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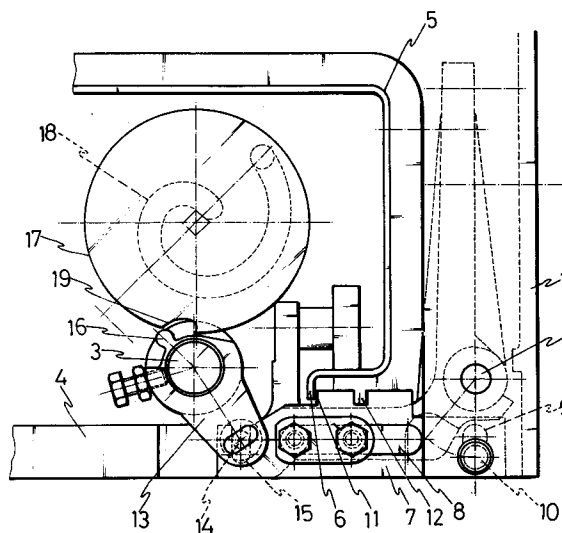
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AT CH DE FR GB IT LI NL(71) Applicant: **Arconada Arconada, Luis**
Avda. Sancho El Sabio, 26-1C
E-20010 San Sebastian(ES)(72) Inventor: **Arconada Arconada, Luis**
Avda. Sancho El Sabio, 26-1C
E-20010 San Sebastian(ES)(74) Representative: **Ungria Lopez, Javier et al**
Avda. Ramon y Cajal, 78
E-28043 Madrid(ES)(54) **Safety device for cold cuts cutting machines.**

(57) These machines have a base with two inclined planes that form a dihedral right angle. One of them includes the discoidal cutting blade and the other is determined by a moveable carriage on which the cold cut to be cut is supported.

The safety device prevents the cleaning of the machine from taking place if the blade is unprotected. For this purpose one of the plates of the base has a longitudinal edge (69) that does not reach one of the sides, upon which a moveable strip (7) of the support (1) of the carriage collides if the support is collapsed in an incorrect longitudinal position.

The moveable strip (7) is connected to the end of a swing arm (13) in a longitudinal rod (3), whose other end has a stub (16) which makes contact with a cam (17) provided with a notch (19.)

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The present invention, as is expressed in the title of this specification, refers to a safety device for cold cuts cutting machines and has a series of relevant features with regard to the devices that are presently used for the same purpose.

Cold cuts cutting machines are generally comprised of a base, normally on a table, which offers two inclined planes forming between them a dihedral right angle.

One of these inclined planes determines the one where the cutting device defined by a circular blade is located. On this same inclined plane there is a stop plate which is able to move away from or approach said plane, depending on the needs. On this same inclined plane there is a stop plate which covers the discoidal blade, in such a way that the amount of this parallel movement between the stop plate and the blade itself, regulates or determines the cutting thickness of the cold cut.

The other inclined plane is determined by the useful surface of a longitudinally moveable carriage with a side lap, upon which the cold cut to be cut is placed, said carriage being upon a support.

This type of machine requires frequent cleaning, for which purpose it is necessary to tilt the carriage.

Safety regulations establish that it is not possible to effect the tilting of the carriage in order to clean the machine if the cutting blade is moved with regard to the stop plate, since in this case the blade is unprotected and there may be risks of accident for the user thereof.

Now then, the safety device that the invention proposes obtains in an extremely simple and efficient manner the compliance of this regulation, since the carriage can only be tilted in a position in which the cutting blade is totally protected.

DESCRIPTION OF THE INVENTION

In general lines, in order to obtain the object described in the above section, it is provided that one of the plates that make up the structure of the base, has an edge folded all along the same, with the exception of one of its side ends.

The carriage support is collapsible and is connected to a vertical strip which is drawn in the tilting movement, remaining placed in a transversal plane, in other words, perpendicular to the direction of movement of the carriage, which is known to take place from left to right of the operator of the machine. This strip collides with the edge of the base upon beginning the tilting movement of the carriage, for which reason this operation cannot take place, unless the carriage is located on the side where there is no edge.

