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Date of Application, 27th April, 1915

Complete Specification Left, 26th Oct., 1915—Accepted, 27th Jan., 1916

PROVISIONAL SPECIFICATION.

Apparatus for Applying Meteorological Observations to the Forecasting of Weather.

I, ERIC WILFRED KITCHIN, Civil Engineer, of "Markonia", 55, Egmont Road, Sutton, Surrey, do hereby declare the nature of this invention to be as follows:—

In forecasting weather, meteorological data may be marked by scales or otherwise in suitable positions on pieces of card or other material connected together but free to slide or turn; and by turning or sliding one or more of such pieces, particular portions of the scales may be brought into use so as to correspond with meteorological conditions prevailing at any particular time, (and observed by instruments or otherwise), in such a way that a forecast of weather is shown by a mark appearing near part of a scale or list of forecasts. A forecast may alternatively be shown by the apparatus indicating a number corresponding with a number forming part of a list or scale of forecasts, or otherwise.

Dated the Twenty-seventh day of April, 1915.

E. W. KITCHIN.

COMPLETE SPECIFICATION.

Apparatus for Applying Meteorological Observations to the Forecasting of Weather.

I, ERIC WILFRED KITCHIN, Civil Engineer, "Markonia", Egmont Road, Sutton, Surrey, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

The object of this invention is an appliance for obtaining weather forecasts from meteorological observations; and I accomplish this by arranging meteorological data in suitable positions on movable or rotatable disks or otherwise shaped pieces of cardboard or other material. One or more of the said pieces carries scales or marks which represent certain data, and after one or more of such pieces has been moved or rotated in accordance with the meteorological conditions prevailing at any particular time, one of a series of weather forecasts is selected by the apparatus.

The data which I make use of in this invention are:—(1.) Atmospheric pressure, (2.) the condition of atmospheric pressure, that is, whether same is decreasing, stationary, or increasing, (3.) the direction from which the wind is blowing, and (4.) the season of the year.

By adding other data I can obtain a more complete forecast, although this makes the apparatus more complicated to use.

This invention may be carried out by constructing its several parts to slide

[*Price 6d.*]

relatively one to the other, but I consider that the most convenient method is to have them rotatory; and in the pattern described hereafter and illustrated by the drawings annexed to this specification I make use of three pieces of cardboard; the first or base being rectangular, and the other two of a modified disk shape. A hole is punched through the centre of each of the two latter, and one also near the middle of the base. These three portions are fastened together by an eyelet or other means so that the two disks are free to turn.

On the rectangular piece (Fig. 1.) I place two curved scales in such positions that they are not covered by either of the two disks. One is a scale of atmospheric pressure, marked in "inches of mercury" to resemble the scale commonly used on a barometer. The other is a scale of wind directions in accordance with the eight chief points of the magnetic compass. Both of these scales are arranged on arcs of circles whose centre is the hole punched in the card, and the lines of the scale divisions are radial.

Upon the disk next to the base I place a scale or lists of weather forecasts written or printed radially between the centre and the circumference. This disk is divided into three equal areas by three radial lines; and each area contains a list consisting of twenty weather forecasts which differ in their wording to suit the data marked (2) above. This disk is formed with three pieces (Fig. 2.) outside the circumference of the disk proper; these serve the double purpose of carrying marks or scales, and of providing handles by which to turn the disk. In the remainder of this specification I refer to these pieces as extensions. One extension is marked "falling", another "steady", and the third "rising"; and in accordance with data marked (4.) above I place on each of the "rising", and "falling" extensions two radial marks, one for winter and the other for summer. The "steady" extension bears a single radial mark in its centre. The correct positions of these marks are given below.

