United States Patent [19]

van de Werken

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[54] **FORSYTHIA CV. 'LEMON-SCREEN'**

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[52] **U.S. Cl.** **Plt./54**
[58] **Field of Search** **Plt./54**

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[57] **ABSTRACT**

A new cultivar of *Forsythia intermedia* named 'Lemon-Screen' characterized by its vigor, upright fan-shaped habit, lemon yellow flowers, high degree of sterility, its yellow shoots, and light green foliage.

2 Drawing Sheets

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The invention relates to a new cultivar of *Forsythia intermedia* named "Lemon-Screen", which is characterized especially by its abundance of light yellow flowers, its sterility, yellow stems with chartreuse leaves in spring, and whitish blotches on otherwise normal green leaves in summer.

The new variety was derived from a periclinal chimera mutant, which itself was derived from a sectorial mutant, which was produced in turn by subjecting rooted cuttings of the parent *Forsythia intermedia* "Lynwood Gold" (a sport of *F. intermedia* "Spectabilis") to irradiation with 1,200 rad fast neutrons.

In 1968, three hundred cuttings of "Lynwood Gold" that had been potted and held in cold storage (38° F.) for six weeks and then returned to the greenhouse for two days were irradiated with 1200 rad fast neutrons. One of the plants of this group that broke dormancy formed a shoot with variegated foliage. This plant was cut back repeatedly to induce branching and eventually formed shoots that exhibited different characteristics. Each shoot was propagated by stem cuttings over 10 vegetative generations of selection and propagation. From this plant population two vegetatively selected types and three seedlings were selected. Further propagation and testing of these selections over several more years were shown to be the stable and new forsythia varieties that are the subject of this and four other copending plant patent applications; viz:

Ser. No.	Name	Type
272,063	"Lemon-Screen"	vegetative selection
273,489	"Tinkle Bells"	vegetative selection
271,919	"Minikin"	seedling
271,665	"Fairy Land"	seedling

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-continued

Ser. No.	Name	Type
271,666	"Pygmy-Red"	seedling

Each differs greatly from the parent "Lynwood Gold" and also from one another.

"Lemon-Screen" was selected from a series of chimeral plants because of its distinct foliage, upright growth habit, and vigor. Cuttings from this plant have been rooted in soil and asexually propagated, and its progeny have displayed homogeneous and stable characteristics.

Throughout this specification, color names beginning with a small letter signify that the name of the color as used in common speech are aptly descriptive. Color names beginning with a capital letter designate values based on the R.H.S. Colour Chart, published by The Royal Horticultural Society of London, England.

The accompanying drawings illustrate the new variety in color as grown in Knox County within the State of Tennessee.

FIG. **1** illustrates 5½ year old "Lemon-Screen" in bloom in March-April.

FIG. **2** is a close-up view of the flowers.

FIG. **3** illustrates the "Lemon-Screen" plant in leaf.

FIG. **4** is a closer view of the foliage shown in FIG. **3**.

The following characteristics distinguish "Lemon-Screen" from its parent and other Forsythia cultivars:

THE PLANT

The "Lemon-Screen" plant form is tall and vigorous, with an upright, fan-shaped habit. "Lemon-Screen" ultimately reaches up to 10 ft. in height. The "Lemon-

Screen" shrub is naturally open and graceful but is easily pruned as a tall, flowering screen in spring; it is hardy in Zone 6b or lower. Because of its vigor, "Lemon-Screen" is conveniently produced in the nursery field, but small plants can be grown in containers for a year if cut back substantially. The cultivar is particularly suited for landscape purposes, especially as a tall barrier or visual screen. "Lemon-Screen" will branch out quickly when vegetative shoots are pruned back, making the plant suitable in traffic or crash barriers, where dense plantings are used.

Its parent, "Lynwood Gold", by contrast is tall and slender—a straight upright variety with erect stems and which attains a height of 6 ft. to 7½ ft. at maturity.

