The aim of this work is to step forward in the process of an automatic detection of SC. SC is produced by a sudden increase of solar wind pressure and is detected simultaneously everywhere on the ground. Since 1975 the Ebre Observatory is responsible to elaborate the list of SC, following the morphological rules proposed by Mayaud. Some observatories report possible candidates of SC. The Ebre observatory checks these candidates and elaborates a final list of SC. This task presents some difficulties; the different interpretation of the Mayaud rules by different observers and the number of observatories who collaborate in this task which is decreasing by the installation of unattended observatories. The automatic method presented in this work is based in neural network analysis. To succeed with neural networks we made a previous work of characterization and parameterization of SC by a statistical analysis. In this way, we focused in the slope, rise time, change of magnetic activity and difference levels before and after the jump. We worked with H component and also with D component. With appropriate threshold values, a trained neural network is able to recognize the basic patterns of the SC. The network was trained with events from the official lists in order to be coherent with them.