The second disk, (Fig. 3.) which is uppermost, is of the same diameter as the first; but is formed with a pointer, outside its circumference, to traverse the scale of atmospheric pressure. A panel is also cut out to allow any two contiguous forecasts on the lower disk to be seen as the disk is turned. The rest of the upper disk covers from sight the remainder of the lists of forecasts. The correct positions of the various scales and marks on the surface of the cardboard is of the utmost importance, and these are secured as follows:—The scale of atmospheric pressure or barometer readings is on an arc whose length for convenience should not greatly exceed a quarter of the circumference of the whole circle, and is in such a position on the base that the pointer of the uppermost disk can easily traverse the whole scale. The range of the scale is from 28 to 31 inches, and the radial division for 29½ inches is in the middle of the width of the base. This scale is subdivided into twentieths of an inch; but it is understood that an inch on this scale only represents an inch, and need not necessarily be an inch by actual measurement. The scale of wind directions is at the opposite side of the base, and its centre is a point exactly in the middle of the width of the base. The scale is along the arc of a circle whose radius is slightly greater than the distance from the centre of the lower disk to the outer edge of one of its extensions. This scale is formed with eight radial divisions, the one in the centre of the scale being marked W. or west. To the left of this central line are three other radial lines, one at a distance from it along the scale arc of 0.06, the second 0.12, and the third 0.24 of an inch of the barometer scale on the base; and these three lines are marked respectively S.E. or south-east, S.W. or south-west, and S. or south. To the right of the central line above mentioned are four other radial lines at distances from it along the scale arc of 0.06, 0.12, 0.18, and 0.24 of an inch of the barometer scale, and these lines are marked respectively E. or east, N.W. or north-west, N.E. or north-east, and N. or north. The first or lower disk (Fig. 2) is divided up by three complete radial lines, the angle between any one and that on either side being 120 degrees. Each extension subtends one of these angles, and

projects beyond the circumference of the disk about one fourteenth of the diameter of the disk: its exact width is immaterial, its outer edge is an arc of a circle whose centre is the hole punched in the card. In the centre of the extension marked "steady" is a single short radial line extending to its outer edge. On each of the other two extensions are two similar short radial lines at a distance along the outer edge of 0.06 inch (of the barometer scale on the base) on each side of an imaginary radial line in the exact middle of the extension. On the extension marked "falling" the left hand line is marked winter, and the right hand one summer. On the extension marked "rising" the left hand line is marked summer, and the right hand line winter.

In each of the three areas of this disk are placed twenty equally spaced weather forecasts arranged on the following plan:—The forecasts in each area are so worded as to apply to the condition of atmospheric pressure indicated on the extension adjacent to that area: those at the left side of each area predict very fine weather, and those at the right side very wet. The predictions are graduated in their wording to give a range of forecasts from very fine to very rainy. Most of those in the "rising" section give promise of improvement; whilst those in the "falling" section, excepting a few at the left side, predict a deterioration in the weather. The second or uppermost disk (Fig. 3.) is formed, as above stated, with a pointer outside one part of its circumference. This pointer traverses the barometer scale, and its length is arranged accordingly. Exactly opposite to this, on the other side of the circle, is cut out a panel whose sides are radial, and whose width is just sufficient to expose two adjacent forecasts on the lower disk. A mark is placed at the middle of that edge of the panel which is nearest to the centre of the disk, and in using the apparatus the forecast nearest this mark is the one selected.

The annexed drawings show the base (Fig. 1) and each disk separately (Figs. 2 & 3), also the whole appliance assembled, and indicate wording suitable for the forecasts. I may however vary the wording if considered convenient, and also the number of the forecasts.

To use the apparatus for obtaining a weather forecast applicable to the prevailing meteorological conditions, the direction of the wind is noted by means of a wind vane or other indicator, and the lower disk is turned until one of the short radial lines on one of its extensions, both selected by reason of their corresponding with the condition of atmospheric pressure and the season of the year, coincides with the appropriate line on the scale of wind directions. The lower disk is then held in position, and the upper one moved round until its pointer coincides, on the scale of barometer readings, with the reading given at the time by a barometer. In the cut out panel the appropriate weather forecast can then be read opposite the special mark on the upper disk. Note that it is essential that the barometer whose reading is used should be set correctly for its height above sea level, or a corresponding allowance made.

Having now particularly described and ascertained the nature of my said invention, and in what manner the same is to be performed, I declare that what I claim is:—

An apparatus for applying meteorological observations to the forecasting of weather, consisting of scales or marks representing meteorological data arranged in suitable positions on movable or rotatable disks or otherwise shaped pieces of cardboard or other material: the moving or rotation of one or more of such pieces in accordance with meteorological conditions prevailing at any particular time causing the apparatus to select an appropriate forecast from a number of such predictions.

