S. B. HASKELL.

AUTOMATIC FORMULA FINDER.

APPLICATION FILED MAR. 5, 1919.

1,323,763.

Patented Dec. 2, 1919.

2 SHEETS—SHEET 1.

Fig. 1.

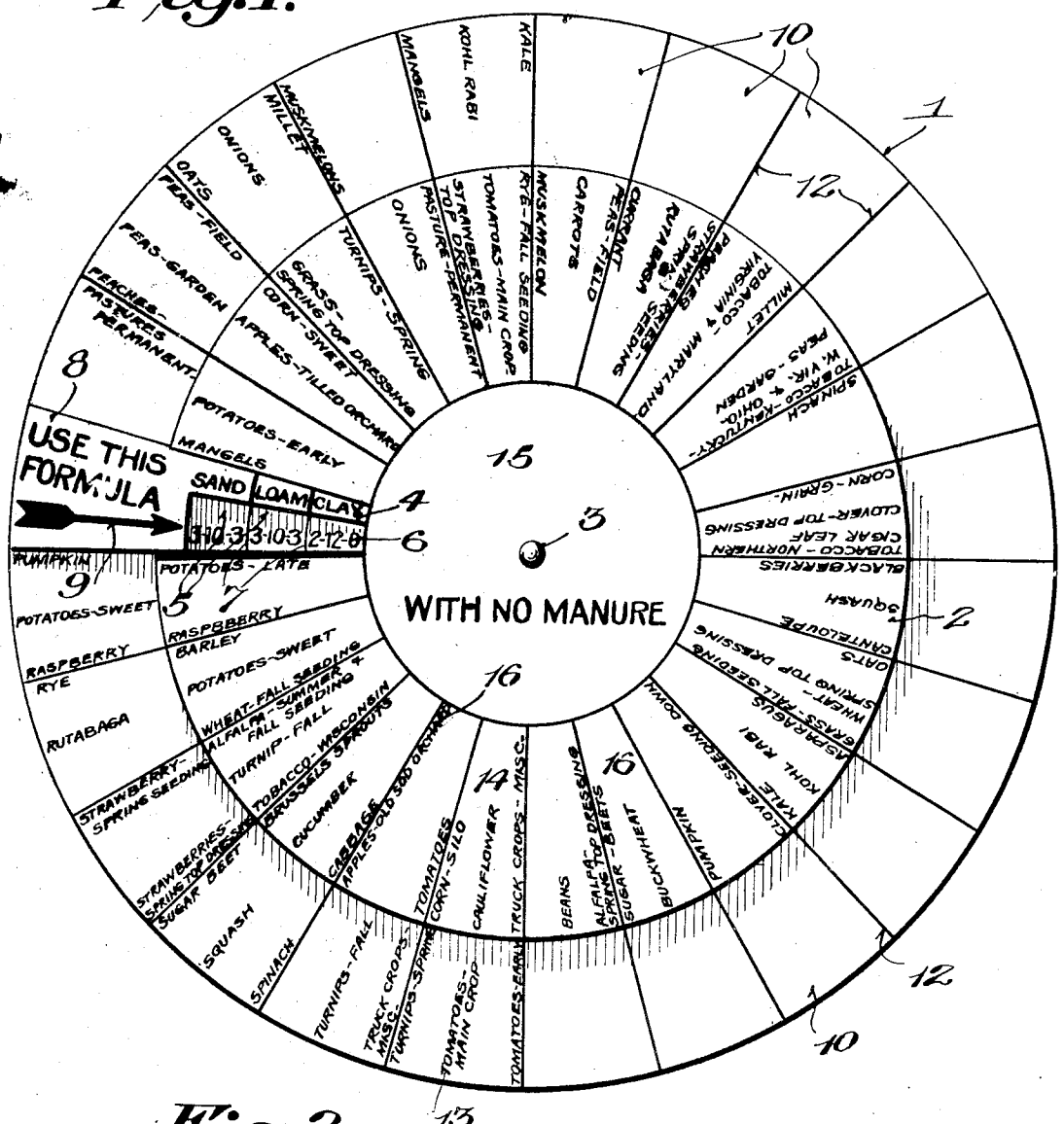
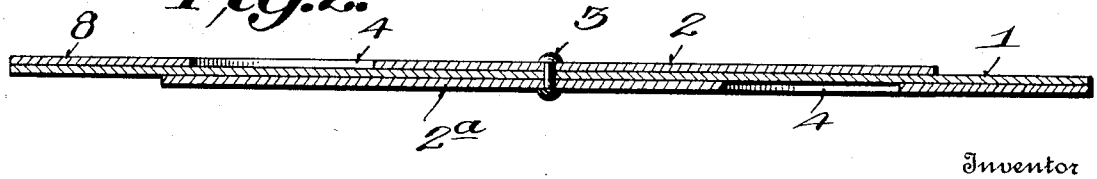


Fig. 2.



