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(54) **Paper shredder with automatic paper separator**

(57) This invention relates to a paper shredder with automatic paper separator, including a housing, having a paper inlet and a paper outlet; a motor and a plurality of rotary shaft and cutting blades assembly contained within the housing; a paper separating wheel contained also within the housing; and a paper supporting tray disposed at the paper inlet of the housing; each of the two sidewalls of the housing is mounted with a supporting arm; the paper inlet of the housing is installed with a paper

intake sensing device. Rather than being inspected by the user throughout the whole shredding process, papers can be destroyed automatically by using the paper supporting tray and the paper separating wheel disposed at the paper inlet of the housing; Moreover, the room is saved and the size of the shredder is reduced since the supporting arms mounted on the sidewalls of the housing may hold any dustbins and use them as wastebasket for the paper shredder.

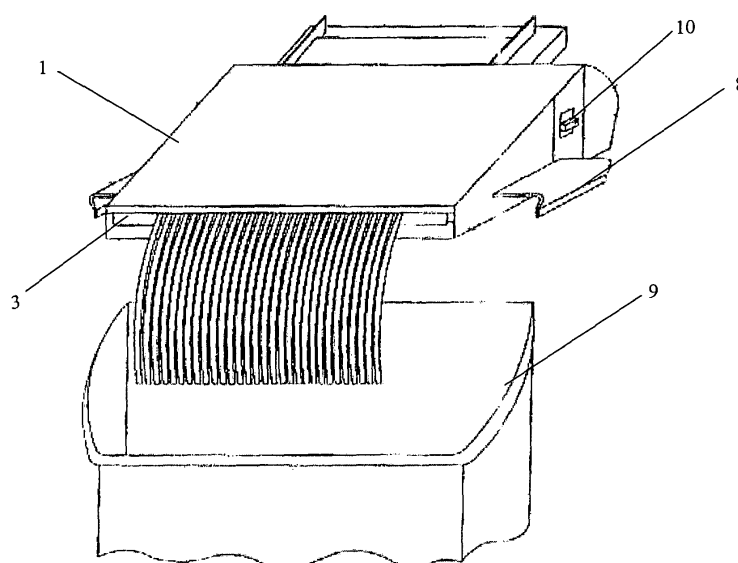


FIG 1

## Description

### TECHNICAL FIELD

**[0001]** This invention relates generally to an office electrical appliance, and more particularly to a portable paper shredder with automatic paper separating device.

### BACKGROUND

**[0002]** Paper Shredders are well known devices for destroying papers. In a typical configuration of the paper shredder of the prior art, paper to be destroyed have to be guided manually and continuously into the paper shredder which results in fairly complex operation and efficiency compromises. Furthermore, large scale paper shredders are often equipped with external wastebasket, and small scale paper shredders usually have built-in internal wastebasket, the large dimensions of the wastebasket has been a drawback as, on one hand, more space are needed to accommodate such wastebasket, and on the other hand, excessive efforts have to be paid to move such wastebasket.

### DESCRIPTION

**[0003]** One aspect of the invention is to provide a paper shredders with automatic paper separating device to overcome the deficiencies e.g. complex operation and large volume that accompanied with the paper shredders of the prior art.

**[0004]** The technical solution of the invention is: a paper shredder with automatic paper separator, including a housing, having a paper inlet and a paper outlet; a motor and a plurality of rotary shaft and cutting blades assembly contained within the housing; a paper separating wheel contained also within the housing; and a paper supporting tray disposed at the paper inlet of the housing.

**[0005]** Preferably, each of the two sidewalls of the housing is mounted with a supporting arm.

**[0006]** Preferably, the paper inlet of the housing is installed with a paper intake sensing device.

**[0007]** The advantageous effects of this invention are as follows: rather than being inspected by the user throughout the whole shredding process, papers can be cut automatically by using the paper supporting tray and the paper separating wheel disposed at the paper inlet of the housing; Moreover, the room is saved and the size of the shredder is reduced since the supporting arms mounted on the sidewalls of the housing may hold any dustbins and use them as wastebasket for the paper shredder.

### BRIEF DESCRIPTION OF THE DRAWINGS

**[0008]**

Figure 1 is a schematic drawing of an embodiment

according to this invention;

Figure 2 is a schematic drawing of the inner structure of the housing according to one embodiment of this invention;

Figure 3 is a schematic drawing of the rotary shaft and cutting blades assembly according to one embodiment of this invention;

Figure 4 is a schematic drawing of the rotary shaft and cutting blades assembly according to another embodiment of this invention;

### DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

**[0009]** One embodiment of the invention is shown by Figure 1 to 3, a paper shredder with automatic paper separator, including a housing 1 having a paper inlet 2 and a paper outlet 3 thereon, a motor 4 and a plurality of rotary shaft and cutting blades assembly 5 contained within the housing, a paper separating wheel 6 contained also within the housing, and a paper supporting tray 7 disposed at the paper inlet of the housing. Each of the two sidewalls of the housing is mounted with a supporting arm 8. The paper inlet 2 of the housing 1 is installed with paper intake sensing device.

