

(12) **United States Plant Patent**  
**Dozier, Jr. et al.**

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(45) **Date of Patent:** **Oct. 6, 2009**

- (54) **CHESTNUT PLANT NAMED ‘AU BUCK III’**
- (50) Latin Name: *Castanea mollissima*  
Varietal Denomination: **AU Buck III**
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- (\*) Notice: Subject to any disclaimer, the term of this  
patent is extended or adjusted under 35  
U.S.C. 154(b) by 0 days.
- (21) Appl. No.: **12/012,110**
- (22) Filed: **Jan. 30, 2008**
- (65) **Prior Publication Data**  
US 2009/0193552 P1 Jul. 30, 2009
- (51) **Int. Cl.**  
**A01H 5/00** (2006.01)
- (52) **U.S. Cl.** ..... **Plt./152**
- (58) **Field of Classification Search** ..... **Plt./152**  
See application file for complete search history.
- (56) **References Cited**  
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(57) **ABSTRACT**

‘AU Buck III’ is a new and distinct Chinese chestnut cultivar  
that is blight resistant, precocious and an annual bearer. It  
produces a medium to heavy crop load each year and a  
medium sized nut. Nut drop begins about September 25 and  
continues for a 4–5 week period. A large percentage of the  
nuts drop during the first three weeks of the period that nuts  
drop from this cultivar. ‘AU Buck III’ is a small to medium  
sized tree that is round in shape with low, dense, and spread-  
ing branches that was 6.71 meters tall, with a canopy covering  
an area of 41.85 square meters at 20 years old. ‘AU Buck III’  
is the third cultivar to mature and drop nuts in a series of four  
Chinese chestnut cultivars that will provide for a continuous  
nut drop of a high energy wildlife food source from late  
August through mid-to-late November.

**3 Drawing Sheets**

**1**

Latin name of the genus and species of the plant claimed:  
*Castanea mollissima* Blume.  
Variety denomination: ‘AU Buck III’.

**BACKGROUND OF THE INVENTION**

A Chinese chestnut planting was established at Auburn  
University, Auburn, Ala., from nuts collected in China. The  
planting was established on the United States Department of  
Agriculture Horticulture Farm which in later years became  
the Mainstation Horticulture Farm. Precocious and prolific-  
bearing, blight resistant seedlings were selected for nut  
appearance, size and quality. Each generation of seedlings  
were the product of controlled mass pollination from the most  
promising seedlings selected from the previous generation.  
‘AU Cropper’, ‘AU Leader’ and ‘AU Homestead’ were  
released from a second generation of approximately  
2000seedlings. A planting of third generation seedlings from  
controlled mass pollination of ‘AU Leader’, ‘AU Homestead’  
and ‘AU Cropper’ was established at the Auburn University  
Piedmont Substation at Camp Hill, Ala.

**SUMMARY OF THE INVENTION**

‘AU Buck III’ is from a sister line to ‘AU Leader,’ ‘AU  
Homestead’ and ‘AU Cropper’.

**2**

The present invention relates to a new and distinct Chinese  
chestnut cultivar that is blight resistant, precocious, produces  
a heavy crop annually, average nut size is medium (10.9 g),  
and begins nut drop about September 25 and continues for a  
4–5 week period. A high percentage of the nuts produced drop  
during the first three weeks of the period that nuts drop from  
this cultivar. Nut drop from ‘AU Buck III’ begins about 2  
weeks after nut drop from ‘AU Buck II’ begins. The medium  
sized nut is an excellent food source for wildlife such as deer  
and squirrels. The 20-year old tree of ‘AU Buck III’ is a small  
to medium sized tree in height that is 6.71 meters tall with a  
canopy of 7.29 meters wide and covers a canopy area of 41.85  
square meters. The ‘AU Buck III’ tree has produced a heavy  
crop load each season for tree size and produced 20.3 kg (44.8  
lbs) in 2006.

