PATENT SPECIFICATION

DRAWINGS ATTACHED

843,403

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International Classification:—G06g.

COMPLETE SPECIFICATION

Improvements in or relating to Calculating Aids

We, VITAMINS LIMITED, a British Company, of 23, Upper Mall, London, W.6, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The invention relates to calculating aids or calculators for calculating food conversion rates for pig feeding stuffs in the rearing of pigs for bacon, and in ascertaining the expected date of birth of piglets from the 115 day gestation term of the sow.

According to the invention, the calculator comprises two discs superposed concentrically upon each other and attached together at their centres so as to be relatively rotatable, the discs being provided with arcuate logarithmic scales, so positioned to co-operate with one another, one scale representing the number of pigs to be fed to a certain weight, and the other scale representing the weight of food consumed by the pigs during a certain increase in weight of the pigs from one weight to another, to be read off against an provided in one disc to permit a third arcuate logarithmic scale, provided on the other disc and representing the conversion ratio of the weight of food consumed by the pigs to the live weight gained during a certain increase in weight of the pigs from one weight to another, to be read o ffagainst an index mark on the disc with the arcuate window. Preferably the calculator includes a third concentric disc rotatably attached to one of the discs, a circular scale divided into 365 divisions representing the days of the year being provided upon the latter disc or upon the third disc and co-operating with an arcuate scale, representing the 115 day gestation term of a sow, provided on the third disc or the disc to which it is attached respectively, whereby alignment of the beginning of the arcute scale representing the gestation term of a sow, with the date of service of the sow on the circular scale causes the end of the arcuate scale to indicate the expected date of farrowing. The main scales are logarithmic and the additional scales linear.

A calculator embodying the invention will now be described by way of illustrative example with reference to the accompanying drawing, in which:

Fig. 1 shows the obverse side of the calculator;

Fig. 2 shows the obverse side of the calculator, with a front disc removed; and

Fig. 3 shows the reverse side of the calculator.

The calculator is arranged to facilitate the calculation of food conversion ratios or rates in connection with the rearing of pigs for bacon and the calculation of the expected date of birth of piglets or farrowing. The food conversion rate is the ratio of the weight of food consumed to the live weight gained over a given period. The period considered is normally that in which the weight of the pig increases from the weaning weight conveniently regarded as 40 lb., to the bacon weight of 210 lb.

The calculator comprises a first disc 1 of cardboard or thin plastic sheet material having printed near the periphery of one surface a logarithmic scale 2 comprising radially extending marks numbered from 1 to 10 representing the number of pigs. A front disc 4 of live material is secured for rotation concentrically of the disc 1 and is provided with a peripheral logarithmic scale 5 for co-ordination with the scale 2. The scale 5 comprises radial marks representing pounds weight of food consumed. A window 6 is provided in the front disc 4 and one edge defining this window is formed as a pointer 9 for registering with an arcuate logarithmic scale 7 (Fig. 2) printed on the disc 1 in the area covered by the disc 4. The remaining portion of the area of the

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Price 25p

disc 4 may be occupied by instructions for using the calculator, advertising matter, etc.

In use, the total weight of food fed, in pounds, on the peripheral scale 5 on the disc 4 is aligned radially with the mark of the scale 2 on the disc 1 corresponding to the number of pigs by which this weight of food was consumed. In this position, the window displays a portion of the scale 7 on the disc 1, the pointer 9 indicating the precise point of the scale corresponding to the value of the food conversion rate. When for example the weight 2550 lb. is aligned with the mark numbered 3, i.e. when 2550 lb. of foodstuff has been consumed in raising 3 pigs from a weaning weight of 40 lb. to the bacon weight of 210 lb., the number 5 is indicated by the pointer, so indicating a food conversion rate of 5.

A third disc 10 (Fig. 3) operates concentrically on the reverse side of the disc 1 and is of the same diameter as the disc 4. The exposed annular area of the reverse of the disc 1 is provided with a scale 11 divided into 365 divisions representing the days of the year. A segment 12 representing the 115 days gestation term of the sow is marked off on the disc 10. When the left-hand index line 14 of this segment 12 is placed against the date of service of a sow on the date scale 11 of the disc 1, the expected date of farrowing is the day indicated by the right-hand index line 15 of the segment 12. The remainder of the disc 10 may be occupied by instructions for the use of either calculator or advertising matter as before.

It will be apparent that the embodiment described may be modified in many ways. For example, the calculator may be arranged for dealing with calculations involving more than 10 pigs, or the scales may be interchanged. The discs may be of equal diameter, the upper disc in the position of use having its scale adjacent an arcuate cut-out portion which exposes a scale printed on the lower disc. The weight scale may be duplicated by a concentric scale giving weight in terms of hundred-weights.

