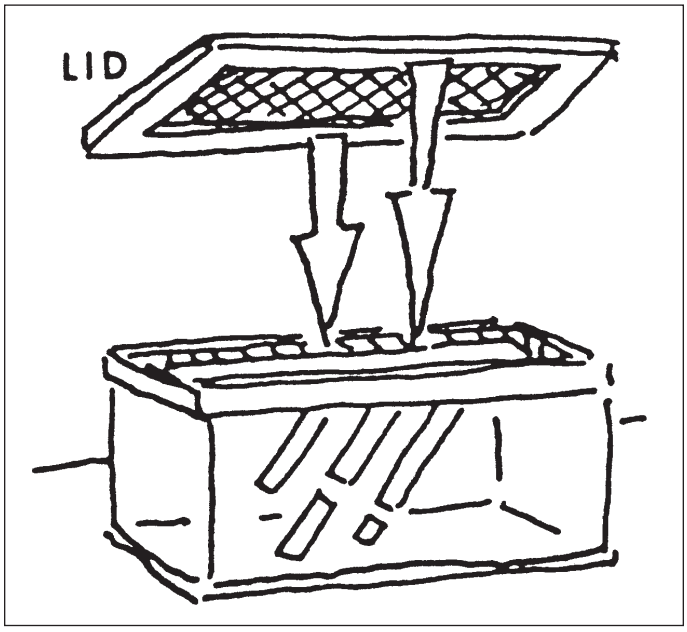
Making Custom Lids and Clips

By Karen Robbins

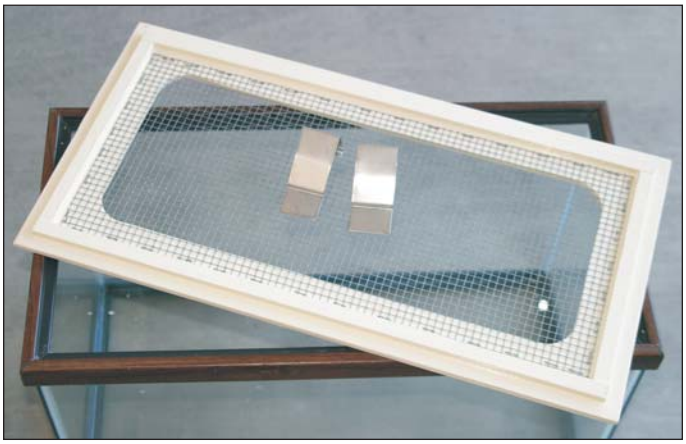
Many years ago when the only caging options for small animals were aquariums, converted bird/rabbit cages, making your own cage, or the metal/wire mouse cage with slide out tray that corroded over time and didn't hold much bedding, breeders and pet keepers had to make their own lids for the aquariums they housed their animals in. Some people just took ¼ or ½ inch wire, folded over the edges, and placed bricks or books on the corners to keep the rats from getting out (not necessary for mice) (see article "Put A Lid On It—An Aquarium That Is" **www.afrma.org/pp_cagelid.htm** on how to make a plain wire lid). Having a handy dad that could make things, we came up with a wood/wire lid with hold-down clips (eliminates the need for bricks or books) that looks more finished and professionally made. Over the years we found other cages that these lids could also be used on other than just aquariums, such as the plastic critter keeper type tanks, glass terrariums that came with a combo glass/screen top (just remove the glass and replace with a custom lid so the whole top has ventilation), to the plastic storage bins that people were using to house mice in or use as carriers for mice or rats.



A custom-made lid for a tank. Diagram by Dean Norton.

There are now several types of screen lids available (Zoo Med, Flukers, Zilla, or Penn Plax) but they are either made with window screen or only ⅛ inch metal screening and are designed more for reptiles. The ⅛ inch metal screen/metal frame lids would be OK to use for mice (though ¼ inch is better), but not for rats as it wouldn't allow enough air flow into the tank. Some of these lids come with a smaller door or are hinged in the middle; clips to keep the lid on would have to be bought separately on most brands.

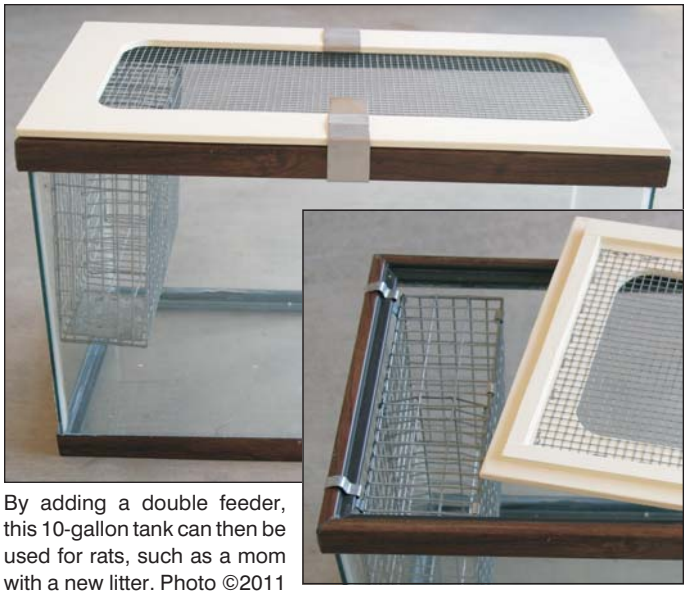
This 10-gallon plastic-framed tank has a full-size lid and clips. The lid sits on top of the frame and is easier to remove. By making a full-size lid, the tank can be used for either mice or rats. Photo ©2011 Karen Robbins.



The underside of the lid showing the stiffeners that keep the lid in place. The stiffeners sit on the inside lip of the frame. The wire is cut to fit inside the entire area bordered by the stiffeners so the rats can't chew the lids. Photo ©2011 Karen Robbins.

