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Adams

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(54) **RASPBERRY PLANT NAMED 'PARAGON'**

(50) Latin Name: ***Rubus idaeus***
Varietal Denomination: **PARAGON**

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(57) **ABSTRACT**

This invention relates to a new and distinct everbearing variety of raspberry plant named 'PARAGON'. The new variety is primarily adapted to the growing conditions of the central coast of California and is characterized by the following: early primocane production with medium sized fruit of light-red coloration and high gloss. Fruit is of consistent conic shape, medium adherence of receptacle and is of excellent flavor. Foliage is slightly concave, medium green; possessing very strong rugosity and equal 3-5 foli-ates. Primocanes have an absent or very weak waxy coat, medium thorn density and weak, anthocyanin coloration.

4 Drawing Sheets

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Latin name of the genus and species of the plant claimed:
Rubus idaeus.

Variety denomination: 'PARAGON'.

BACKGROUND OF THE INVENTION

The present invention relates to a new and distinct fall bearing raspberry variety designated as 'PARAGON'. This new variety is a result of a controlled cross made in 2008 in Watsonville, Calif. between raspberry variety 'GRAN-DEUR' (patented, U.S. Plant Pat. No. 20,459) as the female parent and raspberry variety 'PS-3890' (unpatented) as the male parent in an ongoing breeding program. The variety is botanically known as *Rubus idaeus*.

The seedling resulting from the aforementioned cross was asexually propagated by dormant canes in Santa Cruz County, Calif. and was subsequently selected by the inventor from a controlled breeding plot in Watsonville, Calif. in 2010. After its selection, the new variety was further asexually propagated by dormant canes, roots and non-dormant root shoot cuttings in Santa Cruz County, Calif., San Joaquin County, Calif. and Siskiyou County, Calif. The new variety was then extensively tested over the next several years in fruiting fields in Santa Cruz 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

'PARAGON' is primarily adapted to the climate and growing conditions of the central coast of California. This region provides the necessary year-round temperatures required for it to produce and maintain a strong vigorous

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plant and to remain in fruit production from July through December on primocanes and in the ensuing year from May through July on the floricanes. The following traits have been repeatedly observed and are determined to be unique characteristics of 'PARAGON', which in combination distinguish this raspberry plant as a new and distinct variety:

1. Early primocane fruiting
2. Very strong rugosity
3. Light red fruit color
4. High fruit gloss
5. Excellent flavor

The raspberry variety that is believed to be most closely related to the new raspberry variety 'PARAGON' is the raspberry variety 'GRANDEUR' (patented, U.S. Plant Pat. No. 20,459). In comparison to the similar raspberry variety 'GRANDEUR', 'PARAGON' differs by the following combination of characteristics described in Table 1:

TABLE 1

| Characteristic | 'PARAGON' | 'GRANDEUR' (U.S. Plant Pat. No. 20,459) |
|-----------------------------------|----------------------------------|--|
| Primocane waxy coat (glucosidity) | Absent to very weak | Absent to very weak |
| Predominate number of leaflets | Equal 3-5 | Always 3 |
| Leaf shape (cross section) | Slightly concave | Flat to slightly convex |
| Rugosity | Very strong | Strong |
| Culm mature fruit | RHS 34A Light red | RHS 42A Medium red |
| Primocane fruit weight (g) | 4.2 | 3.9 |
| Floricanes color | RHS N167A Greyed-orange group | RHS 164A Greyed-orange group |

'PARAGON' differs from its parents, 'GRANDEUR' and 'PS-3890' by the following combination of characteristics described in Table 2:

TABLE 2

| Characteristic | 'PARAGON' | 'GRANDEUR' (U.S. Plant Pat. No. 20,459) | 'PS-3890' |
|----------------------------|-----------|---|-----------|
| Productivity | High | High | Medium |
| Glossiness (fruit) | High | Medium | High |
| Adherence of receptacle | Medium | Weak | Strong |
| Primocane time of fruiting | Early | Medium | Late |
| Fruit size | Medium | Medium | Large |
| Flavor | Excellent | Good | Very good |

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

BRIEF DESCRIPTIONS OF THE DRAWINGS

The accompanying color photographs illustrate the overall appearance of typical specimens of the new raspberry variety, 'PARAGON' at various stages of development as true as reasonably possible with color reproductions of this type. Color in the photographs may differ slightly from the color value cited in the detailed botanical description which accurately describes the color of 'PARAGON'. The depicted plant and plant parts of the new raspberry variety 'PARAGON' were taken in Watsonville, California and are approximately 2 to 16 months old:

FIG. 1 shows typical primocane foliage and fruit color; foliate and rugosity characteristics of 'PARAGON' taken in the month of July 2014;

FIG. 2 shows typical coloration of apical growing tip during early primocane rapid growth of 'PARAGON' taken in the month of May 2013;

FIG. 3 shows typical harvested fruit of 'PARAGON' taken in the month of July 2014;

FIG. 4 shows typical dormant cane color characteristics of 'PARAGON' taken in the month of January 2013.

