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(54) Cutting die damper

(57) The subject matter of the patent is a cutting die damper used to improve the adherence of the die cut material to the stripping board in the process of stripping the edges of the die cut material. The cutting die damper consists of two elements which slide in one axis and a the sleeve / 1 / with a mushroom-shaped element / 2 / placed in the body / 3 / is supported on a spring / 5 /. The body / 3 / is fixed to the cutting die base / 10 / using the flat bar / 4 /, and the mushroom-shaped element / 2 / with the insert / 6 / is attached to the stripping board / 9 / of the cutting die, moving the die cut material to the conveyor.

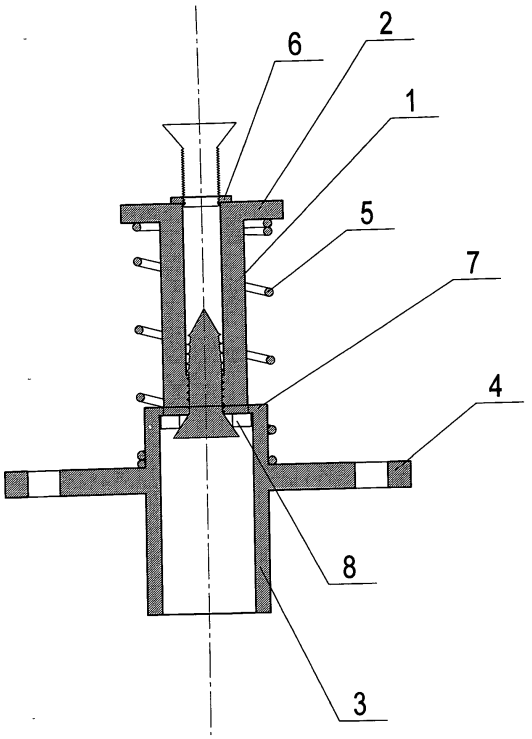

Fig. 2

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Description

[0001] The subject matter of the patent is a cutting die damper used to improve the adherence of the die cut material to the stripping board in the process of stripping the edges of the die cut material.

[0002] Well known and commonly used are the external machines for detaching the die cut material from the punch or die in the form of mandrels with a piece of plate attached at their end that is inserted between the punch and the sheet of the die cut material. Then the material is detached using levers or using the plate as a wedge. There are also known cutting die dampers that are attached to the punch plate as described in the German description of utility model No. DE 202008002306. These dampers consist of two sleeves located one in the other and bolstered on the spring placed inside the sleeve which is supported on one side on the bolted cover and on the other side on the internal wall of the internal sleeve. The case of the commonly used damper is placed in the punch plate aperture that on the external side has four symmetrically aligned protrusion lines that keep the damper in the punch plate aperture.

[0003] The known solution is complicated and expensive in fabrication, which, considering a large amount of dampers used per punch (at least four) increases the cost of cutting dies.

[0004] In order to eliminate this disadvantage, a cutting die damper as per the patent was designed.

[0005] The cutting die damper as per the patent consists of two elements which slide in one axis and a spring aligning the position of the two elements against each other. In its top part, the internal damper sleeve has a mushroom-shaped element and is placed in a pass-through body provided with a flat bar fixing the body to the cutting die base. The flat bar fixing the body supports a spring that at the other end rests against the mushroom-shaped element of the internal sleeve. This spring is located outside the working elements. At the top part of the mushroom-shaped element there is a permanently fixed threaded insert into which there is driven the screw which fixes the mushroom-shaped element to the plate reflecting the shape of the die cut material. The damper's body has on the internal side of the pass-through aperture a formed ring the diameter of which is not smaller than the diameter of the sleeve. The ring supports a screw-mounted disk which fixes the sleeve in the damper's body. The body is connected with the cutting die base using the fixing flat bar. The design of the cutting die damper as per the patent allows fixing a number of dampers in the cutting die and, during the cycle of die cutting and/or die cut material edge stripping, supports the entire surface of the material.

[0006] The cutting die damper as per the patent was shown on the illustration. Illustration No. 1 shows the damper mounted in the cutting die, while illustration No. 2 - cross section of the damper.

[0007] The cutting die damper as per the patent and designed for use at the die cut material edge stripping board consists of two elements which slide in one axis and a spring which is located outside the elements. The spring aligns the position of the two elements against each other. In its top part, internal damper sleeve (1) has a mushroom-shaped element (2) and is placed in a pass-through body (3) provided with a flat bar (4) fixing the body to stripping board (10) of the cutting die. The flat bar (4) fixing the body supports an external spring (5) that at the other end rests against the mushroom-shaped element (2) of the internal sleeve (1). At the top part of the mushroom-shaped element (2) there is a permanently fixed threaded insert (6) into which there is driven the screw which fixes the mushroom-shaped element to the stripping board (9) reflecting the shape of the die cut material. The damper's body (3) has on the internal side of the pass-through aperture a formed ring (7) the diameter of which is not smaller than the diameter of the sleeve (1). The ring supports a screw-mounted disk (8) which fixes the sleeves in the damper's body (3). The body (3) is connected with the stripping board (10) of the cutting die using the fixing flat bar (4).

