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Bost

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[54] HIBISCUS PLANT NAMED 'BOST HYBRID NO. 4'

P.P. 9,555 5/1996 Morrison Plt./67.8

[76] Inventor: Georgia A. Bost, 1209 Pine Chase, Houston, Tex. 77055

Primary Examiner—James R. Feyrer
Attorney, Agent, or Firm—Martin L. McGregor

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[57] ABSTRACT

An herbaceous perennial Hibiscus plant having numerous large polypetalous flowers with blushed deep raspberry red overlapping petal arrangement, a dark red eye, buds of darker red, and medium-sized well-branched, upright plants with one- or three-lobed leaves of dark green color.

[56] References Cited

U.S. PATENT DOCUMENTS

P.P. 9,311 10/1995 Bost Plt./67.8

1 Drawing Sheet

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HISTORICAL NOTE

As of August 1996, there are a total of 20 plant patents granted for the species Hibiscus in the United States of America. The earliest patented Hibiscus plant (U.S. Plant Pat. No. 835), identified in the records simply as 'Mallow', was selected from a population having within its genetic background *Hibiscus laevis* (formerly *militaris*), *H. coccineus*, and *H. moscheutos*. This early improved plant was characterized by having smooth, deeply cut leaves, as attaining shrub height of medium size, of having medium sized (6–8 inch) flowers with deep red, imbricated flower petals and by being adapted for culture in the temperate zone.

Within the remainder of the existing patents, 10 are *H. "rosa-siensis"* types developed by Frank Moser; three more are also *H. rosa-sinensis* varieties, developed by Roberta Ludick; and one is a variegated sport of *H. paeoniflorus*, selected by Harold Hillis. All plants in this group of patents are developed from tropical, mostly pan-Pacific species that do not survive unprotected north of USDA Zone 10.

The novel plant invention describer herein is developed from the suite of perennial Hibiscus species belonging to Hibiscus Section Meunchhusia (O.J. Blanchard, 1976; P.A. Fryxell, 1988) that are native to the continental United States. There are four recognized species in this Section (*H. coccineus*, *H. dasycalyx*, *H. laevis*, and *H. moscheutos*) one of which has several recognized subspecies: *H. moscheutos moscheutos*, *H. m. palustris*, and *H. m. grandiflorus*. The other species of Hibiscus native to the conterminous U.S. and Hawaii are not genetically compatible with these four species.

All species of Hibiscus in Section Meunchhusia are wetland plants and, although tolerant of even severe drought (via semi-dormancy), perform best under adequate moisture conditions. They tolerate—rather than require—saturated soil and/or standing water conditions and compete best in the wild on the borders of water bodies where periodic fires reduce competition from woody species. Consequently, they make excellent low-maintenance border plantings around water features and grow well in all climates where adequate rainfall and/or irrigation is available. As a general rule, the farther north the planting, the less water is required and the shorter the plant will be at maturity.

There are currently only six patented varieties of this type of Hibiscus: 'Mallow' (Hemmings, U.S. Plant Pat. No. 835), 'Lady Baltimore' (Darby, U.S. Plant Pat. No. 4,271), 'Anne Arundel' (Darby, U.S. Plant Pat. No. 5,209), 'Sweet Caro-

line' Winters, U.S. Plant Pat. No. 7608), 'Quatro Rojo' (Bost Hybrid No. 1, U.S. Plant Pat. No. 9,311), and 'Pink Wonder' (Morrison, U.S. Plant Pat. No. 9,555). The first four of these plants were developed from East Coast USA populations of Hibiscus species (or subspecies) *H. moscheutos*, *H. moscheutos* ssp. *palustris*, and/or *H. laevis*, in various combinations with the Florida species, *H. coccineus*. The sixth was developed from *H. moscheutos*, *H. m. palustris* and *H. laevis*, 'Quatro Rojo' was developed from progeny of crosses made with a population of *H. laevis* native to Texas, in various combinations with *H. coccineus* and *H. moscheutos*×Southern Belle'; the latter was developed from U.S. native Hibiscus by Japanese breeders many years ago and marketed in the USA, originally through seed catalogs. 'Southern Belle' is dominated by *H. moscheutos* characteristics.