25th October, 1915.

E. W. KITCHIN.

Redhill: Printed for His Majesty's Stationery Office, by Love & Malcomson, Ltd.—1916

A.D. 1915. April 27. № 6276.
KITCHIN'S Complete Specification.

{4 SHEETS}

SHEET 1.

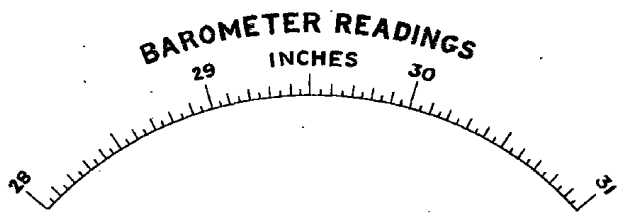


FIG 1

SHEET 2

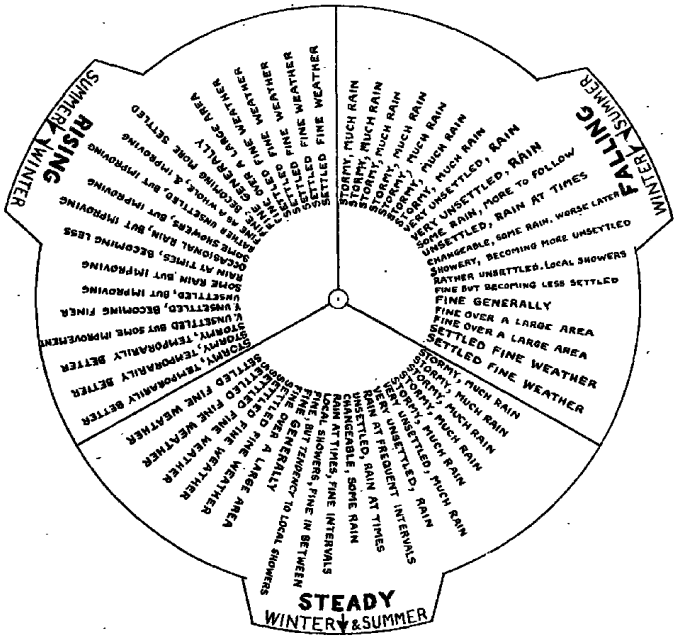
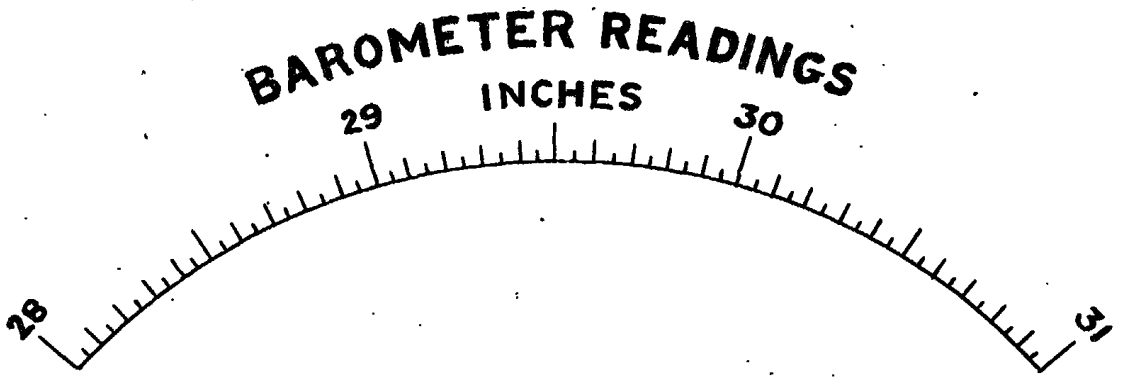
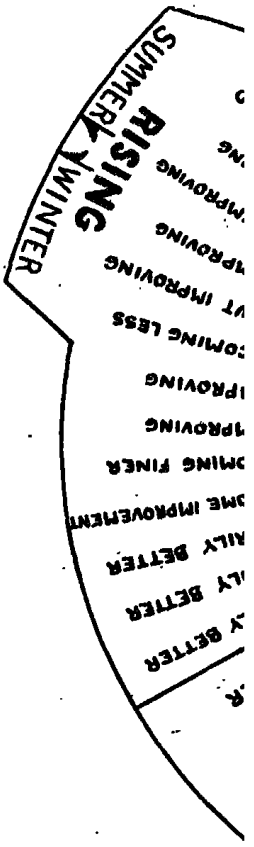
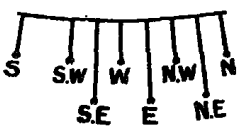


