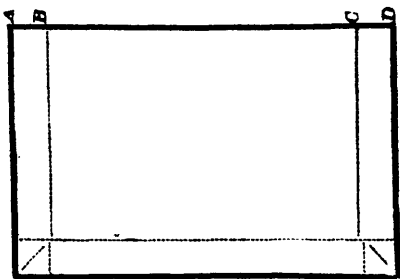
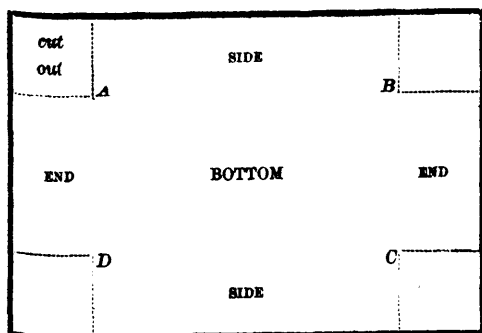


TO MAKE A LEAD TANK.

Plan the cutting of your sheet lead so as to make as short joints as possible; if the tank is to hold water, use good easy flowing solder; if it is to hold acid, burn the seams; if you cannot do this, use very coarse solder, as the acid will act upon it much slower than when the solder is fine.

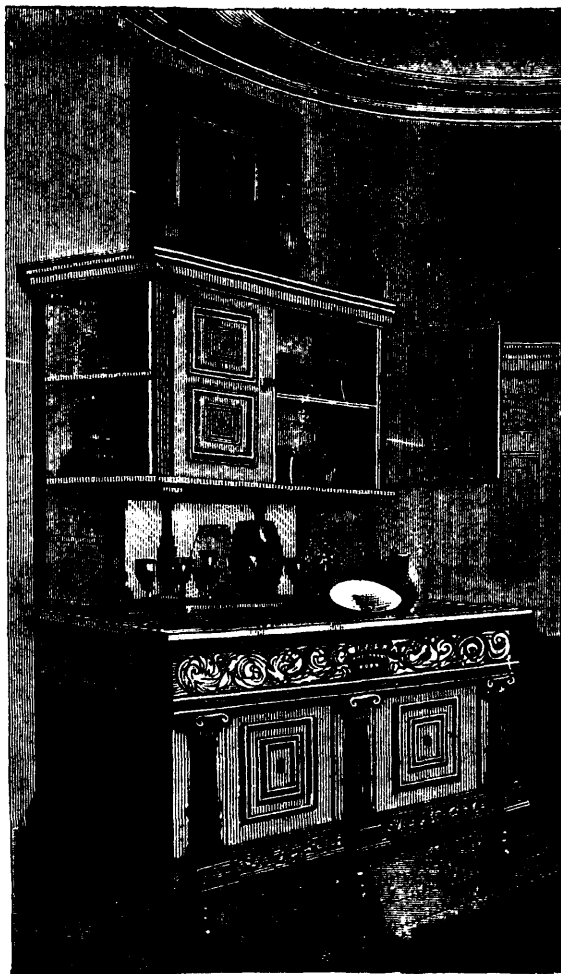
If the tank is very shallow and long and wide, cut as follows, and wipe seams in the corners; this will save the seams from *a* to *d* and *b* to *c* and the solder saved will more than pay for loss of lead cut out of the corners. If the tank is deep and low, cut the sides, bottom and lapping for top edges of box of one piece of lead, and the ends of two other pieces; this will make two seams in the corners of the box, one at each end. If the box is small and lead light, and you wish to make joints with copper bolt, put your bottom and sides in one piece falling short 2 inches at each end, instead of allowing the edges to join in corners, then cut your ends folding in the corners to meet the bottom sheet, dress the edges of lead into a small groove cut in box under where the seam will come, and run the seam with the copper bolt.

Fold corners as shown by dotted lines. *BC* is the length of end of box, *AB* and *CD* the distance the bottom lead falls short of the length of tank at each end. After laying out the pieces of sheet lead as above, multiply length and breadth and weight per square foot to get the quantity of material. The quantity of solder will vary from 1 to 3 lbs. per foot of joints according to the way it is wiped; do not forget to allow enough lead to cover the top edges of the box, and to drop down a $\frac{1}{2}$ inch on the outside where a row of tinned tacks with large heads should fasten the sheet lead.



SHORTENING A BELT.—It is frequently convenient to shorten a belt temporarily, especially in the upper stories of a mill, when the miller would be put to some trouble and the loss of considerable time to shorten the belt in the customary way. In such cases, we have heard the following simple method recommended, which will answer very well where the belt does not run near a beam or other obstruction: Unlace the belt and place the two ends together, making the laced portions parallel, and allowing them to project away from the pulleys. They may then be laced again, using the same holes and fastenings. Though very simple, this hint may save annoyance and time.

AN APT COMPARISON.—The late M. Ste. Claire Deville was one day discussing with a famous anatomist the subject of the advance of knowledge. "After all," he said, "you have made great advances; but don't you think you are very like the hackmen, who know all the streets, but haven't the remotest idea of what is going on in the houses?"



CABINET—FROM "ART IN THE HOUSE."

ALCOHOL IN THE SYSTEM.

We find in *Hall's Journal of Health* a vigorous article in reply to an English review which upheld alcohol as a food, &c. The article is long and forcible, but we have space only for the general summing up, as follows:

If alcohol is not a poison, but food, because alcohol gives force, muscular power—then, arsenic is not a poison, but food, because arsenic gives force, muscular power.

As nature has formed no element in its purity, which element in large dilution is necessary to health, we conclude that such element in its purity is not essential to health.

As men have lived in perfect health without alcohol, the use of alcohol cannot add to that health, because a man cannot be better than well.

As we know of no article which contains hydrocarbon largely, which would not destroy life, if used alone, not even sugar; so we may conclude that alcohol, which does contain hydrocarbon largely, will destroy life, if used alone.

If any elementary substance in its purity destroys life, if used alone, it is reasonable to conclude that the only safe method of using any elementary substance is, in using it in the proportion in which nature has combined it with other materials: therefore, that however essential to existence hydrocarbon may be, it is not healthful or safe to use it in its concentrated, a fictitious combination, but only healthful and safe in deriving our supplies of it, as contained in our natural food. Therefore, we consider it established, that alcohol is not essential to health; that it is not promotive of the health of those who are well; and that in proportion as it is used largely, or alone, in such proportion is it, like all other elementary concentrations, certainly destructive of health and life together.