This strip in turn is connected to a radial arm which swings around a horizontal bar to which it is

integral, in other words, when the support of the carriage tilts the advance of the strip and angular displacement of the swing arm takes place. This swing arm has in a point diametrically opposite the one of its connection to the plate, a stub which makes contact with the circular periphery of the cam that regulates the cutting thickness of the cold cut. Said cam includes in a point of its periphery a notch where it is possible to house the stub of the swing arm, when the angular displacement thereof takes place as a result of the collapsing of the support. In accordance with this, said tilting can only take place when said stub remains facing the notch, while in any other position of the cam said movement is prevented since as we have indicated above the stub comes in contact with the outer circular periphery of said cam.

The notch of the cam only occupies the position of coincidence with the stub of the swing arm when the cutting blade has its edge protected in the plane that the stop plate defines, whereby upon effecting the tilting of the carriage there is no danger for the operator.

Besides, the moveable strip includes a notch on its top edge, which is capable of confronting the edge of the plate, in the tilting or collapsing position of the support. Thanks to the existence of this groove it is possible to longitudinally displace the carriage. The side edges of this notch or groove open to the top edge do not permit the lifting of the support of the carriage unless the latter is moved towards the side when the edge has already finished.

In order to make it easier to understand the features of the invention and forming an integral part of this specification, a sheet of drawings, on whose sole figure the following has been represented in a illustrative and non-restrictive manner, is accompanied:

BRIEF DESCRIPTION OF THE DRAWINGS

Sole figure.- It is a schematic raised side view of one portion of the cold cuts cutting machine that includes the safety device object of the invention.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Making reference to the numbering used in the figure, we can see that number (1) is the support of the carriage which may be displaced longitudinally along the base of the machine, in other words, perpendicular to the plane of the drawing. This support (1) can also be tilted around shaft (2) in order to allow the machine to be cleaned.

The machine also includes a support bar (3) and main guide (4.) In the structure of this type of

machine there is a cam which makes it possible to adjust the cutting thickness of the cold cut, upon displacing the stop plate with regard to the circular cutting blade.

In accordance with the invention one of the plates that make up the structure of the base, (5), has an edge (6) folded vertically all along the base, with the exception of one of its sides.

The support of the carriage (1) is connected to the strip (7) in such a way that the tilting of the former around shaft (2) entails the advancing of said strip (7) upon being guided in the groove (8.) The moveable strip (7) has the rear groove (9) in which the stub (10) of drawing the same, located in the support (1), moves.

In the top thereof the moveable strip (7) has an angular notch whose edge defines a stop wall against edge (6) of the plate (5), which prevents the advance movement of the strip during the tilting of the support (1) of the carriage. Thus, in the entire base area where there is edge (6) it will be impossible to effect the tilting of the support of carriage (1), given that the stop wall defined by the front top vertical edge (11) of the strip (7) will collide with said edge (6), while the tilting will be possible in the area where the edge (6) has already finished, this movement also being dependent on other conditions or impediments which will also have to be overcome, as we will explain hereinafter.

The strip (7) also has at the top a notch (12), located in a point which may be linearly coincident with edge (6), in the tilting condition of the support (1) of the carriage, whose function we will also see hereinafter.

Strip (7) is also connected by its front end to the radial arm which is swinging with regard to the geometric axis of the support bar (3.) This arm (13) has on its end connecting with the strip (7), a stub (14) which moves in the vertical groove (15) of the moveable strip (7.) As long as the strip (7) moves forward and backward by collapsing and lifting of the support (1) of the carriage, there will be a small angular and swinging movement of the radial arm (13) if there is no other obstacle.

The radial arm (13) has in one point diametrically opposite the one that has the stub (14) another stub (16) which is in contact with the circular periphery of the cam (17) which defines the means of adjustment of the cutting thickness of the cold cut, known in themselves and in which the spiral ramp (18) intervenes. In a peripheral point of the cam (17) there is a notch (19.)

