

Claiborne Patent Law Services

United States Patent [19] **Patent Number:** 4,736,866
Leder et al. [45] **Date of Patent:** Apr. 12, 1988

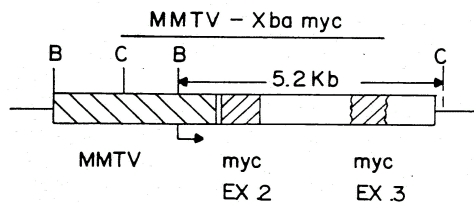
[54] **TRANSGENIC NON-HUMAN MAMMALS**
 [75] **Inventors:** Philip Leder, Chestnut Hill, Mass.; Timothy A. Stewart, San Francisco, Calif.
 [73] **Assignee:** President and Fellows of Harvard College, Cambridge, Mass.
 [21] **Appl. No.:** 623,774
 [22] **Filed:** Jun. 22, 1984
 [51] **Int. Cl.⁴** C12N 1/00; C12Q 1/68; C12N 15/00; C12N 5/00
 [52] **U.S. Cl.** 800/1; 435/6; 435/172.3; 435/240.1; 435/240.2; 435/320; 435/317.1; 935/32; 935/59; 935/70; 935/76; 935/111
 [58] **Field of Search** 435/6, 172.3, 240, 317, 435/320, 240.1, 240.2; 935/70, 76, 59, 111, 32; 800/1
 [56] **References Cited**
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 Palmiter et al. (1983) Science 222, 814.
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Primary Examiner—Alvin E. Tanenholz
Attorney, Agent, or Firm—Paul T. Clark
 [57] **ABSTRACT**
 A transgenic non-human eukaryotic animal whose germ cells and somatic cells contain an activated oncogene sequence introduced into the animal, or an ancestor of the animal, at an embryonic stage.
 12 Claims, 2 Drawing Sheets

Oncomouse®

The OncoMouse® transgenic animal technology relates to animal models that develop tumors as a consequence of containing a recombinant activated oncogene sequence. First described by Dr. Philip Leder, its usefulness in basic medical research is widely recognized as these mice are key model systems for the study of cancer and in testing the effectiveness of novel cancer therapeutics.

The patent for the transgenic mouse, assigned to E.I. DuPont Corporation, was the first patent issued for a higher organism. Its issuance sparked controversy among researchers and others concerning both the patentability of higher organisms and access by researchers to valuable patented research tools.

By agreement with the National Institutes of Health, DuPont provides the oncomouse transgenic animal technology to academic laboratories for research uses and allows unencumbered use and transfer of this technology among researchers at not-for-profit institutions. Recognizing that academic institutions may want to transfer oncomouse transgenic animal technology to commercial entities, DuPont provides commercial research license terms for such transfers.

