

US00PP21415P3

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

(10) **Patent No.:** **US PP21,415 P3**
(45) **Date of Patent:** **Oct. 26, 2010**

(54) **STRAWBERRY PLANT NAMED ‘RELIANCE’**

(50) Latin Name: *Fragaria ananassa*
Varietal Denomination: **Reliance**

(75) Inventors: **Stephen M. Ackerman**, Salinas, CA (US); **Steven D. Nelson**, Watsonville, CA (US); **Michael D. Nelson**, Watsonville, CA (US)

(73) Assignees: **Plant Sciences, Inc.**, Watsonville, CA (US); **Berry R&D, Inc.**, Watsonville, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **12/455,165**

(22) Filed: **May 29, 2009**

(65) **Prior Publication Data**

US 2010/0122387 P1 May 13, 2010

Related U.S. Application Data

(60) Provisional application No. 61/114,194, filed on Nov. 13, 2008.

(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—Susan B McCormick Ewoldt

(74) *Attorney, Agent, or Firm*—Foley & Lardner LLP

(57) **ABSTRACT**

This invention relates to a new and distinct variety of strawberry plant named ‘RELIANCE’. This new strawberry plant named ‘RELIANCE’ is primarily adapted to the growing conditions of the central coast of California, and is primarily characterized by its large to very large fruit size; red to dark red fruit color; high productivity; medium sized plant; calyx that tends to be more equal to the diameter of the fruit; uniformly shaped, conical berries with good flavor; and relatively short fruiting trusses.

5 Drawing Sheets

1

Latin name of the genus and species of the plant claimed:
Fragaria ananassa.

Variety denomination: ‘RELIANCE’.

BACKGROUND OF THE INVENTION

The present invention relates to a new and distinct strawberry variety named ‘RELIANCE’. This new variety is a result of a controlled cross made in 2000 in an ongoing breeding program between strawberry variety designated ‘PS-592’ (patented, U.S. Plant Pat. No. 9,903) and strawberry variety designated ‘PS-1269’ (patented, U.S. Plant Pat. No. 10,686) in an ongoing breeding program. Due to the combining of the reciprocal seed lots, it is unknown as to which parent variety is the seed parent and which parent variety is the pollen parent. The variety is botanically known as *Fragaria ananassa*.

The seedling resulting from the aforementioned cross was selected from a controlled breeding plot in Monterey County, Calif. in the summer of 2002. After its selection, the new variety was asexually propagated by stolons in both San Joaquin County, Calif., and Siskiyou County, Calif. The new variety was extensively tested over the next several years in fruiting fields in Monterey County, Calif. This propagation has demonstrated that the combination of traits disclosed herein as characterizing the new variety are fixed and remain true to type through successive generations of asexual reproduction.

BRIEF SUMMARY OF THE INVENTION

‘RELIANCE’ is primarily adapted to the climate and growing conditions of the central coast of California. The nearby Pacific Ocean provides the needed humidity and moderate

2

temperatures to produce a strong vigorous plant and maintain fruit quality during the spring, summer and fall production months.

The following traits have been repeatedly observed and are determined to be unique characteristics of ‘RELIANCE’, which in combination distinguish this strawberry plant as a new and distinct variety:

1. Large to very large fruit size;
2. Red to dark red fruit color;
3. High productivity;
4. Medium sized plant;
5. Calyx that tends to be more equal to the diameter of the fruit;
6. Uniformly shaped, conical berries with good flavor; and
7. Relatively short fruiting trusses

The strawberry varieties that are believed to be most closely related to the new strawberry variety ‘RELIANCE’ are the strawberry variety ‘PS-4634’ (patented, U.S. Plant Pat. No. 17,487) and the strawberry variety ‘PS-5298’ (patented, U.S. Plant Pat. No. 19,583). In side-by-side comparisons to the similar strawberry varieties ‘PS-4634’ and ‘PS-5298’, the new strawberry variety ‘RELIANCE’ differs by the following combination of characteristics as described in Table 1:

