9

Attention to Details

Quite a lot of concern is required to balance the functional with the aesthetic considerations of any object. To function properly the needs may be one thing, whereas to be visually satisfying they may be another. Although this is a difficult balance to achieve, any measure of imbalance should most likely be geared more toward making the object do what it is intended to do, rather than making it look a little more enticing. I am not suggesting that making ugly pots that work is any more commendable than making beautiful pots that don't work. Rather, one should do everything in one's power to make the balance between function and looks as equitable as possible, without one compromising the other.

Unless they are done for a special effect, the use of oversize appendages and details of any kind—be they lids, spouts, knobs, or handles—is usually visually destructive to the total aesthetic quality of the pot, while at the same time not necessarily helping it to function. There is a right size for all appendages to work properly, both functionally and visually, on any object. However, achieving this balance and finding the right size only comes with considerable experience coupled with astute observation. In this section, I am more concerned with the practical aspects in both the design and in the making, but I would like to make it clear that no matter how much attention is paid to the details, if the form or basic intention of the object is weak, the final object will be a dud. If the form is strong and satisfying, the attachment of weak details will likely also render this piece a dud. If both form and details are well related, the piece is likely to be good. If the form and details are good, and the object functions as desired, then it should be a winner.

Unless a pot is a complete sphere or some other totally enclosed form, it will have a beginning and an end. In the usual method of anthropomorphic association, we normally name these parts lip or mouth and bottom or foot. In between, we are likely to find some or all of the following: neck, throat, collar, shoulder, belly, and waist, depending on the form of the object. We talk about forms being masculine or feminine, their relative strength or sensuousness, and of how they sit or stand. We also give them other human characteristics. They are sometimes called weak, mean, thin, slight, tight, loose, robust, rotund, vigorous, sensuous, virile, and many others.

Simple (meaning made in one piece) thrown forms grow from the base upward, moving in a sometimes fluid line, often called feminine; sometimes in an interrupted line with angular changes in direction, often called masculine. These points of movement or change in linear profile from one part of a form to another are known as *articulation*.

Forms that are made on the potter's wheel do not necessarily have to be round and symmetrical. The wheel may be used as the basic tool for forming almost any shape. Pots can be adjusted to the potter's desire by the use of a paddle when the pot has stiffened to some degree. Cube-shaped thrown forms are best developed from a totally enclosed sphere. Pyramidal and parabolic forms are best made from a cone shape made without a base, and a slab base attached later. Any sort of free asymmetrical forms can be developed quite simply through gentle beating with a variety of paddles. Paddles may be made of wood and may have patterns carved in them to create surface variation while altering the form. Any development of asymmetrical form allows great freedom for the potter, freedom which can easily lead one into the trap of novelty for novelty's sake. If one is not careful to impose some parameters to the forms to be explored, things may easily get out of hand.

Of all the possible variations of altered thrown forms, perhaps the one most commonly asked for is the oval form. Oval forms can be made in various ways using the

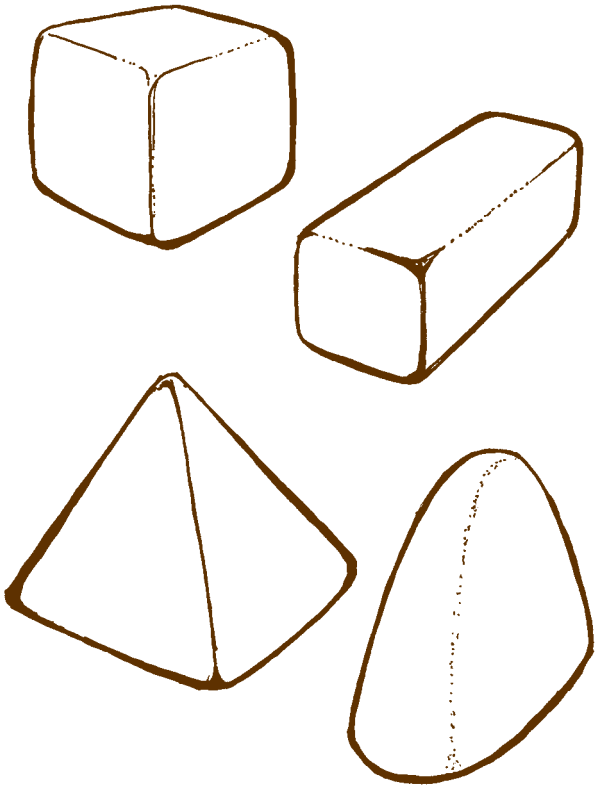

Fig. 9.1 Simple forms that can easily be beaten from round thrown forms.

potter's wheel. Figure 9.3 shows three. The most traditional way of making oval dishes is to cut an elliptical or long leaf-shaped piece from the base of a stiffened but not yet leather-hard dish. The sides are then squashed together so the long sides of the ellipse meet and can be joined. The cut-out ellipse is often placed across the join and pressed in to complete and strengthen the base. If they are not carefully compressed in the base, dishes made in this way are prone to cracking. The second method starts with a thrown form at the same stage of stiffness as the first. A thin knife or cutting wire is inserted through the walls at the level of the inside base, and a horizontal cut is made for what will become the length of the side. This is done on both sides. After cutting, the surface is coated with light slip or water and the walls may be slid across to form an oval shape. When the shape is satisfactory, the walls are stuck down in their new position and any excess clay trimmed away. The third method uses a thrown clay wall made without a base. If it is thrown on a batt, the walls should be able to be slid into any form after first undercutting with a wire. Once the altered form has stiffened to leather-hard, it can be attached to a slab base to make the oval dish. Method three is widely adaptable to make freeform shapes.

For any pot to be aesthetically satisfying, the basic form has to be well considered. The development of form was explored in Parts One and Two. Here, I am mainly considering details, either the beginnings and ends of pots themselves, or appendages, such as lids, spouts, and handles. In the historical review of Part One, I attempted to outline the general growth, implementation, and change of these details as they appear to have developed through the ages. Now they are considered in

Fig. 9.2 A variety of wooden paddles with patterns cut into the surface.

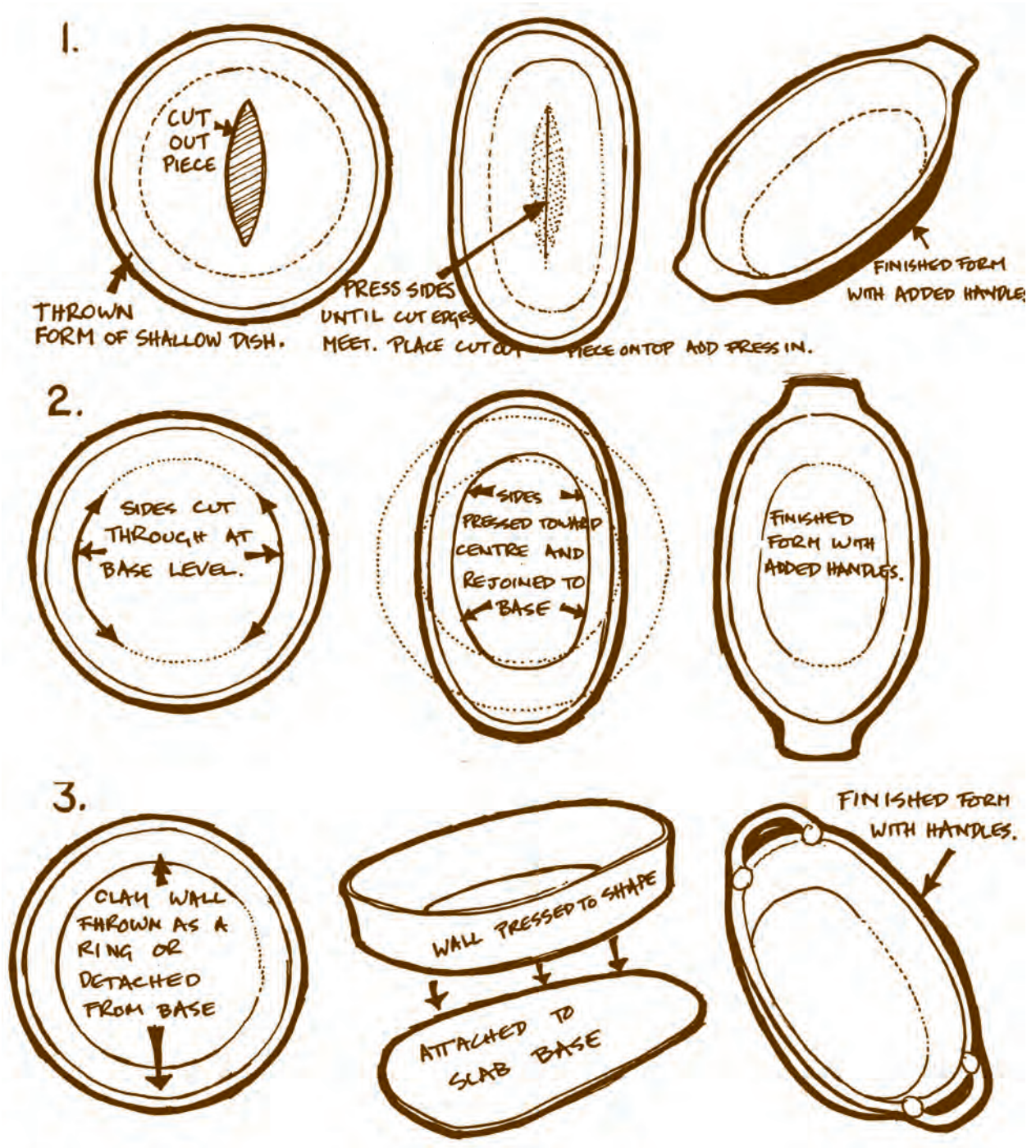

Fig. 9.3 Oval thrown forms, three variations.

a more analytical vein in how they function, a more practical vein of how they are made, and what are the relevant considerations that should be looked at in their production. Since there are many ways to achieve the different ends employed in making pots on a wheel, I will try to show as many variations as space will allow. There will undoubtedly be some omissions in the complexities of clayworking, and individuals reading this book will almost certainly have their own variations to just about everything I might mention. However, without somewhere to start, one can't imagine getting to the finish. In order to start on firm ground, we will start with base terminations, namely bottoms or feet.