Full-Size Lid

A full-size lid can be made for any size aquarium. These work for tanks that house mice or when tanks are used for rats and you are using the *inside* lab block feeder and water bottle holder/double feeder (see the WSSF 2011 newsletter "Pet Projects: Making Rat



By adding a double feeder, this 10-gallon tank can then be used for rats, such as a mom with a new litter. Photo ©2011 Karen Robbins.

A close up showing how the hanging straps of the feeder are bent around the top frame so the lid fits snug; also, the bottom of the lid showing the stiffeners that sits on the lip of the frame. Photo ©2011 Karen Robbins.

Lab Block Wire Feeders" **www.afrma.org/pp_ratwirefeeder.htm**). If you have a tank larger than a 15 gallon/20-gallon tall, it is best to make 2 or 3 sections to the lid so you don't have to remove the entire lid when needing to feed, water, or visit the rats or mice.

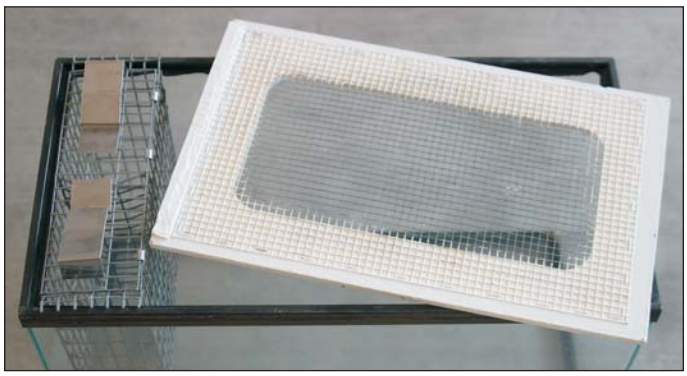
The lids can be made for either the metal-framed tanks (lid sits on top and requires stiffener strips added to the bottom of the lid to keep the lid from sliding around; can also make this version for the plastic-framed tanks if you would rather have the lid sit on top of the tank where it is easier to remove) or for the plastic-framed tanks where it has a "lip" inside that the lid will rest on (stiffener strips not needed for this type of lid; however, they are more difficult to remove since they sit flush with the top edge).

If you have a large 20 long, 30- 40- or 55/60-gallon tank, then it is recommended you make the lid in either 2 or 3 sections with

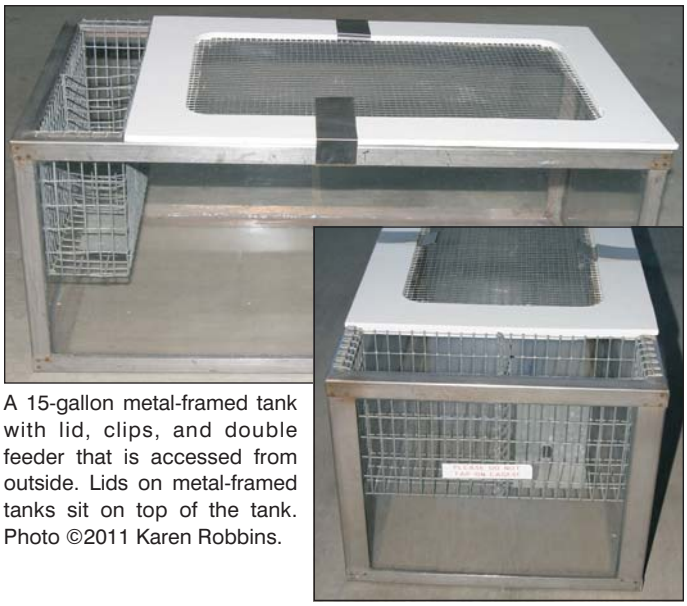
A 60-gallon tank showing the lid in 3 sections. Having smaller sections makes it easier to get in and out of the cage. The middle section and 2 sides butting next to it have an extra stiffener strip on the bottom of the lids for extra strength. The 2 wood strips on the top of the middle section are what the wheel is attached to with zip ties. Photo ©2013 Karen Robbins.

This section of lid used on a 60-gallon tank that butts up to another section of lid showing the extra stiffener strip added on top of the other strips for extra strength. Photo ©2013 Karen Robbins

This 10-gallon plastic-framed tank has a lid that sits on the inside lip of the tank frame complete with outside double feeder with water bottle protector ready to use for rats. This lid sits flush with the frame which makes it more difficult to remove. Photo ©2011 Karen Robbins.



. . . and the underside of the lid. Since it sits on the lip of the plastic frame, stiffeners are not needed, just the one on the edge of the lid that is next to the feeder basket. Wire on these lids cover the entire area exposed inside the tank so there is no bare wood that can be chewed on by the rats. The rats do tend to chew on the stiffener strips, though you could wrap the wire around the part of the stiffeners the rats can get to. Just add the extra needed to your measurements on the wire length and width before cutting. Photo ©2011 Karen Robbins.



A 15-gallon metal-framed tank with lid, clips, and double feeder that is accessed from outside. Lids on metal-framed tanks sit on top of the tank. Photo ©2011 Karen Robbins.

The view showing the lid with the stiffener that butts up next to the feeder basket. Photo ©2011 Karen Robbins.

each section having their own hold-down clips (make 2 sections for 20-long and 30- and 40-gallon tanks; 3 sections for 55/60-gallon tanks). Add an extra stiffener strip to the edge that butts up to another lid for added strength.