If the support of the carriage (1) is displaced towards the area of the stop plate, in other words, towards where there is no edge (6), the tilting of the same can take place as long as the cutting blade is protected by the stop plate. In this position the cam of control (17) has its notch (19) opposite

the stub (16) of the swing radial arm (13), allowing the rotation of the same clockwise. In these conditions the tilting of the support (1) of the carriage can take place in order to proceed to clean the machine.

If on the contrary, the cutting blade is moved with regard to the stop plate and protective plate of said blade, the tilting of the support (1) cannot take place since the notch (19) of the cam (17) does not occupy the position opposite the stub (16) of the radial arm (13) and therefore said stub (16) contacts with the periphery of the cam (17.) In this situation it is not possible to turn the arm (13) and therefore the moveable strip (7) remains locked, thus preventing the tilting of the support of the carriage (1.) There cannot be any movement of the stop plate if the arm (13) is locked in the cam (17), in such a way that the user is protected, in order to do the cleaning, because the cutting blade is perfectly protected by the stop plate.

Once the tilting of the carriage (1) and the corresponding cleaning of the machine has taken place, it is necessary to lift the support (1), simultaneously producing the rotation of the arm (13) counterclockwise, as well as the unlocking of the control cam (17.) In this lifting normal use position of the machine, the support of carriage (1) can move longitudinally.

If the support (1) of the carriage is in the collapsed position and it is desired to longitudinally move the carriage, this operation can take place since the top notch (12) of the moveable strip (7) is confronted by the edge of the plate (5), in other words, edge (6) is flanked by the side edges of the notch (12.) Once the support has been moved, it will not be possible to lift the carriage because the front edge of the notch (12) collides with edge (6.) Thus it is necessary to effect the collapsing or lifting of the support (1) on the side where there is no edge and then its linear movement.

Therefore, until the cutting edge is protected the support cannot be tilted, which can only be done if the carriage is moved towards one of the sides, specifically towards the place where there is no edge (6) of the plate (5) of the base.

Claims

1. Safety device for cold cuts cutting machines, of the type that are generally made up of a base upon which there are two inclined planes forming a dihedral right angle, one of which includes the discoidal cutting blade, capable of remaining fixed at differences distances from the same, remaining protected by a plate which is also moveable, and the other plane being defined by a carriage that moves longitudinally and which serves as a support of

the cold cut to be cut, having the purpose this safety device of preventing the tilting of the carriage for the cleaning of the machine if the cutting blade is not protected, characterized because one of the plates (5) which forms the structure of the base, has an edge (6) folded all along the base except in one of the sides, and the support (1) of the carriage that is moved and tilts on the same base has a moveable strip (7) ortotonal to said edge (6), which is capable of acting as a stop upon said edge (6) upon starting the collapsing of support (19.)

