US00PP16238P2

(12) **United States Plant Patent**
Amorao et al.

(10) **Patent No.: US PP16,238 P2**
(45) **Date of Patent: Feb. 7, 2006**

(54) **STRAWBERRY PLANT NAMED 'DRISCOLL EL DORADO'**

(50) Latin Name: ***Fragaria×ananassa***
Varietal Denomination: **Driscoll El Dorado**

(75) Inventors: **Amado Q. Amorao**, Camarillo, CA (US); **Michael Ferguson**, Moorpark, CA (US); **Arnoldo Solis, Jr.**, Oxnard, CA (US)

(73) Assignee: **Driscoll Strawberry Associates, Inc.**

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 88 days.

(21) Appl. No.: **10/957,845**

(22) Filed: **Oct. 4, 2004**

(51) **Int. Cl.**
A01H 5/00 (2006.01)

(52) **U.S. Cl.** **Plt./209**

(58) **Field of Classification Search** Plt./209
See application file for complete search history.

Primary Examiner—Anne Marie Grunberg
Assistant Examiner—Annette H Para
(74) *Attorney, Agent, or Firm*—Jones Day

(57) **ABSTRACT**

This invention relates to a new and distinct variety of strawberry named 'Driscoll El Dorado.' The variety is similar to the varieties 'Camarosa' and 'Ventana.' The variety is distinguished from 'Camarosa' and 'Ventana,' in particular, by a greater number of teeth per Terminal Leaflet, fewer achenes per fruit, a rounded shape of the base of terminal leaflets, a rounded shape of the teeth terminal leaflets, sparse to medium petiole pubescence, larger size of calyx in relation to fruit on secondary fruit, and a medium sized hollow center of fruit.

5 Drawing Sheets

1. Latin name of the genus and species of the plant claimed: The variety is botanically identified as *Fragaria× ananassa.*

1.1 Variety denomination: The strawberry variety denomination is 'Driscoll El Dorado'.

2. BACKGROUND OF THE INVENTION

The new variety originated as a result of a controlled cross between the strawberry plants '62C131' (unpatented) and 'Camarosa' (U.S. Plant Pat. No. 8,708) in an ongoing breeding program, and was discovered as a seedling in Ventura County, Calif. in 1999. The original seedling of the new cultivar was asexually propagated by stolons in a Nursery in Shasta County, Calif. Propagules were transplanted to a controlled breeding plot in Ventura County, Calif., where the variety was identified and selected for further evaluation. 'Driscoll El Dorado' was subsequently asexually propagated and underwent further testing in Ventura County, Calif. for five years. This propagation and testing has demonstrated that the combination of traits disclosed herein which characterize the new variety are fixed and retained true to type through successive generations of asexual reproduction.

3. SUMMARY OF THE INVENTION

The present invention relates to a new and distinct variety of strawberry named 'Driscoll El Dorado.' The variety is botanically identified as *Fragaria×ananassa.* The new variety is distinguished from other varieties by a number of characteristics as set forth in Tables 1–4.

4. COMPARISON TO SIMILAR VARIETIES

The varieties which we believe to be similar to 'Driscoll El Dorado' from those known to us are 'Camarosa' (U.S. Plant Pat. No. 8,708) and 'Ventana' (U.S. Plant Pat. No. 13,469). There are several characteristics of the new variety that are different from, or not possessed by 'Camarosa' and 'Ventana'. For example, the new variety has a greater number of teeth per Terminal Leaflet, fewer achenes per fruit, a rounded shape of the base of terminal leaflets, a rounded shape of the teeth terminal leaflets, sparse to medium petiole pubescence, larger size of calyx in relation to fruit on secondary fruit, and a medium sized hollow center of fruit.

Maternal Parent '62C313' was not available for side by side comparison with 'Driscoll El Dorado'. 'Driscoll El Dorado' is distinguished from its maternal parent '62C313' by its earlier date of harvest commencement, firmer fruit flesh, and less creasing on the fruit. 'Driscoll El Dorado' is distinguished from its paternal parent 'Camarosa' as indicated in Tables 1–4.

5. BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying photographs show typical specimens of the new variety, including fruit, foliage and flowers, in color as nearly true as it is reasonably possible to make in color illustrations of these characteristics.

FIG. **1** shows the whole the plant.

