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

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(54) **HOP PLANT NAMED ‘HBC 291’**
(50) Latin Name: *Humulus lupulus*
Varietal Denomination: **HBC 291**
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patent is extended or adjusted under 35
U.S.C. 154(b) by 185 days.
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A01H 5/12 (2006.01)
(52) **U.S. Cl.**
USPC **Plt./236**
CPC *A01H 5/12* (2013.01)
(58) **Field of Classification Search**
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See application file for complete search history.

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(57) **ABSTRACT**
A new hop plant named ‘HBC 291’ is disclosed. The cones of
‘HBC 291’ mature in mid September, and yield a crop of 2000
to 2400 pounds per acre. ‘HBC 291’ is used for its unique
aromatic and flavor qualities, high alpha acid content and
exceptional yield.

2 Drawing Sheets

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Genus and species: *Humulus lupulus*.
Variety denomination: ‘HBC 291’.

**STATEMENT REGARDING FEDERALLY
SPONSORED RESEARCH OR DEVELOPMENT**

None

BACKGROUND OF THE INVENTION

‘HBC 291’ is a product of a controlled breeding program
carried out by the inventors in the Yakima Valley of Washing-
ton state. ‘HBC 291’ was one of several seedlings resulting
from a cross made in 2002 of female parent ‘Glacier’ (not
patented) and male parent ‘HBC 9902(2)’ (not patented). A
single plant of ‘HBC 291’ was selected in 2003, and in 2004
was expanded by softwood cutting propagation in Yakima,
Wash. to 70 plants, which were then planted in the area of
Toppenish, Wash. The plants were observed and evaluated for
several years, and in 2009 were expanded by softwood cut-
tings for further observation and evaluation in the Toppenish,
Wash. area. A one acre test plot of ‘HBC 291’ was established
in 2009. Throughout several generations of asexual propaga-
tion by softwood cuttings, ‘HBC 291’ has been observed to
retain its distinctive characteristics and remain true to type.
‘HBC 291’ is distinguished from other known hop cultivars
by its low cohumulone and its large number of small, tight
cones. ‘HBC 291’ has a distinctive citrus/floral aromatic
property.
‘HBC 291’ is distinguishable from its parent plants (‘Gla-
cier’ and ‘HBC 9902(2)’). ‘HBC 291’ is distinguishable from
its male parent ‘HBC 9902(2)’ with flowers that develop into
mature hop cones without producing pollen, while flowers of
‘HBC 9902(2)’ produce pollen without developing into
mature hop cones.

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TABLE 1. sets forth some of the distinguishing characteristics of
‘HBC 291’ as compared to its female parent ‘Glacier’ and ‘HBC 394’
(U.S. Plant Patent 21,289):

	‘HBC 291’	‘Glacier’	‘HBC 394’
Alpha Acids %	10.0% to 12.0%	3.3% to 9.7%	11% to 13%
Beta Acids %	4.5% to 5.5%	5.4% to 9.7%	3.5% to 4.5%
Cohumulone %	21.0% to 23.0%	11% to 13%	22% to 24%
Total oils	1.5 to 2.5 mL/ 100 g cones	0.7 to 1.6 mL/ 100 g cones	2.2 to 2.8 mL/ 100 g cones

BRIEF DESCRIPTION OF THE PHOTOGRAPH

FIG. 1 illustrates a mature ‘HBC 291’ hop plant grown on
a trellis;
FIG. 2. illustrates a hop cone of the ‘HBC 291’ hop plant;
and
FIG. 3. illustrates a leaf of the ‘HBC 291’ hop plant.
The colors of these illustrations may vary with lighting
conditions and, therefore, color characteristics of this new
variety should be determined with reference to the observa-
tions described herein, rather than from these illustrations
alone.

DETAILED BOTANICAL DESCRIPTION

The following description is based on observations made
during the 2011 growing season at Toppenish, Wash. It should
be understood that the characteristics described will vary
somewhat depending upon cultural practices and climatic
conditions, and can vary with location and season. Quantified
measurements are expressed as an average of measurements
taken from a number of individual plants of the new variety.
The measurements of any individual plant or any group of
plants, of the new variety may vary from the stated average.