‘AU Buck III’ is the third cultivar to mature and drop nuts  
in a series of four Chinese chestnut cultivars that will provide  
for a continues nut drop of a high energy wildlife food source  
from late August through mid-to-late November. ‘AU Buck  
I’, ‘AU Buck II’ and ‘AU Buck IV’ are the other three culti-  
vars, which are disclosed in U.S. patent application No.  
12/012,091, filed on Jan. 30, 2008, and entitled “Chestnut  
Plant Named ‘AU Buck I’”, U.S. patent application No.  
12/012,025, filed on Jan. 30, 2008, and entitled “Chestnut  
Plant Named ‘AU Buck II’” and U.S. patent application No.



12/012,112, filed on Jan. 30, 2008, and entitled “Chestnut Plant Named ‘AU Buck IV’”, which are hereby incorporated by reference.

The new cultivar is able to be asexually reproduced by budding and grafting onto a seedling Chinese chestnut root-stock. The unique characteristics come true to form and are established and transmitted through asexual propagation.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a photograph of nuts of the ‘AU Buck III’ cultivar.  
FIG. 2 is a photograph of nuts of the ‘AU Buck III’ cultivar.  
FIG. 3 is a photograph of a tree of the ‘AU Buck III’ cultivar.

DETAILED BOTANICAL DESCRIPTION

The Chinese chestnut, *Castanea mollissima* Blume, is a cold hardy temperate zone species native to China. It can be grown between 30° and 50° latitudes. The Chinese chestnut is resistant to chestnut blight fungus *Cryphonectria parasitica*. Generally, Chinese chestnuts are grown on a wide range of soils, but well-drained, deep and fertile soils are considered the best. Soils should be slightly acidic with pH 5.6–6.5. The name *mollissima* means soft hair and this species is recognized by dense hair on young leaves and downy yellow terminal parts of the shoots in winter. The leaf blade is thicker, and, in general, mature leaves are broader than those of other species. The nuts have a small scar or hilum. The pellicle or thin membranous skin on the nuts is thin and peels readily from the kernel. The trees are a spreading type and long-lived with a round top. The trees have bark with furrows and buds with 3–4 scales and leaves are 2 ranked, serrated with numerous parallel veins.

Chestnuts are monoecious and staminate flowers appear on erect cylindrical catkins with 10–20 stamens and 6-parted calyx. Pistillate flowers are borne on lower part of the upper staminate catkins and rarely on separate catkins usually 3 in a prickly symmetrical involucre with 7–9 styles and a 6-celled ovary. Nuts are small, brown with a pale scar at the base. Generally, 1–3 nuts per involucre or bur are present.

‘AU Buck III’ is a small to medium sized tree that is round in shape with low, dense, and spreading branches. The 20-year old tree is 6.71 meters (22.0 feet) tall, with a trunk diameter at breast height of 22.6 cm (8.90 inches). The canopy is 7.29 meters (23.90 feet) wide and covers an area of 41.85 square meters (450.48 square feet). The average nut weight is 10.9 g, average nut length is 28.4 mm (1.12 inches) and the average nut width is 30.4 cm (1.30 inches). The nuts start dropping about September 25 and continue to drop for a 4 to 5 week period. A high percent of the nuts produced drop during the first three weeks of the period that nuts drop from this cultivar. Nut drop from ‘AU Buck III’ begins about 2 weeks after nut drop from ‘AU Buck II’ begins. ‘AU Buck III’ is prolific and fruits annually.

In the planting at the Piedmont Substation, Camp Hill, Ala., accurate yields could not be obtained due to extremely heavy wildlife (deer and turkey) feeding. Therefore, the trees were rated for crop load each year. ‘AU Buck III’ has been a producer of a medium to large crop load each season. In the fall of 2006, individual trees were caged with 6 foot (1.83 meters) tall chicken wire prior to nut drop to exclude wildlife and nuts were picked up daily from the beginning through completion of nut drop. The 20-year old ‘AU Buck III’ tree produced 20.3 kg (44.8 pounds) of nuts in 2006. This yield is similar to reported yields of similar aged trees.