Lid Used With An Outside Feeder

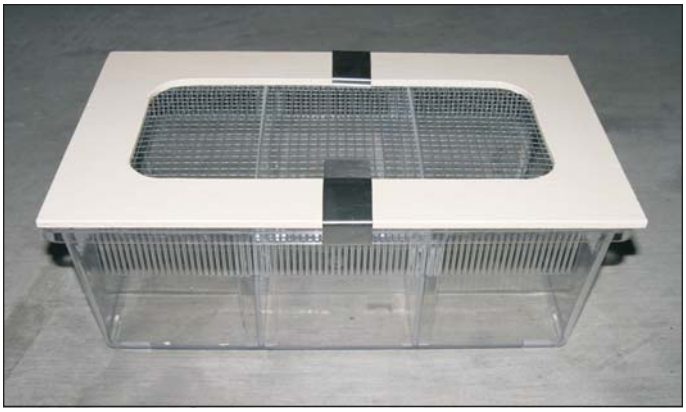
These lids are the same idea as the full lid but rather than covering the entire top, they stop at the outside feeder basket so you can easily access the food and water. This way the lid does not have to be removed when checking these items. If you are using stiffeners for the entire bottom for the lids that sit on top of the tank, then just move the one side to the edge of the lid and make the two sides longer to meet up with it (don't leave any gaps in the stiffeners or the animals will have a place to start chewing; they will usually do some chewing on the inside edge of the stiffeners). An extra stiffener will need to be added to the edge that is next to the feeder to eliminate any gaps for lids that sit on top of the tank.

Lids On Other Cages

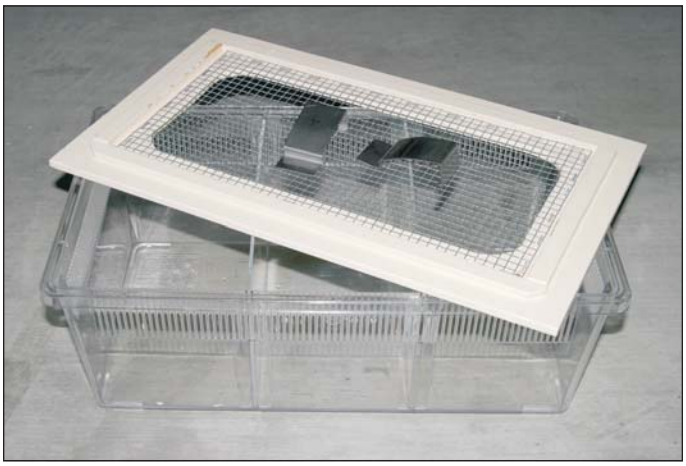
Custom-made lids can be made to fit other types of cages such as

A jumbo carrier with lid and clips. Photo ©2013 Karen Robbins.

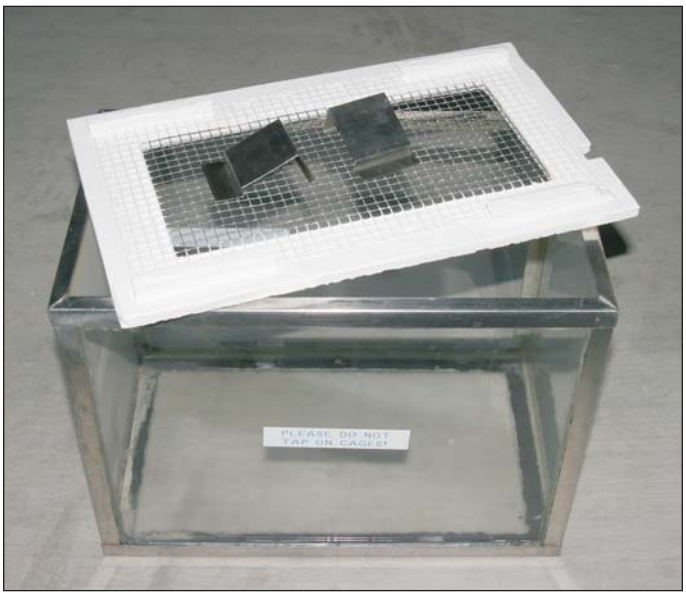
. . . and the bottom of the lid showing the cut corners on the stiffeners to fit the rounded edge of the carrier. Photo ©2013 Karen Robbins.



A large reptile-type carrier used for mice with a custom lid and clips. This one has another divider added (comes with one) so can be used to transport more groups of mice. Photo ©2013 Karen Robbins.



. . . and showing the bottom of the lid with the cut corners to fit the rounded edge of the carrier. Photo ©2013 Karen Robbins.



The bottom of a lid made for a small 3-gallon aquarium. This is one of the first ones made and just had wood blocks in the corners to keep the lid in place. The plans were later modified to have the stiffener strips around the entire border. It had a notch made for the water bottle holder which is not necessary for lids that fit on top of the tank. Photo ©2013 Karen Robbins.