The general growth habit of Section Meunchhusia hibiscus is characterized by long, straight, light-weight canes which arise annually from a perennial crown. Once established, crowns generally bud two to three—more rarely, four—new shoots from the base of each of the preceding season's canes. Side branching occurs in the upper half to one-third of the cane (depending on species dominance), given sufficient length of growing season, but generally is not initiated until first bud set has occurred. Forking of canes occurs only if the green cane is cut or broken off.

All four native Section Meunchhusia species are more likely to self pollinate than to out cross, but each species has a different mechanism for this phenomenon. *H. coccineus* is the only wild member of the group that is not bee-pollinated, and shows very little variation between wild populations. The other three species show striking variations across and within their ranges.

Crowns frequently go through cycles of cane production that are a function of the age of the crown and the amount of crowding in the center of the crown. Typically, new canes are more abundant on the outside of the crown, until enough space has developed in the center to once again allow central cane growth. Plants can be propagated effectively either from crown division or from cuttings; for either method, rooting hormone is optional.

Cane production is typically much more vigorous (in both size and number) in hybrids than in the native specimens, all other factors being equal. In general, a new seedling will produce only one cane, due to the time it takes for the plant to mature enough to begin flower budding. Second year crowns generally break dormancy with 2–3 canes, but may

produce more given a sufficiently long growing season. Third year crowns typically produce 6-9 canes, and so on. Number and vigor of canes is also dependent on spacing of the individual specimens and the size of the container in which it is grown, as well as length of growing season where
5 grown, and the genetic background of the parental stock from which the cultivar was developed. Plants become severely stunted when container size is too small for the crown size. A well developed crown will frequently outweigh its canes.

Spacing of leaves, internodal length and leaf shape are a function of species genome, as is bloom onset and distribution, abscission point, and presence or absence of foliage on bloom pedicels. However, these characters in hybrids show a wide range of intermediate characters and may or may not be distinctive for a given hybrid type.

Overall plant presentation ranges from *H. moscheutos* on one extreme, with an essentially spherical presentation (consisting of relatively short canes and widely-spaced but large, cordate leaves), to *H. coccineus* on the other extreme, with an essentially vase-shaped or V-shaped presentation of 5-lobed, highly-dissected, Cannabis-like leaves. *H. laevis* and *H. dasycalyx* have the shortest internode size with leaves that are predominantly 3-lobed and hastate, with an essentially vase-shaped habit. *H. moscheutos* flower buds tend to produce a panicle-like effect due to the extreme fore-shortening of flowering internodes and the relatively short period of flowering for this species (1-2 months, even in Zone 9). The other three species have well-spaced flowers that follow the same rotation as the leaf nodes and bloom for 2-7 months, depending on soil temperatures and frost dates for the region in which they are grown, and genetic dormancy for the region of origin.

On the average, a given flower for any of these genomes will last only one day; however, cool nights followed by cool mild day(s) commonly delay flower drop for an additional day or two, especially if fertilization has not occurred. The farther north the plants are grown, the more likely the flowers are to last more than one day. Thus, the ability of a given flower to last more than one day is not a particularly distinctive character within this group. Similarly, the more northern USDA Zones will have shorter and more concise bloom periods and may frequently experience frost before "natural" dormancy begins. The regional affect on the genetic component of dormancy appears to apply primarily to the breaking of dormancy in Spring, not to winter onset.

In Zone 9, dormancy almost always occurs before frost, although some plants have still been observed to bloom as late as the end of January, during especially mild winter. Dormancy appears to be triggered by soil temperature, but also shows a strong genetic component related to the climatic region of the source genome. Dormancy or semi-dormancy can also be triggered by severe drought. A normal winter-triggered dormant period seems to be beneficial for this group of Hibiscus, as specimens grown in tropical climates or in heated greenhouses year-round loose vigor, are less resistant to disease and pests, and eventually die prematurely (five years or less).

The average life span of the perennial crowns of these species and their hybrids has not, to our knowledge, been documented. Anecdotal evidence suggests crown life-spans of more than 25 years and, barring catastrophic events or disease, could be more than 100 years.

BACKGROUND OF THE NEW PLANT

The BOSTx® breeding program which produced the novel plant invention described herein and named "Bost Hybrid No. 4" extended over a period of some 10 years.