FLOWER

"Lemon-Screen" has light lemon yellow flowers (Yellow 6C) that are 1½ in. to 1¾ in. in diameter. The internodes are 1" to 2" long on flowering wood. Flowering is early and profuse, with four and up to eight flowers per node on some portions of some stems. The corolla lobes are somewhat reflexed. Flowers have four petals and are sometimes fasciated. The flowers have aborted stamens and/or pistils; consequently, "Lemon-Screen" possesses a high degree of sterility.

The "Lynwood Gold" parent is fertile and has pistils that extend well above its pollen sacs, is late flowering and its medium sized flowers (about 1" to 1½" in diameter) are almost evenly spaced on the stem. The flowers of "Lynwood Gold" are brilliant yellow (lighter than its parent, F. Spectabilis). The corolla lobes of "Lynwood Gold" are reflexed and its petals are elliptic.

SHOOTS

The mature shoots of "Lemon-Screen" are yellow and pith is slightly lamellate between nodes.

The stems of the "Lynwood Gold" parent are green when young and brown when mature; they are a bit stiff; the pith at the nodes is lamellate, and on one year shoots, the stems between nodes are hollow.

FOLIAGE

The "Lemon-Screen" leaves are simple, serrate, acuminate at the tip, and attenuate at the base. The size of the leaves is not a distinguishing characteristic. The "Lemon-Screen" leaves which appear in the spring are chartreuse or of about a Yellow-Green 151 B color. In the summer the mature leaves are in the Yellow-Green 144 A/C range and have a Yellow-White 158 A, irregular blotch with no defined edge covering about 25–30% of the leaf surface and that extends outward from the mid rib and veins and contrasts with the green colored portions of the leaf. Fall foliage is Greyed Purple 156B. The summer foliage is disease and insect resistant. The young chartreuse leaves which appear after flowering are striking and suggest the plants are in bloom again. Summer pruning leads to the appearance of shoots with leaves that are chartreuse when young.

The leaves of the "Lynwood Gold" parent, on the other hand, are ovate lanceolate in shape and about 3" to 4½" long and about 1" to 1½" wide. Both young and old leaves are deep green in color.

To facilitate the comparison of the characteristics and features of "Lemon-Screen", the subject of this application, and its parent, "Lynwood Gold" and also with the four other new mutant offspring varieties of "Lynwood Gold" referred to above, there are attached hereto as Tables 1–5 comparative tabulations of the characteristics and properties of parent and its five offspring mutants that were developed from a single irradiated plant of "Lynwood Gold." Table 1 compares "Lemon-Screen" and its parent "Lynwood Gold". Table 2 compares "Lemon-Screen" and "Pygmy-Red". Table 3 compares "Lemon-Screen" and "Tinkle Bells". Table 4 compares "Lemon-Screen" and "Minikin". Table 5 compares "Lemon-Screen" and "Fairy Land".

TABLE 1

	Ser. No. 272,063 LEMON SCREEN
Plant:	
Habit	Tall, open and graceful; Upright, fan shape; vigorous; open foliage
Size, height	up to 10'
Size, width	
Vigor	Hardy Zone 6b (or lower)
Hardiness	Vigorous
Productivity	Abundant Flowers/highly sterile/ pruned wood branches quickly
Stems or Shoots:	
Color (young)	
Color (mature)	Yellow
Rigidity	Slightly lamellate between nodes
Leaves:	
Type	Simple
Color:	
(young)	Yellow green 151 B or Chartreuse (appear after flowering)
(mature)	Normal green (Yellow-Green 144) whitish blotches
(fall)	Greyed Purple 187 B
Shape	
tip	Accuminate
base	Attenuate
margins	Serrate
Size	
length	Not distinguishing
width	Not distinguishing
Venation	Pinnate
Flower:	
Date of Flowering	Early
Size: width	1½"–1¾"
Color:	Yellow (6 C)
Corolla:	
length	
lobes	Somewhat reflexed
Petals: number	4, sometimes fasciated
Pistils:	aborted stamens &/or pistils
Number per node:	4 to 8
Insertion angle on upright stems:	
Internodes:	1" to 2" long on flowering wood
Stress Resistance:	Summer foliage disease & insect resistant
Utility Aspects:	Summer pruning leads to shoot with chartreuse leaves (young)
	LYNWOOD GOLD
Plant:	
Habit	Tall, slender-Upright straight & erect stems
Size, height	6'–7½'
Size, width	
Vigor	
Hardiness	
Productivity	Fertile
Stems or Shoots:	
Color (young)	Green
Color (mature)	Brown
Rigidity	A bit stiff; pith nodes lamellate; hollow between nodes on one year shoots
Leaves:	
Type	
Color:	
(young)	Deep Green

