going up or down hill, as on level ground, by having two cog-wheels of different speeds, one placed on each end of the delivery barrel, either of which may readily be put out of gear, as required, to work the barrel from alternate ends; the small wheel when going up hill, and the large one when going down.

The engraving represents a *side view* of the drill, shewing it with a fore carriage steerage. With this steerage, which is adapted for lands ploughed flat, and acts as a fore-carriage to the implement, a man may keep the rows of grain perfectly parallel with the preceding course of the drill; this is done by a man holding the steerage handle as shown, and keeping the small fore-wheel in the track of the former large one; this, with a little practice, is very easy, and will amply repay by the perfect regularity in the crop, affording the greatest facility for the horse-hoe going between all the rows of plants, and with equal precision, where the drills join in their different courses through the field. The swing steerage, at a less cost, and managed without an additional attendant, is amply sufficient where the drill covers each stitch, or land, in twice, and where one wheel can be kept in the open furrow.

The seed-engine is sometimes made to affix to the grain drill, and is adapted to sow at the same time with spring corn, or may be used as a separate implement for grass seeds, broadcast, or turnips, or mangel wurzels, in rows.

In order to ensure an equal delivery of the different kinds of seed, the box is partitioned off into two departments, one for heavy seeds, such as clover, trefoil, &c.; and the other for lighter seeds; the former being delivered from cups, and the latter from brushes, down the same conductors with it. The required quantities of each seed are thus nicely mixed, and evenly sown all over the land, and may be regulated by turning the screw at the end of the box for lighter seeds, and changing wheels on the cup barrel, for clover, &c.

The price of this Drill varies according to size, from £18, having a spread between wheels of 3 feet 6 inches and sowing 6 rows; to £30, having a width of eight feet six inches, and sowing 16 rows. Messrs. Garrett, manufacture drills at lower prices, adapted to smaller farms, also agricultural implements and machines generally; for which they have won the gold and silver medals, and first money premiums, at the leading exhibitions in Great Britian and Ireland, as well as on the continent of Europe. Their establishment dates back as far as 1778.

THE BARLEY CROP.

The cultivation of Barley is yearly getting of more importance in Canada; and our readers will find the following extracts both interesting and useful. They are taken from a valuable serial work now in the course of publication, by Messrs. Blackie & Son, entitled "*Our Farm Crops,*" by Professor John Wilson, of the University of Edinburgh, who is personally known to several of our readers in consequeace of his visit to Canada, a few years since, and who has always manifested a desire to promote our interests at home, which he did with much success at the London and Paris Exhibitions.

TEMPERATURE.

A mean temperature of 46.4 deg. during the summer quarter, seems to be for Europe the only indispensable condition for the cultivation of barley; in the inlands of the Atlantic Ocean, and in insular climates generally, a summer temperature of 3 deg. to 4 deg. higher appears to be necessary for its success. Iceland, indeed, where this grain cannot be grown at all, presents in its southern districts, at Rejkavik, a mean summer temperature of 49·4 deg. It appears that there unseasonable rains are the means of preventing all cultivation of cereals. With the exception of districts where such counteracting influences exist, we may consider that the limit of barley cultivation varies between the zones of 46·4 deg. and 49 deg. of mean summer temperature (isothermal,) in those countries