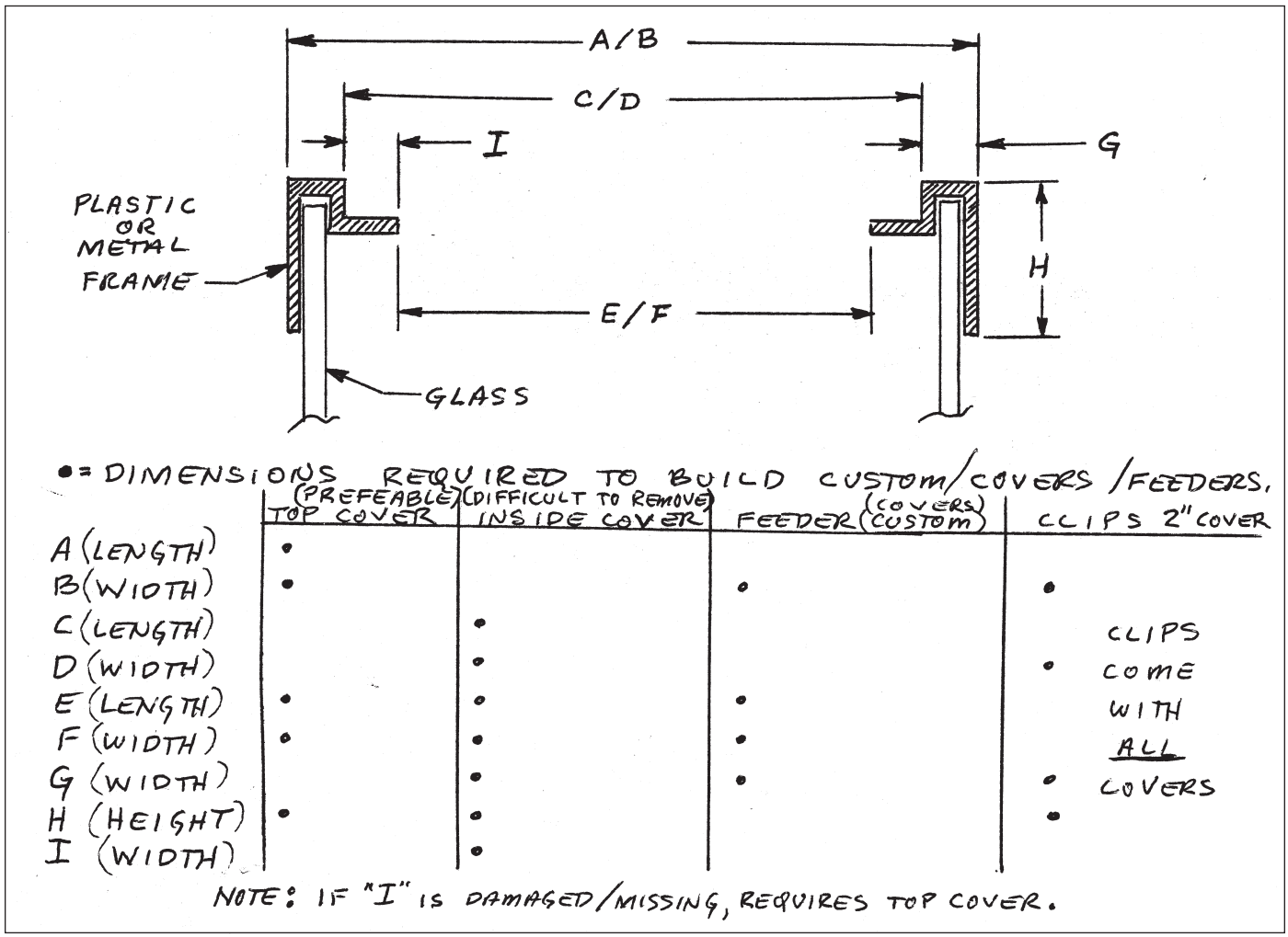
the plastic critter keepers (Lee's Kritter Keeper®/Reptile Ranch®, Penn Plax SmallWorld® tank, Exo-Terra® Faunarium) or the storage boxes modified to be used for housing or carriers. Just measure the size needed (these will need the bottom stiffeners to keep the lid from sliding around) and make as you would the other lids. The only slight modification that has to be made is the bottom stiffeners will need to have the corners cut off since these cages have rounded corners (see photos previous page and the diagram on page 56). I had my dad make custom lids for my critter keeper type carriers since the mice like to climb the bottles and chew the plastic tops that normally come with these cages.

Specifications

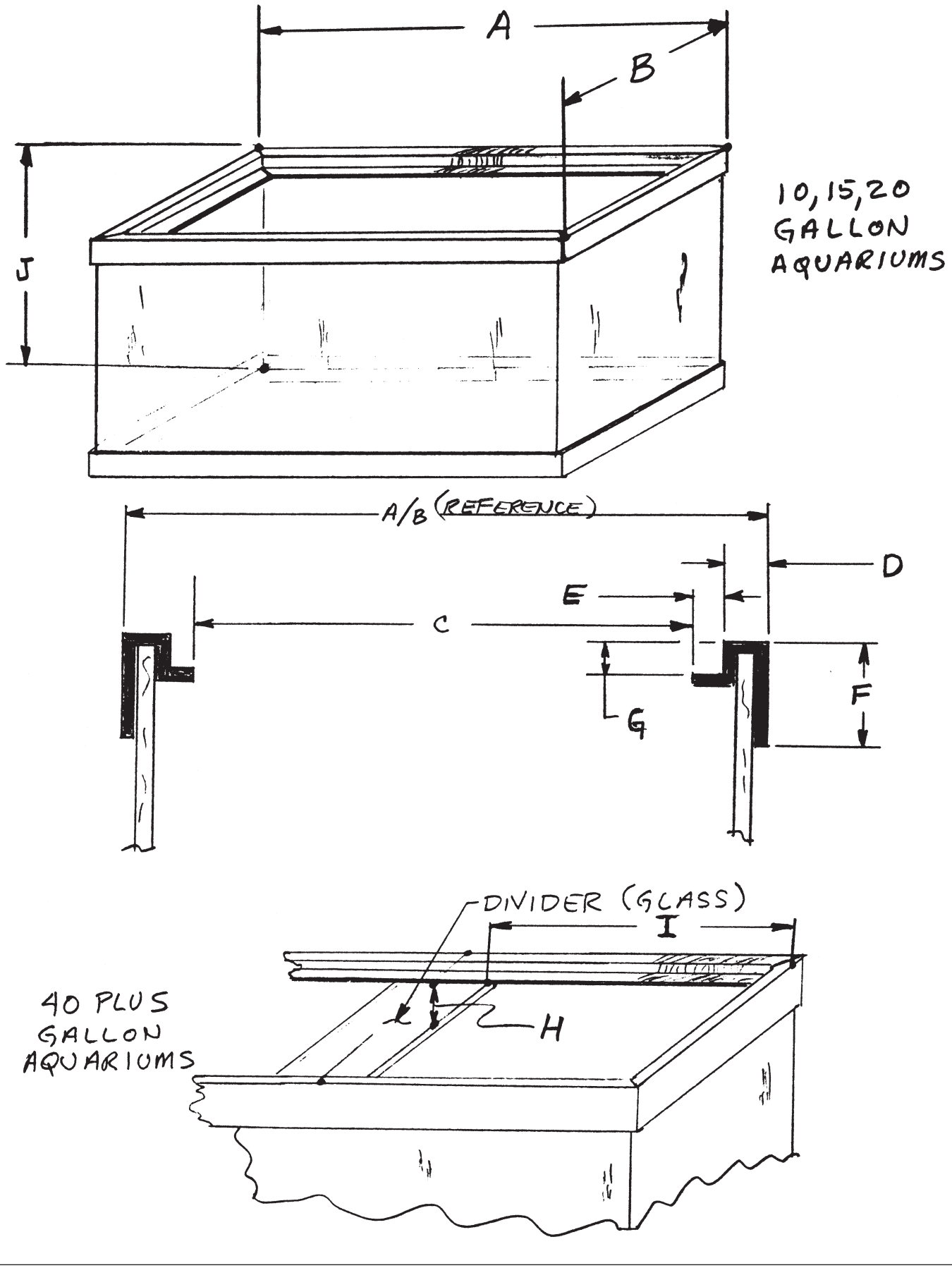
- See plans below and on the following page on how to measure; there is no universal size to tanks or carriers, so lids are made to fit each tank/carrier individually
- The border/lid is 2 inches wide all around for 10-gallon or larger tanks; this allows maximum ventilation from the wire center opening but enough wood to make a sturdy lid; for smaller tanks and carriers, make the border 1½″ wide
- Stiffener strips are ½″ wide by the length needed for your lid (cut from the inside piece of the lid or sheet of plywood)
- Hold down clips are 1¼″ wide by the length needed to bend from around the bottom of the frame edge, up the side, over the top width of the lid, down the lid edge, then back up to make a slanted tab where you would grab the clip to take off; add a little extra to the length that will allow you to make adjustments to fit the clip to the lid (see diagrams and photos pages 56–58)