BASE TERMINATIONS: BOTTOMS AND FEET

One tends to think of the bottom as the part of a form that is heavy, rotund, and gets sat upon. Feet are the foundations from which a form grows and develops. They can have many diverse qualities—from heavy, solid, and earthbound as in military, to light, ethereal,

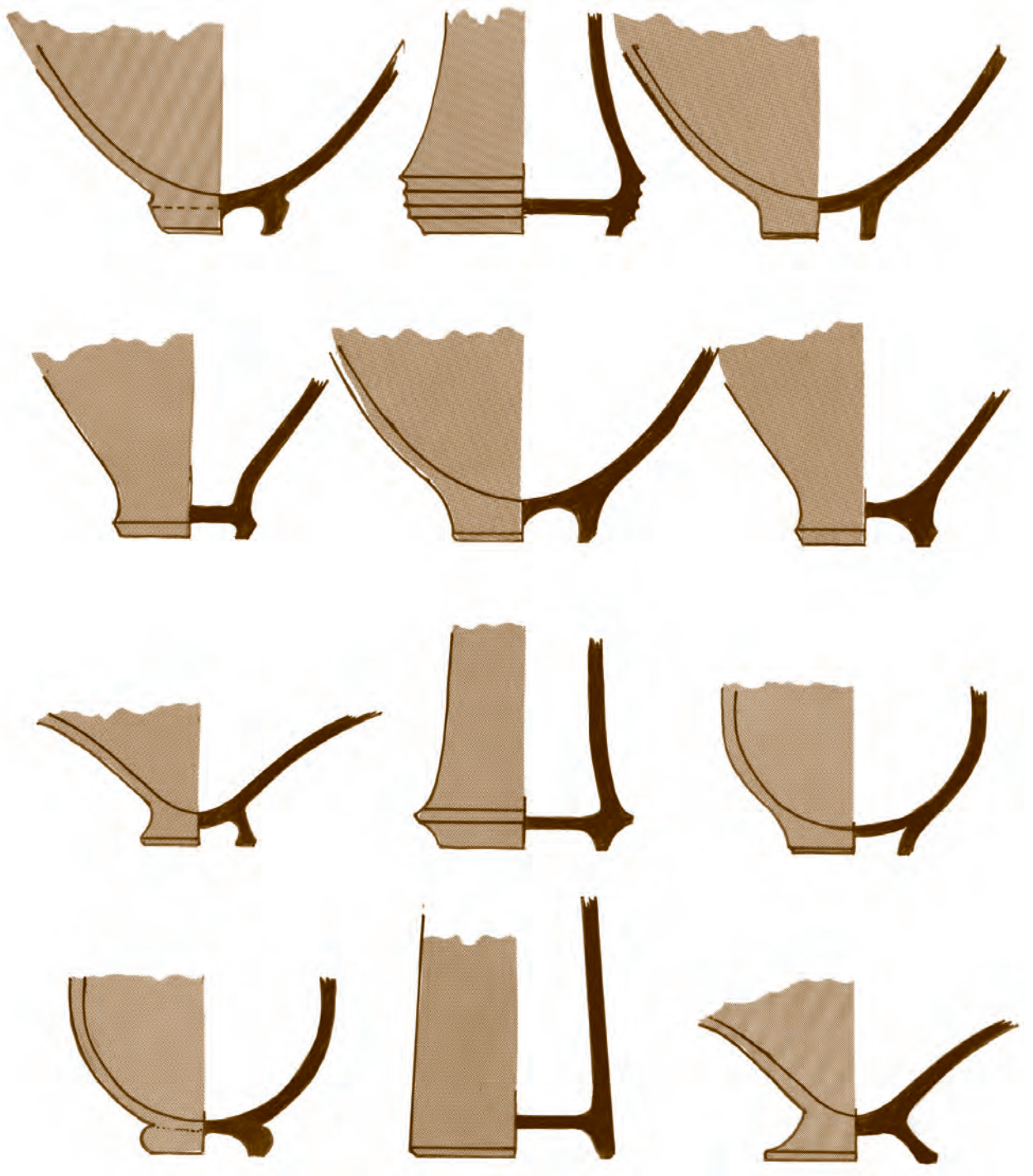

Fig. 9.4 Variations in trimmed or turned feet.

and dancing as in ballet. Feet, in pots as in people, create the stability needed to stand properly. Are they on duty, or may they dance?

Decisions in shape and size of feet demand aesthetic, structural, and practical consideration. Small feet reflect elegant, delicate, and refined forms more suited to contemplation and display, whereas large bottoms and large feet suggest stolidity, stability, and an ability to deal with the stresses and strains of daily family living. The relationship of foot size to the rest of the form, as well as to its efficiency as a stabilizer, is partially controlled by the type of use that will be made of the object. For instance, a small elegant foot, well suited to a purely decorative bowl, is unlikely to satisfy the needs of a soup bowl where stability on a flat surface is paramount, or where moving volumes of liquid make them

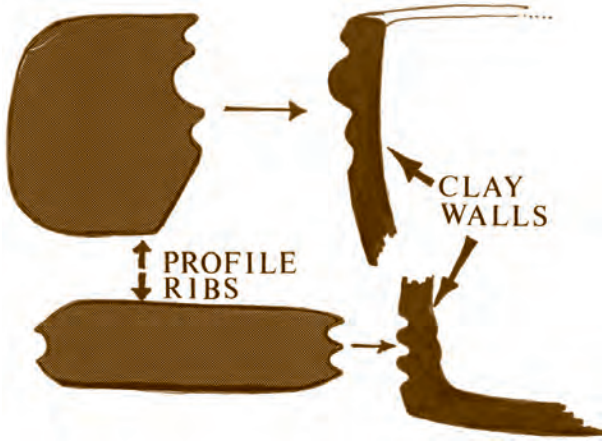

Fig. 9.5 Profile ribs can be made with wood, metal, or plastic, depending on the size and flexibility required. For small ribs, old credit cards work well. For larger ones, samples of Formica or arborite sheet are good, and can be cut with a fret saw and files.

vulnerable. The foot is also important structurally, as it supports the object in the drying and firing processes. If it is made too narrow, it may well cause the pot to slump due to the weight above. If it is made too wide, the inner part of the foot might sag and deform the interior. The outside of a form must relate to the inside, otherwise not only will sagging and slumping likely occur, but cracking from uneven wall thickness might also develop. Practicality can refer both to the practical nature of the foot itself and also the trimming of a shape that makes later gripping easier during the glazing process.

It is not always necessary to finish a piece with a trimmed, turned, applied, or cut foot. Depending on what the object is to do, combined with the aesthetic considerations that go with that object, pots are often cut from the wheel with a wire and left with little or no further working. Profiles made from wood, metal, or plastic can be used to give the bottom edge a range of interesting linear effects (Fig. 9.5). A slight cleaning or softening of the bottom edge by rolling it on a hard surface or rubbing with a moistened finger is often all that is needed to satisfy the needs of function. Slight indenting

Fig. 9.6 Shell-like pattern produced from a cutting cord or wire.

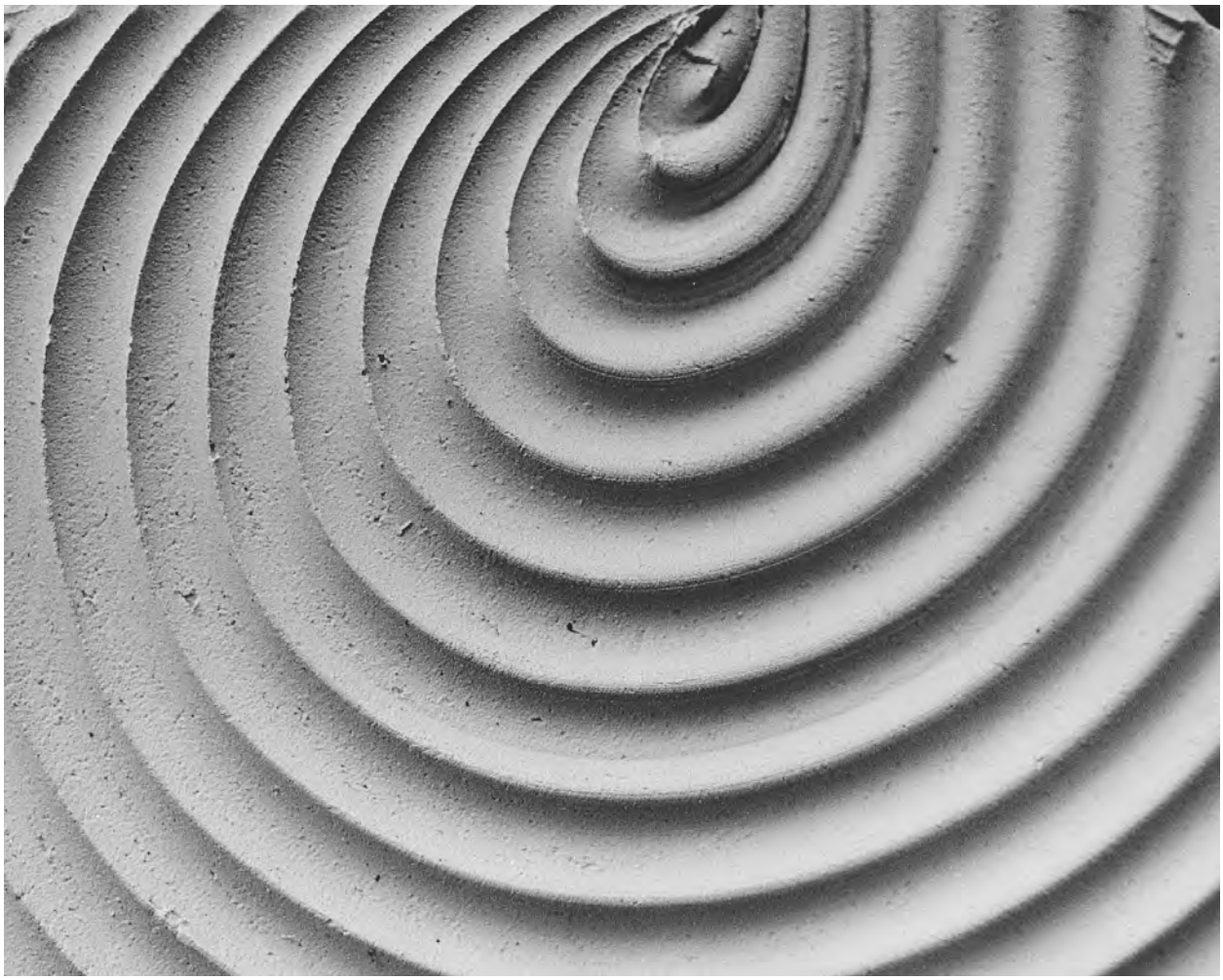

Fig. 9.7 Trimmed feet on Korean (left) and Japanese tea bowls. Collection of the author.

of the whole base by a gentle pressure of the palm assists in alleviating the problem of bases warping into a convex and wobbly, and thus unstable, state: a recurrent problem with untrimmed bases. A further alternative to, or even addition to, wire-cut bases can be small buttons of clay or modeled feet. If this is done, indenting of the base is not necessary.

