PATENT SPECIFICATION

DRAWINGS ATTACHED

Inventor: HERBERT VISSERS

854,356

Date of Application and filing Complete Specification March 3, 1959.

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Index at acceptance:—**Class 106(1)**, B4, B5(A:G19:GX).

International Classification:—**G06g.**

ERRATUM

SPECIFICATION NO. 854,356

Page 4, line 38, for "row" read "rows"

THE PATENT OFFICE,
10th January, 1961

DS 84016/1(35)/8533 200 12/60 PL

The invention relates to an instrument for calculating the percentage of plants to be removed when thinning plants growing in rows. As for certain crops normally more plants come up than are allowed to remain in the rows, said rows of plants need to be thinned. For determining the percentage of thinning a measuring stick of certain length is used which for instance is divided into inches, and the number of inches in which there are plants is counted. The number of inches, in which the plants may be left, depends apart from other factors mainly on the nature of the plants and the character of the ground and for plants of sugar beets on a row of a length of 100 inches may vary e.g., from 12 to 15, so that the plants in the remaining inches are to be removed.

The expression "percentage of thinning" used herein means the number of plants to be removed from a row of unit length (e.g. 100 inches) expressed as a percentage of the total number of plants existing in such a row, or the number of inches or other graduations from which the plants are to be removed from a row of unit length (e.g. 100 inches), expressed as a percentage of the total number of inches or other graduations containing plants in such a row.

When the row of plants are thinned by mechanical means, e.g. by a machine such as has been described in British Patent Specification No. 788,389 and having the thinning elements secured to an oscillating rod, the the percentage of thinning may be varied within wide limits.

The invention has for its object to provide an instrument of simple construction for calculating the percentage of thinning and according to the invention the instrument comprises a disc or slide provided with a logarithmic graduation indicating the mean number of inches occupied by plants and found in a row of a predetermined length (e.g. 100 inches), said disc or slide being adapted to be adjusted with respect to a stationary logarithmic graduation indicating the number of inches required to be occupied by plants after the thinning operation, said disc or slide further being provided with a second concentric or parallel graduation indicating the percentage of thinning to be read at a fixed reading mark, and characterised further in that the disc or slide is provided with means for indicating various values of adjustable factors influencing the setting of the apparatus which performs the thinning operation, such as velocity of thinning elements, the number of said elements for each row of plants, the gear ratio of the driving mechanism for swinging the thinning elements in such a manner that the required values of said factors are indicated when the desired thinning percentage has been calculated. The operation of the instrument will appear from the following description in which the invention has been explained with reference to the accompanying drawings in which:—

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COMPLETE SPECIFICATION

Improvements in and relating to Instruments for Calculating the Percentage of Plants to be Removed

We, LANDBOUWWERKTUIGEN- EN MACHINE-FABRIEK H. VISSERS N. V., of 1278, Hoofdweg, Nieuw-Vennep, Holland, a Dutch Corporate Body, 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 an instrument for calculating the percentage of plants to be removed when thinning plants growing in rows. As for certain crops normally more plants come up than are allowed to remain in the rows, said rows of plants need to be thinned. For determining the percentage of thinning a measuring stick of certain length is used which for instance is divided into inches, and the number of inches in which there are plants is counted. The number of inches, in which the plants may be left, depends apart from other factors mainly on the nature of the plants and the character of the ground and for plants of sugar beets on a row of a length of 100 inches may vary e.g., from 12 to 15, so that the plants in the remaining inches are to be removed.

The expression "percentage of thinning" used herein means the number of plants to be removed from a row of unit length (e.g. 100 inches) expressed as a percentage of the total number of plants existing in such a row, or the number of inches or other graduations from which the plants are to be removed from a row of unit length (e.g. 100 inches), expressed as a percentage of the total number of inches or other graduations containing plants in such a row.

When the row of plants are thinned by mechanical means, e.g. by a machine such as has been described in British Patent Specification No. 788,389 and having the thinning elements secured to an oscillating rod, the number of plants removed from a row depends on the travelling speed of the thinning elements and on the gear ratio of the driving mechanism for the oscillating rod carrying the thinning elements and further on the width of the thinning elements in the travelling direction as well as on the number of thinning elements and their spacing. With such a machine the percentage of thinning may be varied within wide limits.

The invention has for its object to provide an instrument of simple construction for calculating the percentage of thinning and according to the invention the instrument comprises a disc or slide provided with a logarithmic graduation indicating the mean number of inches occupied by plants and found in a row of a predetermined length (e.g. 100 inches), said disc or slide being adapted to be adjusted with respect to a stationary logarithmic graduation indicating the number of inches required to be occupied by plants after the thinning operation, said disc or slide further being provided with a second concentric or parallel graduation indicating the percentage of thinning to be read at a fixed reading mark, and characterised further in that the disc or slide is provided with means for indicating various values of adjustable factors influencing the setting of the apparatus which performs the thinning operation, such as velocity of thinning elements, the number of said elements for each row of plants, the gear ratio of the driving mechanism for swinging the thinning elements in such a manner that the required values of said factors are indicated when the desired thinning percentage has been calculated. The operation of the instrument will appear from the following description in which the invention has been explained with reference to the accompanying drawings in which:—

Figure 1 is a plan view, and

Figure 2 is an inverted plan of the instrument.