Supplies Needed For Making Custom Lids

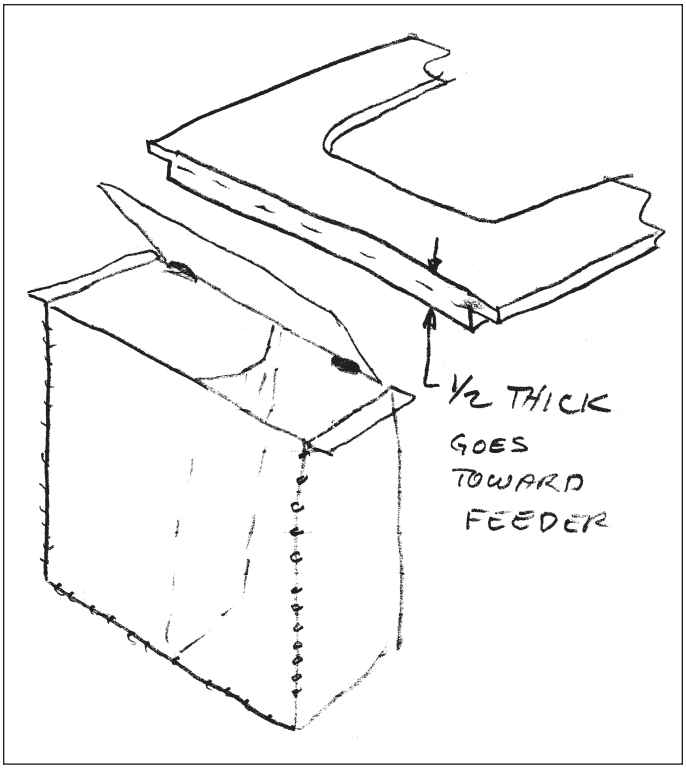
- ¼ inch plywood
- Table saw or circular saw to cut out the lid(s) from the sheet of plywood
- Jigsaw to cut the inside out of the lid (use a large bit drill to make the initial hole to put the blade into to get started in cutting); use a small can (2–2⅛″) or other round item to give the rounded inside corners to the lid; use the inside piece from the lid to cut some of the stiffener strips if making the lid to sit on top of the tank or carrier
- Sander or sandpaper to smooth the cut edges
- ¼ inch or ½ inch hardware cloth (I use ¼ inch in all my lids so they can be used for either mice or rats; ½ inch is not recommended for mice as the small babies may be able to get out)
- Wire Cutters to cut the wire
- Wood glue (and finishing nails, optional, if just using a single



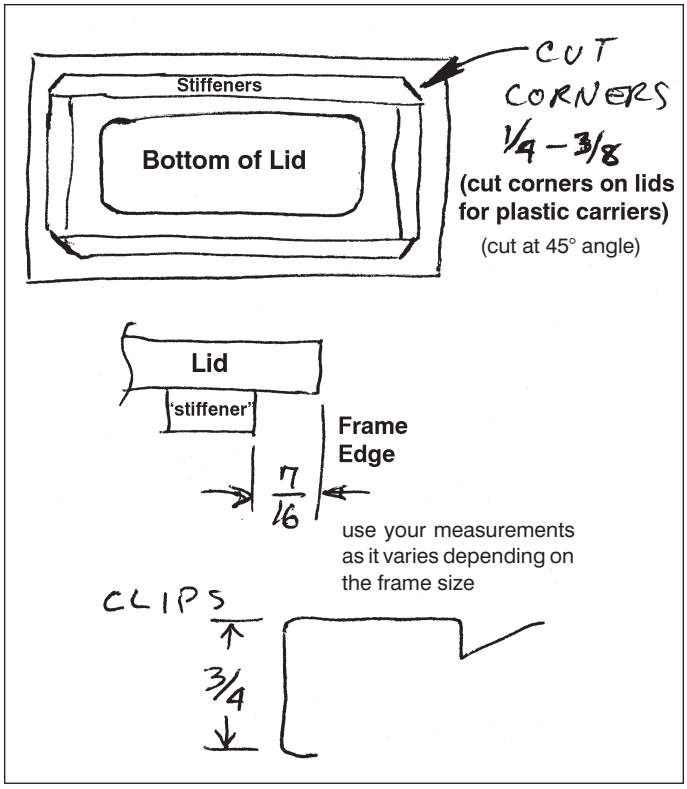
This diagram from when my dad was making custom lids to sell, shows where to measure depending on the type of lid you will be making. The "top cover; A/B" are for the metal framed aquariums where the lid sits on the top of the tank (can also use for the plastic framed tanks); the "inside cover; C/D" for the glass aquariums with plastic top and bottom frame and the lid sits inside the top frame. See also diagram next page. Plans by Harley E. Hauser.



