Feb. 23, 1971 F. DAGE 3,564,664

ROPE CLAMP

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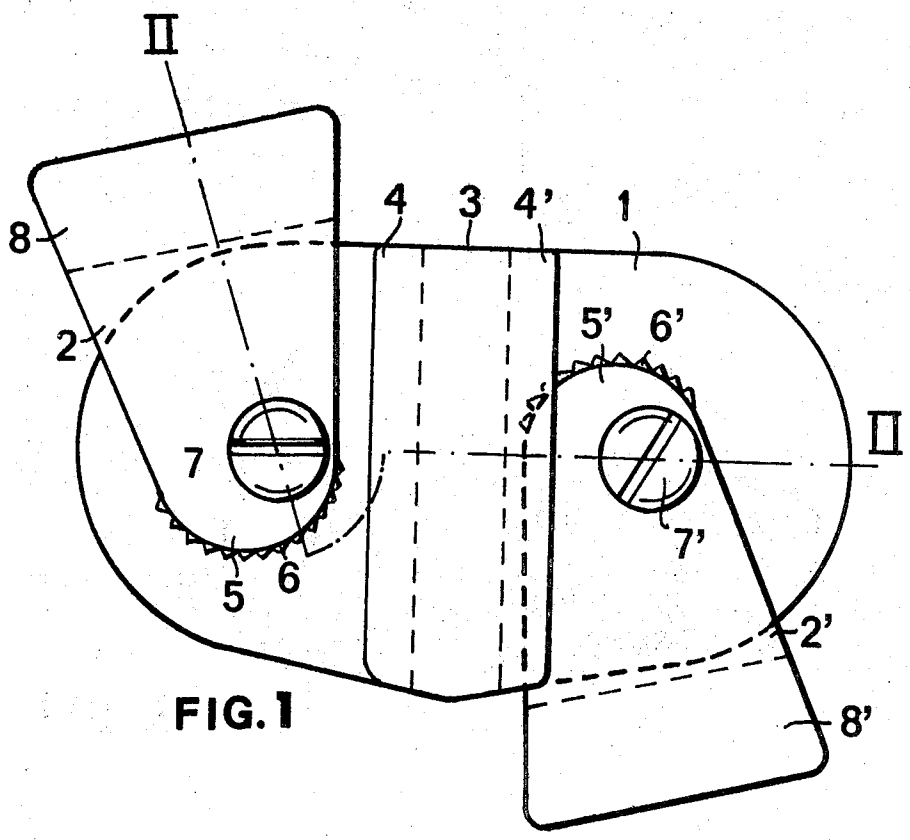


FIG. 1

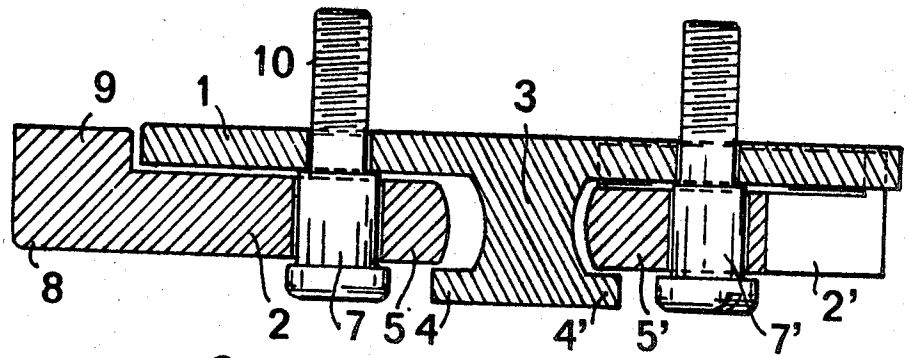


FIG. 2

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ROPE CLAMP

Folke Dage, Asby Sateri, Stigtomta, Sweden

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ABSTRACT OF THE DISCLOSURE

A rope clamp having a base plate to be attached to a support surface and carrying a wall member having an abutment surface constituting one gripping surface of the clamp and extending in a substantially vertical direction from the base plate. At least one clamp member freely rotatable about a gudgeon attached to the base plate, the axis of said gudgeon extending in a substantially vertical direction from the base plate, and comprises a sector-shaped eccentric portion cooperating with said abutment surface of the vertical wall member to hold a rope. The rotatable clamping member includes a portion which projects laterally of said eccentric portion in a direction from the gudgeon axis opposite to the clamping member and perpendicular to said axis, and which is so dimensioned and arranged relative to the eccentric portion that the centre of gravity of the rotatable clamping member as a whole is located within said portion projecting laterally of the eccentric portion.

BACKGROUND OF THE INVENTION

The invention relates to a rope clamp, in particular a rope clamp for fastening a rope when securing loaded goods to lorries or railway waggons and including an eccentric rope clamping member, which cooperates with an abutment surface to hold a rope under tension when the rope is exposed to a force in the peripheral direction of the clamping member.