The disc 1 is rotatable on a pin 4 between two plates 2 and 3 which at their circumference are attached to each other. The disc 1 at its front has two concentric graduations A and B of which the graduation A is obtained by the logarithms of the possible number of inches occupied by the plants and present in a row of plants not yet thinned and having a length of 100 inches. For plants of sugar beets said graduation runs e.g. from 15 to 50. The graduation B indicates the percentage of thinning for obtaining the desired number of plants in a row and runs from 0 to 80.

The graduation B occupies nearly a complete circle and the graduation A extends through an arc of a circle of about 270°.

The front plate 2 carries a graduation C which is obtained by the logarithms of the number of inches which after the thinning operation has been finished must be occupied by plants in a row of the length from which is started. The graduation B, indicating the percentage of thinning, is obtained by placing a figure of graduation A opposite a certain figure of the graduation C and by calculating the percentage of thinning for both said figures, which is then written at the reading mark S.

If by means of the above mentioned measuring stick for instance 29 inches containing plants are found in a row having a length of 100 inches and if it is desired to retain only 14 inches occupied by plants the Figure 29 of graduation A which is visible in a viewing window 5 of the front plate 2 is to be placed opposite the Figure 14 of graduation C and then the percentage 52 of thinning is read in the viewing window 6 at the reading mark S. Said percentage of thinning is obtained at a definite travelling speed of the thinning elements, a predetermined gear ratio of the driving mechanism for the oscillating rod carrying the thinning elements and for a definite number of thinning elements having a predetermined spacing. The various values of said varying factors may be indicated at the back of disk 1 and may then be visible through viewing windows 7, 8, 9 and 10 in the back plate 3 at a certain adjustment of disk 1 in such a manner that with the percentage of thinning obtained at the mark S the factors belonging to said percentage may be read at the back of the instrument, so that the machine may be adjusted for said factors.

It is to be noted that said factors may also be indicated at the front of disk 1 so that the windows 7, 8, 9 and 10 should then be provided in the front plate 2 and the plate 3 could be omitted.

WHAT WE CLAIM IS:—

1. An instrument for calculating the percentage of plants to be removed when thinning plants growing in rows and comprising a disc or slide provided with a logarithmic graduation indicating the mean number of inches occupied by plants and found in a row of a predetermined length (e.g. 100 inches), said disc or slide being adapted to be adjusted with respect to a stationary logarithmic graduation indicating the number of inches required to be occupied by plants after the thinning operation, said disc or slide further being provided with a second concentric or parallel graduation indicating the percentage of thinning to be read at a fixed reading mark, and characterised further in that the disc or slide is provided with means for indicating various values of adjustable factors influencing the setting of the apparatus which performs the thinning operation, such as velocity of thinning elements, the number of said elements for each row of plants, the gear ratio of the driving mechanism for swinging the thinning elements, in such a manner that the required values of said factors are indicated when the desired thinning percentage has been calculated.

2. An instrument for calculating the percentage of plants to be removed when thinning plants growing in rows, constructed and adapted to operate substantially as herein described with reference to the accompanying drawings.

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854,356 COMPLETE SPECIFICATION
1 SHEET

FIG. 1

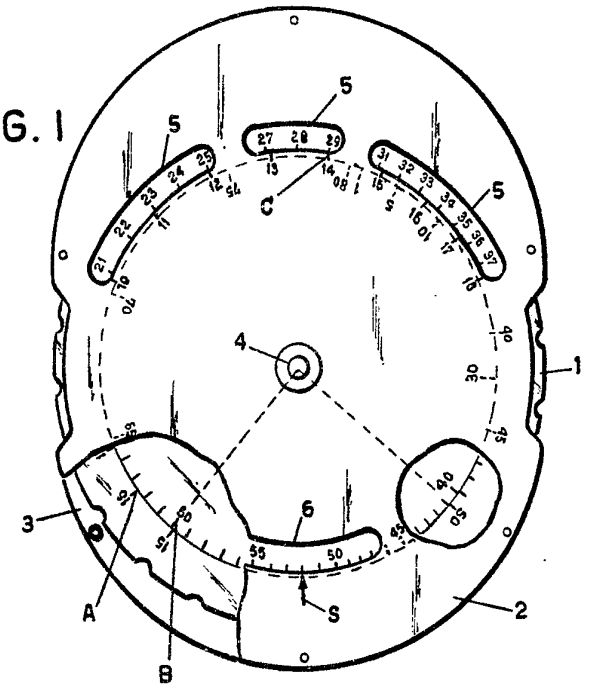

FIG. 2