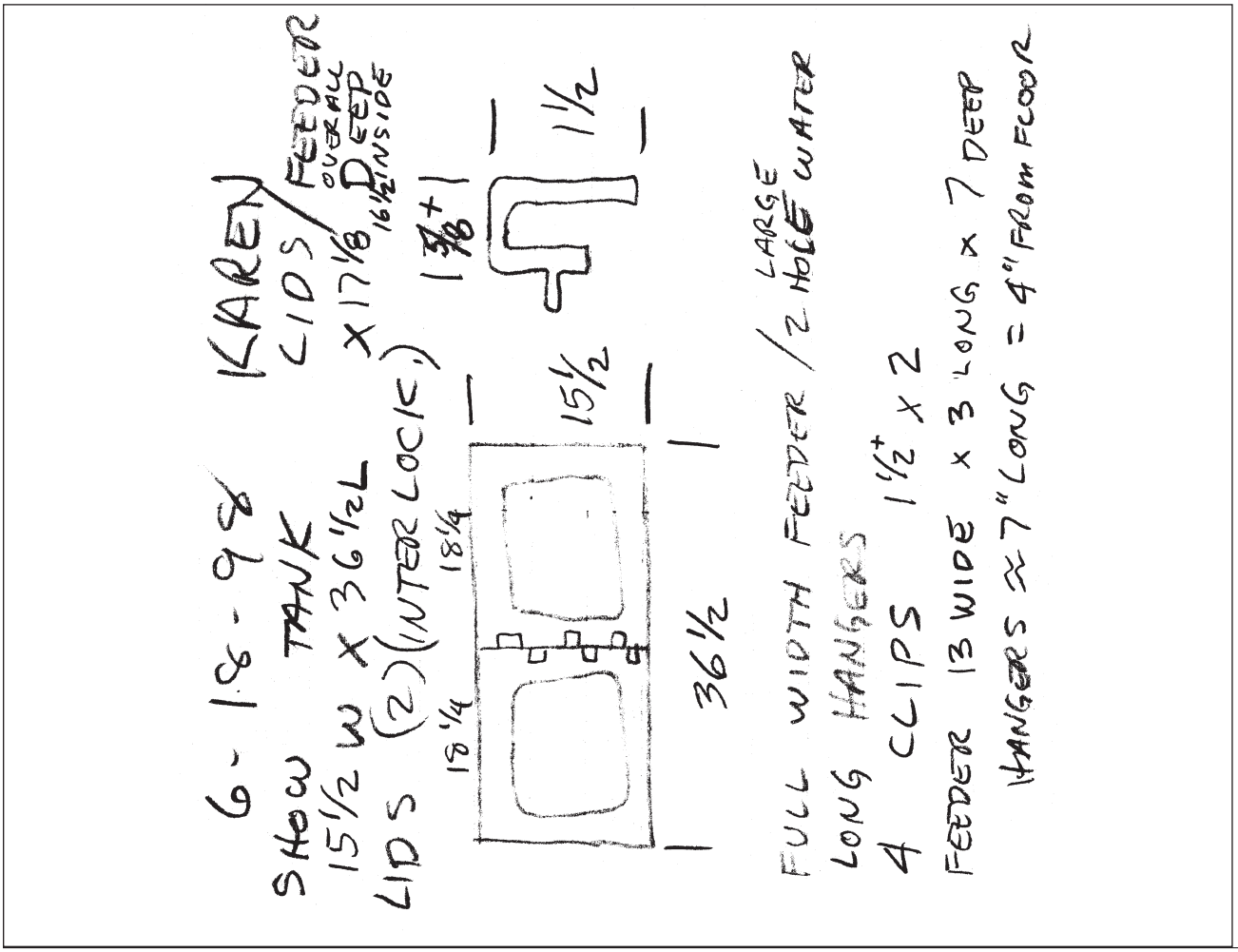
Plans by Harley E. Hauser.