Cutting wires of different types, from twine and smooth nylon filament fishing line to thin stretched springs or curtain wires, can be used to create differing decorative effects. The most usual wire-cut effect is commonly found on untrimmed wares from Romano-Britain to modern peasant wares from Europe, although it is most associated with the Far East. A fine twisted metal or cord cutting wire is pulled through the soft clay while the wheel is slowly revolved to create a shell-like pattern (Fig. 9.6). By using various forms of twisted wire, many variations of cut can be made. Other patterned bases can be made by pressing the medium-soft clay on textured surfaces, such as basket weave, burlap, or even corduroy fabrics. Textured bases, like most feet, are only noticed when the pot is lifted and the base exposed. As such, they can become an important decorative adjunct to the rest of the form. In parts of the Orient, the first part of an object to receive the close scrutiny of collectors and users is often the foot. To connoisseurs, the foot tells a great deal about the person who made it, quite apart from it being the most usual place where a piece might be signed. The way a potter finishes the base is read like a signature, knowledgeable people often being able to tell the identity of the maker from the foot alone. The suitability of the base is an important concern of the overall form, and although it is underneath the piece and seldom seen, nevertheless needs careful consideration. Good houses need good foundations. So do pots!

Once a decision on the final desired form is made, the inverted piece can be centered on the wheelhead, over a chuck or in a chum for trimming or turning (Fig. 9.8). The consistency of the clay at this point is critical. If too soft, it will deform; too hard, and it won't cut properly and may well crack in the process. The clay should be what is called *leather-hard*, a consistency similar to

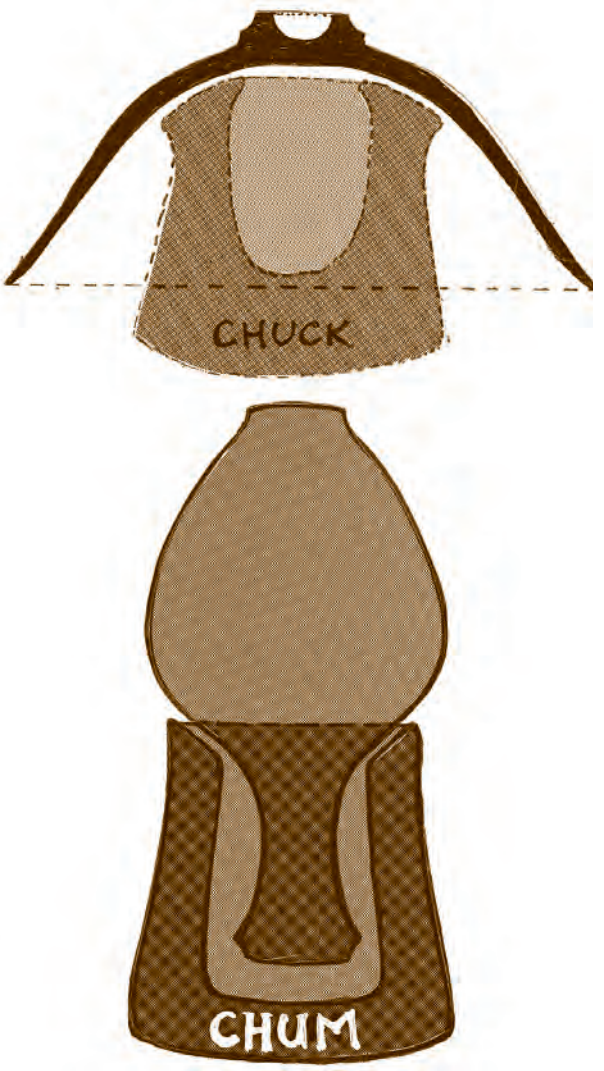

Fig. 9.8 Chucks and chums should be contoured to support the object at its most vulnerable point.

cheddar cheese in the way that it cuts, able to be pared away cleanly without clogging the tools or dragging on the surface of the clay. The clay should be evenly dried to the cheese or leather-hard state throughout the object for even trimming to take place. Unevenly thrown or dried, or off-center pieces, or pieces being trimmed with blunt tools will all be harder to trim efficiently. Tools should be kept sharp to eliminate the likelihood of chattering, where the tool bounces on the clay, forming slight ridges and depressions and giving a corrugated effect. There may be times when this effect is desirable for a decorative treatment, as in a number of Oriental surface effects where chattering is encouraged by the use of extra long and springy metal tools called *kanna*. This technique has the Japanese name *kasuri-mon*. For the most part, however, chattering is an annoying fault that can be easily rectified by sharpening the tools and possibly holding them a little tighter, in a different way, or at

a different angle. Tools for trimming can be of several kinds (Fig. 9.9), and their efficiency for different uses can only be felt by experience. The great majority of potters make their own tools, suited to their own needs or to the needs of the pieces being made.

In trimming, the relationship between the shape of the inside to that of the outside is vital. (Different styles of trimming are shown in Fig. 9.4.) Foot trimming for production work is most easily accomplished when the objects are placed on a chuck contoured to fit the inside of the object (Fig. 9.8). Quick, efficient trimming of small numbers of low forms such as bowls and plates is often best done on the flat metal wheelhead. By dampening the wheelhead and the edge of the piece to be trimmed and applying slight downward pressure once the piece is centered, it can be trimmed without the need for small dots or coils of clay being used to hold the pot in place. This results in a clear view of the total exterior of the piece, and the slight pressure exudes a small amount of air from beneath, holding the object in place by means of a vacuum. If the trimming is done quickly, the vacuum will hold firm for several minutes, at least long enough to easily trim most forms. To break the vacuum and remove the piece, all that is needed is a light tap on the side. The pot can then be removed easily. One may lose a few pieces in learning the exact dampness required and the right consistency of the clay, but once learned, this method of trimming saves a considerable amount of time with no compromise to the quality. Vacuum trimming is most useful for objects that are low and wide, as taller slimmer pieces can sometimes detach themselves from the wheel due to side and lifting pressures. After trimming, feet may be further adapted and altered by cutting or modeling. These practices can also be the basic way of foot development, as is often found in Japanese tea bowls where the entire foot is cut with a tool while the bowl is rotated in the hands. Feet can also be thrown with soft clay directly onto the trimmed leather-hard form or be thrown separately and joined at the leather-hard stage.

Single feet are the most obvious and most used forms, although it is, of course, possible to make an infinite variety of feet in ways other than throwing. Thrown feet can also be made separately and added either individually or in multiples. The most common multiple foot is the tripod, which has been used throughout history (see Footed Forms in Part One). A tripod is a good stable form if the legs are the same length and applied with the same angle and vertical thrust. The applications of feet in functional pottery discussed in this book refer mainly to the single foot, since it would be quite impossible to cover all possible variations.

The foot is an important aesthetic and functional detail that is often made in ways that reflect the individual maker. It plays an integral part in the form of a pot,

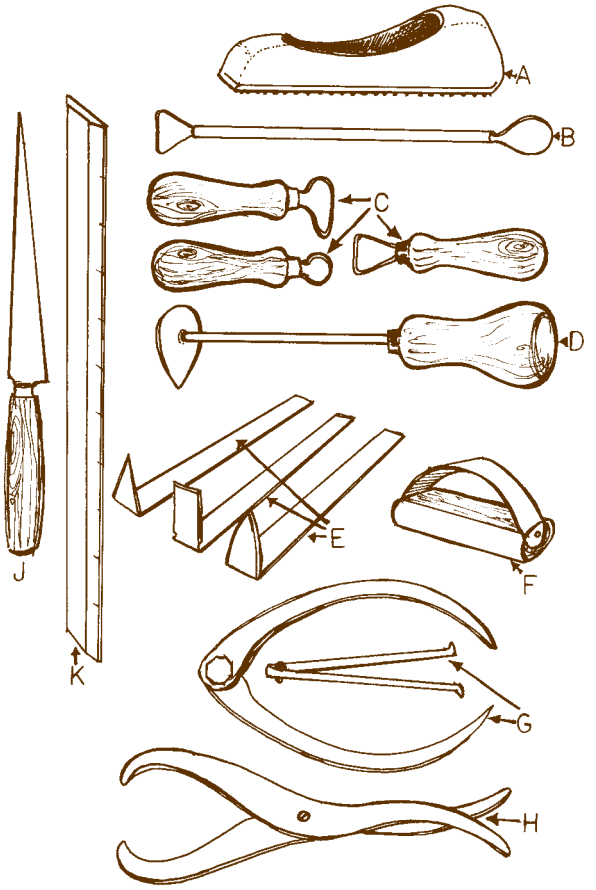

Fig. 9.9 Tools used in throwing and trimming: A. Surform plane, a rasp for removing heavy excesses of clay, particularly on altered forms; B. Wire-ended modeling tools; C. Metal loop tools; D. Solid paint scraper for heavy work; E. Flat strip metal tools, ends made to a variety of shapes; F. Heavy duty hand grip tool for preliminary trimming of large forms; G. Calipers; H. Double-ended calipers; J. Knife; K. Ruler.

whether one views it as the beginning or the end of the piece. Since the ends of the line are so important, one being where it springs from and the other being where it terminates, it follows that these points should receive prime consideration in both the design and the making stages.

