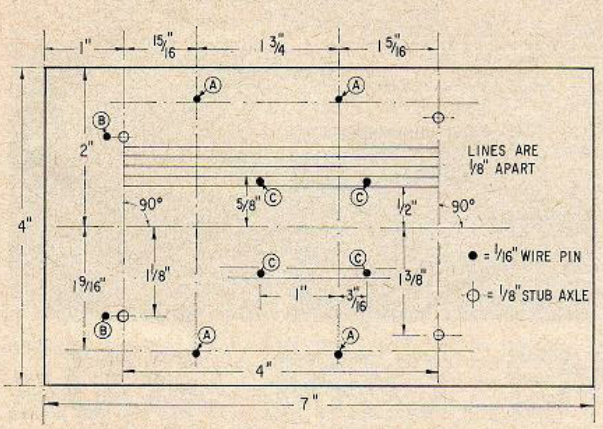

At left is Bob Emott's plan for the ideal building jig. It utilises a Champion fire-proof block (or a piece of 4 in. x 7 in. formica-covered chipboard) drilled and lined accurately to the dimensions given. Accuracy of drilling cannot be over-stressed here, since your chassis will only be as precise as the jig holes and lines, etc. on the block.

hinge to lay flat on the swing arm (only .050 in. thick).

24. Locate hinge 2⅜ in. from the centre of the front axle tube. Be sure hinge is at 90 deg. to chassis rails. *Do not solder to swing arm yet.* Photo 8.
25. Bend two pieces of 1/32 in. wire as shown in photo 8 and solder to chassis rails and hinge tube. Cut off excess level with the front edge of the hinge tubing.
26. Now solder swing arm to centre piece of hinge. Grind or file a notch in the centre hinge tube about ⅛ in. from each end through to the piano wire. Solder centre tube through notches to piano wire. Grind or file ends of hinge off flush with chassis rails.
27. Bend a small L out of 1/32 in. piano wire and solder to motor mount bracket and chassis at the front. Cut off excess wire even with top of bracket.
28. Unscrew jig motor from bracket and unsolder from rear axle tube. Be careful not to bend bracket while removing motor.
29. Mark a piece of 1/16 in. wire ⅜ in. from the end and bend to 90 deg. Mark the wire ¼ in. from the outside of the bend. Hold the L in a pair of pliers with the short end down and bend at mark to 45 deg. Remove jig wheel from left side of chassis. Solder brace to axle tube first. Then solder to bracket. Be extra careful not to unsolder bracket from frame in the process. Cut off excess wire even with end of axle tube. Photo 9.
30. Mark a piece of 1/16 in. wire ⅛ in. from the end and bend to slightly less than 90 deg. File a notch in rear axle tube as in photo 10. Solder L brace in place with short leg of L pointing forward, cut off excess wire above axle tube. Now, take a deep breath, lean back and look at the result of your handywork. You've finished the main frame almost.

Wire Wrapping

Next we re-inforce the critical joints with wire.

1. Cut two 4 in. pieces of thin, soft steel wire (approx. 32 gauge American) uninsulated copper wire will do if you can find nothing else but it isn't nearly as strong. Take chassis out of the jig and wrap the front end joints as in photo 11. *Don't solder.*
2. Wrap other rear axle tube joint with wire as shown in photo. *Don't solder.* Grind or file a notch in the rear axle L brace and chassis rail as in photo 12. Wrap joint with wire. Be sure you notch outside of rear chassis rail as well as the bottom or the re-enforcing wire will interfere with tyre.
3. Mark a piece of .047 in. piano wire ½ in. from the end and bend to 45 deg. Adjust bend so wire fits between rear frame rail and rear axle tube as in photo 12. Solder in place and cut off excess wire.
4. Put chassis back in jig and solder wire wrapped joint on rear axle tube. Be sure solder flows well and covers wire.
5. Now solder front axle tube joints. Take care that the chassis rails and jig wheels stay flat on jig or ground clearance will be affected.
6. Now quit! For a Coke anyway – write me if you manage to get this far in a day! It took me three days!

On to the Plumber and Floppies.