Fig 2

Malby&Sons, Photo-Litho







WIND DIRECTIONS

FIG 1

SHEET 2.

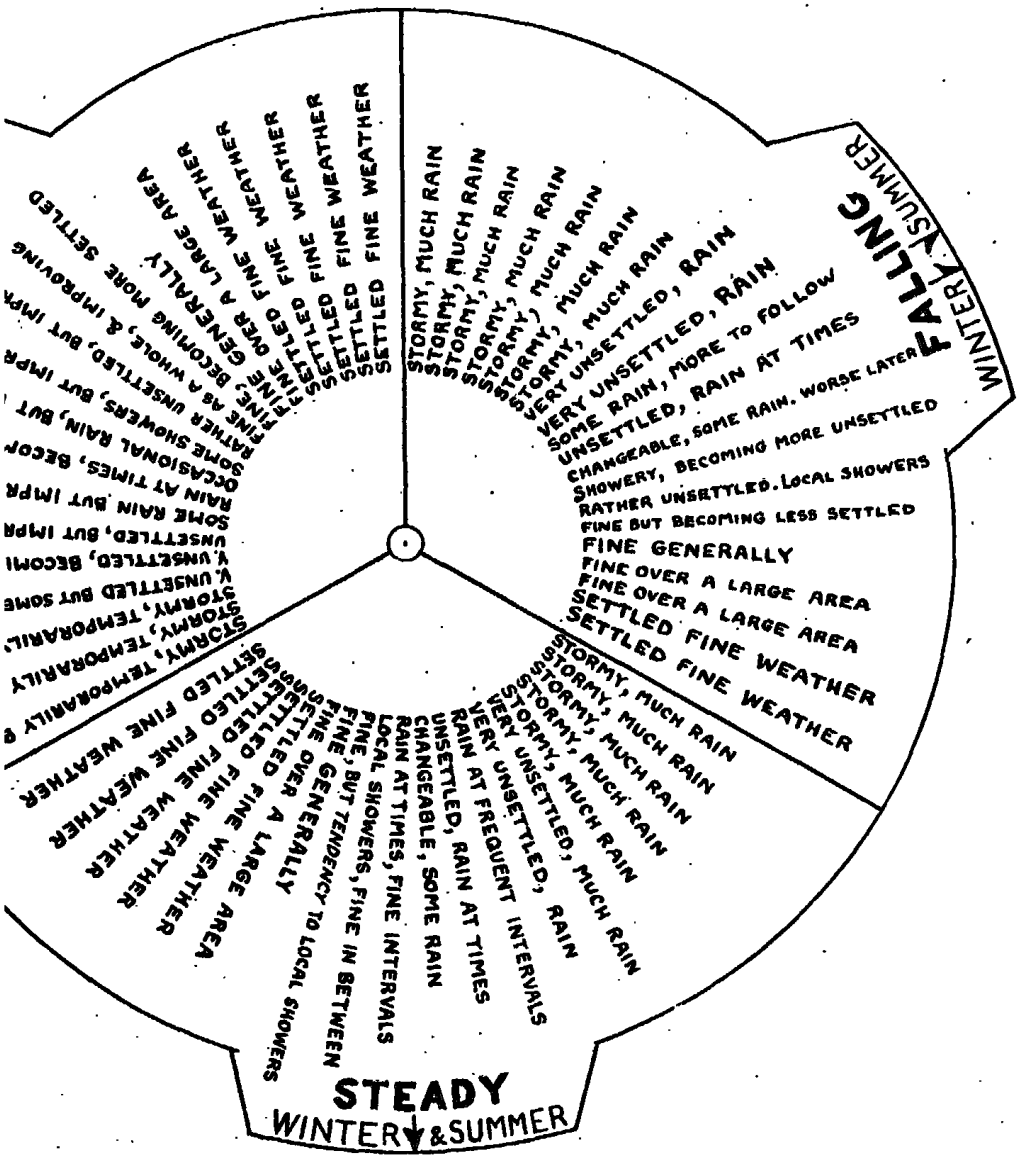


Fig 2

Malby&Sons, Photo-Litho.