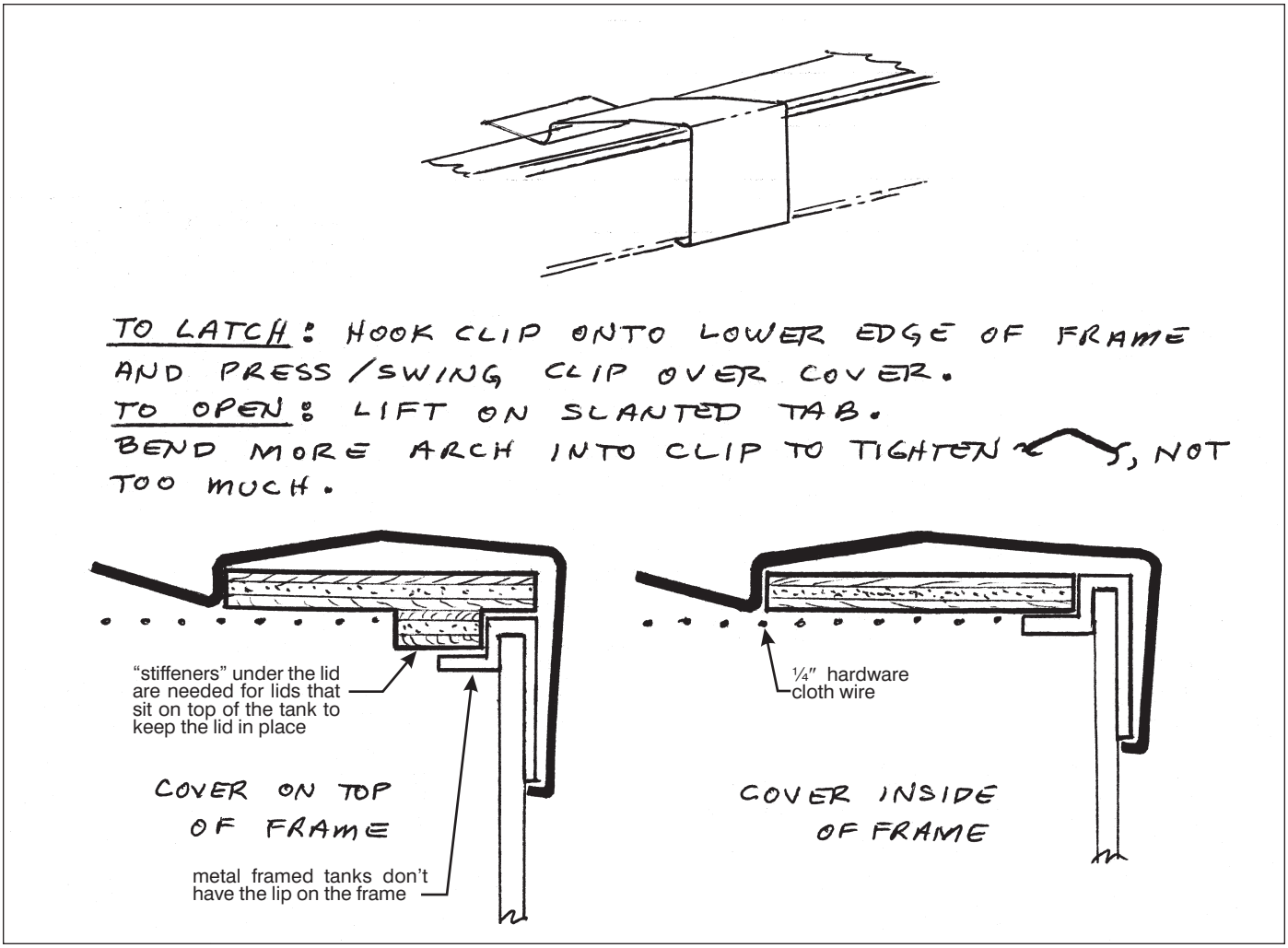
This shows the edge of the lid with the additional stiffener that goes next to the feeder. The stiffener fills any gaps between the lid and feeder. This feeder is for outside access and sits on top of the aquarium frame. Plans by Harley E. Hauser.



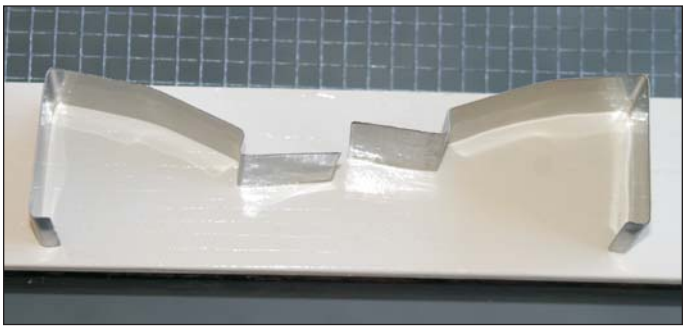
These plans shows the bottom of the lid with the stiffeners. This lid was for a plastic carrier and needed the corners of the stiffeners cut so the lid would fit correctly on the carrier. Lids for aquariums would not need the stiffener corners cut. Plans by Harley E. Hauser.



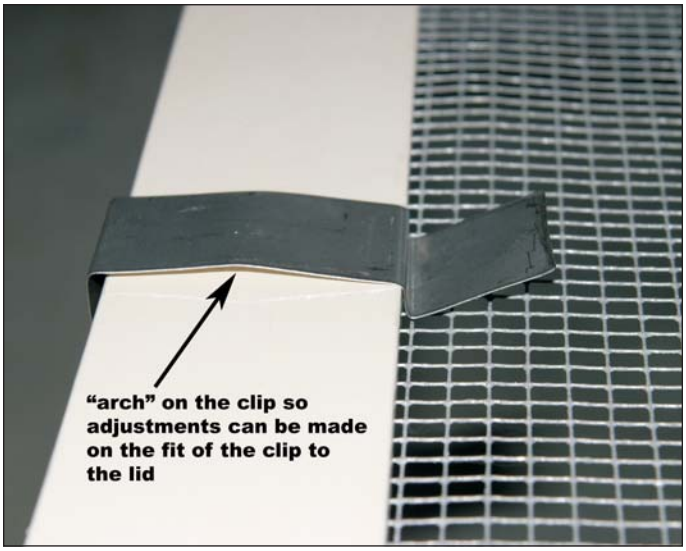
These are the plans to make an interlocking 2-section lid (staggered tabs on the bottom of the lids) for a 40-gallon tank. The feeder used for this tank is an inside feeder. Plans by Harley E. Hauser.