Rope clamps of this kind as used for holding ropes securing heavy loads usually include an operating handle by means of which the eccentric clamping member may be rotated, or comprise a spring which is arranged so as to bias the clamping member in closing direction for gripping a rope, that is, the direction in which the distance between the clamping member and the abutment surface cooperating therewith to hold a rope decreases due to the eccentricity of the clamping member. Rope clamps of this kind comprising an operating handle suffer a drawback, when used for lashing heavy loads on trucks and waggons, in that they have proved often to be unintentionally actuated, to the effect that a fastened rope is loosened. Neither rope clamps comprising springs biassing the clamping member towards a position to grasp a rope are well-suited for fastening heavy loads, in particular due to the fact that such springs are apt in course of time to cause uncertainty as regards the dependability of the clamp.

It is an object of the present invention to provide a novel and improved rope clamp, which, as answers the purpose intended, is to be mounted on a substantially vertical surface of a support member, a vertical wall of a goods vehicle, for instance, and which can be readily operated and treated fairly roughly when used and which is highly dependable in use.

The construction of the rope clamp according to the invention is described below considering the fact that, when mounted to be used in practice, it is attached to a substantially vertical wall surface to hold a rope exposed to an upwardly directed force.

Thus, the rope clamp according to the invention belongs to the kind of rope clamps comprising a base plate to be attached to a support surface and carrying a wall member having an abutment surface constituting one gripping surface of the clamp and extending in a substantially vertical direction from the base plate, and at least one clamp member which is freely rotatable about a gudgeon attached to the base plate, the axis of said gudgeon extending as well in a substantially vertical direction from the base plate, and which comprises a sector-shaped eccentric portion cooperating with said abutment surface of the vertical wall member to hold a rope. Viewed in a plane perpendicular to the pivot axis of the rotatable clamp member said eccentric portion extends substantially arc-shaped between a smallest radius of the clamping member and a largest radius thereof, which in a peripheral direction about the gudgeon axis defines a limit of the effective range of the rotatable clamping member for gripping a rope in cooperation with the abutment surface of said wall member.

SUMMARY OF THE INVENTION

According to the invention a rope clamp of the kind described is substantially characterized by the fact that the rotatable clamping member includes a portion which projects laterally of said eccentric portion in a direction from the gudgeon axis opposite to the clamping member and perpendicular to said axis, and which is so dimensioned and arranged relative to the eccentric portion that the centre of gravity of the rotatable clamping member as a whole is located within said portion projecting laterally of the eccentric portion.

By constructing the rotatable clamping member as thus defined, the result is attained that, if and when the rope clamp, as is intended in view of the object of the invention, is attached to a substantially vertical wall in a position, in which the abutment surface of the wall member attached to the base plate extends as well in a substantially vertical direction, the rotatable clamp member is exposed by gravity to a rotational momentum in a direction in which parts of the surface of the eccentric portion of the rotatable clamping member move, at least within a substantial part of the rotation of the rotatable clamping member, between a position in which a smaller radius of the eccentric portion of the clamping member is directed towards the vertical abutment surface of the wall member, and a position in which a larger radius points towards said surface.

In a preferred embodiment according to the invention, the rope clamp is designed to constitute a twin clamp comprising two individual clamping units for each one rope, two rotatable clamping members being arranged as images of each other about a common centre wall having abutment surfaces which each faces a rotatable clamp member.

The gudgeons about which said two rotatable clamp members are pivoting in this last described twin rope clamp may then conveniently each constitute portions of threaded bolts with which the clamp is to be attached to a support wall, the cylindric shanks of the bolts constituting gudgeons for the rotatable clamp members.

In order that the invention may be clearly understood, a preferred embodiment thereof will now be described by way of example only with reference to the accompanying drawing.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a front view of a twin rope clamp including two symmetrically mounted rotatable clamp members cooperating with a common center wall member to hold a rope, the left hand one of said rotatable clamp members, as viewed in FIG. 1, being held manually against

gravity to occupy a position in which a rope can be introduced into the clamp, and

FIG. 2 shows a section along the line indicated II—II in FIG. 1.

DESCRIPTION OF A PREFERRED EMBODIMENT

The rope clamp as illustrated includes a base plate **1** and a central wall member **3** extending along and perpendicular to the base plate, and two rotatable clamp members **2** and **2'**, respectively, each pivotally arranged on a gudgean **7** and **7'**, respectively, and also extending perpendicular to the base plate. Each rotatable clamp member includes an eccentric portion **5** and **5'**, respectively, the eccentric surface **6**, **6'**, respectively, of which moves closer to or farther away from the wall member **3** when the clamp member is rotated in one direction or other.