TABLE 1-continued

(mature)	Deep Green
(fall)	
Shape	ovate lanceolate
tip	
base	
margins	
Size	
length	3–4½"
width	1–1½"
Venation	
Flower:	
Date of Flowering	Late
Size: width	1"–1¼" (medium)
Color:	Brillant Yellow (lighter than its paren Spectabilis)
Corolla:	
length	
lobes	Reflexed
Petals: number	Large, broad, open
	Elliptic
Pistils:	Extend well above pollen sacs (anthers) of stamens
Number per node:	
Insertion angle on upright stems:	
Internodes:	Flowers almost evenly spaced on stems
Stress Resistance:	
Utility Aspects:	

TABLE 2

Ser. No. 272,063
LEMON SCREEN

Plant:	
Habit	Tall, open and graceful; Upright, fan shape; vigorous; open foliage
Size, height	up to 10'
Size, width	Hardy Zone 6b (or lower)
Vigor	Vigorous
Hardiness	
Productivity	Abundant Flowers/highly sterile/ pruned wood branches quickly
Stems or Shoots:	
Color (young)	
Color (mature)	Yellow
Rigidity	Slightly lamellate between nodes
Leaves:	
Type	Simple
Color:	
(young)	Yellow green 151 B or Chartreuse (appear after flowering)
(mature)	Normal green (Yellow-Green 144) whitish blotches
(fall)	Greyed Purple 187 B
Shape	
tip	Accuminate
base	Attenuate
margins	Serrate
Size	
length	Not distinguishing
width	Not distinguishing
Venation	Pinnate
Flower:	
Date of Flowering	Early
Size: width	1½"–1¾"
Color:	Yellow (6 C)
Corolla:	
length	
lobes	Somewhat reflexed
Petals number	4, sometimes fasciated
Pistils:	aborted stamens &/or pistils
Number per node:	4 to 8
Insertion angle on upright stems:	
Internodes:	1" to 2" long on flowering wood

TABLE 2-continued

Stress Resistance:	Summer foliage disease & insect resistant
Utility Aspects:	Summer pruning leads to shoot with chartreuse leaves (young)

Ser. No. 271,666
PYGMY RED

Plant:	
Habit	Low, loose graceful arching to ground
Size, height	3½'–4½'
Size, width	5'–6'
Vigor	Good vigor
Hardiness	Hardy Zone 6b (or lower)
Productivity	Readily roots where branches touch ground few seed pods
Stems or Shoots:	
Color (young)	High anthocyanin
Color (mature)	Purple Red (59 A)
Rigidity	Flexible lamellate between nodes
Leaves:	
Type	Simple
Color:	
(young)	Dark Green
(mature)	Dark Green
(fall)	Anthocyanin (maroon) expressed in full sun
Shape	Lanceolate (few lobed leaves on vegetative shoots)
tip	Accuminate
base	Attenuate
margins	Serrate
Size	
length	2"–2½" on flowering wood; to 2¾" on vegatative wood
width	0.3"–0.4" on flowering wood; to 1" on vegetative wood
Venation	Pinnate
Flower:	
Date of Flowering	Intermediate
Size: width	1¼"–1½"
Color:	Yellow (7A)
Corolla:	
length	
lobes	Narrow
Petals number	4 - sometimes 5
Pistils:	Extend 2/25"–3/25" above pollen sacs of stamens
Number per node:	2
Insertion angle on upright stems:	
Internodes:	1"–1½" (1½" even on fast growing shoots
Stress Resistance:	disease and insect
Utility Aspects:	