TOP TERMINATIONS: RIMS, MOUTHS, LIPS, AND EDGES

The most quickly noticed detail, after the eye takes in the general form of any pot, is usually the lip, mouth, or edge. Strangely, it is the part that so often betrays the potter, showing weakness by looking as though the clay ran out just before it got to where it was supposed to go. Lips and edges often have a starved or pinched look, which not only is aesthetically displeasing but also leaves the thin edge vulnerable to easy chipping and breakage. If anything, edges of functional ware need to be slightly thicker than the rest of the piece as a protection. There are, of course, exceptions to this, such as in

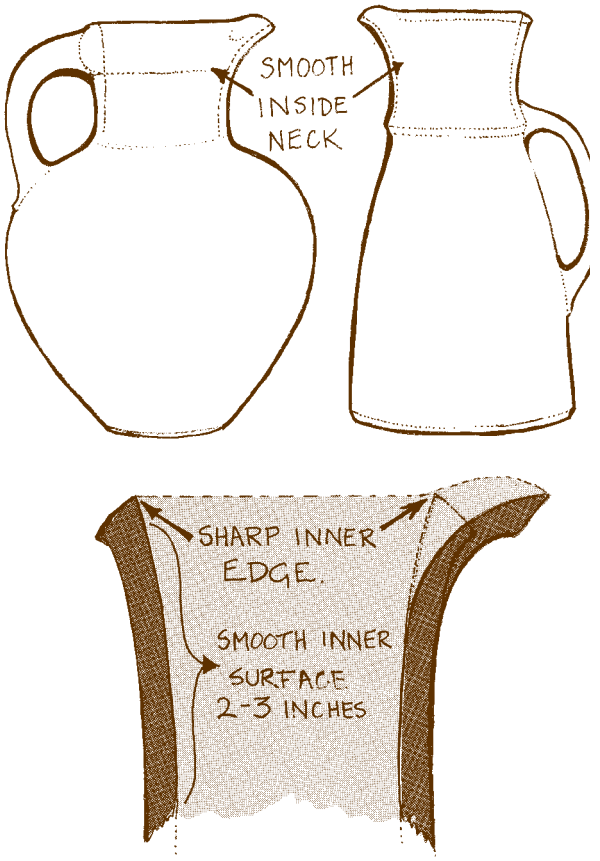

Fig. 9.10 Interior of vessels designed for pouring liquids.

Fig. 9.11 Pulling a spout: 1 - 3. Pinching out the thickened lip to thin the edge; 4. Starting a pouring lip; 5. Sponging the curve of the lip; 6. Pulling the pouring lip; 7. Easing out the throat to give a good inner pouring surface.

drinking vessels where extra thickness is uncomfortable, but in the main, edges should be strengthened. This is usually done by a controlled downward pressure being applied to the rim in a compressive action, as one of the very last movements in the throwing stage. With some clays, such as porcelain which are often finely thrown, late compression might lead to deformation of the form, so the answer here is to keep the edge fairly compressed throughout the throwing process. The range of lip variations made possible by slight pressures and finger positions is great, and it is often a stimulating process for the developing potter to spend a good deal of time practicing them on simple cylindrical forms. Such continuous practice forms the basic discipline necessary to gain some mastery in the making of any pottery. A fine edge or a refined piece of pottery can often demand a more reverent approach by the user. It can, and perhaps should, affect the way the object is used.

In the making of any object that is designed to pour liquids from the top edge of the basic form rather than through a spout, special notice should be made that the inner surface of the form be very smooth for the top two or three inches. It is also preferable that there be a sharp edge at the top of that inside surface (Fig. 9.10). This ensures that when a pouring lip is pulled out from the basic form, it has a sharp edge to pour over when the form is tilted. When the form is returned to its upright state, the sharpness of the edge makes sure of cutting the flow of liquid, resulting in less likelihood of dripping. Pots that pour are like miniature waterfalls and those with sharp pouring edges will normally function best. Extended pouring lips, which can also improve the pouring ability, can be made by pinching the clay to a thinner wall at the point determined to be the site of the lip. This is best done with a pressure between thumb and forefinger, gently pulling the clay up before attempting to pull it out from the form (Fig. 9.11). When the clay has been pulled up adequately, it is then teased out to complement the vessel and at the same time create a good throat to direct the liquid in its path. There are a number of other ways that can be used to form pouring lips. These will be explored in the Spouts section later in this chapter.

One form of top termination that is sometimes found (and could be much more developed than it has been) is that of cutting the tops of thrown forms. It is often used for pitchers and jugs but could easily be incorporated in a wide range of other ways. The clay is usually cut when leather-hard and can be softened by misting with a water spray, with a damp sponge, or by wrapping with wet newspaper, to re-form the shapes of the cut areas. The

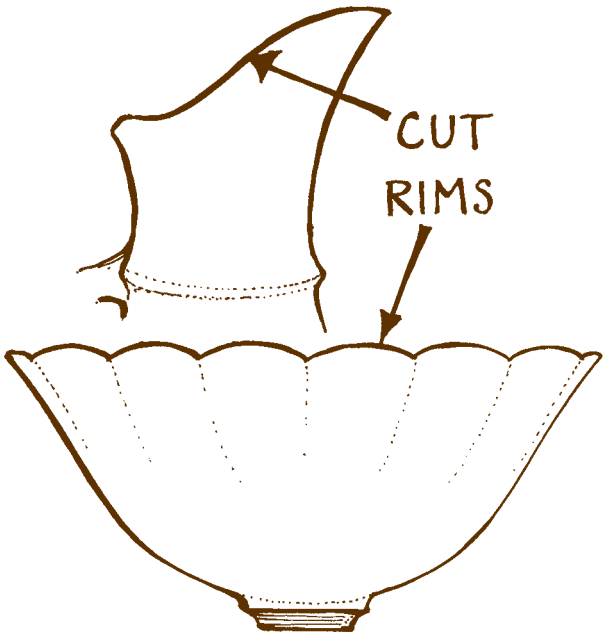

Fig. 9.12 Cut rims.

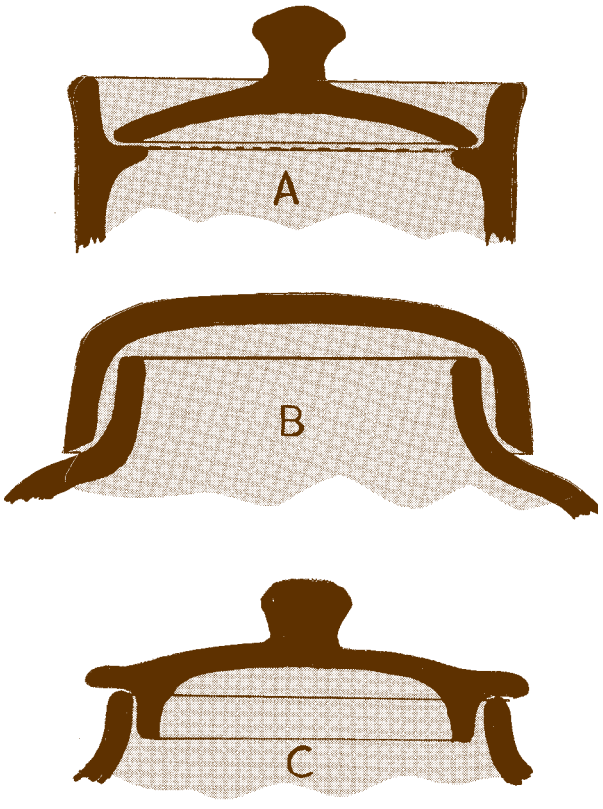

Fig. 9.13 A. Top terminations with internal flange. B. and C. Simple support for more complex lid fittings.

flat side of a knife can be used to compress the newly cut areas. Any rough edges can easily be sponged to make them smooth (Fig. 9.12).

A common form of top termination requires the seating for a lid or cover. For some lids, this will be a simple termination of the pot's wall. For others, it may be in the formation of an inner gallery or flange or in a seating on the exterior below the pot's top edge. The latter may only need a variation in curvature of the form, combined with accurate lid measurement, to suffice. As a general rule in the making stages, the simpler top terminations require the more complicated lid forms. For pots with a gallery on the inside or a support form on the outside, the simpler lid forms are more often appropriate (Fig. 9.13). The inner gallery needs to be made very carefully to avoid deforming the pot in the process of applying pressure at or near the termination point. The best way to make sure the form beneath the gallery is not weakened is to put an embryonic gallery thickness in place fairly early on in the throwing process. This not only allows greater pressure to be applied later, but also ensures that there is, in fact, enough clay to be able to make the flange. Running out of clay is a common fault in inadequately made lid seatings, resulting in a thin to almost nonexistent flange. Should the lid also be badly made, there is a strong likelihood of it warping into the pot during the firing process due to a lack of support when the maturing clay is softened. It is possible to use tools for the entire formation of the gallery or to do the main formation with the fingers, followed with a cleaning and finishing operation with a flat-edged tool such as the end of a flat metal trimming tool. The actual finishing of the gallery should be almost the last thing done in the throwing of a form designed to take a lid. Only a little base trimming should follow, in order not to disturb or deform the lid seating. It is easy to push the form into an oval shape at this time, making proper lid fitting nearly impossible.

LIDS AND COVERS

Lids and covers might seem to be the simplest part of the pots for which they are made. Nothing could be further from the truth! They are perhaps the most demanding and frustrating of the pot's details to deal with and, once again, quickly show the degree of skill the potter may have. First, they should fit properly. Second, they should be carefully related proportionately to the pot that carries them. Third, they should seem to belong to that piece by the extending fluidity of the line from the base through to the top, so that they don't look as incongruous as either an undersized hat on an elephant or, alternatively, an oversized hat on a mouse. There are, of course, times when an extra small or extra large lid might be desirable for the form being made, usually for special effect or aesthetic concern. Fourth, they should fulfill the intended function; select the lid type that is most suitable for a specific use.