Color code designations are by reference to The R.H.S. Colour Chart, 4th ed., Copyright 2001, provided by The Royal Horticultural Society of Great Britain.

Species: *Humulus lupulus*.

Ploidy: Diploid.

Use: Brewing.

Disease susceptibility: 'HBC 291' is not resistant to hop downy mildew. 'HBC 291' is resistant to powdery mildew.

Pest susceptibility: 'HBC 291' is not resistant to normal infestations of hop aphid and normal infestations of two-spotted spider mite.

Harvest date: September 10-16 (2006-2009, and 2011 growing seasons, Toppenish, Wash.).

Crop yield: 2000 to 2400 pounds per acre.

Plant shape: Columnar when grown on a typical 18 foot hop trellis.

Bine:

Color.—Yellow green 145A.

Stipule direction.—Reflexed.

Stipule color.—Yellow green 144B.

Stripe.—Absent.

Bine diameter.—10.0 mm at base; 9.0 mm at 9 feet; 8.0 mm at 18 feet.

Bine length.—18 to 22 feet average length when grown under normal commercial conditions on a standard hop trellis.

Length between internodes.—205 to 215 mm average.

Lateral length.—50 cm to 140 cm, with an average of 80 cm.

Lateral diameter.—4 mm at the base; 0.5 mm at the terminal end.

Lateral color.—Yellow green 148C.

Leaf:

Arrangement.—Opposite.

Shape.—Cordate; Palmate lobes.

Leaf base shape.—Cordate.

Average length of mature leaf.—24.0 cm.

Average width of mature leaf.—19.0 cm.

Color of mature leaf upper surface.—Yellow green 135A.

Color of mature leaf lower surface.—Green 135A.

Color of immature leaf upper surface.—Green 136A.

Color of immature leaf lower surface.—Green 136B.

Number of lobes.—5.

Margin.—Lobed Serrate.

Serrations per inch.—4.

Average petiole length (mature).—9.0 cm.

Petiole diameter.—3.0 mm at base to 2.0 mm at terminal end.

Petiole color at base.—Yellow green 145A.

Petiole color at terminal end.—Yellow green 146D.

Petiole stripe.—Present but diffuse for entire length, Red purple 59A.

Venation.—Palmate.

Vein color.—Yellow green 144C.

Cone:

Average weight.—1030 mg.

Average length.—3.5 cm.

Average diameter.—2.0 cm.

Bract tip color.—Yellow green 143D.

Bract base color.—Yellow green 143C.

Bracteole color.—Yellow green 149D.

Cone shape.—Oblong.

Bract shape.—Ovate.

Bract average length.—11 mm.

Bract average width.—9 mm.

Bract tip shape.—Cuspidate.

Bract tip position.—Appressed.

Bracteole shape.—Acute.

Bracteole average length.—12 mm.

Bracteole average width.—7 mm.

Lupulin gland color.—Yellow green 154B.

Lupulin gland shape.—Pedunculated oblong polyps.

Lupulin gland number.—Medium number per cone.

Pickability.—Good.

Cone storage.—30% loss of soft resins after 6 month storage at room temperature.

30 Analytical characteristics:

Alpha acid.—10.0% to 12.0%.

Beta acid.—4.5% to 5.5%.

Cohumulone.—21.0% to 23.0%.

Myrcene.—37.0% to 39.0%.

Humulene.—23.0% to 25.0%.

Caryophyllene.—7.0% to 9.0%.

Farnesene.—0.6% to 0.8%.

Linalool.—1.0% to 1.5%.

Geraniol.—0.8% to 1.1%.

Humulene/caryophyllene ratio.—2.8% to 3.2%.

Total oil.—1.5 to 2.5 mL per 100 g hops.

Storageability.—70% to 72% alpha acids remaining after 6 months storage at room temperature.

What is claimed is:

45 1. A new and distinct hop plant as shown and described herein.