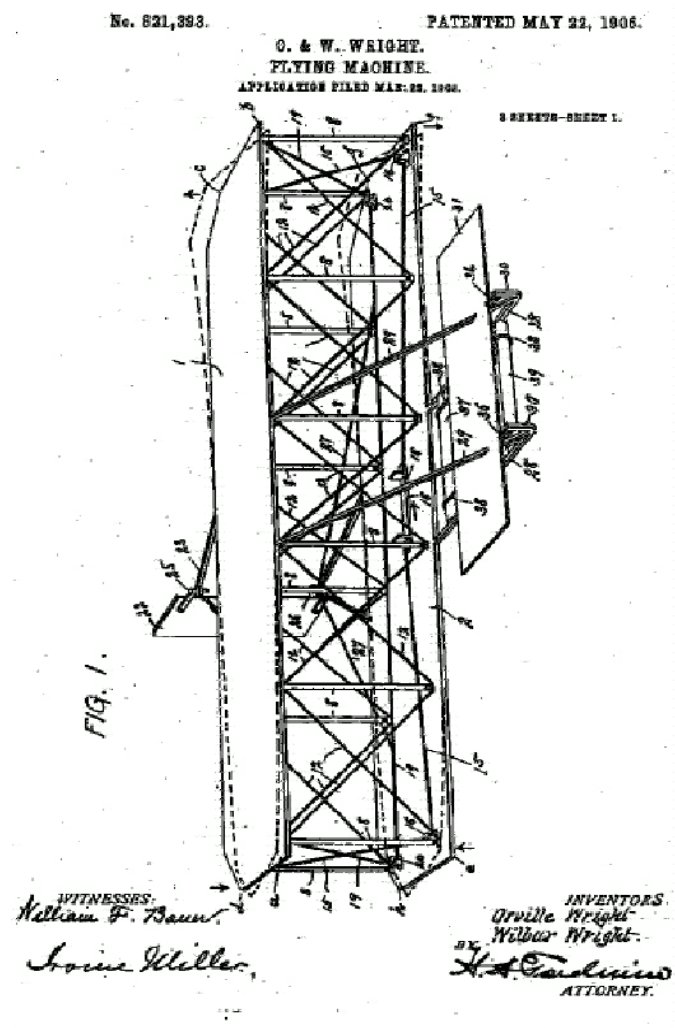


April 2011

Monthly Planner

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3 Daylight Savings Time Begins	4	5	6 1869, Isaac Hodgson received patent No. 88,711 for his "roller skate."	7	8	9																																																																																				
10 1849 - first U.S. patent for a safety pin was issued to Walter Hunt (No. 6,281)	11	12 1988, the first U.S. patent was issued on an animal life form (No. 4,736,866)	13	14	15	16 1867 - Wilbur Wright born																																																																																				
17	18	19	20	21 1857 - first U.S. patent for a bustle issued to Alexander Douglas	22	23 1940 - leak-proof flashlight battery (Ray-o-Vac) patented by Herman Anthony (No. 2,198,423).																																																																																				
24 1934 - first pipeless organ patented by Laurens Hammond (No. 1,956,350)	25 1874 - Guglielmo Marconi born	26 1961 - integrated circuit patented by Robert Noyce (No. 2,981,877).	27 1791 - Samuel F.B. Morse born	28	29	30																																																																																				

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Wright Brothers Flying Machine

On December 17, 1903, near Kitty hawk, North Carolina, Wilbur and Orville Wright made the first controlled, powered, manned flight of a heavier-than-air aircraft. Their innovation was an advantageous wing-warping mechanism permitting aerodynamic control of the craft's flight by the aviator. That wing-warping innovation is the invention claimed in their first patent, filed nine months before but issuing two and a half years after their historic flight.

Wing-warping technology for flight control was soon displaced by the superior aileron technology developed by inventor Alexander Graham Bell and inventor-aviator Glen Hammond Curtiss. Today, while their achievement of flight will always be remembered, the Wright brothers' innovations are mostly of historical interest.