PLUMBER AND FLOPPIES

1. Mark 3/32 in. plumber hinge tubes (see photo 13) and file or cut off level with side of chassis rails. Don't cut off piano wire ! – clean burrs out of inside of tubing.
2. Mark two pieces of 1/16 in. wire ⅜ in. from the end and bend to 90 deg. Measure 3 7/16 in. from outside of bend, mark and cut off excess wire.
3. File ends of plumber hinge tubes until plumber rails lay close along chassis rails (allow about 1/32 in. clearance). Do this step slowly and carefully as plumber rails must not lay against chassis rails or swing arm will not drop freely. The end of the plumber rail on the can side of the chassis will have to be bevelled on the inside to clear chassis rail. Bend plumber rail about ⅜ in. from bend to make rails lay flat on jig. See photo 13.
4. Mark a 3 in. piece of 1/32 in. wire ⅜ in. from the end and bend to 90 deg. Lay in place as shown in photo 13 and mark at edge of plumber hinge tube – bend wire at mark, cut off leg ⅜ in. long. Solder end ¼ in. of each leg to plumber rail. *Be super careful not* to solder plumber rail to chassis or hinge tube. Check to be sure plumber rails move freely upward and downward.
5. Make up two batpans to dimensions shown in photo 14. File notches as shown in photo to clear hinge wires. Be sure to file notches on proper sides of batpans so notches are facing up when pans are in position on chassis. (Check photo closely – I goofed ! Blush.) Cut two pieces of 1/16 in. tubing approx. 1⅜ in. long and file to fit cutout in batpans. Cut two ¾ in. long pieces of .047 in. piano wire. Don't forget the 1/16 x 1 in. chassis wing pieces. What are wings ? Read on.
6. Solder the ¾ in. long pieces of .047 in. wire seen in photo 14, in place in notches outside of batpans. See photo 14. These are to keep the body off the wings on the chassis. What wings again ?
7. Put left batpan in position on jig with 1/16 in. batpan hinge tube in cutout and against plumber rail. Allow a few thou clearance between front of batpan and cross rail on front of swing arm. Solder hinge tube to plumber rail. Don't solder to chassis or batpan. See photo 15. Take chassis out of jig and sight along hinge tube and plumber rail – it's bent, isn't it ! Straighten gently with pliers to counteract bi-metallic thermal bending action. (How do you like that, Eddie Blackwell?) Put chassis back into jig and put batpan back in place.
8. Mark a 3 in. piece of 1/32 in. wire ⅜ in. from the end and bend to 90 deg. using needle nose pliers. Make a second bend as shown in photo 16 this is to make the 1/32 in. hinge wire lay flat on batpan.
9. Repeat step 8 but make second bend in opposite direction for hinge wire at other end of hinge tube.
10. Put hinge wires in place. Check that hinge wires lay flat on batpans and that batpans and plumber rail lay flat on jig. Solder hinge wires to batpans. Be careful not to unsolder the .047 in. wire pieces from outside of pans. Cut off excess wire even with edge of batpan. See photo 16. Lay a piece of .032 in. wire on front of batpan as in photo and solder in place.
11. This is a safety precaution to prevent batpan from being bent down on to track in a crash. Don't solder wire to crossrail on swing arm or batpan to plumber rail. Cut off excess safety wire even with front edge of cross rail. Cut cross rail off 1/16 in. from edge of batpan.
12. File a ⅜ in. long notch halfway through hinge tube starting 1/16 in. behind the offset in batpan cutout and going forward. Remove burrs from inside tube. Mark a 3 in. piece of 1/32 in. wire ⅜ in. from the end and bend to 90 deg.
13. Put wire in notch in hinge tube, lay wire on batpan and make a mark 5/16 in. from inside edge of cutout. Make a second mark even with edge of cutout. Photo 17. Bend wire up at first mark and back down at second. Adjust bends so that when the wire is in the hinge tube notch, the first bend is touching jig and the wire beyond second bend rests flat on batpan. This is your up stop for the batpan. Take out of notch and lay aside.
14. Mark a 3 in. piece of 1/32 in. wire ⅜ in. from the end and bend to 90 deg. (not again ! !), lay on batpan with short leg of L even with edge of cutout. Allow ⅛ in. space between long leg of L and edge of cutout and solder in place. Check photo. This is the downstop for batpan. Cut off excess wire even with edge of batpan.
15. Check photos and put up-stop wire into place. Hold wire up off batpan and against downstop wire and solder into hinge tube. Be careful not to unsolder hinge tube from plumber rail. Check to be sure batpan still lays flat on jig. Cut off excess wire 1/16 in. in from edge of batpan.
16. Now for the wings – lift chassis out of jig far enough to slip a wing piece under rails. Mark wing as seen in photo 18, cut at line. Put back in jig and solder to chassis rails. *Don't solder to plumber rail or batpans.*
17. Hold a piece of 1/16 in. tubing flat on batpan about 1/16 in. in front of forward hinge wire. If using jig as shown, lay pin tubing against 1/16 in. marked A on jig diagram and solder in place. Cut off excess even with edge of batpan. Don't unsolder hinge wire from batpan and don't solder floppy hinge solid. Cut off excess tube even with edge of batpan.
18. Repeat step 17 but with tubing 1/16 in. behind rear hinge wire. See photo 19.
19. Mark a piece of 1/32 in. wire 5/16 in. from the end and