"Bost Hybrid No. 4" originated as a seedling selected from progeny of cross pollination between (1) a breeding line derived from crossing the commercially available *H. moscheutos*×'Southern Belle' and *H. laevis* BOSTx® selection 'Houston-White'; (2) a breeding line derived from crossing *H. laevis* BOSTx® selection 'Houston-White' and *H. coccineus*; and, (3) a breeding line derived from crossing *H. coccineus* and *H. moscheutos*×'Southern Bell'.

Unfortunately, the original tag documenting the pod and pollen parents of the seedling was unreadable at the time the plant was evaluated and selected. "Bost Hybrid No. 4" clearly shows characteristics of at least two of the three original parent (P1) genomes used to establish this breeding program.

The objective of the breeding program which produced the novel plant of this invention was primarily to develop a plant that was suitable for inclusion in a horticultural group to be marketed as the 'Razberri Series' of BOSTx® horticultural hybrids (featuring flowers of raspberry-colored petals with different shapes and sizes of bloom and different growth habits) and having the following characteristics:

- (a) Medium size plant suitable for cultivation with good form and reliably upright habit.
- (b) Decorative foliage of a pleasing shade of green.
- (c) Attractive, well-formed, large raspberry-red-flowers that are distinctive for the color and form, that are well-posed on the plant and that remain open for most of the day (two days in cooler weather).

SUMMARY OF THE INVENTION

The present invention comprises a new and distinct cultivar of herbaceous perennial Hibiscus hybrid hereinafter referred to by the cultivar name "Bost Hybrid No. 4". It was a seedling selected by Georgia A. Bost in July of 1991 from a seedling population grown at her nursery, The Village Botanica, Inc., at 7500 Westview Drive, Houston, Tex. She is the owner of the mother plant and clones and controls all propagations of it. The new plant produced its first flower in the summer of 1991 and, because of the size and shape of the plant and the coloring of the flower, its attractive foliage and controlled habit, it was selected for reproduction and testing. Asexual propagation of this new plant by cuttings was carried on at The Village Botanica, 7500 Westview Drive, Houston, Tex. in 1993 and at JLL Greenhouses, Inc., 1449 Brittmooore, Houston, Tex. in 1994 under exclusive contract to The Village Botanica, Inc. Observation of the asexual progeny of the original plant has demonstrated that this new and distinct variety has fulfilled the objectives and that its distinctive characteristics are firmly fixed and hold true from generation to generation vegetatively propagated from the original clone.

The new and distinct cultivar is of value for its floral display, produced from late May until late November (or frost), depending upon USDA zone in which it is cultivated, environmental conditions and culture methods; and for the landscape value of the entire plant; and as a source of plant materials for commercial and agricultural products.

BRIEF DESCRIPTION OF THE DRAWING

This new cultivar of perennial Hibiscus is illustrated by the accompanying full color photographic drawings which show: FIG. 1—a fully opened flower and some typical leaves (including the lighter colored underleaf), the colors being as true as can reasonably be done by conventional photographic procedures.

DETAILED DESCRIPTION OF THE NEW
PLANT

The following is a detailed description of the new variety, color terminology being in accordance with The Royal Horticultural Society Colour Chart (indicated by initials R.H.S.-number) for the closest match or with ordinary dictionary significance.

THE PLANT

Type: Root-hardy, herbaceous perennial.

Classification: Hybrid variety of Hibiscus, Section Meunchusia (Fryxell, 1988).

Origin: Seedling.

Parentage: Is known to be a selection from BOSTx® breeding population from cross pollination between (1) a breeding line derived from crossing the commercially available *H. moscheutos*×'Southern Belle' with *H. laevis* selection 'Houston-White'; (2) a breeding line derived from crossing *H. laevis* selection 'Houston-White' with *H. coccineus*; and (3) a breeding line derived from crossing *H. coccineus* with *H. Moscheutos*×'Southern Belle'.

Propagation: Holds its distinguishing characteristics through succeeding propagations by cuttings and divisions.

Form: Bushy annual growth from perennial roots.

Mature habit: Upright and much branched.

Growth: Moderate.

Foliage¹:

Arrangement.—Alternate.

Form.—Usually entire, sometimes with two shallow, wing-like lobes on the basal end, glabrate.

Size.—Average is 5–6 inches along primary vein approx. 5 inches wide across lateral veins. Central lobe always larger than any laterals. Leaf ranges in size from as small as 1.75 inches across to as large as 5 inches across lateral veins.

Margins.—Dentate.

Color—top.—Dark mat green (R.H.S.-147A).