Inventor

S. B. Haskell,

Witness

Chas. L. Griesbauer

By

Attorney

S. B. HASKELL.

AUTOMATIC FORMULA FINDER.

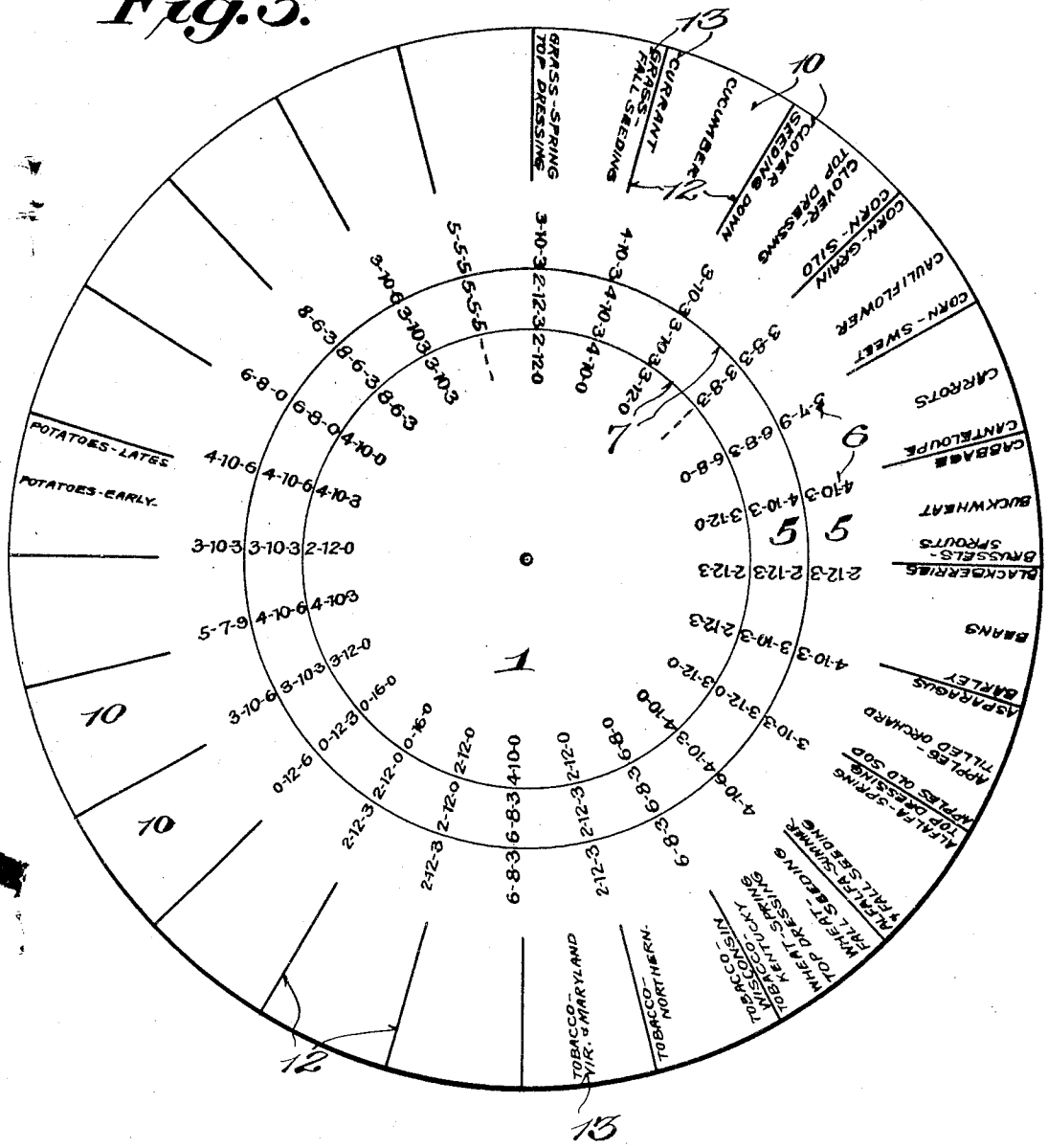
APPLICATION FILED MAR. 5, 1919.

1,323,763.

Patented Dec. 2, 1919.

2 SHEETS—SHEET 2.

Fig. 3.



Witness

Chas. L. Griesbauer

Inventor

S. B. Haskell,

By

Attorney

UNITED STATES PATENT OFFICE.

SIDNEY B. HASKELL, OF BALTIMORE, MARYLAND, ASSIGNOR TO SOIL IMPROVEMENT COMMITTEE OF THE NATIONAL FERTILIZER ASSOCIATION, OF BALTIMORE, MARYLAND.

AUTOMATIC FORMULA-FINDER.

1,323,763. Specification of Letters Patent. Patented Dec. 2, 1919.