As I explained earlier, lids fit on three different types

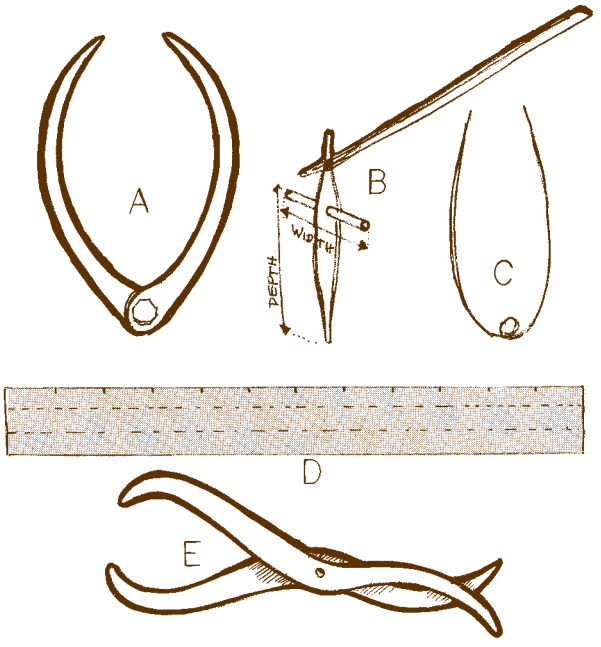

Fig. 9.14 Tools used for taking lid measurements. A. Calipers; B. Japanese "Tombo" measures height and depth of form at the same time; C. Bent wire; D. Ruler; E. Double ended calipers.

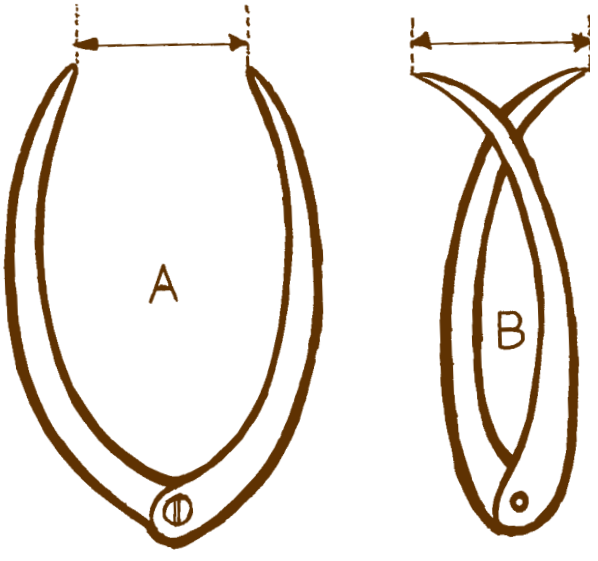

Fig. 9.15 Caliper measurements may be taken across the gap for outside measure (A), or between the points for inside measure (B).

of top termination (see Fig. 9.13). Generally, simple terminations require a more complicated lid and the more complex, galleried termination receives the simpler lid. No matter which combination is used, if the piece is intended to function, the lid should fit properly. Proper fitting is usually achieved by a combination of careful measurement and observation of what the lid has to fit onto. Measurement can be done quite simply with

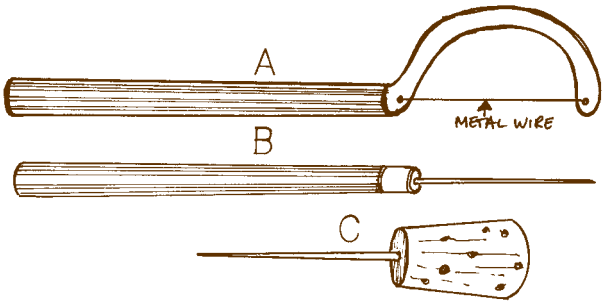

Fig. 9.16 Tools for removing sections of flange or tops of forms. A. Homemade tool with taut metal wire; B. and C. Pin tools.

a ruler, a piece of bent stiff wire, a pair of simple calipers, or sophisticated double-ended calipers that give the dimension of both inside the form and outside the lid. It is also possible to use an Oriental T-shaped bamboo measure, which can measure both width and depth at the same time or, for some lids, a measure attached to the wheel tray or surround. Tools for measuring are shown in Fig. 9.14. Simple calipers can be used in two ways, either by measuring the gap between the points or across the closed caliper to the two points (Fig. 9.15). No matter how one takes the measurement, the prime concern is that it be accurate. It takes far more time to try to rectify a bad fitting than it does to measure and make it right in the first place.

If a lid is required to fit onto a pot with an internal gallery and at the same time has a pulled pouring lip, the part of the gallery where the lip will be can be cut away with a pin tool or simple wire tool, as in Fig. 9.16. This should be done right after the piece is thrown to allow for easier pulling of the lip. After the gallery section is removed, the pouring lip can be pulled as normal, taking care not to deform the rest of the top edge and gallery of the pot. Once the piece is stiffened, drying the lid on the form usually helps to minimize potential warping.

There are some instances when lids may shrink more than the body of the pot. If this happens, it is usually due to the degree of stretching the clay undergoes during the throwing process in comparison to the stretching the basic form undergoes. Clay is formed from myriad microscopic plate-like crystals, sliding over each other with water as the lubricant surrounding each platelet. In the process of throwing and stretching clay, the lubrication between platelets becomes extended, depending on the degree to which the clay has been pulled. Since there are only a certain number of platelets available in a given piece of clay, the excessive extending process of the throwing will cause a small increase in the shrinkage, due to the evaporation of water used to assist in pulling the clay to its extreme. In the drying stage, where the clay usually shrinks significantly, the platelets return again to close contact. This process is somewhat elastic in nature and has given rise to what is sometimes termed

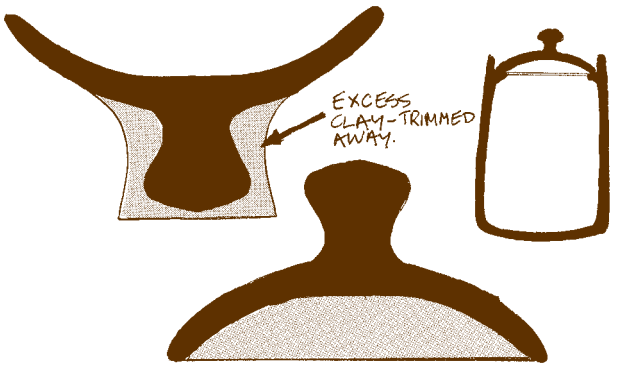

Fig. 9.17 Lid type 1.

clay memory, or elastic or plastic memory. It is particularly prevalent in some clays and some forms, notably lids, necks, and spouts (see Spouts). However, it is not a consistent problem. Different people throwing the same forms with the same clays will likely experience different degrees of change, depending on the speed and strength of the throwing. It should be looked at as a difficulty of making which is relative to the individual, and therefore it is up to the individual to accommodate it in his own work.

There are approximately 11 different basic types of lid, with countless variations. Some varieties of lid forms are made the right way up, more or less as they would appear when sitting on the pot. It is, of course, much easier to visualize the completed object in this way. Most, however, are made upside-down. The reasons for this are the ease of measurement, accuracy in making some lids, and the fact that some can't be thrown any other way. Once the required type of lid to suit the form is decided upon and relevant measurements taken, the piece is thrown. Some lids are easily thrown from a hump of clay, others with weighed out amounts are thrown directly on the wheelhead or on a batt. The illustrations show the lids in section form, as they would usually be thrown, and as they would probably be after trimming. Average weights for weighed-out lids are included in the list of Weights and Measures for production ware, pages 152-153.

Trimming lids, like trimming feet, is accomplished by using a wide variety of possible tools. Lids needn't be trimmed on a wheel, although this might be the quickest way. They can be cut with different wires, wire-ended tools, or knives to achieve variety. It is often a wise precaution to leave the edge of lids with a slight thickness to make them more resistant to the chipping and abrasion that occurs with the wear and tear of normal use.

Lids Thrown Upside-Down

1. This is one of the simplest lids, usually thrown off the hump and made like a small shallow bowl sitting on

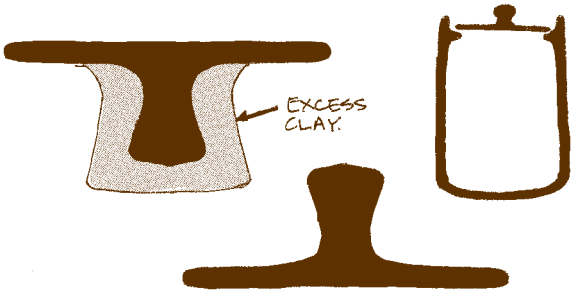

Fig. 9.18 Lid type 2.

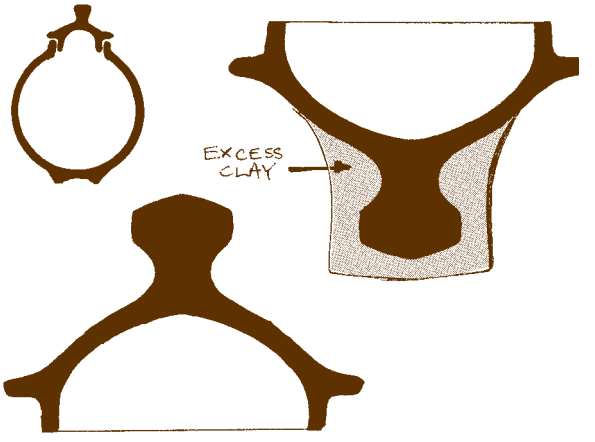

Fig. 9.19 Lid type 3.

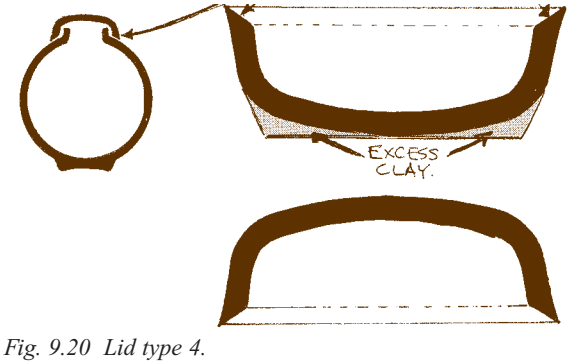

Fig. 9.20 Lid type 4.