DETAILED BOTANICAL DESCRIPTION

'PARAGON' has not been observed under all possible environmental conditions. The characteristics of the new variety 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 raspberry variety 'PARAGON', unless otherwise noted, are based upon observations taken during the 2013-2014 growing season in Watsonville, Calif. Primocane measurements and ratings were taken from plants of 'PARAGON' dug from a nursery located in Siskiyou County, Calif. during the middle of October 2012 and planted approximately 3 to 4 weeks later in Watsonville, Calif. The approximate age of the observed primocane plants is 7 to 8 months. Floricane measurements and ratings were taken from the same planting of 'PARAGON' at an approximate age of 16 to 18 months. Yield observations and fruit quality characteristics are averaged from five years of data collected from the 2009 through 2013 production seasons. Flower measurements and characteristics are from secondary flowers unless otherwise noted. Fruit character-

istics and measurements are from secondary fruit unless otherwise noted. Foliage characteristics and measurements are from 3-foliate foliage unless otherwise noted.

Color terminology where noted follows The R.H.S. Colour Chart Fifth Edition, Royal Horticultural Society, London, United Kingdom (1966).

The following tables 3-7 describe fruit, plant, foliage, flower and pest/disease characteristics of the new raspberry 'PARAGON' in comparison to the similar raspberry varieties 'GRANDEUR' (patented, U.S. Plant Pat. No. 20,459).

TABLE 3

| FRUIT CHARACTERISTICS | | |
|----------------------------------|--------------------------------|--|
| Characteristic | 'PARAGON' | 'GRANDEUR' (U.S. Plant Pat. No. 20,459) |
| Color mature fruit | RHS 34A Light red | RHS 42A Medium red |
| Color achenes | RHS 159A Orange-white group | RHS 159A Orange-white group |
| Fruit length (mm) | 23.12 | 22.91 |
| Fruit width (mm) | 21.65 | 20.12 |
| Length/Width ratio | 1.07 | 1.14 |
| | Longer than broad | Longer than broad |
| Seed weight (mg) | 1.51 | 1.75 |
| Druplets per berry | 116 | 93 |
| Weight of single drupe (g/drupe) | 0.038 | 0.043 |
| Relative size of drupes | Small | Medium |
| Fruit size | Medium | Medium |
| Predominant shape | Conical | Conical |
| Evenness of color | Even | Even |
| Glossiness | High | Medium |
| Adherence of receptacle | Medium | Weak |
| Firmness of flesh | Very firm | Very firm |
| Firmness of skin | Very firm | Very firm |
| Soluble Solids (% brix) | 11.3 | 10.5 |
| Flavor | Excellent | Good |

TABLE 4

| PLANT CHARACTERISTICS | | |
|--------------------------------------|--------------------------------|---|
| Characteristic | 'PARAGON' | 'GRANDEUR' (U.S. Plant Pat. No. 20,459) |
| General: | | |
| Habit | Upright | Upright |
| Size | Medium | Medium |
| Productivity | High | High |
| Self-fruitfulness | Yes | Yes |
| Type of bearing | Everbearing | Everbearing |
| Primocane: | | |
| Color (true) | RHS 145A Yellow-green group | RHS 145B Yellow-green group |
| Length (cm) | 159.2 | 143.6 |
| Basal diameter (mm) | 12.51 | 21.80 |
| Diameter central 1/3 (mm) | 9.66 | 12.55 |
| Lateral length at central 1/3 (cm) | 33.6 | 43.6 |
| No. fruiting laterals per cane | 15.6 | 17.4 |
| Internode length at central 1/3 (mm) | 42.77 | 48.84 |
| Anthocyanin coloration | RHS 59B Red-purple group | RHS 59B Red-purple group |
| Anthocyanin intensity | Weak | Weak |
| Pubescence | Absent | Absent |
| Length of vegetative bud (mm) | 10.65 | 11.01 |
| Strength of waxy coat (glaucoity) | Absent to very weak | Absent to very weak |