The table below illustrates the specific differences between the ‘AU BUCK III’ cultivar and the ‘REVIVAL’ cultivar.

5	The botanical details of this new and distinctive variety of chestnut tree - with color definitions (except those in common color terms) referenced to Royal Horticultural Society's Colour Chart (RHS) and color was also determined using an electronic spectrophotometer to determine hue angle and Chroma (spectrophotometer model CM-2002; Minolta Camera Co., Japan).
10	<div><div></div><div>'AU BUCK III' CHESTNUT</div></div>
	<div>Tree:</div> <div>Size (at maturity) - small - twenty year old original tree is 6.71 meters tall with a canopy width of 7.29 meters and a canopy area of 41.85 sq. meters Tree shape is round. Vigor - very vigorous Trunk: Form - upright with branches low and dense Texture - relatively smooth Color of bark - brown RHS N200A, Chroma C* 11.29, hue angle 80.74 Branches: Form - spreading Texture - relatively smooth Lenticels - few, small Branching habit - low and dense Color - new wood: brown, RHS 200C, Chroma C* 16.06, hue angle 68.53, mature wood: grey-brown RHS N199A Chroma C* 13.18, hue angle 88.29 Foliage: Quantity - abundant Density - dense Leaves: Size - large. Length (cm) 19.3 (16.1-22.1) [20] width (cm) 7.7 (5.0-9.5) [20] leaf ratio 2.6 (2.2-3.4) [20] Shape - oblong-elliptic leaf tip - acute to occasionally acuminate leaf base - cuneate to rounded; equal, rarely oblique Thickness - thick. Leaf venation 1° pinnate: 2° parallel, strongly prominent abaxially Texture - strongly coriaceous Margin - coarsely serrate; teeth spreading, ascending Petiole - length 1.4 cm (0.9-2.1) [20] Petiole pubescence - mixed stellate and simple hairs Color- adaxial surface, glabrous blade; simple and stellate hairs on main veins medium to dark green; very shiny, RHS 147A, Chroma C* 16.23, hue angle 117.35 abaxial surface, densely stellate hairs mixed with occasional long straight hairs on blade, long simple hairs on main veins, RHS 147B, Chroma C* 21.68, hue angle 103.78 Bloom: Amount of bloom - heavy Color - at anthesis, 161D greyed-yellow group, 157D green-white group, 155C white group Blooming period - mid-May. After foliation in April. Age at which tree starts flowering - early, 2-3 years after graft replacement. Male flower - Catkin length (cm) - 14.0 (9.6-19.8) [10] Male flower - stamen number per catkin - 10.8 (8.13) [10] Female flower - flower number per bur - 3 Female flower - style number per flower 7.7 (7-8) [3] Crop: Bearing - regular annual bearer Productivity - prolific Ripening period - long, nuts begin dropping about September 25 and continues for a 4-5 week period. Distribution of nuts on tree - well distributed, fruits on terminals with 2-4 burs per terminal. Tenacity - burs crack while on tree and nuts release and drop from bur.</div>
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-continued	
<u>Hull:</u>	
Description - spiny round bur Size - 2.34-2.56" in diameter Number of nuts - 2-3 per bur Dehiscence - splits easily when still on tree Color - yellow-green at dehiscence, RHS N144C	
<u>Nut:</u>	
Size -medium; average size- 1.12" × 1.30" × 0.71". Average weight - 10.9 grams 42 (36-46) nuts per pound. Form - flattened on 1 side, occ. 2, hemispheric on the other side, Blossom end - small obtuse tip Basal end - broadly rounded Color - brown, lustrous RHS 200B, Chroma C* 11.58, hue angle 36.17 Pubescence- mixed long and short, fine, white hairs densely covering ¼ of the distal end, otherwise very sparse to glabrous elsewhere Shell - thin Hardness of shell - relatively hard, yet not rigid Texture of shell - smooth Percentage of kernel to nut - very high-90-95%	
<u>Kernel:</u>	
Size - almost as large as nut size Form - same as nut shape Pellicle - thin Flavor - excellent, very sweet Color - straw color, RHS 152D, Chroma C* 48.19, hue angle 81.90 Resistance to insects: no unusual susceptibilities noted Resistance to disease: no susceptibilities to disease noted The chestnut tree and its nuts herein described may vary in slight detail due to climatic and soil conditions under which the variety may be grown; the present description being of the variety as grown in Camp Hill, Ala.	
The botanical details of this variety of chestnut tree - with color definitions (except those in common color terms) referenced to Maerz and Paul Dictionary of Color - are as follows:	
<u>‘REVIVAL’</u>	
<u>Tree:</u>	
Size (at maturity) - large Vigor - very vigorous	
<u>Trunk:</u>	
Form - upright with branches spreading in upper reaches of tree. Texture - relatively smooth Color of bark - Silvergray (13-A-1)	
<u>Branches:</u>	
Form - strong Texture - relatively smooth Lenticels - few, small Branching habit - spreading in upper region of tree Color - new wood: reddish brown and glossy, mature wood: silver gray	
<u>Foliage:</u>	
Quantity - abundant Density - dense	
<u>Leaves:</u>	
Size - large. Average length - 5-7" (including petiole). Average width - 2" Shape - oblong with acute tip and rounded base Thickness - thick Texture - smooth Margin - dentate Petiole - length: medium. Thickness: medium. Color - Top side - glossy dark green (22-L-12). Under side - lighter green (21-D-7).	