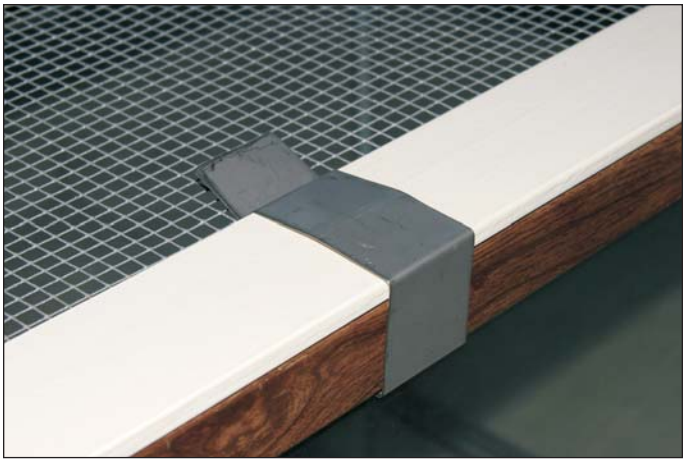
Cage clips to use with the custom made aquarium lids. These are made from stainless steel. This also shows the two different types of lids—one that sits on top of the frame (must use this kind for metal framed tanks), the other sits flush with the frame. "Stiffeners" under the lid are made from strips of wood to add stability to lid and to keep lid in place. Plans by Harley E. Hauser.



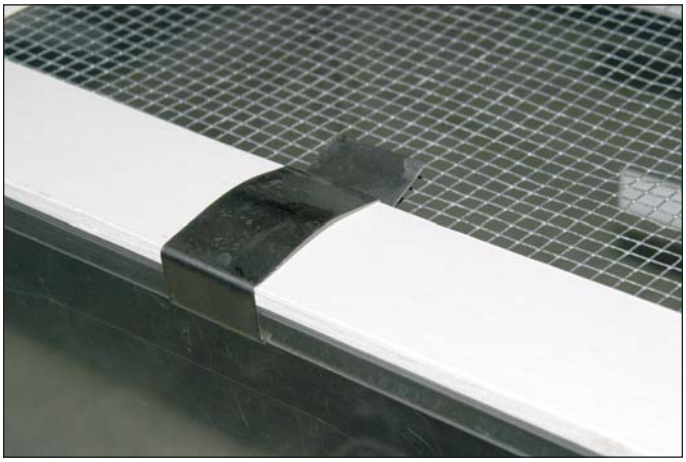
A close up showing the shape of the clips that hold down the lid (with the slight arch in the top middle where you bend more or less to make adjustments to the clip for a good fit): they are bent to hook under the frame, come up the side of the frame, across the width of the lid, down the edge of the lid, then up to make a tab to grab hold of to take the clip off. Photo ©2011 Karen Robbins.



A clip on the lid showing the "arch" in the middle used to make the adjustment on the clip (see diagram above). Photo ©2013 Karen Robbins.



This clip is holding the lid to an aquarium. This has a wider side due to the width of the frame. Photo ©2013 Karen Robbins.



A clip on the lid to a plastic carrier. This has a shorter side of the clip for the smaller size of the cage top frame edge. Photo ©2013 Karen Robbins.

layer of strips); use nails (use either nail gun or hammer) and glue to attach a second layer of strip to the first layer when lid sits next to an outside feeder to fill the gap or if you have the lids in 2–3 sections and the extra stiffeners are used for added strength; use clamps to hold in place until dry

- Staples (¼″) and stapler (Arrow fastener staple gun or Stanley electric stapler) to staple the wire to the bottom of the lid
- 26 gauge stainless steel sheet metal to make the hold down clips
- Tin snips to cut out the clips
- Grinder to grind the cut edges smooth on the wire and stainless sheet metal
- Bending brake to bend the clips into the proper shape (see page 57)
- Paint and paint brush to paint the wood lid which makes it easier to wipe down and clean

Directions

1. Cut out the lid
2. Cut out the inside of the lid (rounding the corners)
3. Cut stiffener strips if using (make sure you cut the corners off the overall square of strips if making for a carrier or plastic box)
4. Sand all the cut edges smooth
5. Glue (and nail) the stiffener strips to the lid (if using)
6. Paint the lid
7. Cut out the wire to fill the entire bottom area of the lid (add extra if covering the stiffener edge exposed to the inside of the tank/carrier), grind sharp edges off, and staple to the inside of the lid
8. Cut out the stainless steel metal strips that will be bent into the hold-down clips, grind edges smooth, and bend into shape
9. Place the lid(s) on tank and attach the clips to keep the lid on

Next Time: *Making simple Water Bottle Holders and Water Bottle Protectors.*

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Blue Mimic Mice

By Virginia Pochmann
From* Mouse Review *No. 14, Dec. 1989

Q "What is a 'blue mimic' gene?"

A Blue mimic refers to a number of genes which produce a diluted coat very similar to that produced by the blue-dilution (*d*) gene. These mice all look like 'Blues' to the eye, but some of the genes produce mice with ruby eyes, not black eyes, and one of them gives a coat without 'mealiness,' such as *d*/*d* mice have. Interestingly, I am personally having my problems with one of these blue-mimic genes, as yet unidentified! The pair of 'Blue' mice which I brought back from England, and which look physically identical to each other, are now found to be of completely different genotypes. One of them is doubtless Blue (*d*/*d*), and the other a blue-mimic. How do I know this? Because their first litter consisted entirely of Self Blacks! This could only happen if one parent had one genotype such as *d*/*d* (Blue) and the other something else, such as 'leaden' (*ln*/*ln*). (Leaden is one of the blue-mimics.) In this case, one parent would be genetically *d*/*d Ln*/*Ln*, and the other parent would be *D*/*D ln*/*ln* . . . and ALL the babies would be *D*/*d Ln*/*ln* (BLACK).

When these babies are mated to each other, I will expect to find BOTH kinds of Blues segregating out, but still won't be able to tell them apart.

Ed. Note: Leaden Tan does not suffer from the dilution of the tan as in the normal Blue Tan (dilute gene *dd*) so you can get "Blue Tan" (Leaden Tan) that has the rich dark orange bellies seen in other Tans.

Other Blue mimic genes are Ashen *ash* and Gunmetal *gm*.

If you have an amusing story, short tale, news note, or other item of interest, send it in to the Editor or e-mail **editor@afrma.org.**