FIG. **2** shows the upper side of the leaves of the plant.

FIG. **3** shows the underside and upperside of the flowers.

FIG. **4** shows a close-up of the fruit.

FIG. **5** shows the fruit in longitudinal cross-section.

6. DESCRIPTION OF THE NEW VARIETY

The following detailed description of the new variety is based upon observations taken of plants and fruit grown in Ventura County, Calif., U.S.A. This description is in accordance with UPOV terminology. Observations of 'Driscoll El Dorado', 'Camarosa' and 'Ventana' were taken in side by

side comparison in the 2004 spring season. Plants were grown in raised beds of soil under conditions typical of commercial strawberry production in Southern California. Fruits were harvested twice weekly for yield determination from early January to late May. Measurements of plant, flower, and fruit characteristics were made in April, approximately six months after planting. Color designations, color descriptions, and other phenotypical descriptions may deviate from the stated values and descriptions depending upon variation in environmental, seasonal, climatic and cultural conditions. Colors are described and the most similar color designations are provided from The Royal Horticultural Society (R.H.S.) Colour Chart.

6.1 PROPAGATION

The new variety is principally propagated by way of stolons. Although propagation by stolons is presently preferred, other known methods of propagating strawberry plants may be employed.

6.2 CHARACTERISTICS OF THE NEW VARIETY

Information on the new variety is presented in Tables 1, 2, 3 and 4. In the tables, the flowers described are secondary flowers except where indicated. The fruit described is the secondary fruit on six month old plants. Fruit and flower measurements are an average of both primary and secondary fruit and flowers.

Table 1 provides information on the plant and fruit characteristics of the new variety 'Driscoll El Dorado' compared with characteristics of 'Camarosa' and 'Ventana.' Table 2 provides additional information of the plant and fruit characteristics of the new variety 'Driscoll El Dorado' compared with characteristics of the varieties 'Camarosa' and 'Ventana.' Table 3 provides reactions of the new variety to stresses, pests and diseases compared with reactions of the varieties 'Camarosa' and 'Ventana.' Table 4 provides isozyme characteristics of the new variety as compared to that of the varieties 'Camarosa' and 'Ventana.'

TABLE 1

QUANTITATIVE COMPARISON OF 'DRISCOLL EL DORADO,' 'CAMAROSA,' AND 'VENTANA'

	'Driscoll El Dorado'	'Camarosa'	'Ventana'
Plant Characteristics			
Height of Plant (cm)	24.0	30.7	24.8
Spread of Plant (cm)	27.5	31.4	28.3
Number of Crowns	5.4	8.8	5.4
Leaf Characteristics			
Terminal Leaflet Length (cm)	7.4	7.5	7.3
Terminal Leaflet Width (cm)	6.0	6.8	5.6
Terminal Leaflet Length/Width Ratio	1.24	1.10	1.31
# Teeth/Terminal Leaflet	20.5	18.5	18.3
Color of upper side	139A medium to dark green	141A medium green	141A light to medium green
Color of under side	138B light gray green	138C light gray green	139C light gray green
Petiole Length (cm)	16.6	21.0	18.0
Petiole Color	145B yellow green	145A yellow green	145A yellow green

TABLE 1-continued

QUANTITATIVE COMPARISON OF 'DRISCOLL EL DORADO,' 'CAMAROSA,' AND 'VENTANA'

	'Driscoll El Dorado'	'Camarosa'	'Ventana'
Petiolule Length (mm)	7.0	12.1	5.8
Petiolule Diameter (mm)	2.0	1.8	1.8
Petiolule Color	145B yellow green	144B yellow green	145A yellow green
Bract Frequency	0	0	0
Stipule Length (cm)	3.49	3.30	3.52
Stipule Width (cm)	1.0	1.2	1.1
Stolon Characteristics			
Anthocyanin color	59C		
Diameter at bract (mm)	2.59		
Avg. # of Daughter plants (2003 Nursery)	129		
Flower Characteristics			
Petal Length (cm)	1.24	1.13	1.25
Petal Width (cm)	1.24	1.11	1.32
Petal Length/Width Ratio	1.00	1.02	0.95
Flower Diameter (cm)	2.45	2.21	2.73
Calyx Diameter (cm)	4.10	4.23	3.66
Sepal Length (mm)	18.05	17.92	15.31
Sepal Width (cm)	7.61	7.72	6.00
Petal Color	155C white	155C white	155C white
Receptical Color	7A yellow green	7A yellow green	7A yellow green
Anther Color	14B yellow	14B yellow	14B yellow
Fruiting Truss Length (cm)	24.5	25.2	24.2
Fruit Characteristics			
Fruit Length (cm)	4.5	4.7	4.4
Fruit Width (cm)	4.1	3.5	3.6
Fruit Length/Width Ratio	1.10	1.33	1.21
Average Berry Weight (g)	22.8	21.3	24.4
External Color	46A dark red	46A dark red	44A red
Internal Color	42A orange red	43A medium red	42B orange red
Achene Coloration	12B to 184A yellow to grayed red	11A to 179B yellow to grayed red	11A to 176B yellow to grayed red
Achenes per berry	247	310	319
Achene weight (g)	0.00049	0.00055	0.00042
2004 Marketable Yield (g/plant)	830	766	1,016

