5. Selection of an assembly and its resolution

The assembly selected to carry out this lecture was selected according to the following criteria:

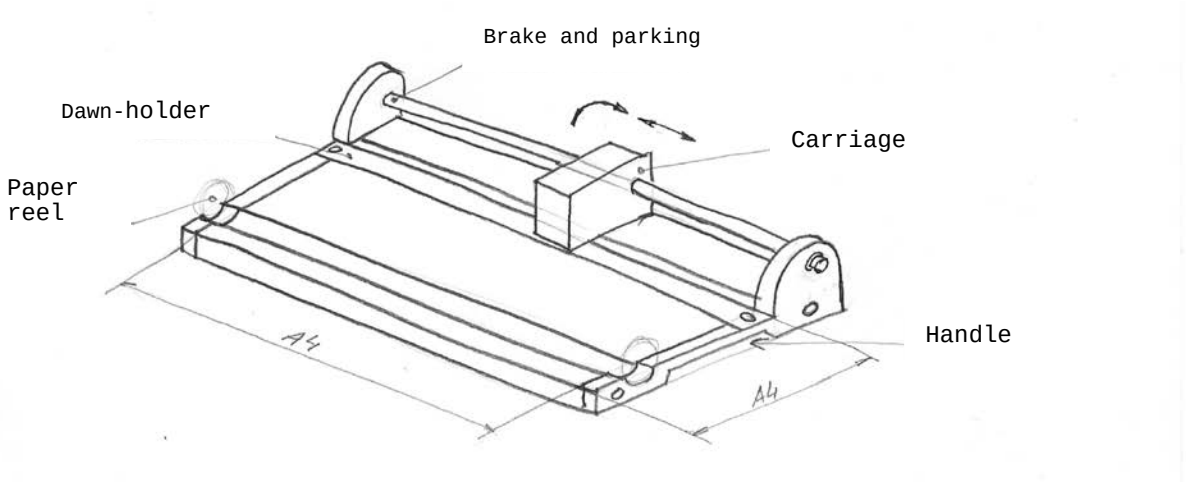
- In order to generate interest: a useful and actual model with daily applications.
- Known functionality of the assembly, to make easier the understanding of the specifications during the design.
- Assembly with a simple geometry, to centre the attention to the concepts.
- Regarding the manufacture processes, a general point of view of the process is pursued.
- Easily parameterized processes that can be achieved with a basic knowledge of the software.
- The assembly includes cases that may be repeated in many other assemblies.

The selection of the geometry of the elements that integrate the assembly was selected according the subsequent criteria:

- Study of different geometries for which different processes are required to generate the models.
- Grade of difficulty.
- Relationship between geometry and functionality.
- Option to generate parameterized models that can be applied to manufacture series.
- Difficulty to express the geometries. Complexity and number of views.

The selection of the parameterization among the elements was done according to the next criteria:

- Commands used to generate or empty solids.
- Commands required for the creation of functional characteristics or geometries.
- The use of special operations: reinforcements, ribs, roundings and chamfers.
- Number of repeated elements and symmetries present.



5.1. Image. Roller shear

Following all the criteria describe above in this section, roller shear was selected as the assembly for this lecture.

The main characteristics of the selected assembly are listed subsequently:

- Well known assembly.
- Common usage assembly.
- Existence of different models in the market. Therefore possible analysis of different solutions.
- Easily understandable functionality.
- Simple geometries.

For the resolution of the assembly presented herein, the whole design process is simplified; in fact the study of the in-depth features is excluded. This will focus the attention of the student in the process itself.