TABLE 1

Characteristic	‘RELIANCE’	‘PS-4634’ (U.S. Plant Pat. No. 17,487)	‘PS-5298’ (U.S. Plant Pat. No. 19,583)
1. Color of mature fruit	Ranges from red to dark red	Ranges from red to orange-red	Red
2. Average fruit weight (gm)	27.4	27.6	24.6

TABLE 1-continued

Characteristic	'RELIANCE'	'PS-4634' (U.S. Plant Pat. No. 17,487)	'PS-5298' (U.S. Plant Pat. No.19,583)
3. Marketable yield (gm/plt)	1,646	1,521	1,445
4. Size of calyx in relation to fruit diameter	Ranges from same size to slightly smaller	Same size	Slightly larger
5. Plant size	Medium	Large	Large
6. Stolon anthocyanin intensity	Weak	Ranges from weak to medium	Weak
7. Interveinal leaf blistering	Medium	Ranges from medium to strong	Ranges from medium to strong
8. Foliage gloss	Medium	Ranges from medium to strong	Ranges from medium to strong
9. Petiole length (cm)	19.4	23.7	24.4
10. Petiolule length (mm)	15.5	9.4	12.3
11. Terminal leaf shape of base	Obtuse	Acute	Acute
12. Terminal leaf shape of teeth	Rounded	Obtuse	Obtuse
13. Fruiting truss length at maturity (cm)	29.9	39.0	36.3
14. Fruiting truss pubescence	Strong	Ranges from medium to weak	Medium

For identification a series of AFLP molecular markers have been determined for this new variety.

'RELIANCE' differs from its parents, 'PS-592' and 'PS-1269' by the following combination of characteristics as described in Table 2.

TABLE 2

Characteristic	'RELIANCE'	'PS-592' (U.S. Plant Pat. No. 9,903)	'PS-1269-2' (U.S. Plant Pat. No. 10,686)
1. Color of mature fruit	Ranges from red to dark red	Ranges from red to orange-red	Red
2. Fruit size	Ranges from large to very large	Medium	Medium
3. Plant size	Medium	Large	Large
4. Fruit skin firmness	Ranges from medium to strong	Medium	Medium
5. Fruit gloss	Medium	Ranges from medium to strong	Ranges from medium to weak
6. Fruit productivity	High	Ranges from medium to high	Medium

BRIEF DESCRIPTIONS OF THE PHOTOGRAPHS

The accompanying color photographs illustrate the overall appearance of typical specimens of the new strawberry variety 'RELIANCE', at various stages of development as true as it is reasonably possible with color reproductions of this type. Color in the photographs may differ slightly from the color value cited in the botanical description which accurately describe the color of 'RELIANCE'. The depicted plant and plant parts of the new strawberry variety 'RELIANCE' were taken in Monterey County, Calif., and are approximately 8 to 9 months old:

FIG. 1 shows typical fruiting field characteristics of 'RELIANCE' taken in the month of June 2008;

FIG. 2 shows a close-up view of a typical leaf structure of 'RELIANCE' taken in the month of July 2008;

FIG. 3 shows typical mature and immature field fruit of 'RELIANCE' taken in the month of July 2008;

FIG. 4 shows a close-up view of mature fruit of 'RELIANCE' taken in the month of July 2008;

FIG. 5 shows typical internal and external mature fruit characteristics of 'RELIANCE' taken in the month of July 2008.

DETAILED BOTANICAL DESCRIPTION

The new variety 'RELIANCE' has not been observed under all possible environmental conditions. The characteristics of the new variety 'RELIANCE' may vary in detail, depending upon variations in environmental factors, including weather (temperature, humidity and light intensity), day length, soil type and location. In addition, the characteristics of any parental variety or comparison variety included in Tables 1-9 of the present invention, may vary in detail, depending upon variations in environmental factors, including weather (temperature, humidity and light intensity), day length, soil type and location.