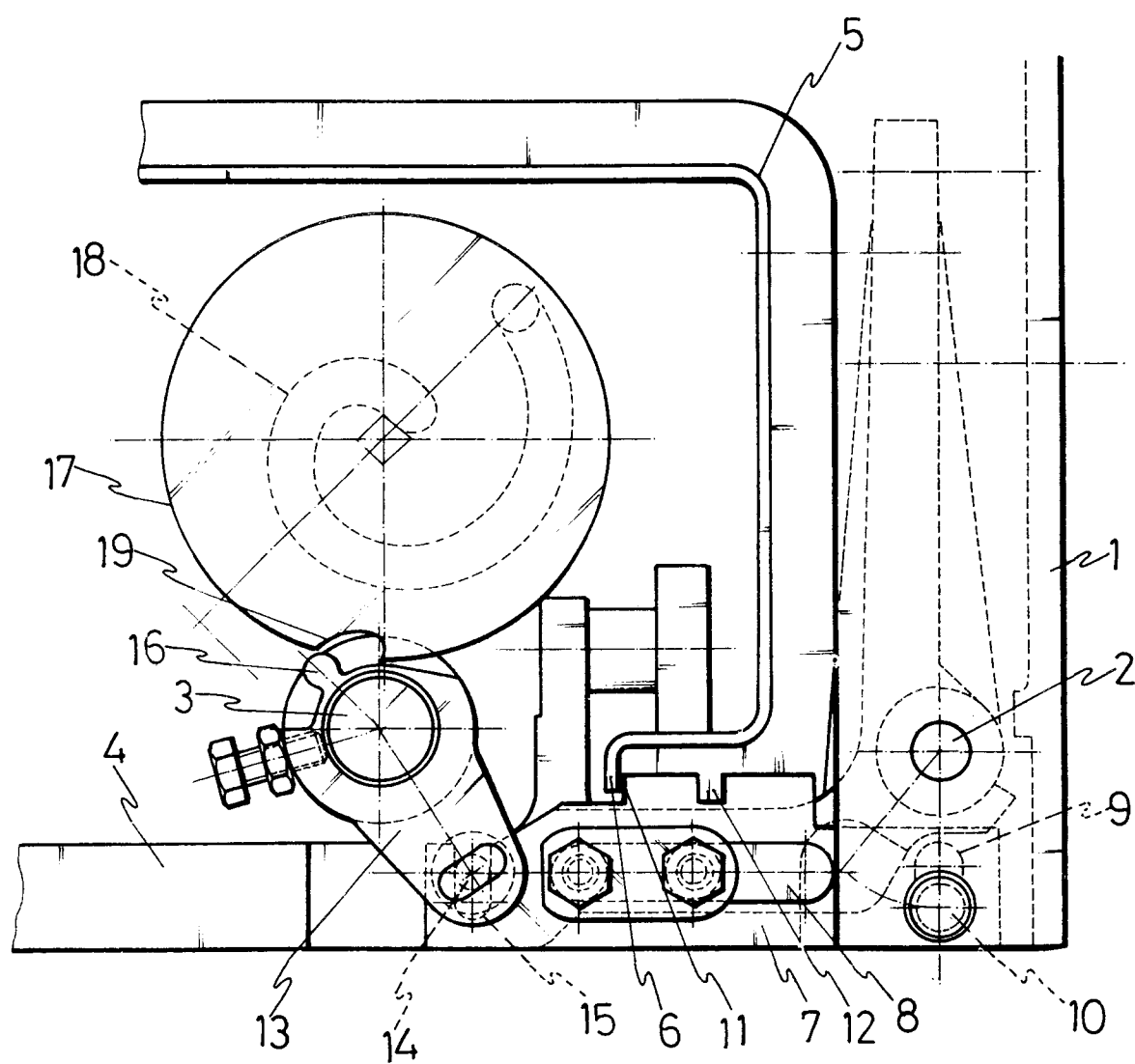
2. Safety device for cold cuts cutting machines, according to claim 1, in which the moveable plate (7) has a groove (15) in which the stub (14) emerging from a radial arm (13) solid to a bar (3) of longitudinal horizontal support, moves, said arm (13) being able to swing upon the strip (7) moving as long as a second stub (16) of the radial arm (13) diametrically opposite the first one, coincides with a notch (19) existing on the circular periphery of the cam (17) that adjusts the cutting thickness of the cold cut.
3. Safety device for cold cuts cutting machines, according to the above claims, in which the moveable strip (7) includes a notch (12) on its top edge which, in the collapsed position of the support (1) is opposite the edge (6) of the plate (5), permitting the longitudinal movement of the carriage and preventing the lifting in another longitudinal position other than that in which said edge (6) is spanned.

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EUROPEAN SEARCH REPORT

Application Number

EP 91 20 3198

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
A	EP-A-0 115 785 (BIZERBA-WERKE WILHELM KRAUT GMBH & CO.) * the whole document * ---	1-3	B26D7/22
A	US-A-3 704 736 (PRATLEY) -----		
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			B26D
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 01 JULY 1992	Examiner ESCHBACH D.P.M.
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			