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

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(54) **RASPBERRY PLANT NAMED 'DRISCOLL CARMELINA'**

(50) Latin Name: ***Rubus idaeus***
Varietal Denomination: **Driscoll Carmelina**

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(58) **Field of Search** Plt./204

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(57) **ABSTRACT**

The present invention relates to a new and distinct cultivar of raspberry plant named Driscoll Carmelina. The new cultivar is distinguished from other raspberry cultivars by its late primocane production, high spring yields, good flavor and disease resistance. The new cultivar is distinguished from its seed parent by having better release from the receptacle, firmer fruit and better spring bud break. The new cultivar is distinguished from its pollen parent by producing firmer fruit with better shipping characteristics.

3 Drawing Sheets

Latin name of the genus and species of the plant claimed: The variety is botanically identified as *Rubus idaeus* L.

1. BACKGROUND OF THE INVENTION

The new cultivar of raspberry plant was developed from the hybridization of the selection 'P362.1' (an unpatented variety) as the seed parent with the selection 'N119.1' (an unpatented variety) as the pollen parent. The parents were crossed in 1995, whereafter fruit and seed were collected to produce seedlings for field planting in Watsonville, Calif. in 1995. The new cultivar was selected from these seedlings in 1997 for its large size, good flavor, and productivity. The new cultivar has been asexually propagated by in vitro shoot tip culture, root sucker division and root cuttings at the Cassin Ranch in Santa Cruz county, Calif. and has been shown to maintain the desired and distinguishing characteristics after propagation over several generations.

Latin name of the genus and species of the plant claimed: The variety is botanically identified as *Rubus idaeus* L.

2. SUMMARY OF THE INVENTION

The present invention provides a new and distinct cultivar of red raspberry plant named 'Driscoll Carmelina'. The cultivar is botanically identified as *Rubus idaeus* L. The 'Driscoll Carmelina' red raspberry plant produces a primocane crop which begins in late July and continues until early November. The floricane crop begins in late May and continues until mid-July. Floricane yields are high relative to other comparable varieties. The fruit of 'Driscoll Carmelina' has consistently good flavor and the fruit separates easily from its receptacle.

3. BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying photographs show typical specimens of the primocane fruit, leaves and shoot of the new cultivar, in color as nearly true as it is reasonably possible to make in color illustrations of these characteristics.

FIG. **1** is a photograph of a 'Driscoll Carmelina' primocane flowers and fruit in various stages of development.

FIG. **2** is a photograph of a 'Driscoll Carmelina' primocane leaves showing upper and lower surfaces.

FIG. **3** is a photograph of a 'Driscoll Carmelina' primocane shoot.

4. DETAILED BOTANICAL DESCRIPTION

The following detailed description of the new raspberry cultivar, 'Driscoll Carmelina', is based upon observations taken of 7 to 17 month old plants and fruit grown in Watsonville, Calif. between 2001 and 2002, and is believed to apply to plants of the 'Driscoll Carmelina' cultivar grown in similar conditions of soil and climate elsewhere.

Throughout this specification, color names beginning with a small letter signify that the name of the color, as used in common speech, is aptly descriptive. Color data followed by an alphnumeric code indicates the most similar color designations as provided by The Royal Horticultural Society (R.H.S.) Colour Chart published by The Royal Horticultural Society of London, England. 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.

Table 1 provides information on the plant and fruit characteristics of the new cultivar 'Driscoll Carmelina' compared with characteristics of the unpatented raspberry cultivar 'Heritage'. Observations of the cultivars were taken under similar conditions.

The new variety is particularly characterized and distinguished from other cultivars by its late primocane production, high spring yields, good flavor and disease resistance.

The fruit color of 'Driscoll Carmelina' is a deep red at harvest. Fruit of 'Driscoll Carmelina' separates easily from the receptacle and is of good firmness at harvest. The fruit

of 'Driscoll Carmelina' is very consistent in size and shape throughout the harvest period. There were an average of 17 young shoots in the observed plants of 'Driscoll Carmelina' and the shoots emerged around February 22nd. The pigmentation color of both surfaces of the petals is 155D and there are five petals per flower. The color of the seeds of 'Driscoll Carmelina' is 161A, the average seed weight is about 1.4 mg, and there are an average of about 91 seeds per fruit.

The floricane yields of 'Driscoll Carmelina' are high relative to the variety 'Heritage'.

'Driscoll Carmelina' is distinguishable from its pollen parent, selection 'N119.1', by producing firmer fruit with better shipping characteristics. The new cultivar is distinguished from its seed parent, selection 'P362.1', by having better release from the receptacle, firmer fruit and better spring bud break.