The aforementioned photographs, together with the following description of the new variety 'RELIANCE', unless otherwise noted, is based on observations taken during the 2008 growing season in Monterey County, Calif. These measurements and ratings were taken from plants of 'RELIANCE' dug from a high-elevation nursery located in Siskiyou County, Calif. during the middle of October 2007 and planted approximately 3 weeks later in Monterey County, Calif. The approximate age of the observed plants is 8 to 10 months. Yield observations and fruit quality characteristics are averaged from four years of data collected from the 2005 through 2008 growing seasons. Flower measurements and characteristics are from secondary flowers unless otherwise noted. Fruit characteristics and measurements are from secondary fruit unless otherwise noted.

Color terminology where noted follows The Royal Horticultural Society Colour Chart, London (2007).

The following Tables 3 to 9 describe fruit, plant, stolon, foliage, fruiting truss, flower and pest disease characteristics of the new strawberry 'RELIANCE' in comparison to the similar strawberry variety 'PS-4634' (patented, U.S. Plant Pat. No. 17,487) and strawberry variety 'PS-5298' (patented, U.S. Plant Pat. No 19,583).

TABLE 3

FRUIT CHARACTERISTICS			
Characteristic	'RELIANCE'	'PS-4634' (U.S. Plant Pat. No. 17,487)	'PS-5298' (U.S. Plant Pat. No. 19,583)
Color of mature fruit	RHS 46A Ranges from red to dark red	RHS 45B Red to orange-red	RHS 45A Red
Color of internal flesh	RHS 44A Medium red	RHS 44C Ranges from medium to light red	RHS 44B Medium red
Fruit length (cm)	4.7	4.9	4.6
Fruit width (cm)	4.2	4.1	4.0
Fruit length/width ratio	1.12 Slightly longer than broad	1.19 Slightly longer than broad	1.15 Slightly longer than broad
Calyx diameter (cm)	3.9	4.4	4.2

TABLE 3-continued

FRUIT CHARACTERISTICS			
Characteristic	'RELIANCE'	'PS-4634' (U.S. Plant Pat. No. 17,487)	'PS-5298' (U.S. Plant Pat. No. 19,583)
Average fruit weight (gm)	27.4	27.6	24.6
Achene color, shaded side	RHS 162B Greyed-yellow group	RHS 162C Greyed-yellow group	RHS 160B Greyed-yellow group
Achene color, sun exposed side	RHS 184B Greyed-purple group	RHS 184C Greyed-purple group	RHS 184C Greyed-purple group
Achenes per berry	340	359	268
Achene weight (mg)	0.60	0.45	0.50
Marketable fruit yield (gm/plt)	1,646	1,521	1,445
Fruit Size	Ranges from large to very large	Ranges from large to very large	Ranges from medium to large
Predominant fruit shape	Conical	Conical	Conical
Difference in shapes between primary and secondary fruit	Slight	Moderate	Moderate
Band without achenes	Narrow	Narrow	Ranges from absent to very narrow
Unevenness of fruit surface	Weak	Ranges from weak to medium	Weak
Evenness of fruit color	Ranges from slightly uneven to even	Ranges from slightly uneven to even	Ranges from slightly uneven to even
Fruit glossiness	Medium	Strong	Ranges from medium to strong
Insertion of achenes	Level with surface	Level with surface	Level with surface
Insertion of calyx	Ranges from level with to in the basin	Ranges from level with to in the basin	Ranges from level with to above fruit
Attitude of the calyx	Ranges from spreading to reflexed	Ranges from spreading to reflexed	Ranges from spreading to reflexed
Size of calyx in relation to fruit diameter	Ranges from same size to slightly smaller	Same size	Slightly larger
Adherence of calyx	Strong	Strong	Strong
Firmness of fruit skin	Ranges from medium to strong	Strong	Ranges from medium to strong
Firmness of fruit flesh	Ranges from medium to firm	Medium	Ranges from medium to firm
Keeping quality	Good	Very good	Good
Distribution of red color of the flesh	Marginal and central	Marginal and central	Marginal and central
Hollow center expression	Moderate	Strong	Moderate
Fruit flavor	Good	Very good	Good
Soluble solids (% brix)	8.8	9.6	9.6
Time of first flowering	Medium	Early	Early
Flowering period	Early to mid March to December	Late February to early March to December	Late February to early March to December
Time of first harvesting	Medium	Early	Early
Harvest period	Early to mid April to December	Late March to early April to December	Late March to early April to December
Type of bearing	Partially everbearing	Not remontant	Partially everbearing