Application filed March 5, 1919. Serial No. 280,755.

To all whom it may concern:

Be it known that I, SIDNEY B. HASKELL, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Automatic Formula-Finders, of which the following is a specification.

The invention relates to an automatic formula finder.

The object of the present invention is to provide a simple, practical and efficient automatic formula finder of inexpensive construction capable of easy operation and designed primarily for enabling the kind of standard fertilizer for use on various plants, trees and crops and the like in sand, loam or clay soil to be easily and quickly ascertained.

With these and other objects in view, the invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings and pointed out in the claim hereto appended, it being understood that various changes in the form, proportion, size and minor details of construction, within the scope of the claim, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings:—

Figure 1 is a plan view of an automatic formula finder constructed in accordance with this invention.

Fig. 2 is a sectional view of the same.

Fig. 3 is a plan view of the main disk or member.

In the drawings, in which like numerals of reference designate corresponding parts in the several figures, the automatic formula finder comprises in its construction a main disk 1, an upper relatively movable smaller disk 2, and a lower similar relatively movable disk 2^a. The disks are mounted on a central pivot 3 preferably consisting of a rivet or other suitable fastening device and each of the similar disks 2 and 2^a is capable of rotary movement with relation to the main disk and coöperates with the same in the operation of the automatic formula finder. The disk 2 is adapted to be turned on the pivot 3 to carry a radially arranged sight aperture 4 over different portions of a plurality of concentric annular spaces 5 located beneath the relatively movable rotary disk 2 and provided with formula indicating numerals 6. The formula indicating numerals refer to the ingredients of standard fertilizer compounds well known to the trade, and detail explanation of the ingredients of the same herein, is deemed unnecessary. The concentric annular spaces are formed by concentric circles 7 and are concealed except at the aperture 4 by the relatively movable rotary disk 2 which is provided at its periphery with an inwardly tapered approximately sector-shaped extension 8 forming a handle and indicator and preferably bearing the legend "Use this formula" and an arrow 9 pointing to the sight aperture and a set of formulæ indicating numerals exposed thereat.

The handle or extension extends to the periphery of the main disk which is provided with an annular series of peripheral spaces 10 formed by radial lines 12 and containing names 13 of plants, trees, crops, etc., and corresponding in size to the tapered extension 8 of the rotary disk 2 so that the handle or extension is adapted to cover any one of the radially arranged inwardly tapered peripheral spaces 10.

The rotary disk or member 2 has an annular series of inwardly tapered peripheral spaces 14 surrounding an inner circular space 15 and formed by radial lines 16 which are adapted to register with the radial division lines 12 of the outer annular series of peripheral spaces. The radial spaces 14 of the rotary disk 2 also contain the names 16 of the plants, trees, and crops of the outer spaces 10 and the disk 2 is adapted to be rotated to bring a name or names of the peripheral spaces opposite or in radial alinement with the corresponding name or names of the outer spaces 10 and when the disks are in such arrangement the formula indicating numerals exposed at the sight aperture will denote the proper fertilizer formula for use in sand, loam or clay soil for fertilizing the said plant, tree or crop.

The central space 15 of the disk 2 bears the legend "With no manure" and the calculations or arrangement of the formula indicating numerals of the face of the main disk coöperating with the disk 2 are made with refereince to such condition while the calculations and arrangement of the formula indicating numerals of the opposite face of the main disk are made to coöperate with

the disk 2^a which is designed to bear the legend "With manure" so that the automatic formula finding device may satisfy either condition, and it is only necessary to reverse or turn the formula finder over to bring either set of calculations in position for observation and use. The device while being designed particularly for the finding of a formula with reference to the fertilizing of land, may be found applicable for various analogous uses. The inner rotary disks 2 and 2^a are adapted to be readily turned to indicate at the sight aperture the proper fertilizer compound for any of the plants, trees or crops contained on the device when such fertilizing compound is to be used in sand, loam or clay soil, and either with or without manure, and the ordering of such materials with the periodical changes of the kinds of crops of various fields may be easily made.

What is claimed is:—

An automatic indicator of the class described, including a main disk provided with an annular peripheral series of inwardly tapered radially disposed name bearing spaces and having a plurality of concentric annular spaces located at the inner ends of the peripheral radially disposed spaces and adapted to bear sets of formula indicating characters, an inner rotary disk centrally pivoted to the main disk and being of a diameter to cover the said concentric spaces and provided with a radially arranged sight aperture extending across the concentric spaces and being of a size to expose a set of the formula-indicating characters, said rotary disk being provided with an annular series of radially tapered name bearing spaces arranged to register with the inner ends of the name bearing spaces of the main disk, and an extension projecting from the inner disk and being substantially of a size to cover a peripheral space at the main disk and adapted to accurately position the inner disk with respect to the outer disk.

In testimony whereof I affix my signature.

SIDNEY B. HASKELL.