Remote from the base plate, the wall member **3** carries flanges **4**, **4'** protruding laterally from the wall, each of said flanges in the gripping position of a rotatable clamping member **2**, **2'** preventing a rope from being removed from the clamp laterally. To this end, the rotatable clamp members **2**, **2'** and the flanges **4**, **4'** are so dimensioned that a slot is present between the clamp member and the flange when the clamping member is swung outwardly a selected smallest angle, preferably an angle of at least 90° from the position in which the largest radius of the eccentric portion of the clamp member points towards the abutment surface of the wall member. As a result, a rope is safely held within the space enclosed by the base plate, the abutment surface of the wall member, the flange **4** and the clamp member **2**. Each clamp member member is left free to move downwardly from the position illustrated in the left-hand part of FIG. 1 towards the position illustrated in the right-hand part of this figure for gripping a rope.

Thus, the left-hand clamp member **2** is illustrated as held in a position, in which a rope may be introduced into the clamp through a slot extending between the flange **4** and the clamp member **2**. Each clamp member **2**, **2'** includes a portion **8** and **8'**, respectively, extending laterally from the eccentric portion **5** and **5'**, respectively. Said portions **8**, **8'** each constitute the major part of the mass of the clamping member. The clamping members are so arranged on their pertaining gudgeons **7** and **7'**, respectively, that they readily swing downwardly after first having been swung manually into the position illustrated by the left-hand clamp member in FIG. 1. To improve the properties of the rope clamp in this respect, the clamp members **2**, **2'** each includes an enlarged portion, which is illustrated in the left-hand part of FIG. 2 at **9**, and extends beyond the base plate **1** in the radial direction of the clamp member. This enlarged portion **9** constitutes, together with the portion **8**, an impact member to close or open, respectively, the clamp by means of a hammer blow.

In the embodiment illustrated in the figure, the gudgeons **7** and **7'** constitute stem portions of screws **10**, by means of which the rope clamp is to be secured to a support wall.

While the invention has been described in detail with reference to a certain preferred embodiment, it will be understood by those skilled in the art that various changes and modifications may be made without departing from the scope of the invention as set out in the appended claims.

I claim:

1. A rope clamp comprising a base plate to be attached to a support surface, a wall member having an abutment surface constituting one gripping surface of the clamp and extending in a substantially vertical direction from the base plate, at least one gudgeon attached to the base plate, and at least one clamping member which is freely rotatable about a respective gudgeon, said gudgeon extending in a substantially vertical direction from the base plate, said rotatable clamping member comprising a sector-shaped eccentric portion facing said abutment surface of said vertical wall member to cooperate therewith to hold a rope, and, as viewed in a plane perpendicular to the pivot axis of the rotatable clamping member, extending substantially arc-shaped between a smallest radius of the clamping member and a largest radius thereof, which in a peripheral direction about the gudgeon axis defines a limit of the effective range of the rotatable clamping member for gripping a rope in cooperation with the abutment surface of said wall member, said rotatable clamping member including a portion which projects laterally of said eccentric portion in a direction from the gudgeon opposite the clamping member and perpendicular to said axis, said portion being so dimensioned and arranged relative to said eccentric portion that the center of gravity of the rotatable clamping member as a whole is located within said portion projecting laterally of said eccentric portion, said wall member comprising a flange protruding laterally therefrom, said flange in the gripping position of said rotatable clamping member extending beyond part of said clamping member, said flange and said clamping member being dimensioned to define a slot for introducing a rope between the flange and the clamping member when the clamping member is swung into a position in which said smallest radius of said eccentric portion is directed towards said wall member.

2. A rope clamp according to claim **1**, wherein said portion of the clamping member located outwardly of the base plate has a surface which is substantially flush with a surface of said base plate.

3. A rope clamp according to claim **1**, wherein said flange and base plate define a clear space therebetween in which said eccentric portion is confined to travel.

4. A rope clamp according to claim **3**, wherein said wall member has a concave surface in said clear space facing said eccentric portion.

5. A rope clamp according to claim **1**, in which said portion projecting laterally of said eccentric portion includes a portion located outwardly of the base plate in radial directions from the gudgeon axis and extending into the space between a plane through the front surface of the base plate and the rear surface thereof.

6. A rope clamp according to claim **1** and comprising two individual clamping units for each one rope, in which two clamping members, each rotatable about each one gudgeon, are symmetrically arranged on either side of said wall member having two abutment surfaces, of which each constitutes a gripping surface of a clamp and faces one of said rotatable clamping members.

7. A rope clamp according to claim **6**, in which each of said gudgeons constitutes a portion of a threaded bolt with which the clamp is to be attached to a support wall.

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BERNARD A. GELAK, Primary Examinet