TABLE 2

QUALITATIVE COMPARISON OF 'DRISCOLL EL DORADO,' 'CAMAROSA,' AND 'VENTANA'

	'Driscoll El Dorado'	'Camarosa'	'Ventana'
Plant			
Habit	globose	globose	flat globose
Canopy Density	dense	dense	dense
Vigor	strong	strong	medium to strong
Leaf			
Shape in cross section	slightly concave	concave	concave
Interveinal blistering	weak	medium to strong	weak to medium
Glossiness	medium	weak to medium	weak to medium

TABLE 2-continued

QUALITATIVE COMPARISON OF 'DRISCOLL EL DORADO,' 'CAMAROSA,' AND 'VENTANA'

	'Driscoll El Dorado'	'Camarosa'	'Ventana'
Number of leaflets	three only	three only	occasionally 4
Terminal leaflet margin profile	revolute to flat	revolute to flat	revolute
Terminal leaflet shape of base	rounded	obtuse	slightly oblique
Terminal leaflet shape of teeth	rounded	obtuse	obtuse
Stipule pubescence	sparse	medium	medium
Petiole pubescence	sparse to medium	dense	dense
Petiole pose of hairs	upwards to outwards	upwards	upwards
Stolon			
Anthocyanin coloration	medium		
Thickness	thin		
Pubescence	medium		
Inflorescence			
Position relative to foliage	above	level with to above	level with to above
Diameter of calyx relative to corolla on secondary flowers	larger	larger	smaller
Diameter of inner calyx relative to outer on secondary flowers	smaller to same size	smaller	larger
Spacing of petals	overlapping	overlapping, occasionally free	touching to overlapping
Fruiting Truss			
Attitude at first picking	prostrate	prostrate	prostrate
Fruit			
Predominant shape	conical	almost cylindrical	conical to almost cylindrical
Difference in shapes between primary and secondary fruits	slight	moderate to marked	slight to moderate
Band without achenes	narrow to medium	medium to broad	narrow to medium
Unevenness of surface	weak	strong	medium
Evenness of color	even	slightly uneven	even
Glossiness	strong	strong	strong
Insertion of achenes	below surface	below surface	below surface
Insertion of calyx	level	set above fruit	level
Pose of the calyx segments	spreading to reflexed	spreading to reflexed	spreading
Size of calyx in relation to fruit on secondary fruit	larger	same size to smaller	smaller
Adherence of calyx	strong	strong	strong
Firmness of flesh	firm	firm to extremely firm	extremely firm
Evenness of flesh color	slightly uneven	even	slightly uneven
Distribution of flesh color	mariginal and central	mariginal and central	mariginal and central
Hollow center size	medium	small	small
Sweetness	medium	medium	medium
Texture when tasted	medium	coarse	coarse
Acidity	medium	medium	medium
Time of First Flowering in 2003–2004	Late-November	Late-November	Late-November
Harvest Interval in 2004	Early-January to Late-May	Early-January to Late-May	Early-January to Late-May

TABLE 2-continued

QUALITATIVE COMPARISON OF 'DRISCOLL EL DORADO,' 'CAMAROSA,' AND 'VENTANA'

	'Driscoll El Dorado'	'Camarosa'	'Ventana'
Type of Bearing	partially everbearing	partially everbearing	June bearing

