

manure, where farm-yard dung is used broadcast, perfectly incorporated with the soil! Mangel-wurzel requires a similar preparation to turnips, and should be sown in drills not less than 30 inches apart as soon as possible. In good, deep soils the long red variety will yield the heaviest returns; but upon poorer and shallow lands the yellow globe is to be preferred. Mangels are far preferable for milch cows to turnips. They impart to the milk and butter no unpleasant taste, and by careful storing may be kept in a fresh condition till late in the spring. They are, too, a more certain crop than the turnip, easily cultivated if the land is well prepared, and but little affected by insects or disease. The principal thing is to get a healthy state of growth, before the hot, dry weather sets in. Ground for potatoes ought now to be got into a prepared state, and the earlier sorts planted. This crop must at the best be considered precarious; but by planting good sound seed, (especially if brought from different soils at a distance,) on dry, well cultivated land, containing a sensible amount of the carbonate and sulphate of lime, either naturally or artificially, a remunerative return may be reasonably anticipated.

Ewes and lambs, and live stock generally, still require the closest attention of the farmer. The present cold weather keeps back vegetation, and it will yet be some time before the grass will afford a good bite. Hay in many places is used up, and sheep and cattle have to depend upon other sorts of food, and it is surprising how the pinching days of early spring may be got over, by cooked provisions, such as roots, linseed, bran, &c. Cattle, if possible, should be in a thriving state when turned out to grass, and newly lambed ewes, if not given extra care, will become weak and sickly; and peculiarly liable, with their progeny, to the attacks of fatal disease.

#### PORTABLE STEAM ENGINES.

The progress of agricultural mechanics of late years has been astonishingly great;

producing changes and improvements in the art of tillage almost as great as those which were accomplished at the latter end of the last century and the beginning of the present, by the inventive genius of Watt and Arkwright, in British textile manufactures. Steam, as a motive force, is not now confined to the workshop and manufactory, but it may be seen ploughing and cultivating the fields, threshing the crops and preparing them for market, slicing and cooking roots, and cutting hay and straw, as food for cattle. It is evidently destined to do for the farm and homestead, what it has already so fully accomplished in other branches of industry, to abridge or displace animal power, to lighten and elevate manual labor, and to increase and cheapen the primary necessities of human life. It must therefore be regarded as a general blessing to the race.

We present our readers in the accompanying engraving, a representation of one of CLAYTON, SHUTTLEWORTH & Co.'s outside cylinder Portable Steam Engines, as seen in its position when working. Portable Engines are those in which all the parts are self-contained, requiring no fixed or permanent location, but can be easily moved from one place to another. They are now extensively used in the British Islands, and it is now quite common for even small farmers to hire them for threshing grain, as was formerly the case with the ordinary threshing mills, moved by horse power.

In the engine, which the engraving illustrates, the cylinder and all the working parts are, as shewn, on the outside or top of the boiler, and can be seen and got at by the person in charge at a moment's notice. This is very important, as sometimes most serious accidents occur to Portable Steam Engines when the working parts are wholly or partially excluded from the eye of the driver. It will be seen by reference to the drawing, that these Engines are fitted with governor, glass water gauge, gauge cocks, blow off cocks, and all appear-