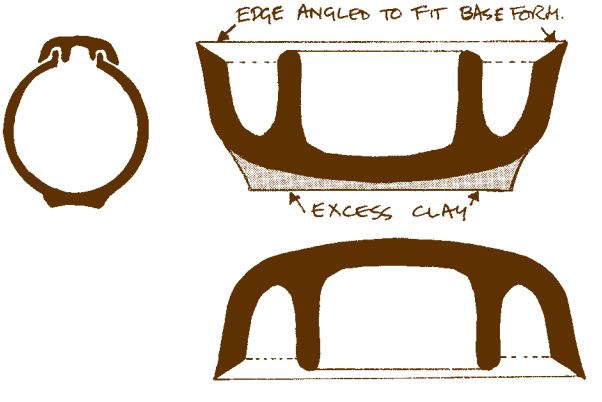

Fig. 9.21 Lid type 5.

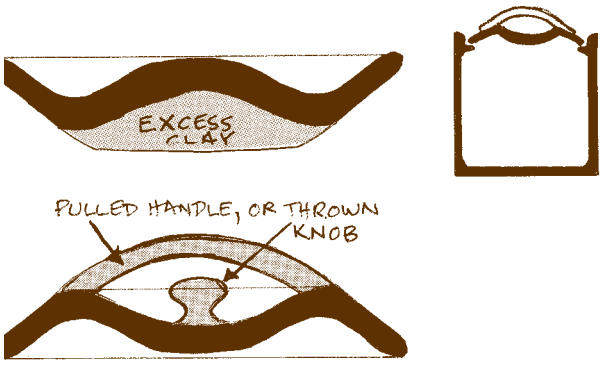

Fig. 9.22 Lid type 6.

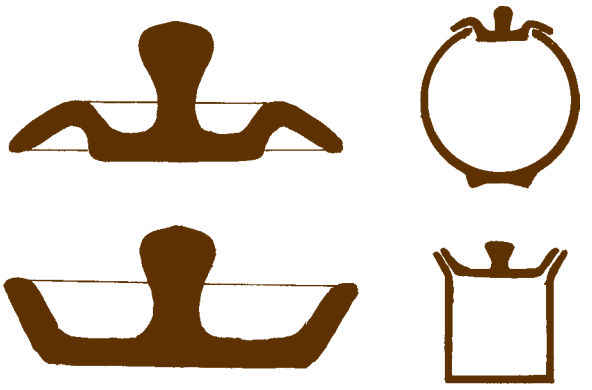

Fig. 9.24 Lid type 8.

a short stalk (Fig. 9.17). The stalk should have enough height and volume of clay to allow later trimming of the knob. It needs to sit on a gallery inside the pot.

2. This lid is thrown in the same way as Type 1, except that it is pulled out as a flat disc in order to make a flat lid (Fig. 9.18). This lid also has to sit on a gallery. Depending on its size, it might be more difficult than Type 1 because of the difficulty of maintaining a flat disc unsupported on a horizontal plane.

3. This type of lid (Fig. 9.19) is probably the most commonly seen and is made with a flange, therefore not necessarily needing a gallery on the pot. It can be thrown off the hump with enough excess clay for a knob to be trimmed, or may be thrown on a batt, with weighed-out clay. For larger lids, the latter is probably the best method. This lid type is useful for most lid applications. In sizes larger than 6″ diameter, it is probably best to throw a knob on after trimming has been done.

4. This type (Fig. 9.20) is like those used on Chinese ginger jars. Owing to the difficulty of lifting it cleanly from a hump, this lid is often best thrown on a batt. It is thrown like a small bowl, usually with short, straight sides. It has to fit over the top of a pot or into a recessed gallery to make sure that it doesn't fall off. Angling the inside top edge to the reciprocal angle of the top of the pot helps to give a clean profile to the finished object.

5. This lid is a more complicated version of Type 4, being made as a double-walled piece (Fig. 9.21). The top termination of the pot fits between the two walls of the lid. It requires two sets of measurements to fit properly. It is used to seal in either the aroma or moisture of the pot's contents. It is also best made with an angled edge on the outside wall, to fit the shoulder of the pot.

6. This lid is made like a small shallow bowl thrown with a flattened dome in the center (Fig. 9.22). It is best thrown on a batt with weighed-out clay. In trimming, the dome is hollowed out, leaving a recess that can be bridged with a pulled handle or decorative recessed knob. It usually fits on an internal gallery.

Lids Thrown Right Way Up

7. To make large lids similar to the finished Type 2 lid, the simplest way is to throw a flat disc on a batt, measured to fit, and leave enough clay in the center to throw a knob if desired (Fig. 9.23). It is basically finished in one operation, save for a little cleaning up when the lid is leather-hard.

8. This is perhaps the fastest lid to make. It can be done off the hump, or with weighed-out clay. It has its own built-in flange so therefore fits onto the simple pot termination (Fig. 9.24). After centering, the knob is formed first, followed by pulling up a small cylinder around it. The outside width of the cylinder is measured to fit the opening of the pot and, when accurate, the top half-inch or so is bent to conform with the top of the pot. It generally needs a little cleaning to finish it. A common variation of this is where the walls of the lid are only

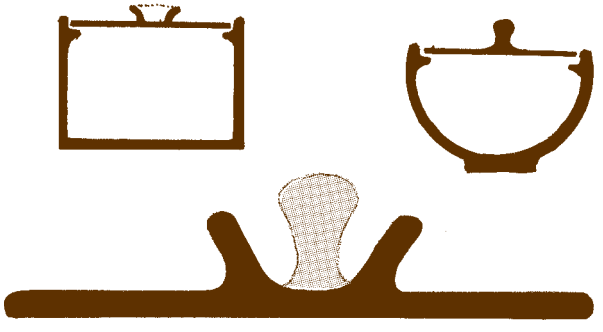

Fig. 9.23 Lid type 7.

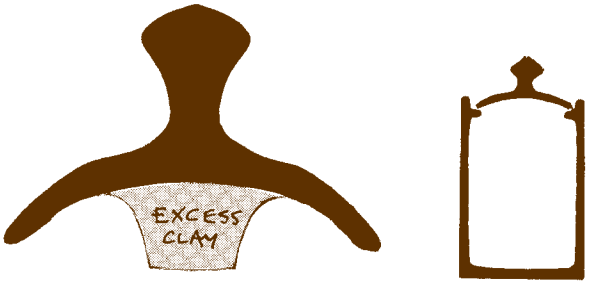

Fig. 9.25 Lid type 9.

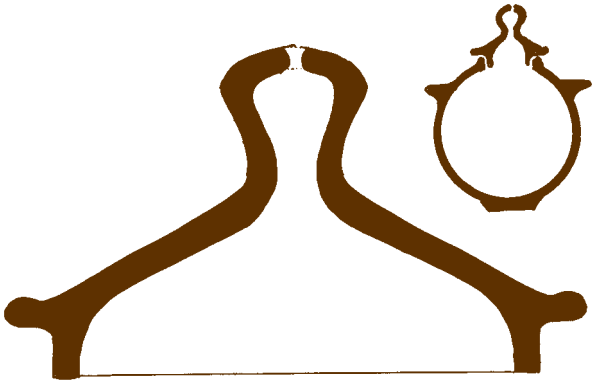

Fig. 9.26 Lid type 10.

pressed out at a slight angle to conform to the inside of the pot's top section, which is similarly angled. In this way the lid forms a friction fit rather like a wedge. This fitting is often used on storage jars or kitchen containers.

9. Another lid that is thrown off the hump is Type 9 (Fig. 9.25). In process, it looks a little like a mushroom. After centering, the lump of clay is pressed into two directions, one becoming the knob and the other a flange that is initially pulled out straight and when the knob is finished, pulled to its full measured width, and either left flat or curved down. When leather-hard, it is inverted on the pot or a small chuck and the "stalk" of the mushroom is trimmed away.

10. This lid (Fig. 9.26) is very tricky to throw but is quite useful for certain objects. It is often used on large crocks or places where a hollow lid might be beneficial. It is thrown as a shaped pot, by establishing the necessary width first and then collaring or narrowing the top to the form required. It is usually trimmed to fit the opening by inverting it on the top of the pot. It can either fit a gallery or a simple termination. Hollow lids can also be made by cutting a hole through the center of a solid knob or by using lid Type 3, throwing a small hollow knob onto the trimmed form and boring a hole through afterward.

11. This is an example of throwing the pot and lid as a complete, enclosed form (Fig. 9.27). When the throwing is finished, a small, straight-edged tool is pressed against the rotating pot to form an indentation almost the thickness of the clay wall. When the clay has stiffened to leather-hard, a needle tool, scalpel, or sharp knife is used to cut the narrow joining part. A small amount of trimming is usually necessary to clean up the edges and get a good fit. Many variations of this form can be made, with a wavy line cut at an angle replacing the tool indentation. This form of cutting should be done when the piece is leather-hard and deformation is less likely. With any of these forms, it is necessary to make a small pin prick somewhere in the form to allow air to escape while drying to leather-hard takes place; otherwise, the piece will crack or deform at the weakest point.

These are the basic variations of lid types. When one adds the variety of knobs, handles, and modeled finials that may be attached to this group of lid types, one realizes that this part of the pot alone allows an infinity of interpretations.

Locking Lids

If lids are made properly and are made to fit, rarely will they fall off or into the pot. However, there are some occasions when locking devices may be incorporated into the design of a lid, form, or both, so the lid can't easily be knocked off. Most lids can be made to lock by adding a small tongue of clay at a point where it will inhibit movement. Figure 9.28 shows how these tongues might look. Sometimes it may be necessary to cut out a

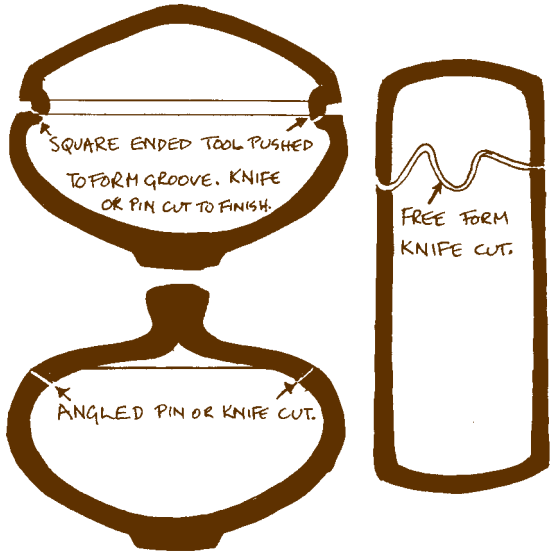

Fig. 9.27 Lid type 11.