-continued	
<u>Bloom:</u>	
5	Amount of bloom - heavy Color - cream white (17-B-1) Blooming period - late. After leaf out in April Age at which tree starts flowering - early; 2-3 years years after graft replacement.
<u>Crop:</u>	
10	Bearing - regular (yearly) bearer Productivity - prolific Ripening period - short. September 15-October 1. Distribution of nuts on tree - well distributed Tenacity - burrs crack while on tree and nuts easily release, many falling by themselves
15	<u>Hull:</u>  Description - spiny, round burr Size - 3-4" in diameter Number of nuts - 2-3 per burr Dehiscence - splits easily when still on tree. Some entire burrs split and fall to ground Color - brown (15-A-8)
<u>Nut:</u>	
Size-large. Average size - 1½" × 1⅛" × 1" thick, Average weight - 24-32 nuts per pound	
25	Form - broad and ovoid on one side, flat on other side Blossom end - pointed tip Basal end - flattened Color - India Red (7-L-6). Shell - thin Hardness of shell - relatively hard, yet not rigid
30	Texture of shell - smooth Percentage of kernel to nut - very high (95%)
<u>Kernel:</u>	
Size - almost as large as nut size Form - same as nut shape	
35	Pellicle - thin Flavor - excellent. Very sweet. Color - Oyster white (10-B-1) Resistance to insects: no unusual susceptibilities noted Resistance to disease: very high inherent resistance to chestnut bark fungus ( <i>Endothia parastica</i> ), no other susceptibilities to any other disease
40	The chestnut tree and its nuts herein described may vary in slight detail due to climatic and soil conditions under which the variety may be grown; the present description being of the variety as grown in Alachua, Fla.
45	‘AU Buck III’ is different from ‘AU Gobbler I’ in several ways. For example, the size of the trees, the trunk forms and colors, the branches, the leaves, the crop and the nuts have differences. Specifically, the ‘AU Buck III’ tree is shorter with a canopy area smaller than the ‘AU Gobbler I’ tree. The ‘AU Buck III’ branches are spreading and brown (new) or grey-brown (mature); whereas, the ‘AU Gobbler I’ branches are upright and brown (new) or greyed-green (mature). The leaves differ in size, petiole and color. The ripening period for the ‘AU Buck III’ is around September 25 and continues for a 4–5 week period, but the ‘AU Gobbler I’ ripening period is around August 25 and continues for 4–5 weeks. The average weight of the nuts of ‘AU Buck III’ is 10.9 grams versus 7.7 grams for ‘AU Gobbler I’. Furthermore, ‘AU Buck III’ has roughly 42 nuts per pound, and ‘AU Gobbler I’ has roughly 59 nuts per pound.
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55	‘AU Buck III’ is different from ‘AU Gobbler II’ in several ways. For example, the trees, the trunk colors, the branch colors, the leaves, the crop and the nuts have differences. Specifically, the ‘AU Buck III’ tree is shorter with a canopy
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width and canopy area smaller than the 'AU Gobbler II' tree. The 'AU Buck III' branches are brown (new) or grey-brown (mature); whereas, the 'AU Gobbler II' branches are brown (new) or greyed-green (mature). The leaves differ in size, shape and color. The ripening period for the 'AU Buck III' is around September 25 and continues for a 4–5 week period, but the 'AU Gobbler II' ripening period is around September 5 and continues for 4–5 weeks. The average weight of the nuts of 'AU Buck III' is 10.9 grams versus 5.7 grams for 'AU Gobbler II'. Furthermore, 'AU Buck III' has roughly 42 nuts per pound, and 'AU Gobbler II' has roughly 65–101 nuts per pound.