[4 Sheets

Sheet 3

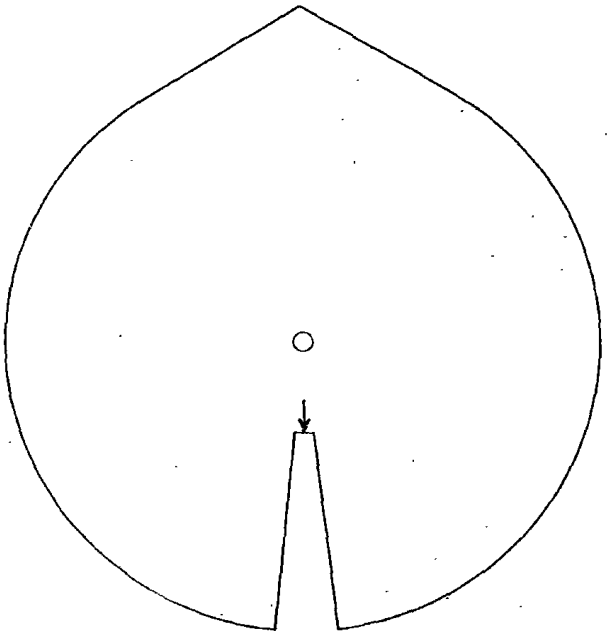


Fig 3.

Sheet 4.

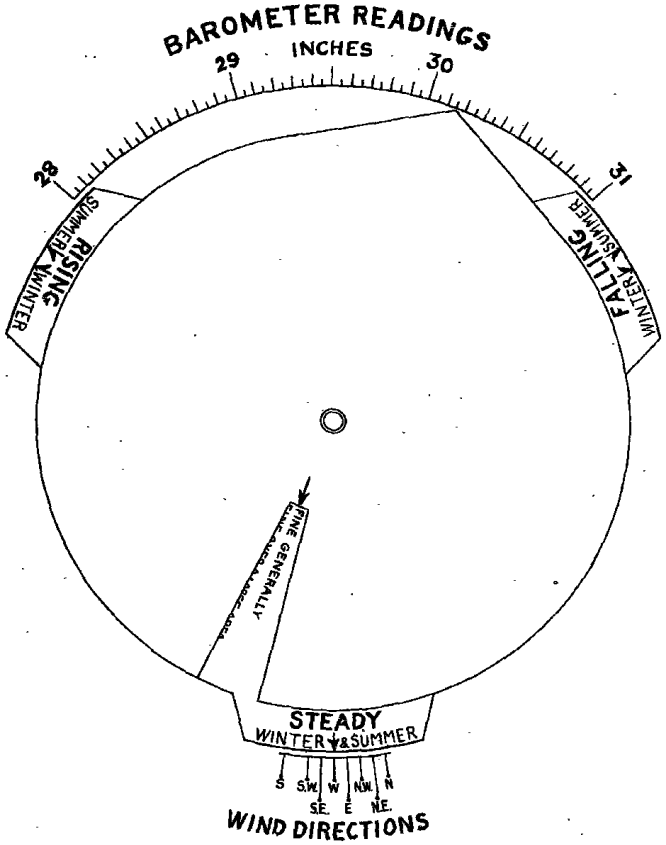


FIG 4.

[This Drawing is a full-size reproduction of the Original.]

Malby & Sons, Photo-Litho.