TABLE 3

Ser. No. 272,063
LEMON SCREEN

Plant:	
Habit	Tall, open and graceful; Upright, fan shape; vigorous; open foliage
Size, height	up to 10'
Size, width	Hardy Zone 6b (or lower)
Vigor	Vigorous
Hardiness	
Productivity	Abundant Flowers/highly sterile/ pruned wood branches quickly
Stems or Shoots:	
Color (young)	
Color (mature)	Yellow
Rigidity	Slightly lamellate between nodes
Leaves:	
Type	Simple
Color:	

TABLE 3-continued

(young)	Yellow green 151 B or Chartreuse (appear after flowering)
(mature)	Normal green (Yellow-Green 144) whitish blotches
(fall)	Greyed Purple 187 B
Shape	
tip	Accuminate
base	Attenuate
margins	Serrate
Size	
length	Not distinguishing
width	Not distinguishing
Venation	Pinnate
Flower:	
Date of Flowering	Early
Size: width	1½"-1¾"
Color:	Yellow (6 C)
Corolla:	
length	
lobes	Somewhat reflexed
Petals number	4, sometimes fasciated
Pistils:	aborted stamens &/or pistils
Number per node:	4 to 8
Insertion angle on upright stems:	
Internodes:	1" to 2" long on flowering wood
Stress Resistance:	Summer foliage disease & insect resistant
Utility Aspects:	Summer pruning leads to shoot with chartreuse leaves (young)

Ser. No. 273,489
TINKLE BELLS

Plant:	
Habit	Semi-dwarf; Upright
Size, height	4'-4½'
Size, width	
Vigor	Medium vigor
Hardiness	Hardy Zone 6b (or lower)
Productivity	Does not layer naturally (replicates from stools (no seed pods observed)
Stems or Shoots:	
Color (young)	Yellow Green
Color (mature)	Light brown
Rigidity	Sparsely lamellate between nodes - Rigid
Leaves:	
Type	Simple
Color:	
(young)	Medium Green
(mature)	Medium Green
(fall)	Faded green to yellow
Shape	Elliptical
tip	Acute on flower shoots accuminate on vegetative shoots
base	
margins	serrate on upper ⅓ near tip
Size	
length	2"-3" (with petiole)
width	½"
Venation	Pinnate
Flower:	
Date of Flowering	Early
Size: width	½"-¾" at 45° angle
Color:	Bright Yellow (7 B)
Corolla:	
length	½" open to 45° angle
lobes	not reflexed during prime
Petals number	4; occasionally 5 or 6
Pistils:	short: anthers slightly below stigma portion of pistil
Number per node:	2; often 4 per node
Insertion angle on upright stems:	buds & flowers pendulous
Internodes:	½—1½"
Stress Resistance:	Disease and insect
Utility Aspects:	Can force flowering suitable

TABLE 3-continued

for container culture

TABLE 4

Ser. No. 272,063
LEMON SCREEN

Plant:	
Habit	Tall, open and graceful; Upright, fan shape; vigorous; open foliage
Size, height	Up to 10'
Size, width	Hardy Zone 6b (or lower)
Vigor	Vigorous
Hardiness	
Productivity	Abundant Flowers/highly sterile/ pruned wood branches quickly
Stems of Shoots:	
Color (young)	
Color (mature)	Yellow
Rigidity	Slightly lamellate between nodes
Leaves:	
Type	Simple
Color:	
(young)	Yellow green 151 B or Chartreuse (appear after flowering)
(mature)	Normal green (Yellow-Green 144) whitish blotches
(fall)	Greyed Purple 187 B
Shape	
tip	Accuminate
base	Attenuate
margins	Serrate
Size	
length	Not distinguishing
width	Not distinguishing
Venation	Pinnate
Flower:	
Date of Flowering	Early
Size: width	1½"-1¾"
Color:	Yellow (6 C)
Corolla:	
length	
lobes	Somewhat reflexed
Petals: number	4, sometimes fasciated
Pistils:	aborted stamens &/or pistils
Number per node:	4 to 8
Insertion angle on upright stems:	
Internodes:	1" to 2" long on flowering wood
Stress Resistance:	Summer foliage disease & insect resistant
Utility Aspects:	Summer pruning leads to shoot with chartreuse leaves (young)

