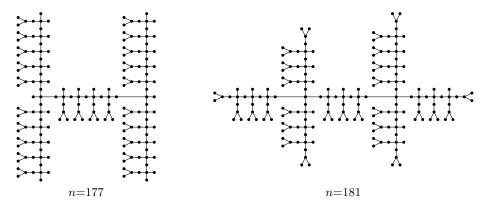
$0 \mod 7$	1 mod 7	2 mod 7 ••	3 mod 7	4 mod 7	5 mod 7	6 mod 7
 <	÷	-	><		>- -	• • • • •
 	;;	÷÷	>	**	÷÷	· ! · · ·
! ↓ 	***	> +	≻ } \	****	**	>
- 	****	>++>+	> + + + + + + + + + + + + + + + + + + +	*****	***	→
₽ ₩₩₩	*****	>+ >+ >>	> \	*******	### ### ### ### ### ### ### ### ### ##	> > > > > > > > > > > > > > > > > > > >
-	*****	>+ >+ >+ >+	> \	********	世	>
¹\\\\\\	tttttt	***	>- 	***********	状況	>-
¹‡‡‡‡‡‡‡	ttttttt		~ \	***************************************	烘	> \
*#########	*******	***	<u> </u>	***************************************	世	> \
*###########**************************	********			***************************************	世	~ \
<u>'\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</u>	**********		>	***************************************	***************************************	-
\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	***********		> 	***************************************		
<u>' </u>	***************************************			***************************************	***************************************	> \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
·	***************************************		> .	***************************************	***************************************	> 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
<u> </u>	***************************************		> \	***************************************		

Each column is trees of $n \mod 7$ vertices. There are some initial exceptions then a general form in each column. Column 0 has its general form once not empty. Column 1 has its general form immediately. Each row adds 7 further vertices in the form of a new "C" piece in one of the tree arms or middle. The n=8 case (column 1 second row) is a single C (and vertex it attaches to).

The last initial exception is at n=30 in column 2 (5th row 3 Cs). It looks like it could be the predecessor of n=37 (6th row 4 Cs), but going up the page for successive smaller sizes in that column, the general form is one C removed from the middle every 5 rows. At n=30 the pattern would be remove from the middle, but the middle is already empty.

Columns 2 and 6 take a while for their patterns to show. Here are bigger examples of each to illustrate. n=181 is Heuberger and Wagner's sample size and is drawn in their style.



These pictures were made using a secret undocumented coordinates feature in my Graph::Maker:: MostMaximumMatchingsTree.

http://user42.tuxfamily.org/graph-maker-other/index.html

Some completely non-visual tree building can be found in my Pari/GP vpar examples/most-maximum-matchings.gp. It includes recurrences and generating functions for the number of maximum matchings. http://user42.tuxfamily.org/pari-vpar/index.html

And all this is following: Clemens Heuberger and Stephan Wagner, "The Number of Maximum Matchings in a Tree", Discrete Mathematics, volume 311, issue 21, November 2011, pages 2512-2542.

http://arxiv.org/abs/1011.6554

https://www.math.tugraz.at/~cheub/publications/max-card-matching/