'AU Buck III' is different from 'AU Premier' in several ways. For example, the trees, the trunk colors, the branch colors, the leaves, the crop and the nuts have differences. Specifically, the 'AU Buck III' tree is taller with a canopy width and canopy area larger than the 'AU Premier' tree. The 'AU Buck III' has a brown trunk, and the 'AU Premier' has a greyed-green trunk. The 'AU Buck III' branches are brown (new) or grey-brown (mature); whereas, the 'AU Premier' branches are brown (new) or greyed-green (mature). The leaves differ in size, shape, thickness, texture, petiole and color. The ripening period for the 'AU Buck III' is around September 25, and the 'AU Premier' ripening period is early September through mid-November. The average weight of

the nuts of 'AU Buck III' is 10.9 grams versus 1.26 grams for 'AU Premier'. Furthermore, 'AU Buck III' has roughly 42 nuts per pound, and 'AU Premier' has roughly 360.3 nuts per pound.

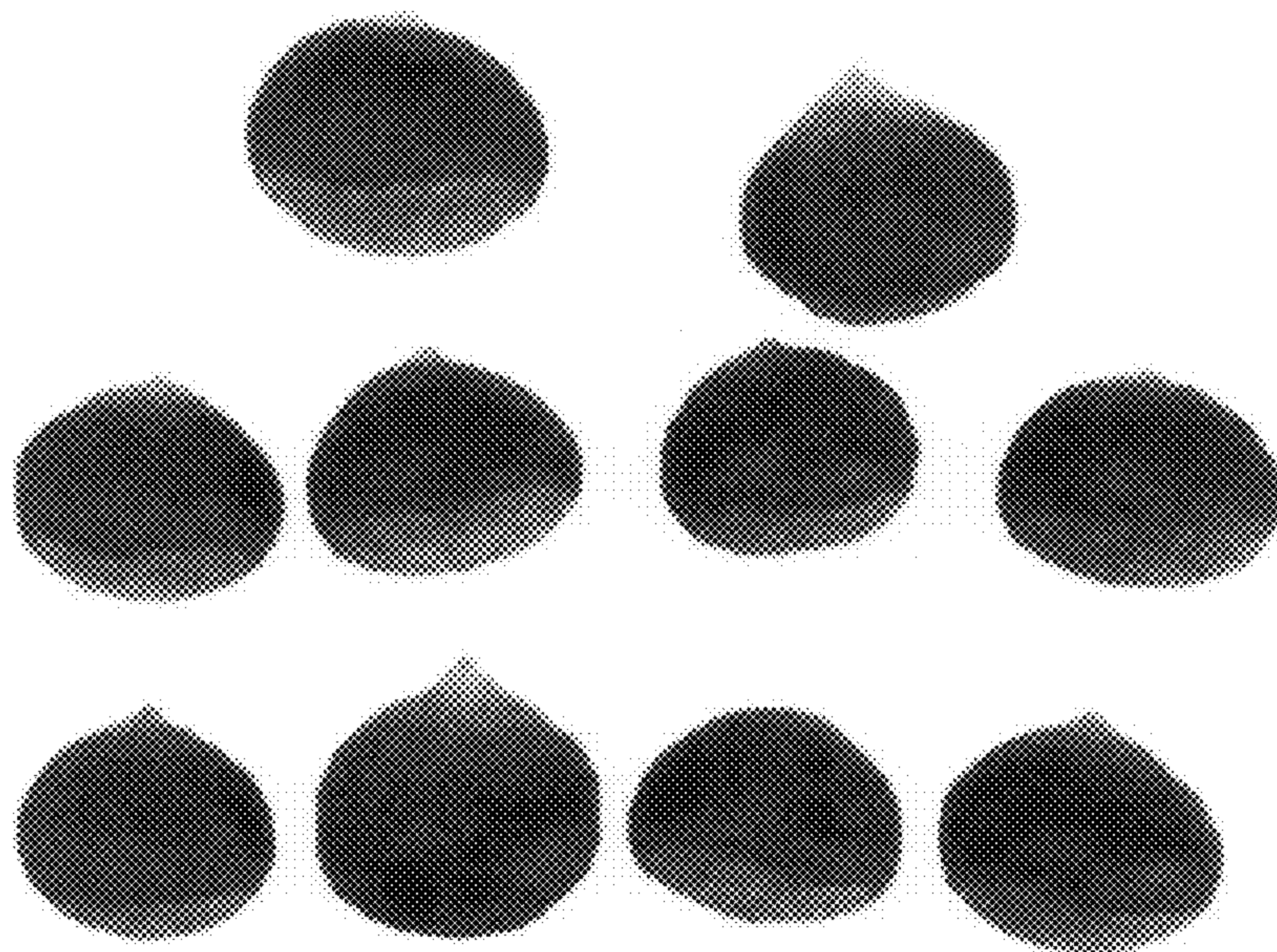
'AU Buck III' is different from 'AU Encore' in several ways. For example, the trees, the trunk colors, the branch colors, the leaves, the crop and the nuts have differences. Specifically, the 'AU Buck III' tree is taller with a canopy width larger than the 'AU Encore' tree. The 'AU Buck III' has a brown trunk, and the 'AU Encore' has a greyed-green trunk. The 'AU Buck III' branches are brown (new) or grey-brown (mature); whereas, the 'AU Encore' branches are brown (new) or greyed-green (mature). The leaves differ in size, thickness, texture, margin, petiole and color. The ripening period for the 'AU Buck III' is around September 25, but the 'AU Encore' ripening period is late September through late November. The average weight of the nuts of 'AU Buck III' is 10.9 grams versus 2.4 grams for 'AU Encore'. Furthermore, 'AU Buck III' has roughly 42 nuts per pound, and 'AU Encore' has roughly 189.2 nuts per pound.

What is claimed is:

1. A new and distinct cultivar of the species *Castanea mollissima* Blume named 'AU Buck III' as described and illustrated herein.

\* \* \* \* \*





‘AU Buck III’

Fig. 1



‘AU Buck III’