Ser. No. 271,919
MINIKIN

Plant:	
Habit	Small stature, fine textured; small leaves and small stems; densely foliated
Size, height	2'-2½'
Size, width	3'-4'
Vigor	Good vigor but slow growth
Hardiness	Zone 6b (or lower)
	Layers naturally
Productivity	Abundant seed pods
Stems or Shoots:	
Color (young)	Light green
Color (mature)	Brownish green
	Ascending strongly
Rigidity	lamellate between nodes
Leaves:	
Type	Simple
Color:	
(young)	Bright green to dark green
(mature)	Bright green to dark green
(fall)	Fading green until leaf drop

TABLE 4-continued

Shape	Linear
tip	Accuminate
base	Attenuate
margins	Lightly serrate
Size:	
length	On vegetative shoots - 1½" attached to ½" long slender petiole; smaller on flowering shoots
width	On vegetative shoots - ¼";
Venation	Pinnate
Flower:	
Date of Flowering	Intermediate
Size: width	¼"–¾" (cup shaped) fully reflexed
Color:	Yellow (9 A)
Corolla:	
length	
lobes	strongly reflexed, very small
Petals: number	4:- short and recurved
Pistils:	Short; 1/25" below pollen sacs of stamens
Number per node:	2–4
Insertion angle on upright stems:	
Internodes:	Short (Flowering shoots ¼"–¾" Vegetative shoots up to 2")
Stress Resistance:	Doesn't require same degree of winter protection as most container grown plants of genre
Utility Aspects:	Blooming can be forced. Especially suited for container culture.

TABLE 5

Ser. No. 272,063
LEMON SCREEN

Plant:	
Habit	Tall, open and graceful; Upright, fan shape; vigorous; open foliage
Size, height	Up to 10'
Size, width	Hardy Zone 6b (or lower)
Vigor	Vigorous
Hardiness	
Productivity	Abundant Flowers/highly sterile/ pruned wood branches quickly
Stems of Shoots:	
Color (young)	
Color (mature)	Yellow
Rigidity	Slightly lamellate between nodes
Leaves:	
Type	Simple
Color:	
(young)	Yellow green 151 B or Chartreuse (appear after flowering)
(mature)	Normal green (Yellow-Green 144) whitish blotches
(fall)	Greyed Purple 187 B
Shape	
tip	Accuminate
base	Attenuate
margins	Serrate
Size	
length	Not distinguishing
width	Not distinguishing
Venation	Pinnate
Flower:	
Date of Flowering	Early
Size: width	1½"–1¾"

TABLE 5-continued

Color:	Yellow (6 C)
Corolla:	
length	
lobes	Somewhat reflexed
Petals: number	4, sometimes fasciated
Pistils:	aborted stamens &/or pistils
Number per node:	4 to 8
Insertion angle on upright stems:	
Internodes:	1" to 2" long on flowering wood
Stress Resistance:	Summer foliage disease & insect resistant
Utility Aspects:	Summer pruning leads to shoot with chartreuse leaves (young)

Ser. No. 271,665
FAIRY LAND

Plant:	
Habit	Small overal & fine textured: Closely spaced flowers & leaves Dense (young) foliage
Size, height	3'–4'
Size, width	5'–6'
Vigor	Good vigor for size
Hardiness	Zone 6b (or lower)
Productivity	Few seed pods
Stems or Shoots:	
Color (young)	Light green
Color (mature)	Brownish green
Rigidity	Very flexible lamellate between nodes
Leaves:	
Type	Simple
Color:	
(young)	Medium green (fairly light)
(mature)	Medium green (fairly light)
(fall)	Mostly faded yellow
Shape	Lanceolate
tip	Accuminate
base	Attenuate
margins	On flowering wood; entire On vegetative wood: serrate top ⅓
Size:	
length	On flowering wood: - 1½"–2½" On vegetative shoots: about 3"
width	On flowering wood: 0.2"–0.4" On vegetative shoots 0.5–0.6"
Venation	Pinnate
Flower:	
Date of Flowering	Intermediate
Size: width	¾"–1¼"
Color:	Yellow (6 A)
Corolla:	
length	
lobes	Reflexed, small
Petals: number	Generally 4-many have 5, 6, 7 and 8 on single corolla
Pistils:	Extend 3/25" to 4/25" above pollen sacs (anthers) of the stamen
Number per node:	2–4
Insertion angle on upright stems:	
Internodes:	¼" to about 1"
Stress Resistance:	
Utility Aspects:	Very well suited for container culture.

