These are not only fairly permanent and economical of writer, but permit complete control of the water when irrigating. The flumes from which the water is to be delivered into the furrows should be placed at intervals of about 25 rols. The size of these finnes varies from 6 to 10 luches; however, the 8-luch finme is the size most commonly used. The water is drawn from these flumes by means of 1-luch holes placed at intervals of about 3 feet. The supply is regulated by a the or wooden slide nailed over the hole. If these slides are placed on the inside of the finme, there will be much less danger of them becoming blocked, but this will require the wetting of the hands each time they are adjusted.

In clean cultivation with young trees a furrow is made on each side of the row, and in old orchards the space between the trees is furrowed at intervals of about 6 feet or even closer in sandy soil. These furrows are made about 4 or 6 inches deep with a small plongh or single-shovel cultivator. The Oliver Double Mould-board No. 2 marking-plongh has been found very valuable for making these furrows.

The slope on which all ditches or finnes should be built is of great importance. It is a common fanit for a beginner to get the fail too great. One luch to 25 fect is plenty. However, if the contour of the land demands a greater fail, the progress of the water may be checked by means of small stones or short lath "stops" placed across the finne.

The minimum fall for furrows between the trees should not be less than 4 luches to each 100 feet for clay soil and 8 luches for sandy soil. The maximum fall is governed by local conditions. If the land is very steep the furrows must be made on the contour and not up and down the hillside.

## THE ADVANTAGES OF WATER UNDER PRESSURE.

So far the use of water from open ditches has been discussed. In many districts people are placing water under pressure, and the results show it to be a very commendable plan. The pipes used to earry the water are made of wood or concrete and are placed underground. Small 1-luch iron pipes with stop-cocks extend up to the iree-rows from the underground lines, from which the water is drawn. "These pipes should extend a foot above the surface of the ground and be placed near a tree, so as not to hinder cultivation.

The advantages of this system are as follows: (1) It does away with the open ditch and finnes, permitting the farmer to cultivate his orchard and harvest his crop at a decreased expense; (2) It permits water to be forced to higher points according to pressure; (3) although more expensive to lastall, is nearly permanent, and if well built requires little expenditure to keep np; (4) It prevents loss of water by seepage or evaporation; and (5) permits the water to be piped into the house and barn for domestic use.

## PREPARATION OF THE SURFACE.

Nothing can be gained by attempting to irrigate and till the land before it is well prepared. A few dollars spent in the beginning will often save twice that amount during the first few years. Unless the land is well prepared and allowed to settle, it is impossible to secure uniform results, because the low places will be flooded while the high points are still dry.

The land should be cleared of all stamps, rocks, or sage-brash, and then ploughed as deeply as possible. If more rocks come to the surface during the process of ploughing they should be removed. The high places should now be graded down and the depressions filled, care being taken not to remove all