Color—bottom.—Medium mat green (R.H.S.-147B).

Veins—top.—Lighter green (R.H.S.-147C/B).

Veins—bottom.—Light green (R.H.S.-147C/148D).

Petiole.—Length 1.75 to 4 inches. Color — olive green (R.H.S.-152B), blushes to mahogany brown (R.H.S.-165A) in full sun, underside pale green (R.H.S.-144A/B, 146C).

Form.—One-parted or three-parted, palmately veined.

Stipules.—Deciduous.

Stem: Cane-like, pale green when young; blushing to light red in full sun and in the Fall. Basal cane diameter is approximately 0.75 to more than 1.25 inches for mature plants.

Height: Near 3 to 6 feet.

¹ None of the R.H.S. greens exactly matches foliage, but the codes given are the closest. The leaf color is characteristic for the group in general and is not a distinctive feature of the plant.

THE FLOWER

Blooming habit: Continuous and free blooming, late May–November (or until frost)

Corolla: Diameter 6.5 to 8.5 inches. The bloom is somewhat flat but, unlike the "Southern Belle"—type bloom, has a deeply belled eye and slightly recurved, ruffled petal. The individual petals are slightly wider than long.

Shape.—Fully open bell with very full petals, overlapping basally and distally, and slightly actinomorphic.

Involucral bracts: Number: 10 to 11.

Color.—Green (R.H.S.-148A/B).

Calyces: Pubescent.

Number of sepals.—Five. *Shape*.—Moderately dissected about half-way from sepal apex, mosque-shaped with apical point at about 1 inch from base.

Color.—Green (R.H.S.-146B/C).

Filaments:

Color.—Hot pink (R.H.S.-66B).

Stamens: Numerous, beginning 0.25" from base of style.

10 Stigma:

Color.—Hot pink (R.H.S.-66B). Pedicels (–0.25") and peduncle (–0.375") dark red (RHS-60D) Pads: five, rounded, discoid dark red (RHS-67A), –0.125 inches Stigmatal structure as a whole –0.5–0.75 inches.

15 Staminal column:

Color.—Pink (R.H.S.-55A/58B) with darker fuschia red streaks.

Length.—2.25 inches. Upper 1.5" is antheriferous. Base of pistil or very center of throat: dark red-black.

20 Pollen: Yellow (R.H.S.-8B).

Petalage:

Shape.—Semiorbicular to orbicular, asymmetrical, apical point rotated right or left of center.

Size.—3.5 to 4.25 inches (base of style to tip of petal), 3.75–4.5 (side to side), depending upon preceding night temperature and culture.

Aspect.—Central one-third satiny, outer two-thirds opaque

Texture.—Moderately thick, about the weight of thick broadcloth.

Color.—Center eye zone: dark red (R.H.S.-53A/B) on top, white below (155D); approximately 1.75" across. Petal: raspberry red (R.H.S.-61B) predominantly, fading to a lighter red to one side of the petal (R.H.S.-63b) Back of petal: raspberry red (R.H.S.-61B), with R.H.S.-63A area corresponding to the lighter zone on the front sided of the petal. The overall effect is of a large, richly textured plate-type hibiscus of raspberry hue with a gently belled shape.

40 Flower: Numerous, elegant; individual flowers last one day, two days in cooler weather.

Peduncle: Three to 5 inches; medium thickness; very stiff. Articulated at or near 0.75 inches from the bloom.

GENERAL CHARACTERISTICS & CULTURE

45 Blooming period: Late May to November (or frost) on the Texas Gulf Coast (Zone 9), July or early August to frost in cooler zones. From the onset of the blooming period the plant is seldom without flowers.

Hardiness: Root hardy to at least Zone 5 (further North is well mulched). Dormancy is apparently triggered by soil temperature rather than by photoperiod. Research at Michigan State indicates that Hibiscus in this group are day-neutral bloomers.

55 Breaking action: Very tough. Immature stems bend and regrow.

Rooting: Excellent. Hormone optional, especially under mist.

Growth regulator: Not required. Optional for holding in pots for commercial nurseries.

60 Shipping tolerance: Excellent, especially as liners or at any size when dormant. Best shipped unstacked in rows on individual shelves if not dormant.

I claim:

65 1. A new and distinct cultivar of Hibiscus plant, as shown and described.

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Fig. 1