

There are a few different formats of pages for the various sections of a patent, but the key one (last section) is similar to *multicols* style. The three new automated items in that section are

1. numbered columns as opposed to numbered pages,
2. line numbers between columns as opposed to a vertical rule, and
3. five stars at the very end of the text.

These features need some tweaking. For example, an hbox of *columnsep* width was used to create each of the numbers between columns. This seems to be a bit wider than the actual column separation that results from *multicols*. That messes up the overall text width a bit, but it isn't noticeable in this situation. Also, the column numbers are created with an hbox of *columnwidth* and this again creates a tiny offset in the text width. (It seems to me that some method of filling, similar to the *vrule* between columns, should work better. However, I couldn't figure it out. Also, it seems that the column number could be done better in a different location or with a different loop. However, I couldn't figure out the placement of *gfirstbox*, *rightbox*, etc.)

Notice at the bottom of the first page that there is a figure. Hence, a balanced bottom is required on the first page.

Selecting the height of the figure space to naturally break at the claims/drawings line would be too much of a trial and error process. To get the balancing, I internally reused the code for generating multicolumns as part of *front*. Since balancing only occurs at the end of *multicols* and not at page breaks, it is necessary to have two *front* sections with the figure in between. So, in order to reuse the same code, I included some internal flags, *colnumbers* and *linenumbers*, to control the presence of the column numbers and line numbers, as seen in the *description* section. The reason I made these controlled separately is that I can imagine an enhancement to *multicols* as such that would allow just line numbers, perhaps for different situations than patents.

I did a little kludge with the page number to get the total number of sheets to appear. In order to get a reference inside the auxiliary file, I redefine the page number to coincide with the instance of sheet. That way I could reference the page number as though it were a sheet number. Perhaps there is a smarter way of getting such a reference inside the auxiliary file. Fortunately, the page number is not required after the drawings section.

Lastly, the *patent* style has a 9pt option that was commandeered from an IEEE transactions style file. Oh, and the fact that *dotfill* doesn't work in *tabbing* environments (as of the 1999 version of L^AT_EX I have) is a bit of a bummer.