4.1. DISEASE AND STRESS RESISTANCE

The cultivar has good tolerance to late leaf rust. Resistance to root rots is intermediate to other varieties. Cold tolerance of the new cultivar has not been established. Post harvest fruit rot resistance is good in comparison over many selections and varieties.

TABLE 1

PLANT CHARACTERISTICS OF 'DRISCOLL CARMELINA'

	Driscoll Carmelina	Heritage
General		
Plant size		Large
Growth habit	Semi-erect	Erect
Productivity	High	Medium
Self-fruitfulness	Self-fruitful	Self-fruitful
Time of bud burst	Medium	Late
Primocane fruiting		
Percent of cane length flowering as primocane	10–30	20–40
Percent of total yield	37	53
Primocanes		
Number of young shoots	Medium	Medium
Young shoot pigmentation	Weak	Medium
Length (cm)	249	196
Time of shoot emergence	Early	Very late
Glaucosity (waxy bloom)	Strong	Weak
Strength	Medium	Medium
Cane Cross section from mid cane of primocane)	Rounded to angular	Rounded
Dormant cane color	brown to purple brown	brown to purple brown
Prickles		
Pigmentation	green	green-brownish to green
Density on young shoots	Sparse	Dense
Attitude of tip	Downward	Downward
Size: Length (base to tip at 1 m height at end of harvest) (mm)	1.2	2.3
Texture	smooth	Rigid
Presence and distribution on petioles	Present irregularly	Present irregularly distribtuted
Pubescence on canes	Absent	Absent
Internodal distance (cm) (at central ⅓ of cane)	5.0	5.3

TABLE 1-continued

PLANT CHARACTERISTICS OF 'DRISCOLL CARMELINA'

	Driscoll Carmelina	Heritage
LEAVES		
Color		
Face	147A	147A
Relief between veins	Weak	Very weak
Glossiness	Medium	Medium
Underside	148C	148B
Petiole length (cm)	6.1	7.7
Stipule orientation	Erect	Erect
Arrangement	Compound	Compound
Number of leaflets	Sometimes 3, sometimes 5	Sometimes 3, sometimes 5
Overlapping of lateral leaflets	Free to touching	Free to touching
Lateral leaflet: length of stalket (lower pair)	Very short	Very short
Terminal leaflet		
Length (cm)	12.4	14.6
Width (cm)	8	7.8
Shape	Ovate	Ovate
Tip	Acuminate	Acuminate
Base	Cordate	Acute to rounded
Margin	Doubly serrate	Doubly serrate
Lateral leaflets (basal pair)		
Length (cm)	10	14.7
Width (cm)	5.6	8.6
Overlap	Yes	Free
Orientation	Opposite	Opposite
Shape	Ovate	Ovate
Tip	Acuminate	Acuminate
Base	Round	Oblique
Margin	Doubly serrate	Doubly serrate
Rachis length between terminal leaflet and adjacent lateral leaflets (cm)	3.5	1.5
FLOWERS		
Flowering period		
Primocane	19 weeks, Late May–late September	19 weeks, Late May–late September
Floricane	10 weeks, Early April–late June	10 weeks, Late March–mid June
Flower diameter (cm)	1.5	1.8
Petal		
Length (cm)	0.7	0.8
Width (cm)	0.4	0.3
Pedicel coloration		Present, strong intensity
FRUIT		
Harvest season		
Primocane	Mid July–early Nov	Early July–early November
Floricane	Late May–late July	Late May–late July
Fruting lateral		
Length (4th lateral from tip) (cm)	82.0	49.8
Number of fruit per lateral	22.1	20.3
Color		
Immature	47A	42C
Maturing	185A	46A
Mature fruit	46A	59A
Glossiness	Weak	Medium
Shape	Elliptic	Ovate

TABLE 1-continued

PLANT CHARACTERISTICS OF 'DRISCOLL CARMELINA'

	Driscoll Carmelina	Heritage
Dimensions		
Size	Medium	Small
Length (mm)	22.3	17
Width (mm)	20	18
Length:width	1.05	0.94
Weight (g/fruit)		
Primocane	4.1	3.1
Floricane	3.8	2.3
Soluble solids (%)	10.4	10.8
Titratable acidity (% as citric acid)	1.57	1.58
Seed Weight (mg)	2.6	1.5
Number druplets/fruit	91	72
Adherence to plug	Medium	Medium
Firmness	Medium	Firm
Yield	High	Medium

4.2. NUCLEIC ACID FINGERPRINTING

Distinctive patterns of polymorphism can be detected using a variety of nucleic acid analysis methods. In one non-limiting example, molecular genetic maps can be produced using random amplified polymorphic DNA (RAPD) (Williams et al., 1990, "DNA polymorphisms amplified by arbitrary primers are useful as genetic markers", Nucleic Acids Res. 18(22):6531-5). Using a variety of oligonucleotide primers, alone or in combination, RAPD analysis of Driscoll Carmelina and Heritage yielded DNA fragment patterns that uniquely distinguish each of thses genetically distinct genotypes.