What is claimed is:

1. A new and distinct cultivar of *Forsythia intermedia* named 'Lemon-Screen' substantially as shown and described herein.

* * * * *

FIG. 2

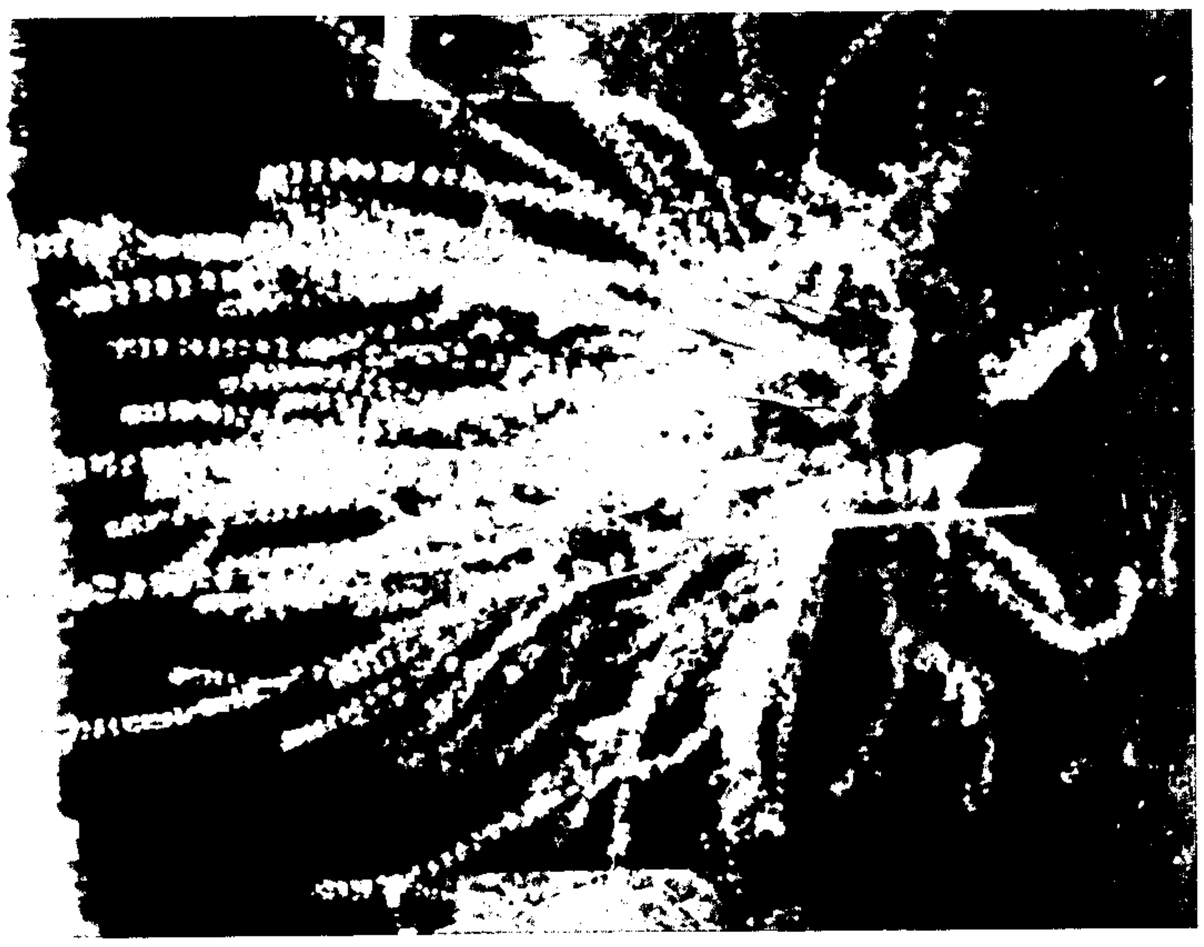

FIG. 1

FIG 3

FIG. 4