WHAT WE CLAIM IS:—

1. A calculator for computing food conversion ratios for pig feeding stuffs, which comprises two discs superposed concentrically upon each other and attached together at their centres so as to be relatively rotatable, the discs being provided with arcuate logarithmic scales, so positioned to co-operate with one another, one scale representing the number of pigs to be fed to a certain weight, and the other scale representing the weight of food consumed by the pigs during a certain increase in weight of the pigs from one weight to another, an arcuate window being provided in one disc to permit a third arcuate logarithmic scale, provided on the other disc and representing the conversion ratio of the weight of food consumed by the pigs to the live weight gained during a certain increase in weight of the pigs from one weight to another, to be read off against an index mark on the disc with the arcuate window.

2. A calculator as claimed in Claim 1, in which the arcuate window has one edge formed as a pointer for constituting the index mark.

3. A calculator as claimed in Claim 1 or 2, which includes a third concentric disc rotatably attached to one of the discs, a circular scale divided into 365 divisions representing the days of the year being provided upon the latter disc or upon the third disc and co-operating with an arcuate scale, representing the 115 days gestation term of a sow, provided on the third disc or the disc to which it is attached respectively whereby alignment of the beginning of the arcuate scale, representing the gestation term of a sow, with the date of service of the sow on the circular scale causes the end of the arcuate scale to indicate the expected date of farrowing.

4. A calculator as claimed in Claim 3, in which at least one of the third disc and the disc to which it is attached is of smaller diameter than the remaining disc.

5. A calculator as claimed in Claim 3, in which at least one of the third disc and the disc to which it is attached is of equal diameter to the remaining disc, the scale or scales on the third disc and the disc to which it is attached being adjacent an arcuate cut-out portion for exposing the scale or scales on the remaining disc.

6. A calculator as claimed in any preceding Claim, in which the scale of the weight of food consumed is graduated in pounds and is duplicated by a concentric scale in hundredweights.

7. A calculator substantially as hereinbefore described with reference to the accompanying drawing.

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PROVISIONAL SPECIFICATION

Improvements in or relating to Calculating Aids

We, VITAMINS LIMITED, a British Company, of 23, Upper Mall, London, W.6, do hereby declare this invention to be described in the following statement:—

The invention relates to calculating aids or calculators, more particularly of the type wherein the mechanical movement necessary to select a certain value or item causes a function of the value or information relevant to the item to be indicated or displayed. A particular but not exclusive application of the invention is in connection with the calculation of food conversion rates for animal foodstuffs, for example in the rearing of pigs for bacon and also in ascertaining the expected date of birth of piglets from the 115 day gestation term of the sow.

According to the invention, a calculator comprises a pair of members arranged to be relatively movable for selection of an initial value, as by alignment of a chosen point of a scale on one member with a point of a scale on the other member, whereupon a function of the values initially selected is indicated, as by a mark on one member and a further scale on the other. Two calculators may be combined by arranging two members each to be relatively movable with respect to a third for the selection of an independent initial value. The members may conveniently comprise concentric discs of different diameters arranged for relative rotation about their common centre, and circular or arcuate scale may be provided on the exposed periphery of the larger disc, a second scale on the smaller disc being arranged to register with this scale for the initial section. It may also be convenient to arrange the further scale in circular or arcuate form concentrically on the larger disc and to provide a window in the smaller disc in such a position that a portion of the scale containing the required function of the value selected from the first scale is disclosed. The scales may be linear or logarithmic according to the nature of the calculation.

It will be appreciated that other forms and arrangements of the members are possible. Thus the smaller discs may be replaced by arms pivoted at the centre of the larger disc and having windows for co-operation with concentric circular or arcuate scales on the disc, or the arms may be formed as pointers for indicating the required function. Two or more functions may be displayed by the provision of an appropriate number of scales and associated windows or pointers. The values from which selection can be made and the appropriate function can be discontinuous; thus the function may be constituted by the answer to a question selected from a range of questions provided in place of the first scale.

A preferred embodiment of the invention, arranged to permit food conversion rates for animal foodstuffs to be quickly and conveniently determined, will now be described.

The calculator comprises a first disc of cardboard or thin plastic sheet material having printed at the periphery of one surface a logarithmic scale comprising radially-extending marks numbered from 1 to 10. A second disc of like material is secured for rotation concentrically of the first disc and is provided with a peripheral logarithmic scale marked in pounds weight for co-operation with the marks on the first disc. A window is provided in the second disc and this registers with a number printed on the first disc in the area covered by the second. The remainder of the second disc may be occupied by instructions for using the calculator, advertising matter, etc. In use, the total weight of food fed, in pounds, on the peripheral scale of the second disc is aligned with the mark of the scale on the first disc numbered according to the number of pigs to which the food was fed. In this position, the window uncovers a portion of a scale printed on the first disc, a mark at an edge of the window indicating the food conversion rate. When the weight, 2550 lb., for example, is aligned with the mark numbered 3, i.e. when 2550 lb. of foodstuff has been consumed in raising 3 pigs to bacon weight, the number 5 is uncovered by the window indicating a food conversion rate 5.