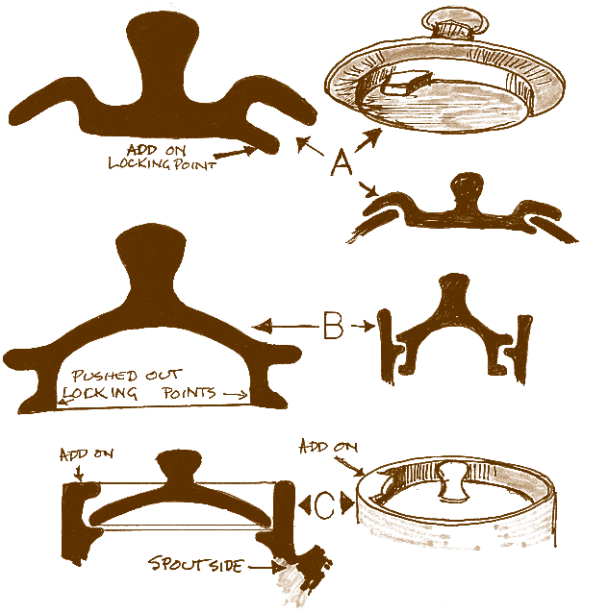

Fig. 9.28 Lid locking devices.

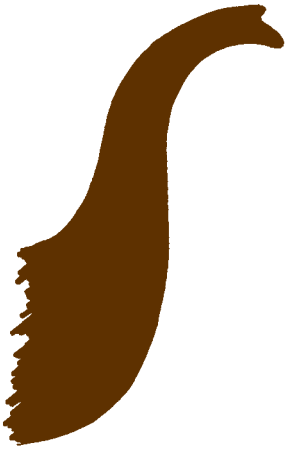

Fig. 9.29 Swan or goose neck spout with multiple curves.

small section of the inner gallery to accommodate the tongue. On lid Type 3, a small pressure can be made like small pulled spouts on each side of the lid flange. These will hook under the inner gallery and are particularly useful on such objects as coffeepots and teapots. If one bores the vent hole on the same side of the lid as the tongue, it is easy to remember where the tongue is situated. This is particularly useful in the dry stage, where lifting the lid might inadvertently break off the tongue. For inset lids with no built-in flange, it may be necessary to add a small piece of clay to the rim of the pot. If it is a pot for pouring from, it should be located on the opposite side from the spout or pouring lip, usually but not always, on the same side as the handles (Fig. 9.28C).

It is possible to make lids that fit with a screw thread, either as an internally threaded neck that receives a stopper or externally, like a standard jam jar lid. Either way, it is necessary to develop a tap and die system to cut the matching threads. This is an involved process, which usually requires the cooperation of a small engineering company unless one is a competent technician oneself. Since a description of the process of making screw thread lids and the accouterments required to make them is likely to take longer than it warrants here, I suggest that any reader who may wish to explore this form of locking device look at Michael Cardew's excellent book, *Pioneer Pottery*, published by Longmans, 1969. This has the best description I have seen. It is often difficult to tell whether the end result achieved by the process is worth the time spent mastering it, or whether it is just an engineering conundrum. Interestingly enough, after using screw lids for quite a time, Michael Cardew confided that he had come to regard it as a time-consuming gimmick.

SPOUTS

Spouts can be press-molded, slipcast, pinched, coiled, slab-built, or thrown. There are some practical advantages to making spouts by ways other than throwing. These are mainly in the consistent quality of the finished article, in producing a spout that is not likely to twist in the firing stages, and in a spout that has multiple curves (Fig. 9.29). The main uses of spouts are in lidded jugs, coffeepots, teapots, pitchers, and a few other items. The main consideration in their function is that they pour properly, preferably in an even flow without dripping or clogging. As with pouring lips, the sharpness of the edge is an important factor in whether spouts function well. As long as the final edge the liquid has to go over is sharp, the flow should cut off without dripping. The edges of spouts that are rounded are almost always prone to dripping. Many potters clean the glaze off the very end of the spout to assist in the flow-cutting action. There is no foolproof way of making spouts that don't drip. There is a combination of factors that come into play such as length, angle of attachment, width of aperture, and complexity of curves. Factors that assist in clean flow are a sharp edge, good angle, and smoothness of the inside of the spout.

Thrown Spouts

Throwing spouts is usually done off the hump, as it is easier to get one's hands around a larger piece of clay. Spouts are made like a funnel, with the fat end at the bottom. In the process of throwing, the clay is often constricted into a small tight form, with a narrow aperture in the middle. It is important to remember just what sort of liquids may be flowing through the spout. Liquids may be any variation in viscosity, from as thin as water to as thick as glue. If the aperture is too tight, it may become clogged by a coagulation of viscous liquid. Even milk, and certainly any thicker liquid, can possibly cause this to happen.

Thrown spouts often have a tendency to twist in the firing, due to the previously mentioned phenomenon commonly known as elastic memory. If the clay is compressed into a small space while spinning, the alignment of particles is stretched as the torque of the clay goes in the opposite direction to the rotation of the wheel. The tension put into the movement often continues the direction during the drying and firing stages. This creates an annoying problem—the cut end of the spout is sometimes twisted to the point where it is almost impossible to pour the liquid cleanly. One solution is in having a narrow spout and not cutting the end. With a narrow spout, more pressure is able to build inside the pot, which can result in a clean flow. With a larger aperture spout, a cut end aids in the pouring action, allowing a passage of air from the vent to the pouring edge. For a clean flow, it is often best to smooth the inside of the spout to eliminate the vortex action of the liquid, which would otherwise be caught up in the throwing ridges

inside the spout, making the liquid pour from the spout in a spiraling movement. The problem of the twisting spout is one of an individual nature and can only be correctly solved by the individual. As with lids that sometimes shrink excessively, the torque developed in the same clay used for the same forms will vary considerably from one thrower to another. It will also vary with different clays thrown by the same thrower. The usual solution, if the problem is a consistent one, is to apply the cut end of the spout at an angle slightly down to the left as one looks at it end-on (Fig. 9.31). It generally takes some time to gauge the right degree of slant, and it is never totally foolproof.

Spouts may also be made from ordinary thrown spouts cut in half lengthwise, or sections cut from bowl-like forms and applied to the outside lip of the main form. Both of these spouts should perform well, particularly for thicker and more viscous liquids (Fig. 9.32).

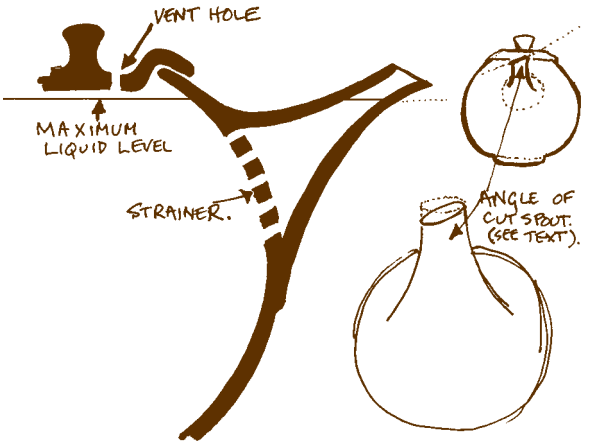

Fig. 9.31 The placement of spouts and angle of cut.

Press-Molded and Slipcast Spouts

Many potters use the processes of press-molding and casting spouts to eliminate the aggravating habit of spout twisting. Casting, particularly, can also be extremely useful in making spouts in shapes not suitable for the wheel or which may be needed in quantity. Press-molding is a slower process, but can also be very useful for asymmetrical shapes not suitable for wheel making. In either case, plaster or bisque molds need to be made from a model. Molds for press-molding can be less carefully prepared than for casting, since press-molding doesn't pick up as much detail and imperfections can be cleaned up later. Molds for casting need to be more carefully made to cast properly, and because the liquid slip shows every mark. A well-finished model saves a lot of cleanup time in removing unwanted seams and marks.

The process for making molds shown in Fig. 9.33 is as follows. First, a model must be made as accurately as possible, with a small amount of excess at each end to facilitate cutting to fit the body of the pot at one end and for developing a good pouring edge at the other. For the simple conical type of spout made by pressing, a simple one-piece mold is all that is necessary. The model is made as a solid cone-shaped form, which can either be made on the wheel or hand-built. When leather-hard, the end that attaches to the pot is cut to the required angle. The individual press-molded spout can be altered easily to exactly fit each body after pressing. Once the model is complete, a wall of clay or linoleum cottle is made to surround it, in order to contain the setting plaster. Plaster is mixed and poured into the mold to a line penciled on the model showing the length needed. Once the plaster is completely set, the model is removed and the edges of the mold cleaned to make sure that pieces of plaster can't chip off into the clay, causing problems later in the firing. After a few days drying, the mold is ready for use. A small cone of clay is pressed into the mold and a modeling tool or sharpened piece of dowel or a pencil is used to both make the hollow and compress the clay against the side of the mold. Any excess is removed with a knife. When the clay has stiffened, it can be removed from the mold and fitted to the pot.

For pressing or casting more complicated forms, a two- or more piece mold is necessary. The process starts with making a model with a small amount of excess at each end. The model is then marked with a seam line

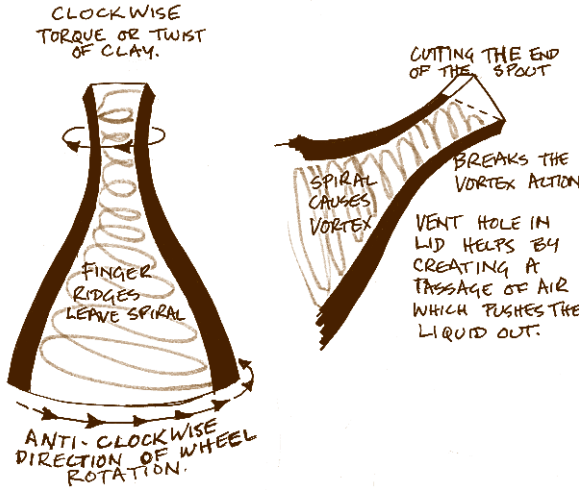

Fig. 9.30 The torque or twisting action of clay in spouts.