* * * * *



FIG. 1

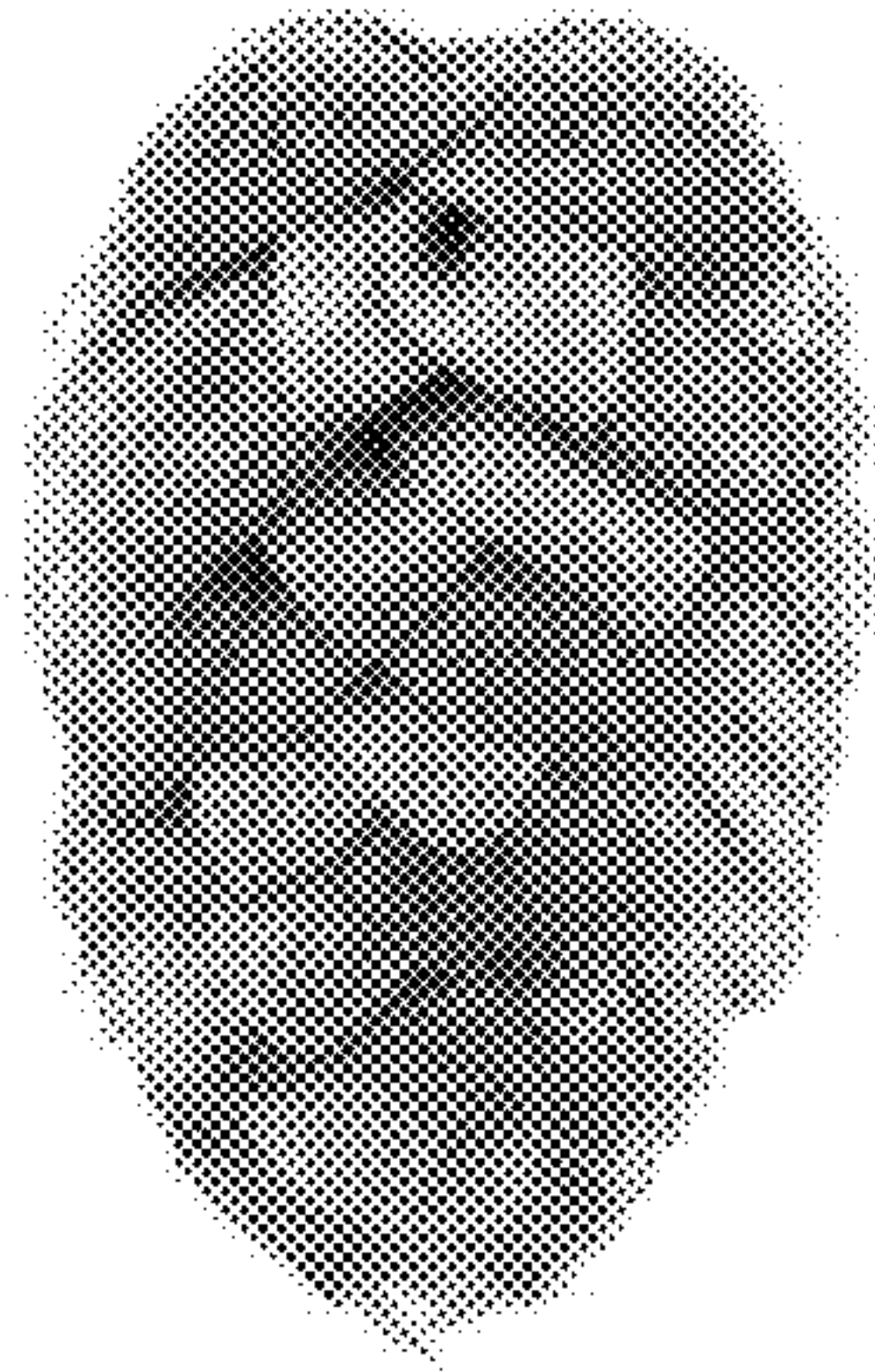