A third scale operates concentrically on the reverse side of the larger disc already described and is of the same diameter as the smaller front scale. The reverse of the large disc is calibrated in 365 divisions for the days of the year. A segment to indicate the 115 days gestation term of the sow is marked off on the third disc. When the left hand index line of this segment is placed against the date of service of the sow on the date scale of the large disc, the expected date of farrowing is easily ascertained as the day indicated opposite the right hand index line of the segment. The remainder of the third disc may be occupied by instructions for the use of either calculator.

It will be apparent that many modifications may be made. For example, the calculator may be arranged for dealing with calculations involving more than 10 pigs, or the marks may be provided on the larger disc and the scale on the smaller. The discs

may be of equal diameter, the upper disc in the position of use having its scale adjacent an arcuate cut-out portion which exposes a scale printed on the lower disc. The scales may be duplicated by concentric scales giving weight in terms of hundredweights and so on.

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843,403 COMPLETE SPECIFICATION
1 SHEET

This drawing is a reproduction of the Original on a reduced scale.

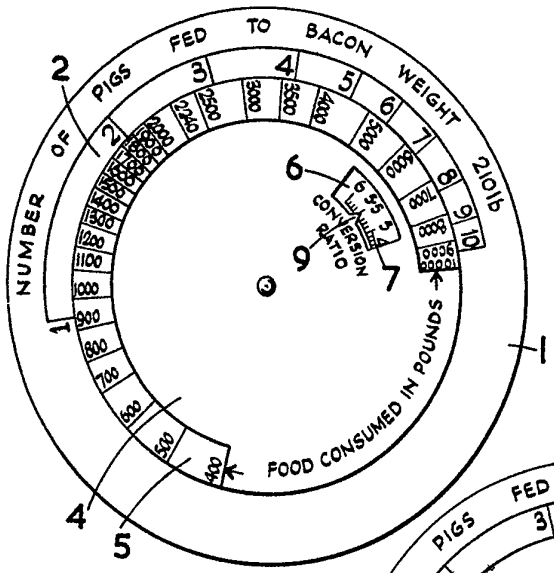

FIG.1.

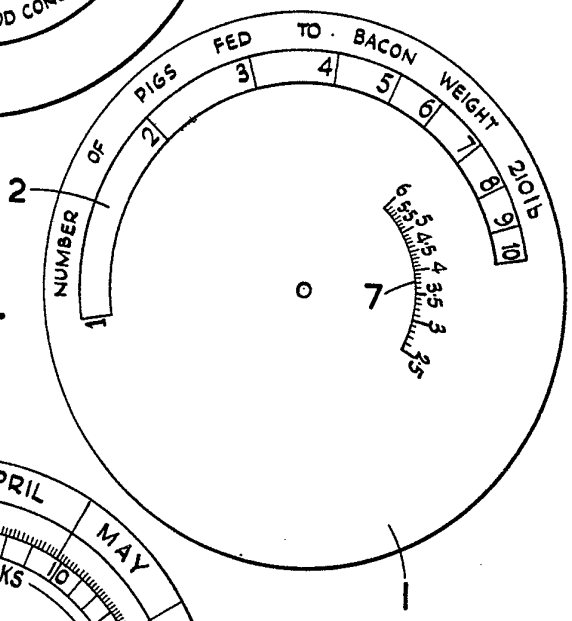

FIG.2.

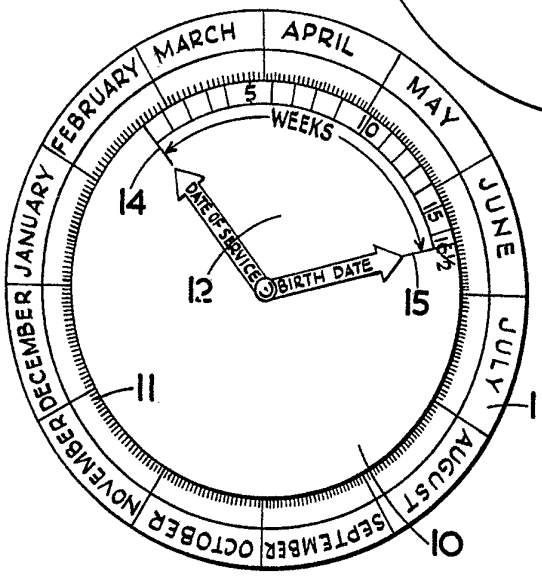

FIG.3.