TABLE 4

PLANT CHARACTERISTICS			
Characteristic	'RELIANCE'	'PS-4634' (U.S. Plant Pat. No. 17,487)	'PS-5298' (U.S. Plant Pat. No. 19,583)
Plant height (cm)	26.5	31.9	34.1
Plant spread (cm)	33.8	36.7	40.0
Crowns/plant	5.3	6.0	6.7
Plant size	Medium	Large	Large
Plant habit	Globose	Globose	Globose
Plant density	Medium	Medium	Medium
Plant vigor	Medium	Strong	Strong

TABLE 5

STOLON CHARACTERISTICS			
Characteristic	'RELIANCE'	'PS-4634' (U.S. Plant Pat. No. 17,487)	'PS-5298' (U.S. Plant Pat. No. 19,583)
Stolon color	RHS 146C Yellow-green group	RHS 144A Yellow-green group	RHS 145A Yellow-green group
Stolon anthocyanin coloration	RHS 180C Greyed-red group	RHS 182D Greyed-red group	RHS 182D Greyed-red group
Stolon anthocyanin intensity	Weak	Ranges from weak to medium	Weak
Average stolon number per plant from the fruiting field	1.1	2.7	0.9
Stolon diameter at bract (mm)	4.3	4.5	4.1
Stolon pubescence	Ranges from medium to strong	Ranges from medium to weak	Ranges from medium to strong
Attitude of hairs	Slightly outward	Upward	Slightly outward

TABLE 6

FOLIAGE CHARACTERISTICS			
Characteristic	'RELIANCE'	'PS-4634' (U.S. Plant Pat. No. 17,487)	'PS-5298' (U.S. Plant Pat. No. 19,583)
Foliage:			
Color of upper surface	RHS 137B Medium green	RHS 137A Medium green	RHS 137B Medium green
Color of under side	RHS 147C Yellow-green group	RHS 147C Yellow-green group	RHS 147C Yellow-green group
Shape in cross section	Ranges from strongly concave to flat	Ranges from slightly concave to flat	Ranges from slightly concave to flat
Interveinal blistering	Medium	Ranges from medium to strong	Ranges from medium to strong
Leaf glossiness	Medium	Ranges from medium to strong	Ranges from medium to strong
Number of leaflets	Three	Three	Three
Terminal Leaflet:			
Length (cm)	9.5	10.5	10.2
Width (cm)	9.1	8.0	8.8