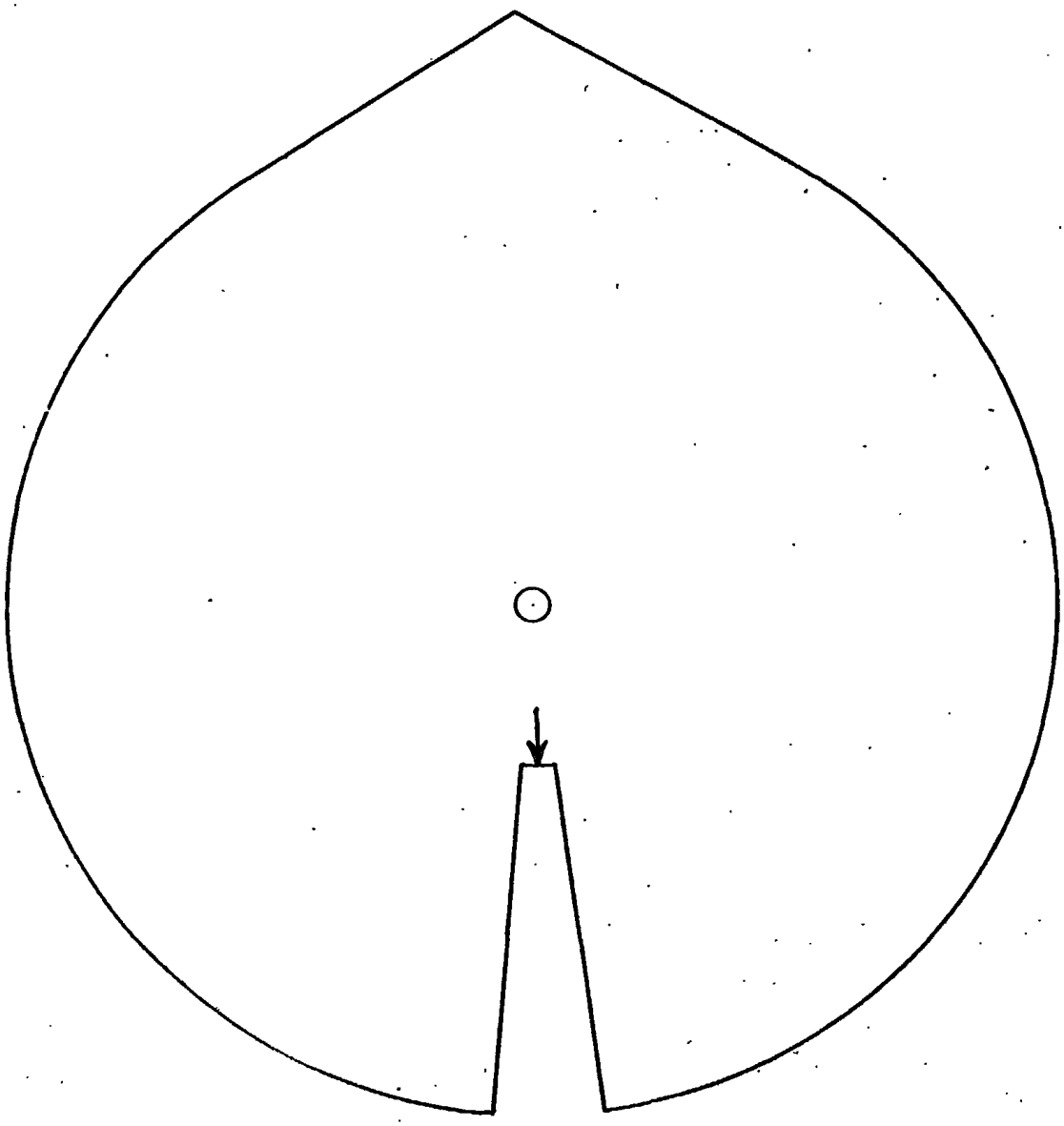
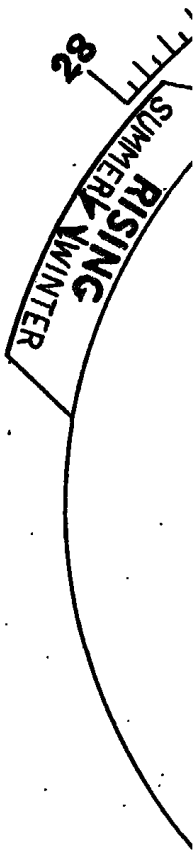


Fig 3.