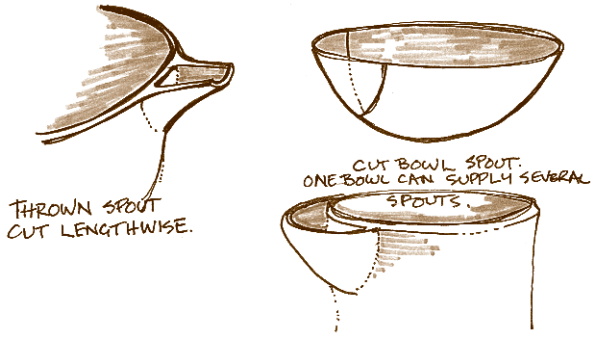

Fig. 9.32 Thrown and cut spouts.

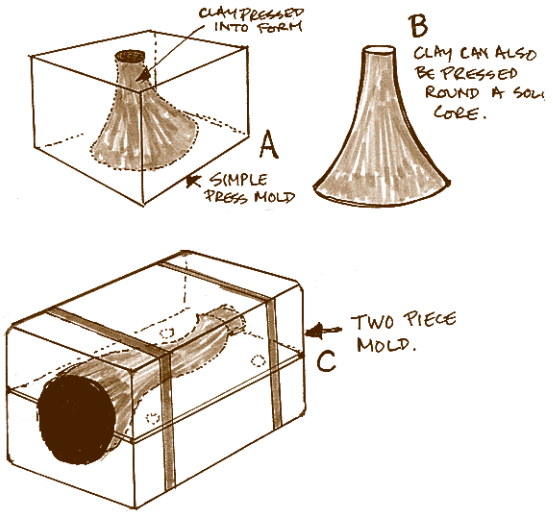

Fig. 9.33 Simple spout molds.

along the most logical point, making sure there are no undercuts. This usually cuts the spout into two equal parts. A mold is made by first placing the model in soft clay up to the drawn seam line with a retaining wall or cottle placed around it. Plaster is then poured over the model to cast half of the mold. When the plaster is set, the cottle is removed and the plaster part is turned over, leaving the model in place. The excess soft clay bed that the model was set in is removed and the first half of the mold is cleaned. Indentations called keys are cut into the plaster to enable the two halves of the finished mold to fit back together in use. Keys can be cut by rotating the end of a knife in the plaster, or plastic keys can be purchased and cast into the mold. The plaster is then cleaned and given four to six coatings of soft soap to allow easy separation. The soap should be burnished between coatings or the two halves of the mold might stick together or have a rough surface. The second half of the mold is made by forming a cottle around the first part, then pouring the liquid plaster to the depth necessary and allowing it to set. After setting, the cottle is removed, the mold separated, and the model removed. All that is needed now is for the mold to be cleaned and left to dry out. The drying should be done with the two halves of the mold held in place with casting straps, usually made from old automobile inner tubes. This process produces a rough mold, sometimes called a waste mold, which is suitable for taking a limited number (150 maximum) of casts. For greater numbers, working molds need to be made. This is done by taking a solid plaster cast of the model and repeating the procedure above. The advantage is that there is always the plaster model to make another working mold. Casting slip can usually be made from the same body as the basic pot form, with deflocculants added to produce a smooth liquid. For large numbers of spouts, battery molds for

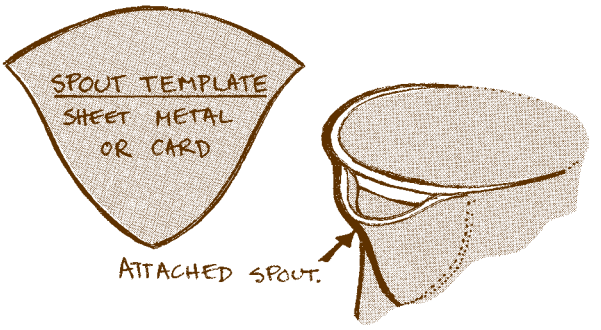

Fig. 9.34 Template model for a hand-built spout and placement.

producing several at the same time might be considered. For further information on mold making, I recommend you select one of the more specialized books in the Bibliography.

Both casting and press-molding are good alternatives to throwing for spouts, particularly where non-round or modeled spouts are required. Since there is no throwing required, there is no problem with twisting or other distortion. Although sometimes questionable from the aesthetic viewpoint, spouts are often made by either slab or coil methods. It is extremely difficult to effect a happy marriage of thrown body with hand-built additions. If hand-built spouts are preferred, since they also do not twist, it is often a good idea to make small templates so the slabs can be cut with ease and accuracy, for rolling and sticking (Fig. 9.34). A small cone of plaster or fired clay or a tapered dowel can be useful for wrapping the spout around so that some pressure can be applied for sticking the ends together. Another method consists of pinching a small ball of clay flat to create an oval lip or overlapping spout. No matter how one makes the spout, its need to function properly remains the same and hints given earlier for clean pouring should also be kept in mind. However, if all else fails, one can always stick a piece of angle-cut plastic tube on the end! It may not be aesthetically pleasing, but it usually does the trick! In Japan, a great many teapots are sold with the plastic tubes in place. It not only helps with the pouring action, but also protects the vulnerable end of the spout. One must admit, however, that there is really no aesthetic comparison between the beautiful, well made teapot with a spout that pours properly, and a teapot that may be just as beautiful to look at but needs a prophylactic in order to function properly!

KNOBS AND FINIALS

The knob or finial, finishing point of a lid, is a point of the form where the potter has great license for play, giving a flourish to the top termination of the piece. Likewise, the lugs and handles required to function properly may also be an avenue for freedom and inventiveness. They are all points of definition, where the

attention of the viewer is likely to be caught and sometimes captivated. Sometimes the knob is used to make or show some kind of sculptural statement, which is of greater importance and artistic concern than the function required of the pot.

There are, of course, a few qualifying requirements to these handling details that should be borne in mind, such as the ability to efficiently pick the object up, particularly if its function is generally in kitchen use. Greasy fingers or residual grease on the surface can cause potentially dangerous situations to develop in the preparation and cooking of hot food or liquids, or even in their storage. If cooking pots or storage containers are not easy to pick up, even with slippery fingers, the user may drop them and lose both pot and contents, burning themselves at the same time. Potters who make pots such as these should perhaps consider product liability insurance!

Knobs are the top finials of lids, although not all lids necessarily have them. To function fully, the knob should be easy to pick up without risk of it sliding or dropping from the user's fingers. If a lid is smaller than the span of a hand or can be picked up easily because of its shape, a knob may not be necessary. Knobs can also be replaced by handles of many types or by modeled details, like miniature sculptures. Not only is the knob the finishing point of the lid, but usually it is the finishing point of the pot that carries that lid. Its size should be considered carefully, as a point of emphasis or as a point of quietude. It can be trimmed from the mass of clay specifically left in throwing or can be thrown or modeled onto the leather-hard partially finished lid. No matter how it is made, it should relate to the overall form. Some of the ways of achieving this can be through an echo of the form itself in miniature, repetition of part of the form, of a movement or line within the form, or of an inversion of any of these. The interplay between form, lid, and knob can become a compulsive exercise where the form may stay constant and the details change, creating a vast series of variations in a similar vein to musicians creating improvisations on a theme. It is a form of intellectual play, which usually leads to exciting results as well as to an acute awareness of the effect that can be achieved by subtle variation, not only in shape but also in scale. A small knob on a large form emphasizes its monumentality.

Trimming Knobs from Existing Clay

Perhaps the most important point of concern here is that the clay be of the right consistency throughout the form to be trimmed. This is usually done with leather-hard clay, to allow for proper cutting. It is also important that there is enough clay left in the throwing stage to enable the trimming to be done without the final knob being starved. It usually takes a good deal of experience to be able to judge this amount, but as a general rule it is better to err on the side of excess. Unless an off center knob is required, the lid should be centered on the wheelhead, batt, or a stiffened clay pad. It is sometimes useful to place a small ball of clay underneath the lid to support the downward pressure during trimming. The clay is trimmed away to leave a lid having much the same thickness as the pot it is to fit.

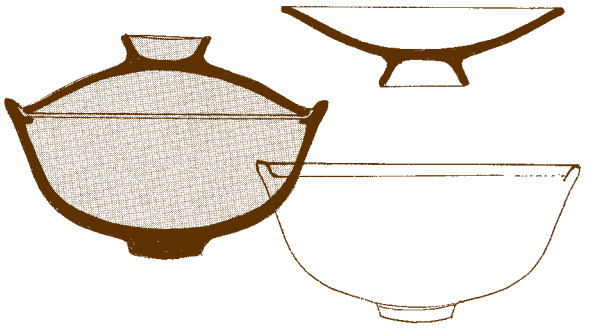

Fig. 9.35 Dual-purpose lid-plate.

Throwing or Modeling Knobs onto Trimmed Lids

In throwing small pieces of clay onto the trimmed lid to develop a knob, the clay of the lid should be sufficiently moist to allow the knob to stick without later cracking but not so moist that it might cause the lid to deform with the pressure and weight. Once the lid is sufficiently trimmed, a small scratched area in the center can be dampened either with slip or water. A small piece of clay is then pressed on, centered, and formed quickly to make the knob. It is often better to use slightly softened clay for this, as it allows easier forming with less pressure. As little water as possible should be used so that the danger of deforming the lid is lessened.

Thrown knobs or finials can also include the throwing on of coils or short walls of clay to give the knob a dual function. It can be both the handle for the lid and, when inverted, the foot of a shallow bowl for serving or for holding serving tools (Fig. 9.35). Trimming can also accomplish a similar result.

Modeled and thrown knobs can be made separately and applied by scoring and slipping or may be modeled directly onto the lid, preferably when it is placed on the form. This makes it easier to relate the scale of the modeling to the rest of the form and facilitates determining the relevant importance of each part.

In place of knobs, lids may also be fitted with handles which may be modeled, pulled, coiled, slabbed, wire cut, press-molded, extruded, or slipcast. There is an incredible potential variety for finishing the top of forms, and it is up to the potter to explore wherever he can, to satisfy his own aesthetics and to create interesting details.