6.3 REACTION TO STRESS, PESTS, AND DISEASE

TABLE 3

REACTIONS TO STRESS PESTS AND DISEASES FOR 'DRISCOLL EL DORADO,' 'CAMAROSA,' AND 'VENTANA'

	'Driscoll El Dorado'	'Camarosa'	'Ventana'
Reaction to Pests			
Tetranychus urticae	susceptible	moderately resistant	moderately resistant
Lygus hesperus	susceptible	susceptible	susceptible
Reaction To Diseases			
Botrytis fruit rot	susceptible		
Powdery mildew	moderately resistant	moderately resistant	moderately resistant
Verticillium wilt	moderately susceptible		moderately susceptible
Strawberry Mottle Virus	moderately resistant	moderately resistant	moderately resistant
Xanthomonas fragariae	moderately susceptible		

6.4 ISOZYME ANALYSIS

In addition to the morphological description above, the new cultivar 'Driscoll El Dorado' has been analyzed to obtain an indication of its genetic makeup to provide further means for identifying the new variety and distinguishing it from other somewhat similar and/or related strawberry varieties. Specifically, leaf samples of 'Driscoll El Dorado', 'Camarosa' and 'Ventana' were analyzed by electrophoresis for isozyme patterns of the enzymes phosphoglucoisomerase ("PGI"), leucine aminopeptidase ("LAP") and phosphoglucomutase ("PGM"). See J. Amer. Soc. Hort. Sci. 106:684–687. Isozyme characterizatin of the three varieties is presented in Table 4, with the letters representing the banding patterns for each enzyme as designated in the above-identified article.

TABLE 4

ISOZYME ANALYSIS FOR 'DRISCOLL EL DORADO,' 'CAMAROSA,' AND 'VENTANA'

Locus	'Driscoll El Dorado'	'Camarosa'	'Ventana'
PGI	A2	A2	A1
LAP	B1	B3	B1
PGM	C3	C1	C2

What is claimed:

1. A new and distinct variety of strawberry plant, substantially as shown and described.

* * * * *

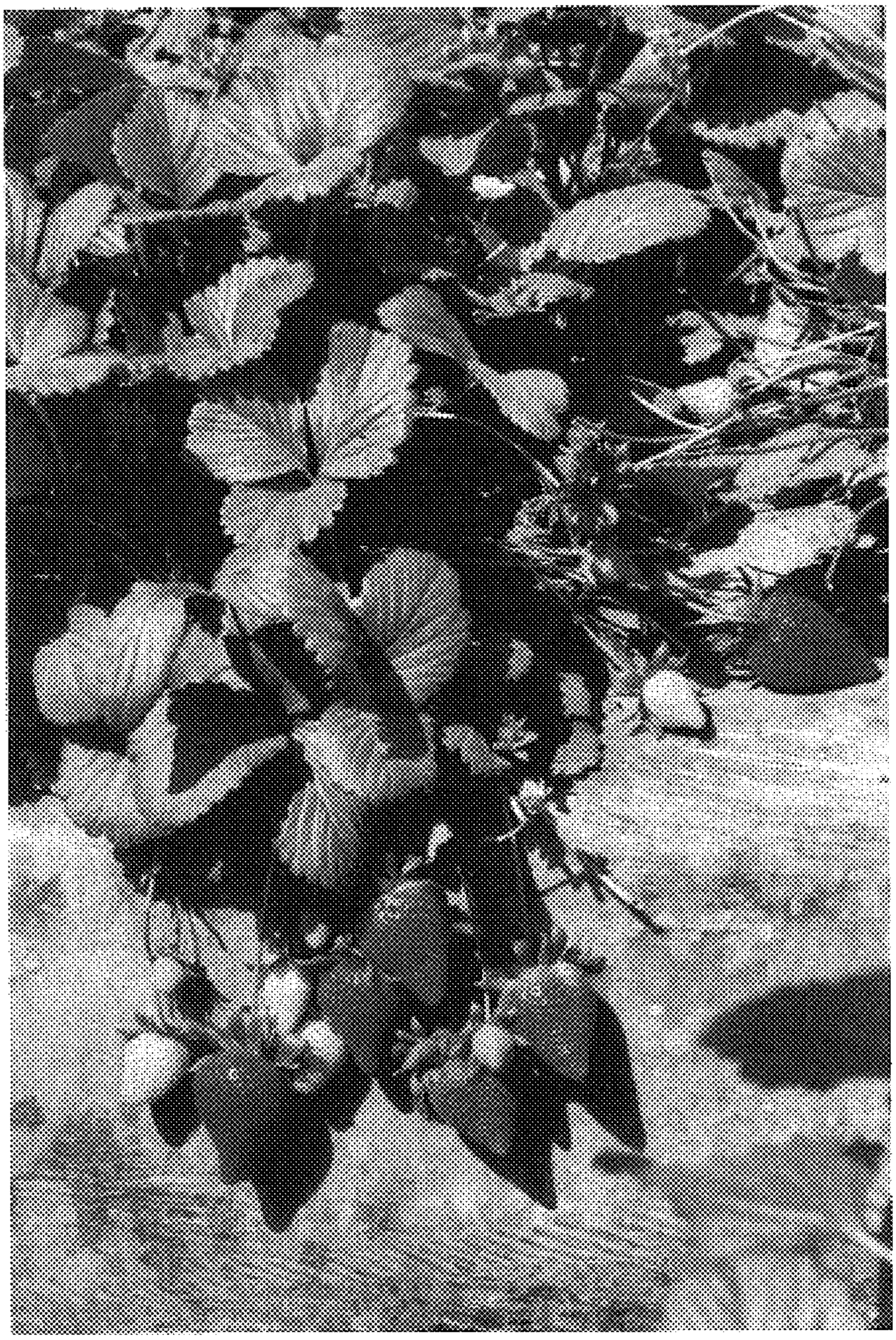

FIG. 1

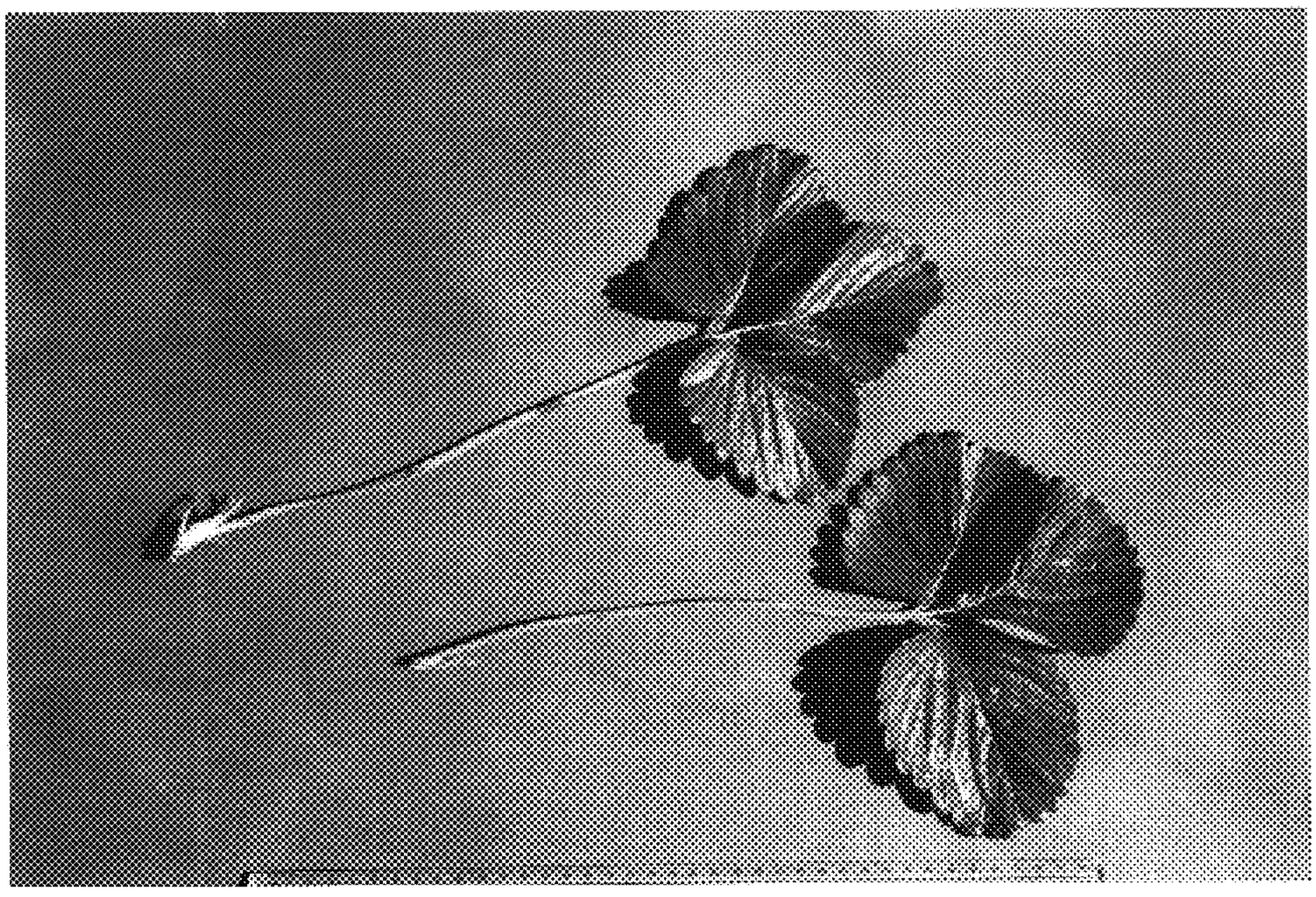