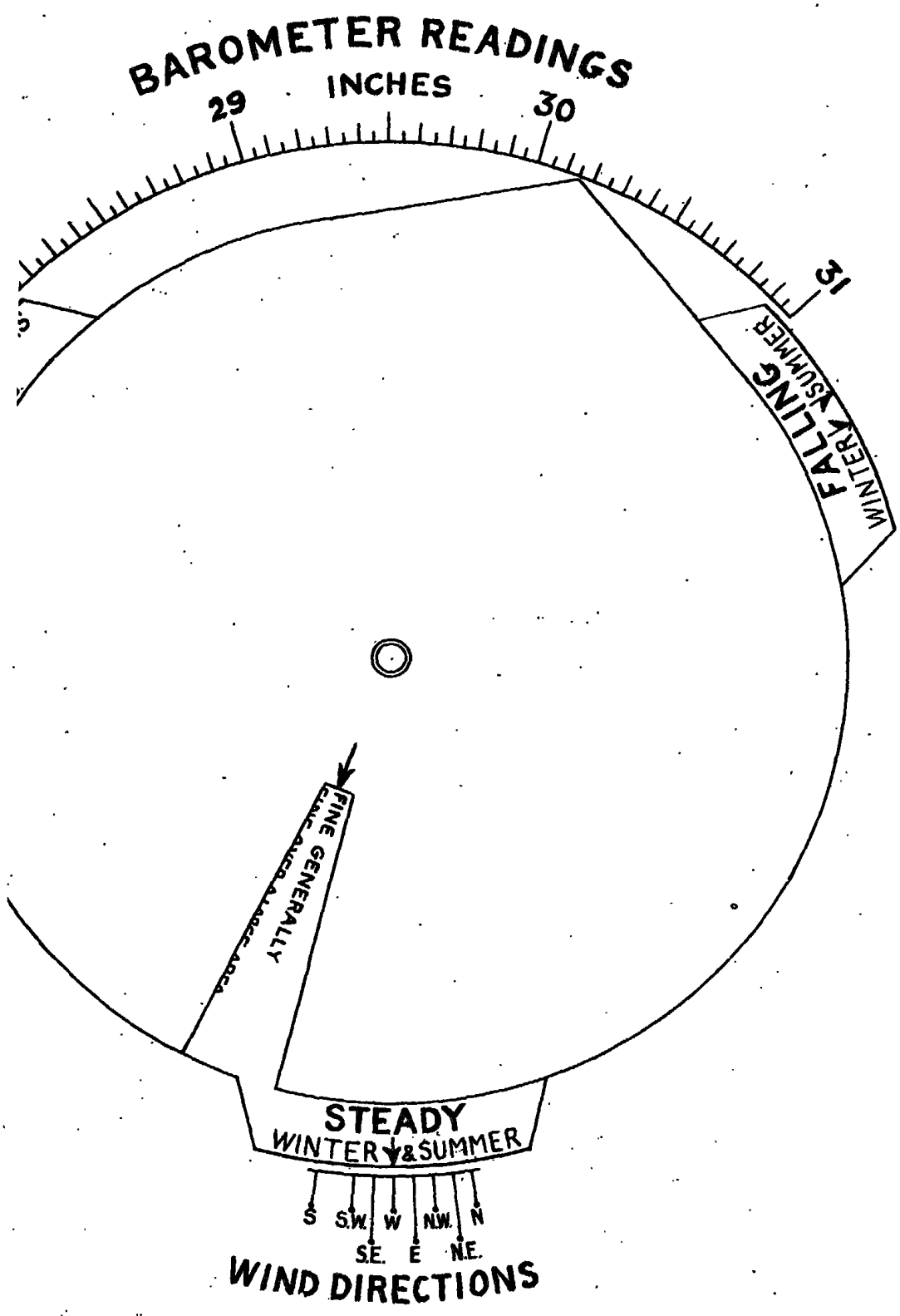


FIG 4.

Malby & Sons, Photo Litho.