May 2011

Monthly Planner

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1	2	3	4	5 <small>1809 - first U.S. patent to a woman, Mary Kies, for weaving straw (No. 1041X).</small>	6	7																																																																																																		
8 Mother's Day	9	10	11 <small>1951 - Jay Forrester patents computer core memory</small>	12	13 <small>1890 - Nikola Tesla issued a patent for an electric generator (No. 428,057).</small>	14																																																																																																		
15 <small>1923 - Listerine registered as a trademark (No. 168,134)</small>	16	17	18	19	20	21 Armed Forces Day																																																																																																		
22 <small>1906 - Orville and Wilbur Wright receive a patent for "new and useful improvements in Flying Machines" (U.S. No. 871,392)</small>	23	24 <small>1938 - parking meter patented by Carl C. McGee (No. 2,118,318).</small>	25	26 <small>1981 - first pure software patent issues (No. 4,270,182)</small>	27 <small>1930 - cellophane transparent adhesive tape patented by Richard G. Drew - Scotch Tape (U.S. No. 1,760,820).</small>	28																																																																																																		
29	30 Memorial Day (Observed)	31	<table style="margin: auto; border: 1px solid black; padding: 5px;"> <tr> <th colspan="7" style="text-align: center;">Apr 2005</th> </tr> <tr> <th style="text-align: center;">S</th> <th style="text-align: center;">M</th> <th style="text-align: center;">T</th> <th style="text-align: center;">W</th> <th style="text-align: center;">T</th> <th style="text-align: center;">F</th> <th style="text-align: center;">S</th> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td style="text-align: center;">3</td> <td style="text-align: center;">4</td> <td style="text-align: center;">5</td> <td style="text-align: center;">6</td> <td style="text-align: center;">7</td> <td style="text-align: center;">8</td> <td style="text-align: center;">9</td> </tr> <tr> <td style="text-align: center;">10</td> <td style="text-align: center;">11</td> <td style="text-align: center;">12</td> <td style="text-align: center;">13</td> <td style="text-align: center;">14</td> <td style="text-align: center;">15</td> <td style="text-align: center;">16</td> </tr> <tr> <td style="text-align: center;">17</td> <td style="text-align: center;">18</td> <td style="text-align: center;">19</td> <td style="text-align: center;">20</td> <td style="text-align: center;">21</td> <td style="text-align: center;">22</td> <td style="text-align: center;">23</td> </tr> <tr> <td style="text-align: center;">24</td> <td style="text-align: center;">25</td> <td style="text-align: center;">26</td> <td style="text-align: center;">27</td> <td style="text-align: center;">28</td> <td style="text-align: center;">29</td> <td style="text-align: center;">30</td> </tr> </table> <table style="margin: auto; border: 1px solid black; padding: 5px;"> <tr> <th colspan="7" style="text-align: center;">Jun 2005</th> </tr> <tr> <th style="text-align: center;">S</th> <th style="text-align: center;">M</th> <th style="text-align: center;">T</th> <th style="text-align: center;">W</th> <th style="text-align: center;">T</th> <th style="text-align: center;">F</th> <th style="text-align: center;">S</th> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> </tr> <tr> <td style="text-align: center;">4</td> <td style="text-align: center;">5</td> <td style="text-align: center;">6</td> <td style="text-align: center;">7</td> <td style="text-align: center;">8</td> <td style="text-align: center;">9</td> <td style="text-align: center;">10</td> </tr> <tr> <td style="text-align: center;">11</td> <td style="text-align: center;">12</td> <td style="text-align: center;">13</td> <td style="text-align: center;">14</td> <td style="text-align: center;">15</td> <td style="text-align: center;">16</td> <td style="text-align: center;">17</td> </tr> <tr> <td style="text-align: center;">18</td> <td style="text-align: center;">19</td> <td style="text-align: center;">20</td> <td style="text-align: center;">21</td> <td style="text-align: center;">22</td> <td style="text-align: center;">23</td> <td style="text-align: center;">24</td> </tr> <tr> <td style="text-align: center;">25</td> <td style="text-align: center;">26</td> <td style="text-align: center;">27</td> <td style="text-align: center;">28</td> <td style="text-align: center;">29</td> <td style="text-align: center;">30</td> <td></td> </tr> </table>				Apr 2005							S	M	T	W	T	F	S						1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	Jun 2005							S	M	T	W	T	F	S					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
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Sheet 1. 3 Sheets

S. F. B. Morse.

Telegraph Signs.

N^o. 1,627.

Patented Jun. 20, 1840.