FIG. 2

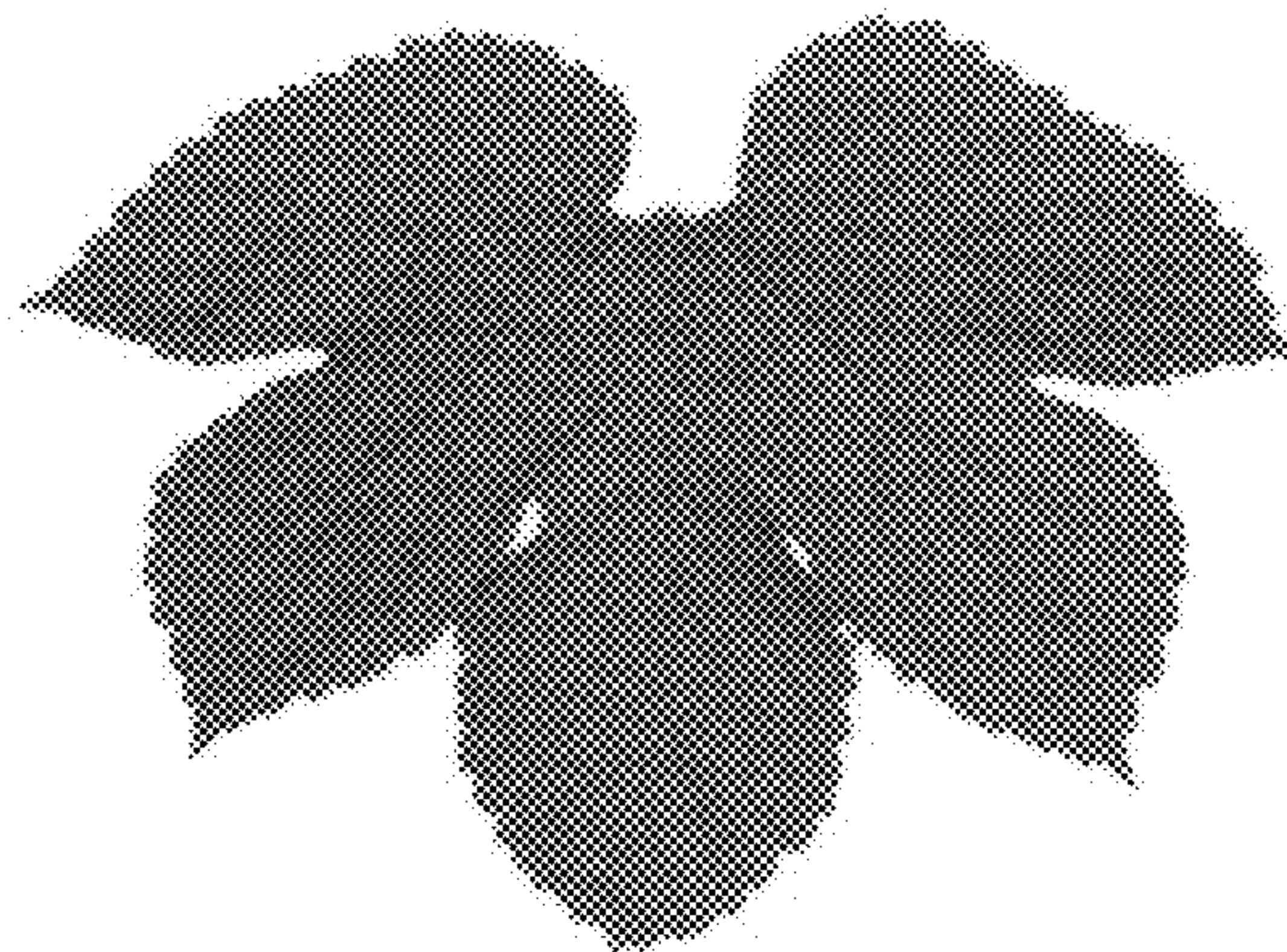


FIG. 3