We claim:

1. A new and distinctive cultivar of raspberry plant, substantially as shown and described.

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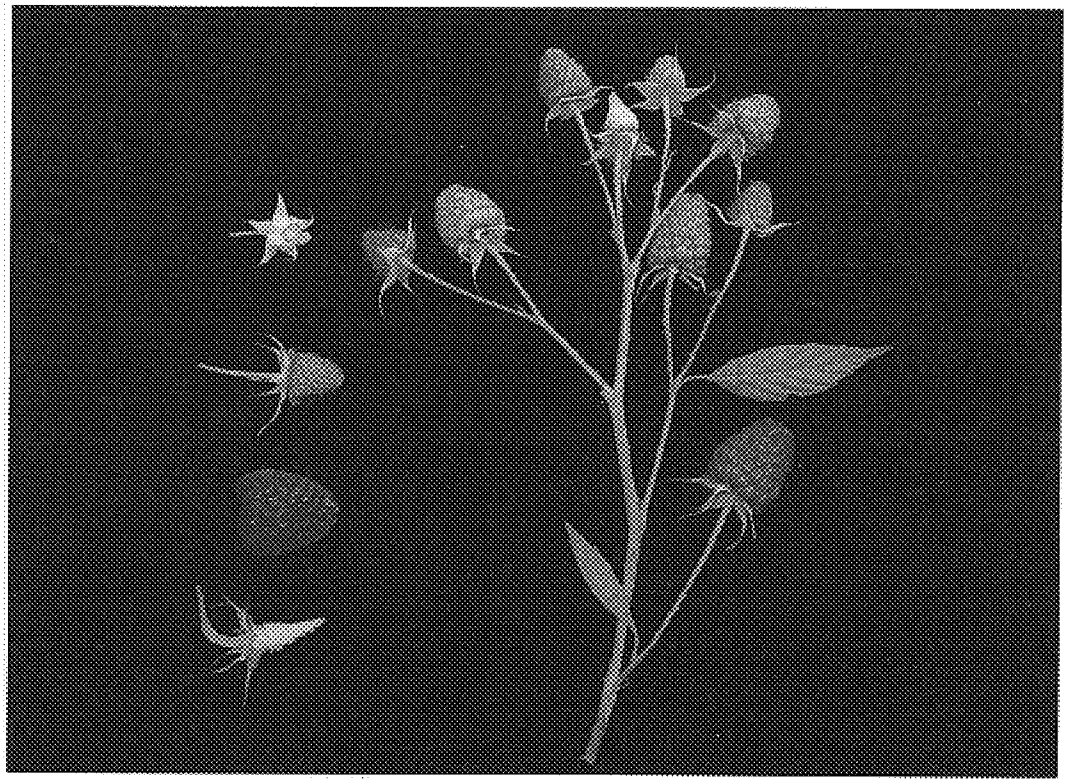