TABLE 4-continued

| PLANT CHARACTERISTICS | | |
|---|----------------------------|---|
| Characteristic | 'PARAGON' | 'GRANDEUR' (U.S. Plant Pat. No. 20,459) |
| Time of flowering | Early | Medium |
| Time of fruiting | Early | Medium |
| Length of fruiting season | Long | Long |
| % of total yield | 45% | 50% |
| Flowering period | Late June to Late November | Late June to Late November |
| Harvest period | Late July to Late December | Late July to Late December |
| Primocane fruit weight (g) | 4.2 | 3.9 |
| Primocane yield (g/plant) | 2,405 | 2,662 |
| Young Shoots: | | |
| Number (per meter) | 15-20 | 15-20 |
| Anthocyanin presence | Medium | Medium |
| Anthocyanin coloration | Present | Present |
| | RHS 179B | RHS 179A |
| Anthocyanin intensity | Red-purple group | Greyed-red group |
| Thorns: | Weak | Medium |
| Thorn coloration | RHS 179A | RHS 180C |
| | Greyed-red group | Greyed-red group |
| Thorn length at central $\frac{1}{3}$ (mm) | 0.75 | 0.76 |
| Thorn base at central $\frac{1}{3}$ (mm) | 0.97 | 1.53 |
| Thorn presence | Present | Present |
| Thorn density per cm at central $\frac{1}{3}$ | 4.41 | 3.38 |
| Thorn texture | Medium | Medium |
| Attitude of the tip | Rigid | Rigid |
| Floricanes: | Horizontal | Horizontal |
| Color (true) | RHS N167A | RHS 164A |
| | Greyed-orange group | Greyed-orange group |
| Length (cm) | 119.4 | 119.8 |
| Fruiting lateral attitude | Erect | Erect |
| Time bud burst | Medium | Medium |
| Time of flowering | Medium | Medium |
| Time of fruiting | Medium | Medium |
| Length of fruiting season | Medium to long | Medium to long |
| % of total yield | 55% | 50% |
| Flowering period | Late April to Late June | Late April to Late June |
| Harvest period | Late May to Late July | Late May to Late July |
| Floricanes fruit weight (g) | 4.0 | 3.7 |
| Floricanes yield (g/plant) | 2,926 | 2,680 |

TABLE 5

| FOLIAGE CHARACTERISTICS | | |
|---------------------------------|--------------------------|---|
| Characteristic | 'PARAGON' (3 Foliate) | 'GRANDEUR' (U.S. Plant Pat. No. 20,459) |
| General: | | |
| Color of upper surface | RHS N137A | RHS N137A |
| | Green group | Green group |
| Color of lower surface | RHS 190B | RHS 190B |
| | Greyed-green group | Greyed-green group |
| Shape in cross section | Slightly concave | Flat to slightly convex |
| Arrangement | Compound | Compound |
| Relief between veins (rugosity) | Very Strong | Strong |

TABLE 5-continued

| FOLIAGE CHARACTERISTICS | | |
|-------------------------|--|---|
| Characteristic | 'PARAGON' (3 Foliate) | 'GRANDEUR' (U.S. Plant Pat. No. 20,459) |
| 5 | | |
| 10 | Glossiness | Weak |
| | Number of leaflets/leaf | Equal 3-5 |
| | Terminal Leaflet: | |
| 15 | Length (mm) | 133.7 |
| | Width (mm) | 89.7 |
| | Length/Width Ratio | 1.5 |
| | | Longer than broad |
| 20 | Size | Medium |
| | Shape | Cordate |
| | Shape of base | Cordate |
| | Shape of tip | Acuminate |
| | Margins | Biserrate |
| | Lateral Leaflet: | |
| 25 | Length (mm) | 114.6 |
| | Width (mm) | 62.7 |
| | Length/Width Ratio | 1.8 |
| | | Longer than broad |
| 30 | Rachis length (mm) | 105.5 |
| | Orientation | Medium to large |
| | Arrangement | Opposite |
| | Shape | Compound |
| | Overlapping | Ovate |
| | Shape of the base | Oblique |
| | Shape of the tip | Touching |
| | Margins | Acuminate |
| | Petiole: | Biserrate |
| 35 | Length (mm) | 36.2 |
| | Width (mm) | 3.99 |
| | Thorn presence | Yes |
| | Thorn orientation | Erect |
| | Anthocyanin coloration of RHS 184C | RHS 184C |
| | upper surface | Greyed-purple group |
| 40 | Anthocyanin intensity of upper surface | Absent to very weak |
| | Stipule length (mm) | Oblique rounded |
| | Stipule orientation | Weak |
| 45 | Length (mm) | 59.00 |
| | Width (mm) | 2.93 |
| | Thorn presence | Yes |
| | Thorn orientation | Erect |
| | Anthocyanin coloration of RHS 184C | RHS 184C |
| | upper surface | Greyed-purple group |
| | Anthocyanin intensity of upper surface | Weak |
| | Stipule length (mm) | 10.23 |
| | Stipule orientation | Erect to horizontal |
| TABLE 6 | | |
| FLOWER CHARACTERISTICS | | |
| Characteristic | 'PARAGON' | 'GRANDEUR' (U.S. Plant Pat. No. 20,459) |
| 50 | | |
| 55 | Petal color | 155C |
| | | White group |
| | Flower diameter (mm) | 17.34 |
| | Petal Length (mm) | 6.53 |
| | Petal width (mm) | 2.71 |
| | Petal length/width ratio | 2.41 |
| | | Much longer than broad |
| | No. petals/flower | 5.4 |
| | No. sepals/flower | 5.4 |
| 60 | Relative number of pedicel thorns | 9.2 |
| | Peduncle anthocyanin presence | Few |
| | Peduncle anthocyanin coloration | Present |
| | Peduncle anthocyanin intensity | RHS 184B |
| | | RHS 184A |