TABLE 6-continued

FOLIAGE CHARACTERISTICS			
Characteristic	'RELIANCE'	'PS-4634' (U.S. Plant Pat. No. 17,487)	'PS-5298' (U.S. Plant Pat. No. 19,583)
Length/width ratio	1.04 Ranges from as long as broad to longer than broad	1.32 Much longer than broad	1.16 Much longer than broad
Serrations/leaf	22.1	21.9	19.1
Leaf size	Ranges from medium to large	Ranges from medium to large	Ranges from medium to large
Shape of base	Obtuse	Acute	Acute
Shape of teeth	Rounded	Obtuse	Obtuse
Petiole:			
Petiole Color	RHS 145A Yellow-green group	RHS 145A Yellow-green group	RHS 144A Yellow-green group
Petiole length (cm)	19.4	23.7	24.4
Petiole diameter (mm)	5.0	5.4	5.4
Petiolule color	RHS 145A Yellow green group	RHS 145A Yellow green group	RHS 144A Yellow green group
Petiolule length (mm)	15.5	9.4	12.3
Petiole pubescence	Moderate	Ranges from moderate to sparse	Ranges from moderate to sparse
Attitude of hairs	Ranges from upward to slightly outward	Slightly outward	Strongly outward
Stipule:			
Color	RHS 146B Yellow-green group	RHS 146B Yellow-green group	RHS 146B Yellow-green group
Anthocyanin coloration	RHS 61B Red-purple group	RHS 58A Red-purple group	RHS 61B Red-purple group
Anthocyanin intensity	Medium	Strong	Weak
Length (mm)	19.4	19.5	23.5
Width (mm)	8.3	9.5	9.8

TABLE 7

FRUITING TRUSS CHARACTERISTICS			
Characteristic	'RELIANCE'	'PS-4634' (U.S. Plant Pat. No. 17,487)	'PS-5298' (U.S. Plant Pat. No. 19,583)
Anthocyanin coloration	RHS 181B Greyed-red group	RHS 182D Greyed-red group	RHS 182C Greyed-red group
Anthocyanin intensity	Ranges from medium to weak	Absent or very weak	Ranges from medium to weak
Length at maturity (cm)	29.9	39.0	36.3
Position relative to foliage	Beneath the foliage	Level with	Level with to beneath the foliage
Pubescence	Strong	Ranges from medium to weak	Medium
Attitude at first pick	Prostrate	Prostrate	Prostrate

TABLE 8

FLOWER CHARACTERISTICS			
Characteristic	'RELIANCE'	'PS-4634' (U.S. Plant Pat. No. 17,487)	'PS-5298' (U.S. Plant Pat. No. 19,583)
Petal color	RHS 155C White	RHS 155C White	RHS 155C White
Sepal color	RHS 137B Green group	RHS 137A Green group	RHS 137B Green group
Receptacle color	RHS 147C Yellow-green group	RHS 147C Yellow-green group	RHS 147C Yellow-green group
Corolla diameter (mm)	30.6	34.2	31.8
Calyx diameter (mm)	32.0	36.6	36.5
Petal length (mm)	12.3	12.8	12.0
Petal width (mm)	12.8	12.5	12.5
Petal length/width ratio	0.96	1.03	0.95
Petals/flower	5.9	6.0	6.4
Sepal length (mm)	12.1	13.2	13.1
Sepal width (mm)	4.8	5.2	4.5
Sepal length/width ratio	2.53	2.53	2.92
Sepals/flower	11.6	12.3	13.0
Size of calyx relative to corolla	Ranges from same size to larger	Larger	Larger
Size of inner calyx relative to outer calyx	Ranges from same size to smaller	Ranges from same size to larger	Ranges from same size to smaller
Relative position of petals	Overlapping	Overlapping	Overlapping

TABLE 9

PEST AND DISEASE REACTIONS			
Characteristic	'RELIANCE'	'PS-4634' (U.S. Plant Pat. No. 17,487)	'PS-5298' (U.S. Plant Pat. No. 19,583)
Two spotted spider mite	Moderately susceptible	Moderately susceptible	Moderately susceptible
Flower thrips	Moderately resistant	Moderately susceptible	Moderately susceptible
Powdery mildew	Moderately susceptible	Moderately resistant	Moderately susceptible
Botrytis fruit rot	Moderately susceptible	Moderately susceptible	Moderately susceptible
Angular leaf spot	Susceptible	Susceptible	Moderately susceptible

We claim:

1. A new and distinct strawberry plant named 'RELIANCE', as herein described and illustrated by the characteristics set forth above.