[0008] The design of the cutting die damper as per the patent allows fixing a number of dampers in the stripping board of the cutting die and, after the cycle of die cutting and/or die cut material edge stripping, lifts the plate with this material to the conveyor.

Claims

1. The cutting die damper consists of two elements which slide in one axis and a spring that aligns the position of the two elements against each other, **characterised in that** the internal sleeve / 1 / together with the top mushroom-shaped element / 2 / is placed in a pass-through body / 3 / provided with a fixing flat bar / 4 / that supports the external spring / 5 / which from the top rests against the mushroom-shaped element / 2 /.

2. The cutting die damper as per claim 1, ***characterised in that*** at the top part of the mushroom-shaped element / 2 / there is a permanently fixed threaded insert / 6 /, while in the body / 3 /, on the internal side of the aperture there is a formed ring / 7 / the diameter of which is not smaller than the diameter of the sleeve / 1 / which supports the disk / 8 / which fixes the internal sleeve / 1 / in the body / 3 /.

3. The cutting die damper as per claim 1, ***characterised in that*** the mushroom-shaped element / 2 / including the insert / 6 / is fixed to the plate / 9 /, while the body / 3 / with the flat bar / 4 / is attached to the cutting die base / 10 /.

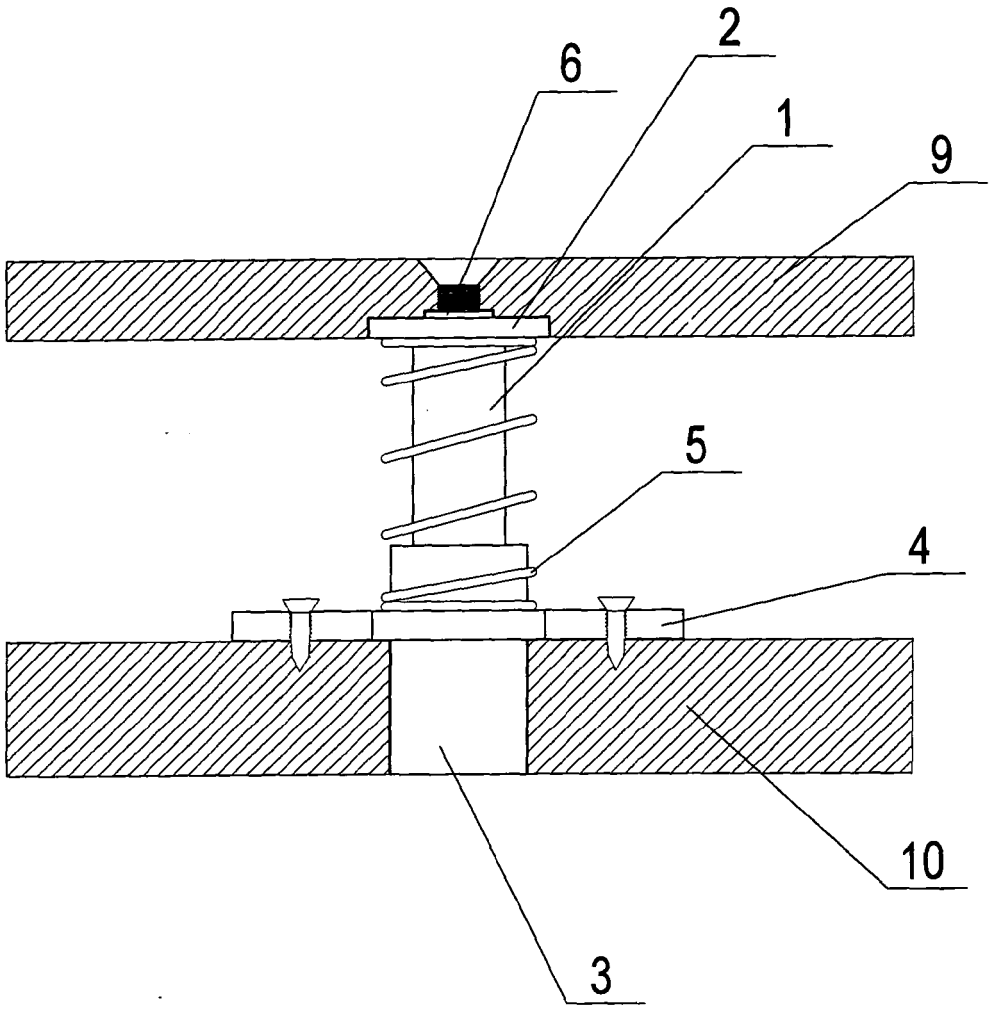

Fig. 1

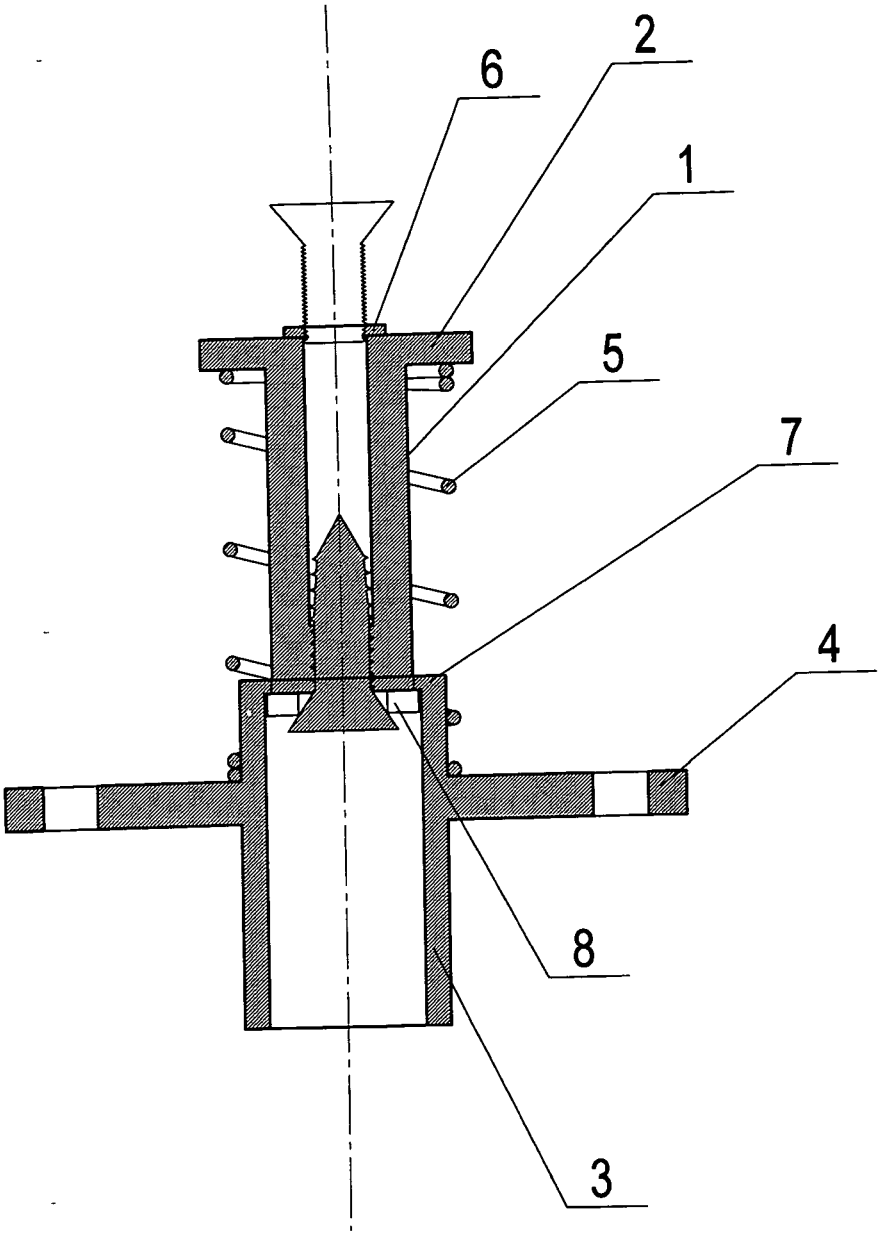

Fig. 2

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EUROPEAN SEARCH REPORT

Application Number
EP 10 46 0050

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A,D	DE 20 2006 017644 U1 (KARL MARBACH GMBH & CO KG [DE]) 8 February 2007 (2007-02-08) * paragraph [0001] - paragraph [0007] * * paragraph [0017] - paragraph [0021]; figures 1-3 *	1-3	INV. B26D7/02 B26D7/06
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A	US 2005/070420 A1 (STEINER JEAN-PIERRE [CH]) 31 March 2005 (2005-03-31) * paragraph [0019] - paragraph [0027]; figures 1-3 *	1-3	
			TECHNICAL FIELDS SEARCHED (IPC)
			B26D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	28 April 2011	Maier, Michael

CATEGORY OF CITED DOCUMENTS

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

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

& : member of the same patent family, corresponding document

EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 10 46 0050

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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28-04-2011

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

REFERENCES CITED IN THE DESCRIPTION

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