FIG.2

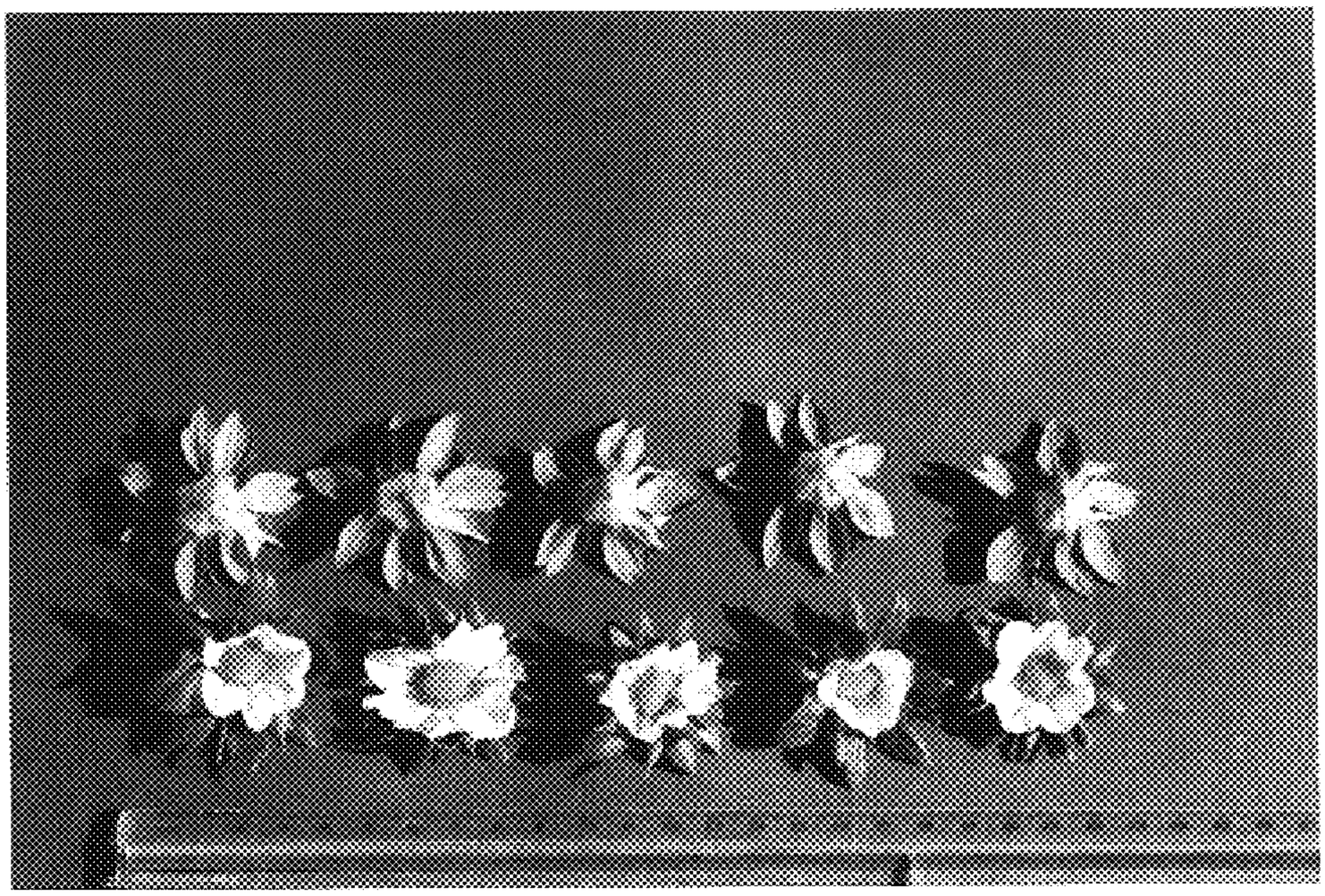

FIG.3