FIG. 1



FIG. 2

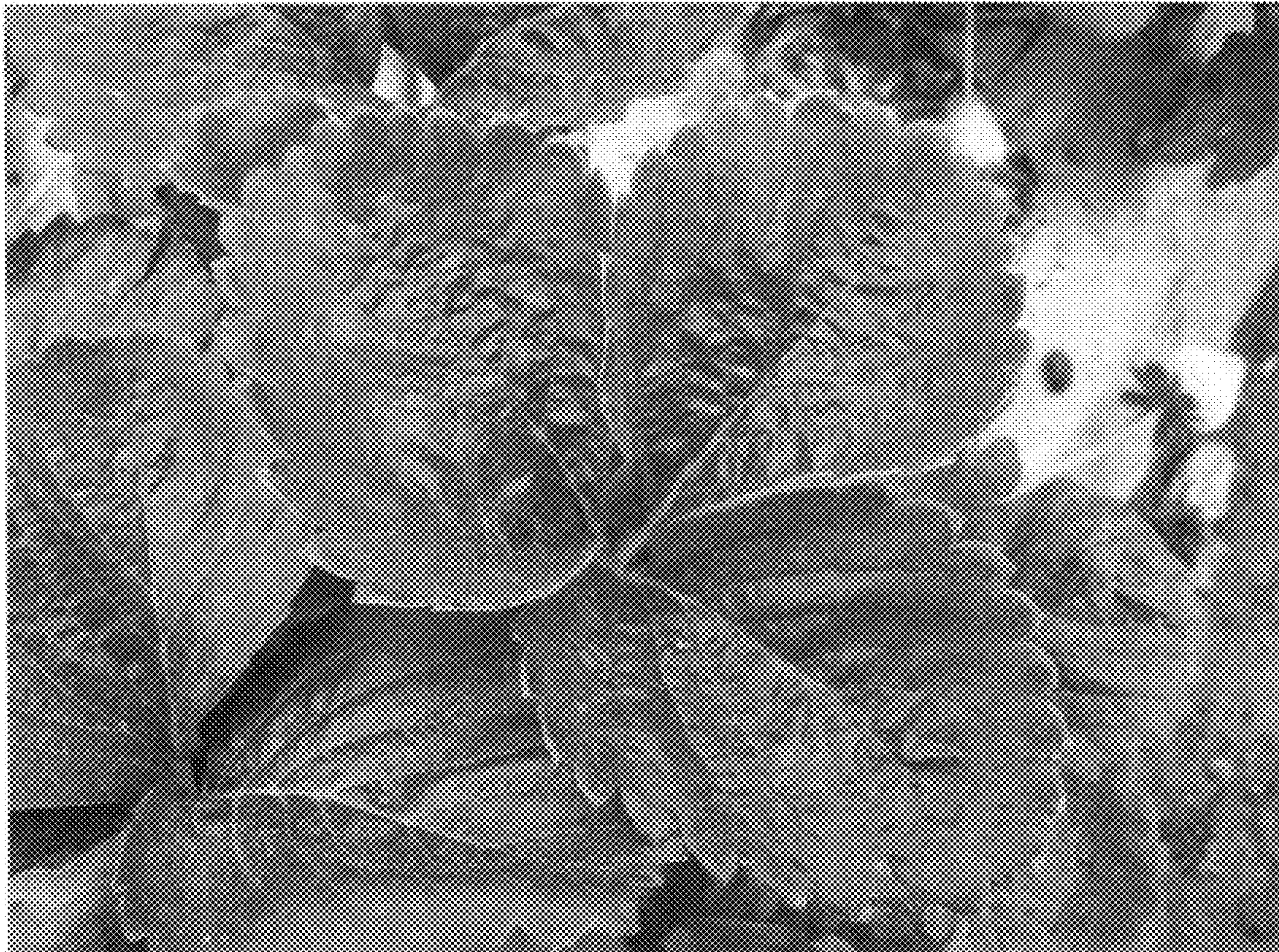