FIG. 1

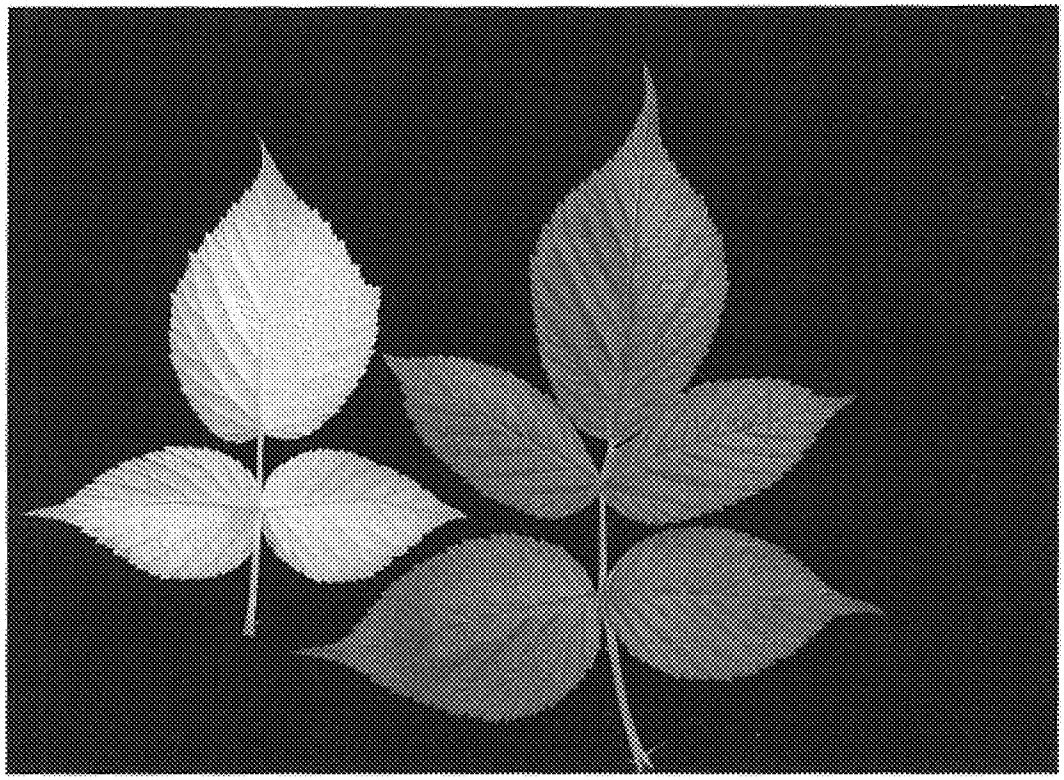

FIG. 2

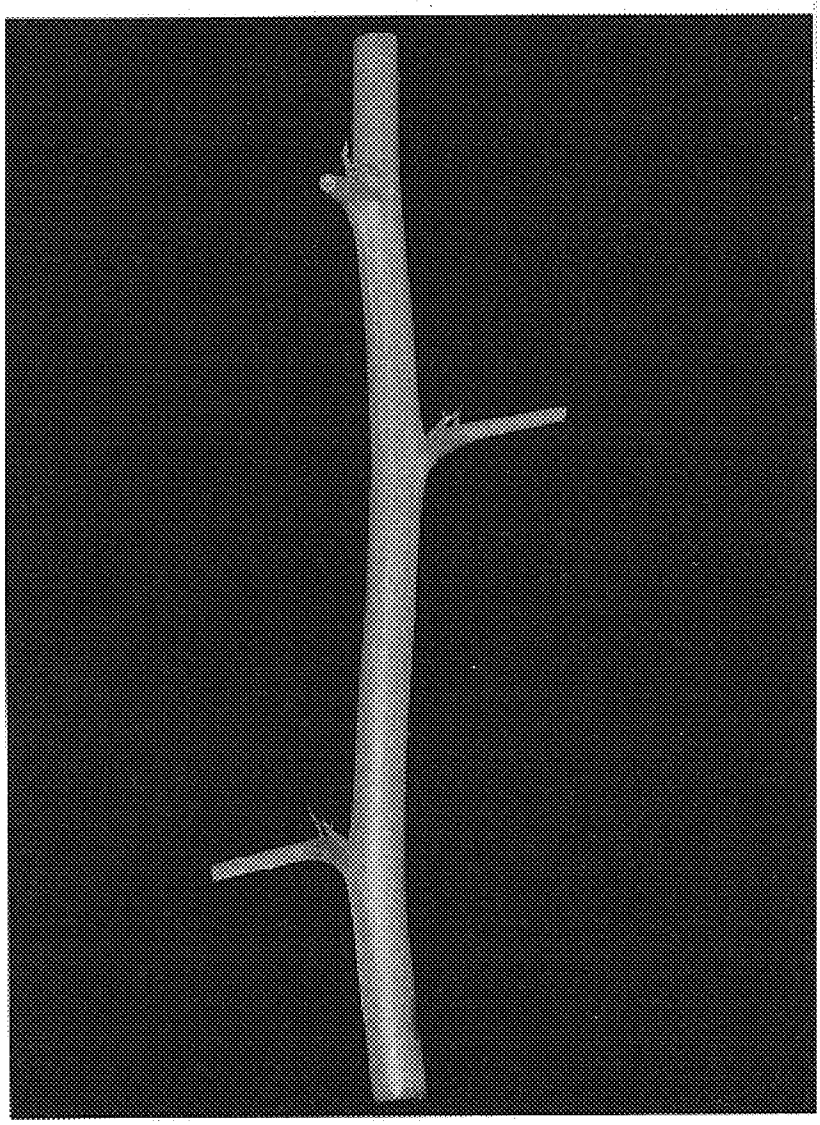

FIG. 3