Fig. 2



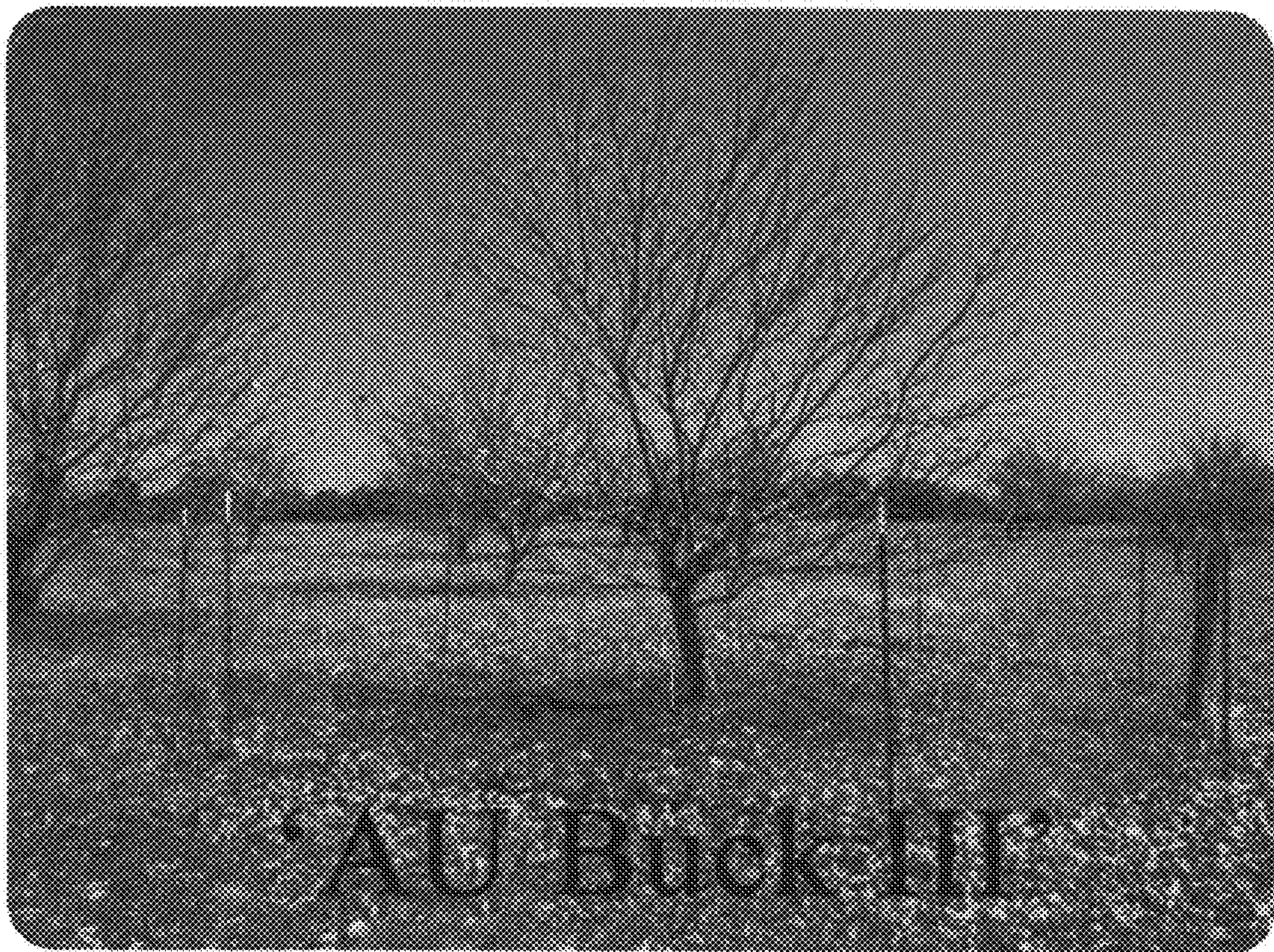


Fig. 3



UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : PP 20,381 P3  
APPLICATION NO. : 12/012110  
DATED : October 6, 2009  
INVENTOR(S) : Dozier, Jr. et al.

Page 1 of 1

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

At column 4, line 38, please change “2° parallel” to “2° ± parallel” so that the line reads

-- Thickness - thick. Leave venation 1° pinnate: 2° ± parallel, strongly prominent abaxially. --

Signed and Sealed this

Twelfth Day of January, 2010

A handwritten signature in black ink, reading "David J. Kappos". The signature is written in a cursive, flowing style with a large initial 'D' and a stylized 'K'.

David J. Kappos  
*Director of the United States Patent and Trademark Office*