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TABLE 7

| PEST AND DISEASE REACTIONS | | |
|--|---------------------------|---|
| Characteristic | 'PARAGON' | 'GRANDEUR' (U.S. Plant Pat. No. 20,459) |
| Spotted wing <i>drosophila</i> (<i>Drosophila suzukii</i>) | Susceptible | Susceptible |
| Two spotted spider mite (<i>Tetranychus urticae</i>) | Susceptible | Susceptible |
| Grey fruit mold (<i>Botrytis cinerea</i>) | Susceptible | Susceptible |
| Powdery mildew (<i>Podosphaera aphanis</i> var. <i>aphanis</i>) | Moderately susceptible | Moderately susceptible |

TABLE 7-continued

| PEST AND DISEASE REACTIONS | | |
|--|-------------------------|---|
| Characteristic | 'PARAGON' | 'GRANDEUR' (U.S. Plant Pat. No. 20,459) |
| Yellow rust (<i>Phragmidium rubi-idaei</i>) | Moderately resistant | Moderately susceptible |

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15 I claim:
1. A new and distinct variety of raspberry plant named
'PARAGON', as herein described and illustrated by the
characteristics set forth above.

* * * * *

FIG. 1



FIG. 2

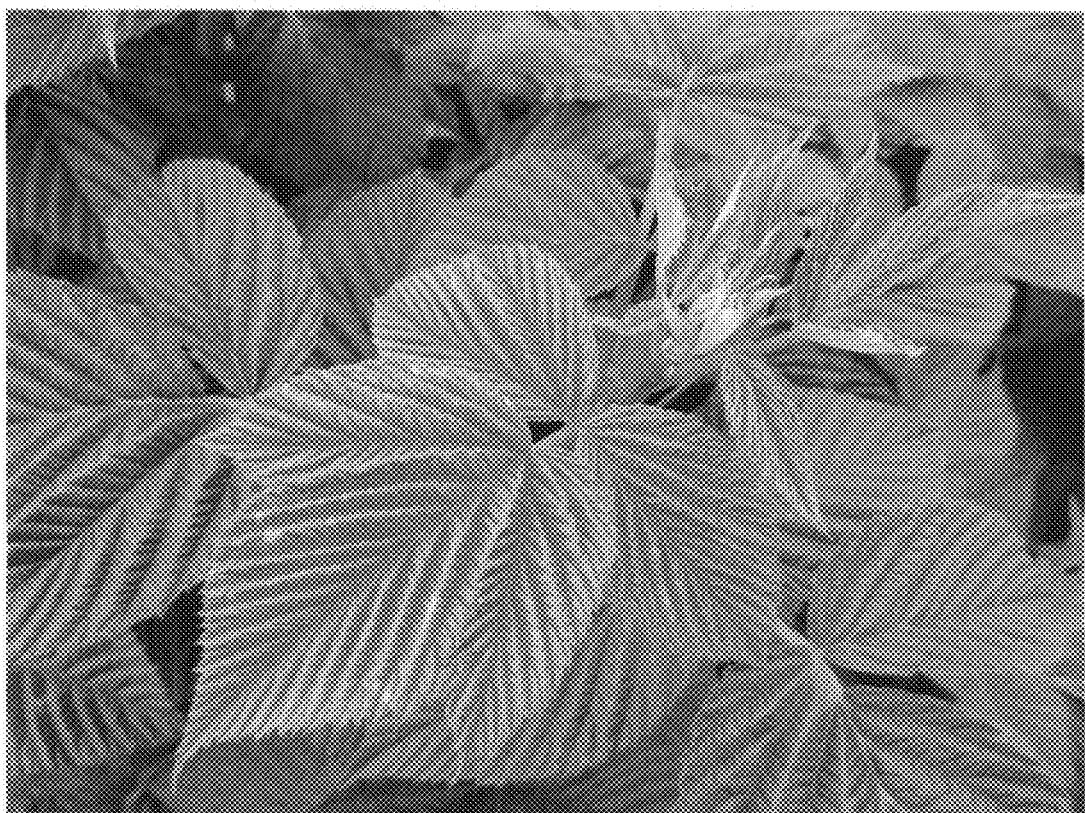


FIG. 3



FIG. 4