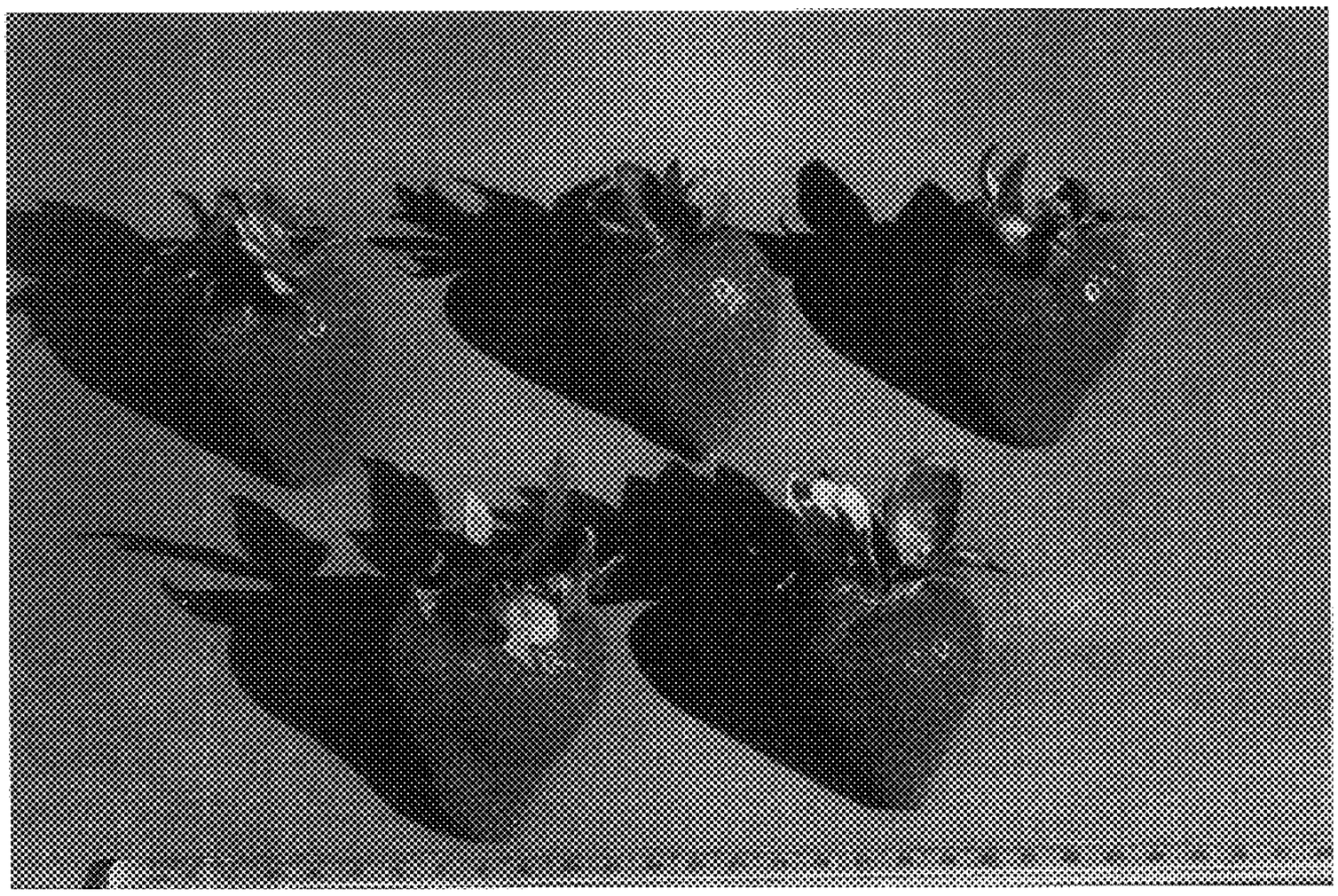

FIG.4

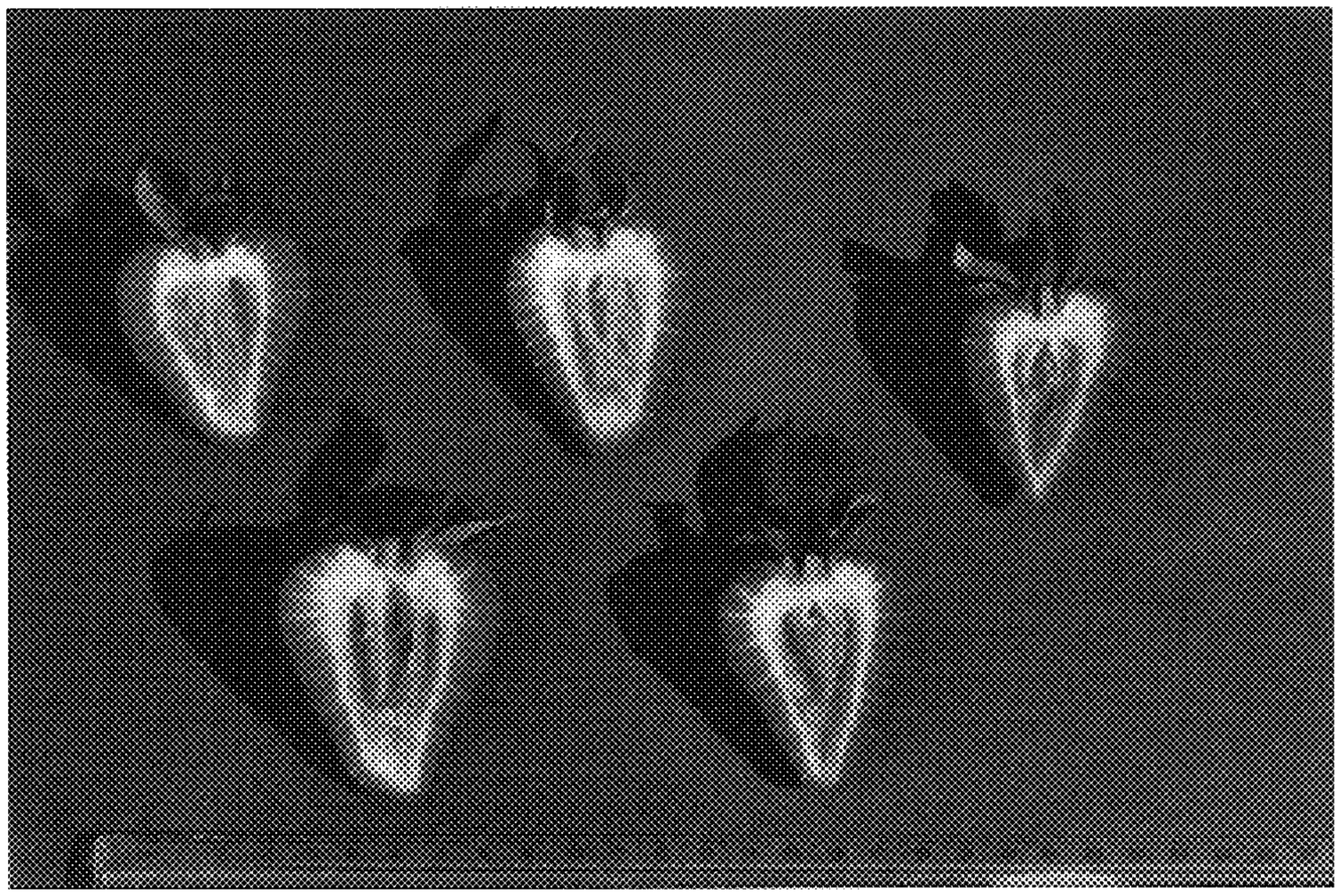

FIG.5