FIG. 3

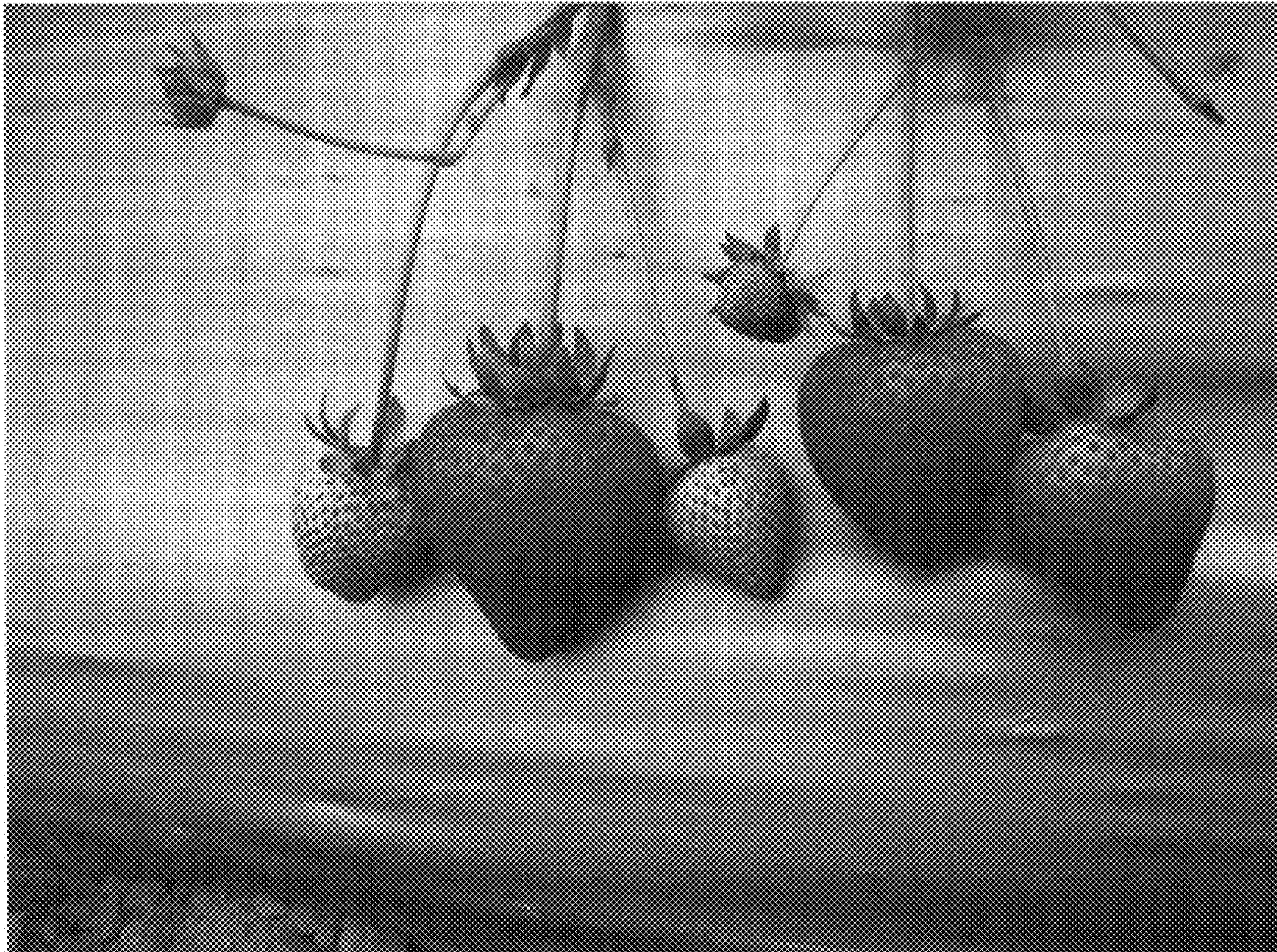


FIG. 4



FIG. 5