**[0010]** Another embodiment of the invention is shown by Figure 4. This embodiment differs from the first one only in that the cutting blades on the rotary shaft are crossed.

**[0011]** When this invention is in use, a common dustbin 9, which is previously disposed below the paper shredder by means of the two supporting arms, will be used as the wastebasket of the paper shredder, and the paper to be shredded is disposed on the paper supporting tray 7; after turning on the switch 10, the paper on the supporting tray will be sensed by the sensing device; the paper-separating wheel 6 is driven and the paper to be shredded is carried into the housing 1, consequently, the paper is shredded by the rotary shaft and cutting blade assembly 5, and the destroyed paper drops into the predisposed dustbin.

### Claims

1. A paper shredder with automatic paper separator, including a housing, having a paper inlet and a paper outlet; a motor and a plurality of rotary shaft and cutting blades assembly contained within the housing; **characterized in that:** a paper separating wheel contained also within the housing, a paper supporting tray disposed at the paper inlet of the housing.
2. A paper shredder with automatic paper separator according to Claim 1, wherein each of the two sidewalls of the housing is mounted with a supporting arm.

3. A paper shredder with automatic paper separator according to Claim 1, wherein the paper inlet of the housing is installed with a paper intake sensing device.

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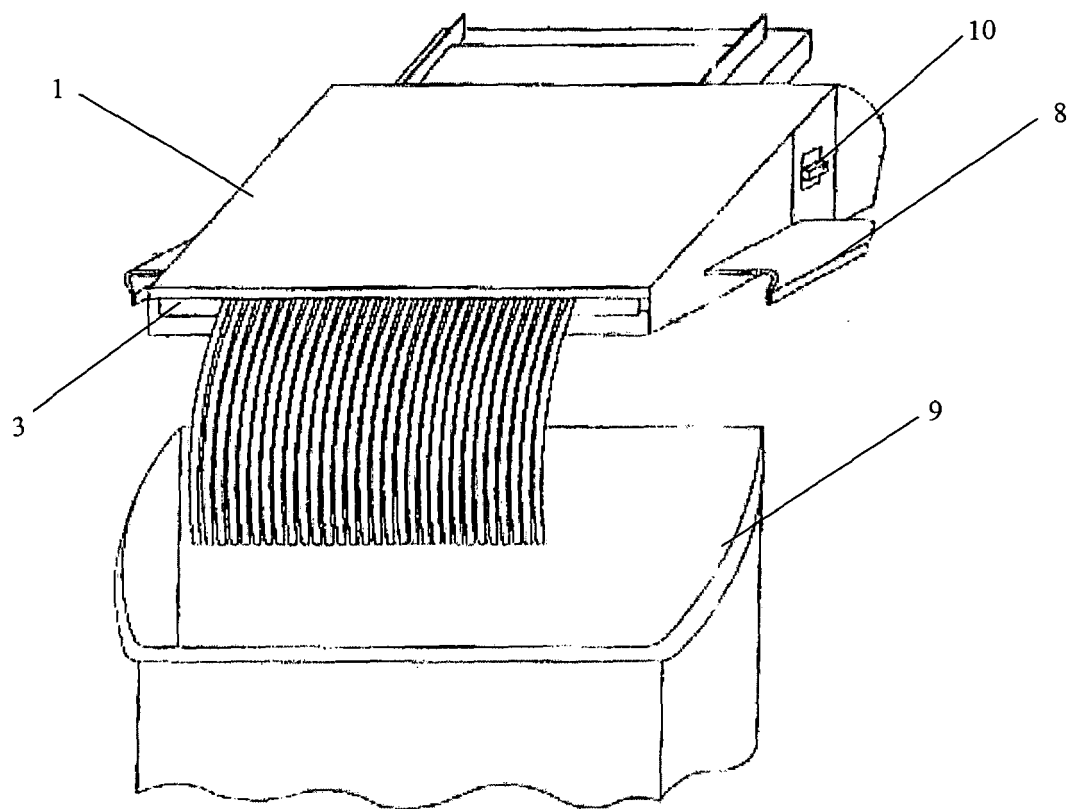


