. In the sheath is a receiver and in the receiver is a float. Below the hole in the centre of the basin a deflecting channel (*ṣadafa*) is fixed, through which the blood runs into the receiver – the end of this channel enters a hole in the top of the receiver’s sheath. Then one takes a brass rod, as long as [the distance] from the top of the float to the gap between the scribe’s fingers. Half of this rod is beaten into the shape of a sword, and the other half is left as it is. The other half is like the top of a board. Then, as before, the height of blood inside the receiver is measured. Then near the top of the board, on its face, a mark is made. And a second mark is made on the face of the board so that the distance between the two marks equals the height of the blood in the receiver. Then 120 divisions are made between the two marks; on the first mark at the top of the board ‘*dirham*’ is written, on the tenth ‘*ten dirhams*’, and so on above each junction up to 120. The rod should weigh about 10 *dirhams*. The end of the rod is soldered to the top of the float, at the side. The top of the board is then between the scribe’s fingers and the tip of the pen is on the face of the board above the ‘*dirham*’ mark. If 120 *dirhams* of blood are poured into the floor of the basin, the board will rise until the tip of the pen is on the last of the numbers, namely 120 *dirhams*. Then the cover, with the scribe soldered firmly to it, is lifted off. A mark is made in the side of the board at the level of the floor of the platform, and a hole is made [at this mark].

The end of a stout string is put through the hole and passed over a small pulley, the groove of which almost touches the side of the board. Then one makes a pulley, its groove of such a diameter that a string passed [once] around it is equal in length to the height of the blood in the receiver. An axle is made for the pulley, one end of which protrudes from the pulley for the length of a barleycorn and the other end the length of half a finger. A bearing is fixed to the floor of the platform vertically beneath the centre of the numbered circle, in which is placed the short end of the pulley’s axle – the other end is in a hole in a crossbeam, which prevents the end of the axle from coming out of the bearing. When the cover is put back in its place on the platform the end of the axle goes through the centre of the numbered circle and protrudes 1 F from the surface of the cover. A staple is fixed in the pulley’s groove, and the string is tied to it after having been given a complete turn around the pulley. The rest of the string is passed over a small pulley above the top of the left-hand column. A hole is made in the platform through to the left-hand column and the end of the string hangs through it into the basin’s pedestal, where a weight of 30 *dirhams* is attached to it. At this juncture the weight is near the bottom of the pedestal.

The cover with the scribe soldered to it is returned to the top of the platform – the cover is fixed to the platform at several points but not soldered. A cover is fixed to the bottom of the pedestal as before. The [other] scribe is put back on to the end of the pulley’s axle, with the tip of his pen outside the first of the numbers on the circle. The receiver is empty and the float is on its floor.

I have shown the picture [Fig. 115]; of the basin: the right-hand column *a* and the left-hand column *b* with the one near it concealed and likewise the fourth; the dome *j* on the centre of the basin with a hole beneath it through which the blood descends, and below the hole the deflecting channel *n* through which the blood runs into the receiver; the receiver’s sheath *y* and the receiver *h*; the float *z* in the floor of the receiver; the rod *w*, i.e. the board, soldered to the float; the end *m* of a string in a hole at the bottom of the board; the small pulley *t* above the top of the right-hand channel, inside the platform; the large pulley *l* with a vertical axle – the end of its axle protrudes from the surface of the platform, and has the scribe on it; the small pulley *q* above the top of the left-hand column, with the rest of the string passed over it; the weight *x* on the end of the string in the basin’s pedestal.

It is very evident that: the basin is placed in front of the person who wishes to be bled, with the half [of the basin] clear of the columns opposite him. He is face to face with the scribe *k* in the circle, and the scribe with the board is on his right, with the face of the board towards him. The floor of the basin is wetted with about 2 *dirhams* of water. Bleeding commences and a *dirham* of blood falls into the floor of the basin. The tip of the pen of the scribe in the circle rotates to the *dirham* mark, the board rises and the tip of the [other] pen comes into line with the *dirham* mark. So it goes on, *dirham* after *dirham* until ten have flowed, and the tips of the two pens are where ‘*ten dirhams*’ is written. This continues as long as the blood falls into the basin up to 120 *dirhams*,

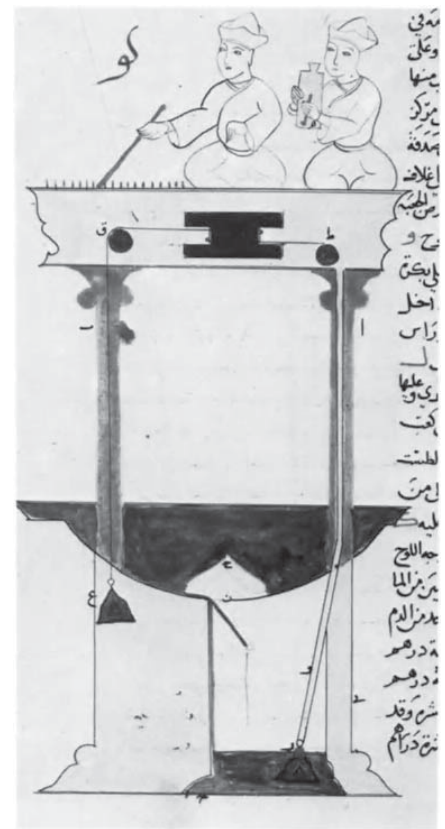
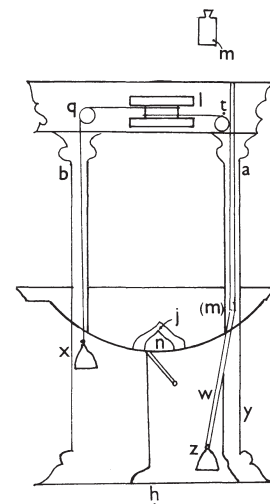


Fig. 115.



or less if desired. Then the blood is extracted from the receiver, which is washed together with the basin, and remains ready for when required.

When it has been completed according to my description, that which requires scraping is scraped, the two scribes are painted in various colours, and everything is coated with [Sandarac] oil.

That is what I wished to describe clearly.

[Now] I will describe what I made, namely [another] basin for blood-letting.