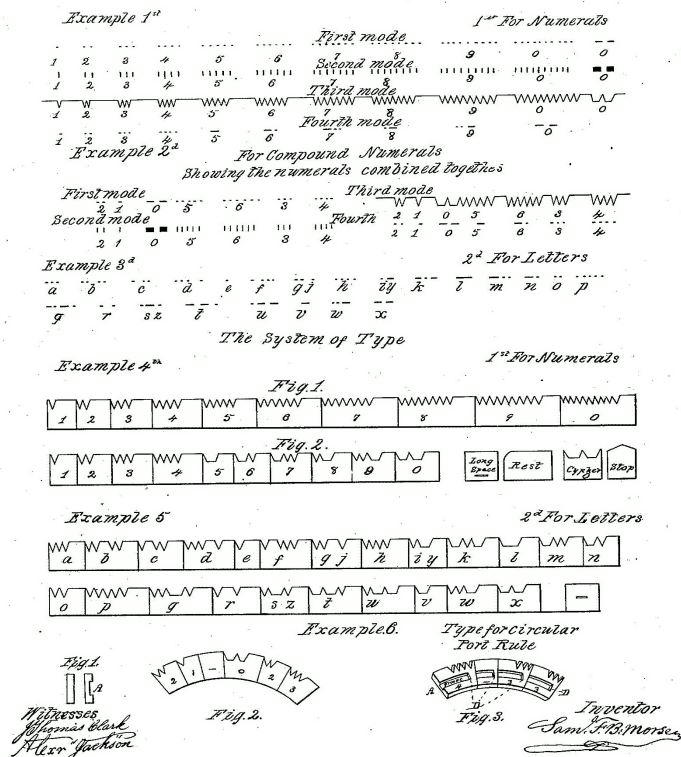
Samuel Morse's Telegraph

On a voyage in 1832 returning to America from Europe, portrait painter Samuel F. Morse and dinner companion Charles Thomas Jackson, a physician, discussed electricity. Morse asked whether an electrical impulse could travel over a long line and Jackson assured him it could.

Morse is said to have exclaimed, "If this be so, and the presence of electricity can be made visible in any desired part of a circuit, I see no reason why intelligence might not be instantaneously transmitted by electricity to any distance." After dinner, Morse sketched a crude telegraph system.

Seven years and much experimentation later, Morse obtained his first patent for Telegraph Signs, teaching telegraphy as circuit, code ("signs"), and means for printing transmitted messages.

By the end of the Civil War, more than 200,000 miles of telegraph line were in use for business and personal communications.



June 2011

Monthly Planner

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<p style="text-align: center; font-size: 24pt;">12</p> <p>1906 - sound movies patented by John Ballance (No. 823,022)</p>	<p style="text-align: center; font-size: 24pt;">13</p>	<p style="text-align: center; font-size: 24pt;">14</p> <p style="text-align: center; color: red;">Flag Day</p>	<p style="text-align: center; font-size: 24pt;">15</p>	<p style="text-align: center; font-size: 24pt;">16</p>	<p style="text-align: center; font-size: 24pt;">17</p> <p>1837 - Charles Goodyear receives first patent for rubber (No. 240)</p>	<p style="text-align: center; font-size: 24pt;">18</p>																																																																																											
<p style="text-align: center; font-size: 24pt;">19</p> <p style="text-align: center; color: red;">Father's Day</p>	<p style="text-align: center; font-size: 24pt;">20</p>	<p style="text-align: center; font-size: 24pt;">21</p> <p>1834 - Cyrus Hall McCormick receives a patent for his reaping machine</p> <p style="text-align: center; color: red;">Summer begins</p>	<p style="text-align: center; font-size: 24pt;">22</p>	<p style="text-align: center; font-size: 24pt;">23</p> <p>1912 - Alan Turing born</p>	<p style="text-align: center; font-size: 24pt;">24</p> <p>1873 - Samuel Clemens receives a patent for a self-pasting Scrapbook (No. 140245)</p>	<p style="text-align: center; font-size: 24pt;">25</p>																																																																																											
<p style="text-align: center; font-size: 24pt;">26</p> <p>1894 - first U.S. patent for a gasoline-driven automobile issued to Karl Benz of Germanv</p>	<p style="text-align: center; font-size: 24pt;">27</p>	<p style="text-align: center; font-size: 24pt;">28</p>	<p style="text-align: center; font-size: 24pt;">29</p>	<p style="text-align: center; font-size: 24pt;">30</p> <p>1948 - transistor invented by three Bell Laboratory scientists in Murray Hill, NJ</p>																																																																																													