FIG 1

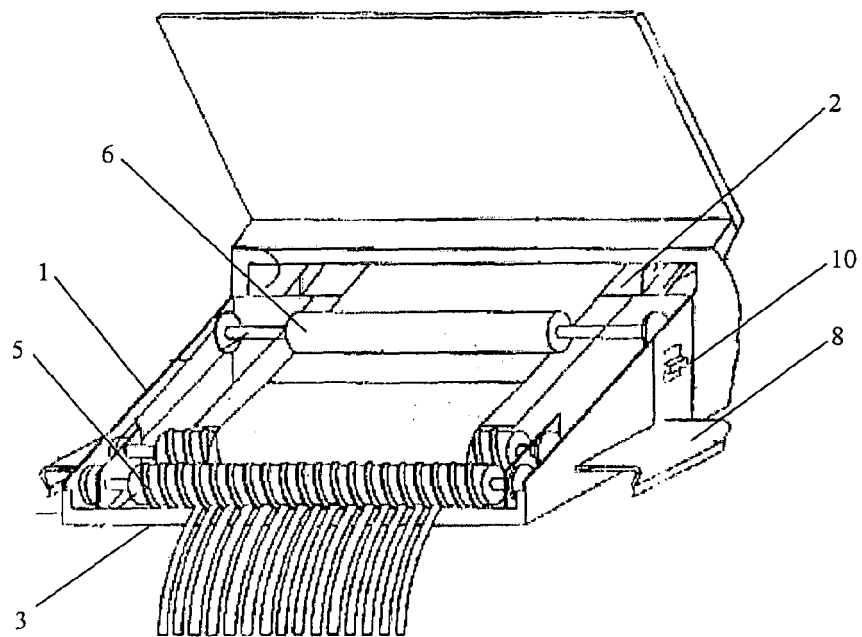


FIG 2

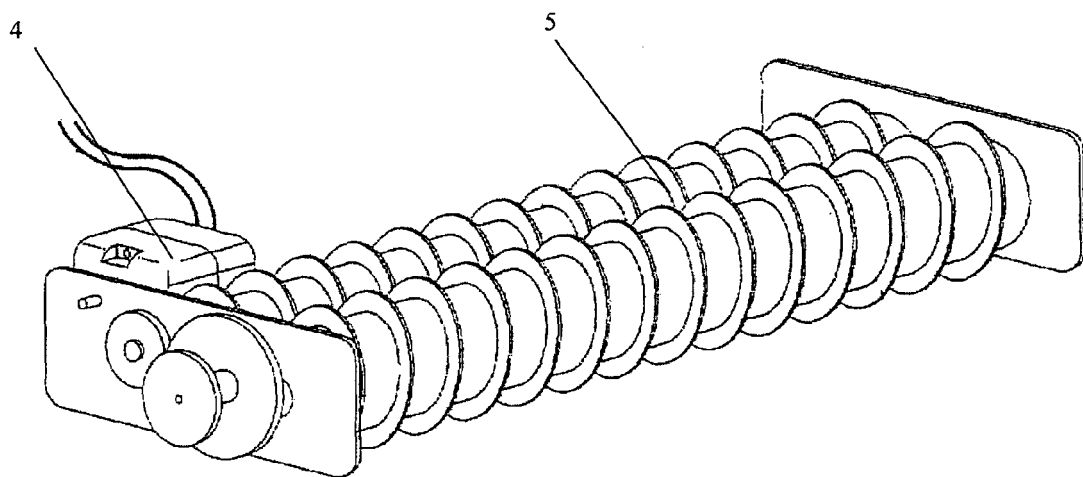


FIG 3

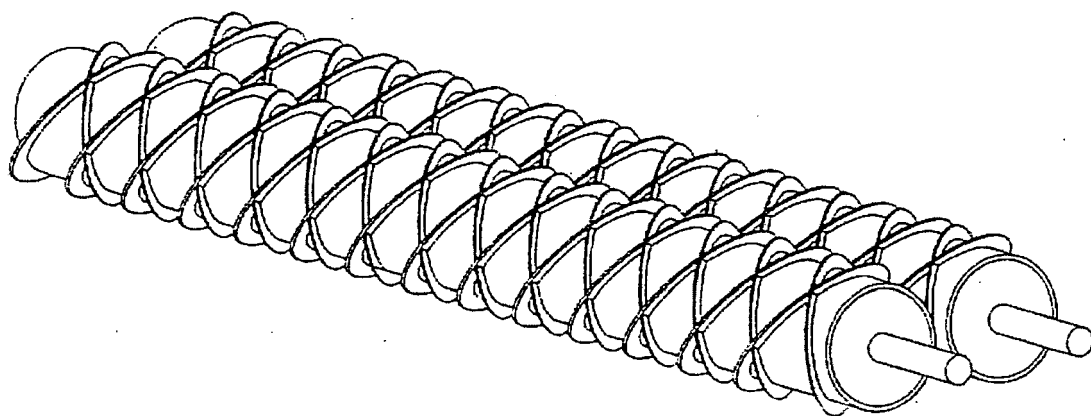


FIG 4



European Patent  
Office

# EUROPEAN SEARCH REPORT

Application Number  
EP 07 25 1978

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 5 975 445 A (KO JOSEPH Y [US]) 2 November 1999 (1999-11-02) * the whole document * -----	1-3	INV. B02C18/22 B02C18/00
			TECHNICAL FIELDS SEARCHED (IPC)
			B02C
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 28 August 2007	Examiner Kopacz, Ireneusz
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ..... &amp; : member of the same patent family, corresponding document</p>			

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**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 07 25 1978

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on  
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28-08-2007

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5975445	A	02-11-1999	NONE
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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82