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Reissinger et al.

[11] **3,808,714**

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[54] **DOUBLE BLADED SNOWPLOW WITH OVERLOAD RELEASE**

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[73] Assignee: **said Gottfried Reissinger, by said Harvo Reissinger**

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[30] **Foreign Application Priority Data**

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[52] **U.S. Cl.** ..... **37/42 VL,** 172/269

[51] **Int. Cl.** **E01h 5/06,** A01b 61/04

[58] **Field of Search** ..... 37/42 VL, 41, 42 R, 50; 172/261, 262, 263, 269, 518, 527, 528, 529, 530; 15/54, 55, 93 R

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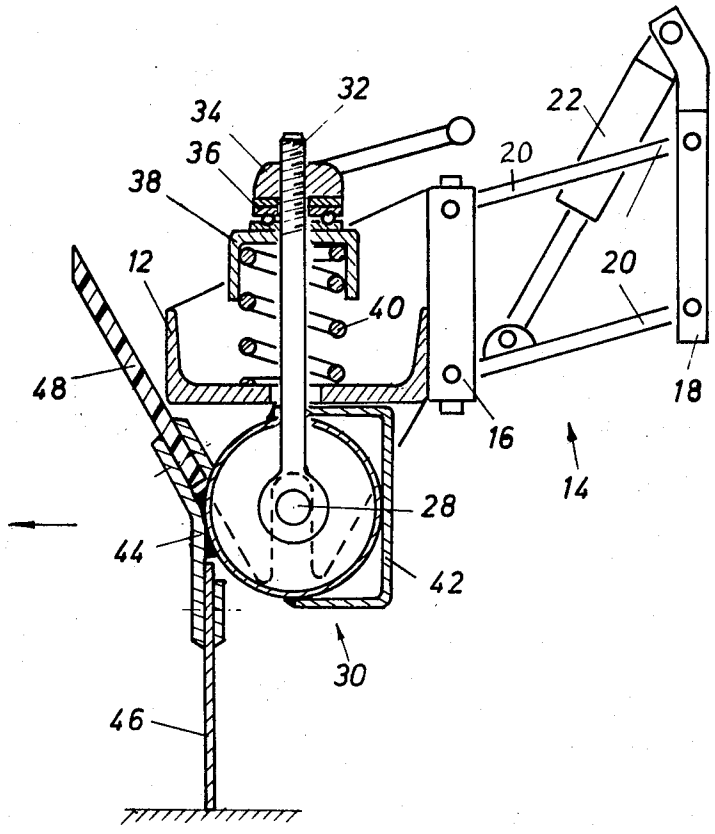
[57] **ABSTRACT**

The invention relates to a street clearing device having a first scraping blade, preferably constructed of steel, and a second scraping blade, constructed of rubber or plastic. The second scraper blade is adapted to be moved between an inoperative position and an operative position where it acts upon the street in place of the first scraping blade, and can be rotated about an axis substantially parallel to the operating edges of both scraping blades in the case of overloading when an obstacle is encountered.

9 Claims, 9 Drawing Figures



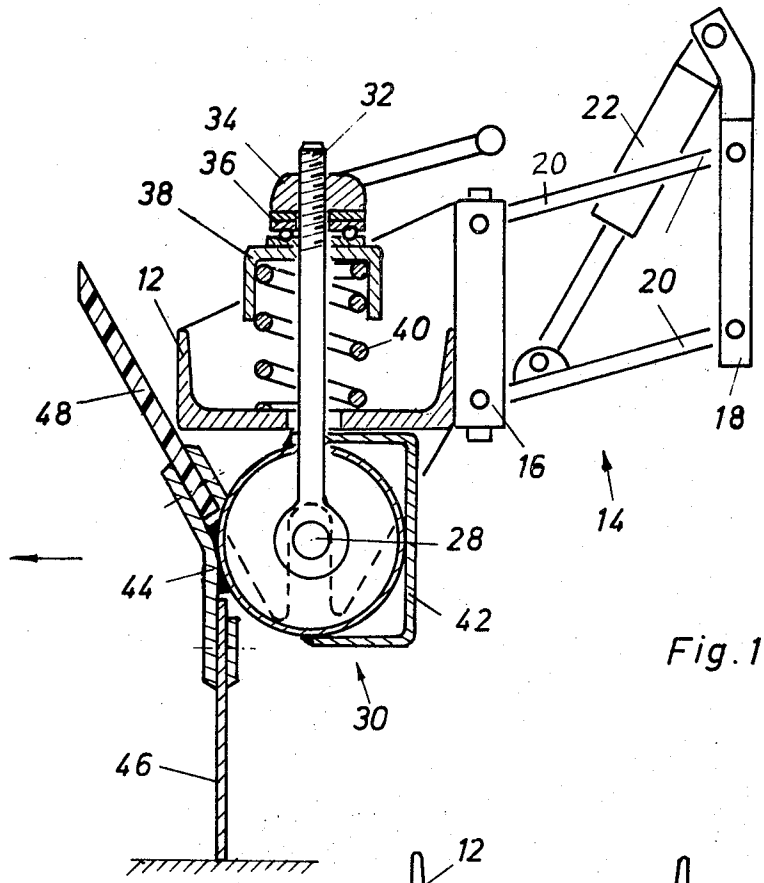

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Fig. 1

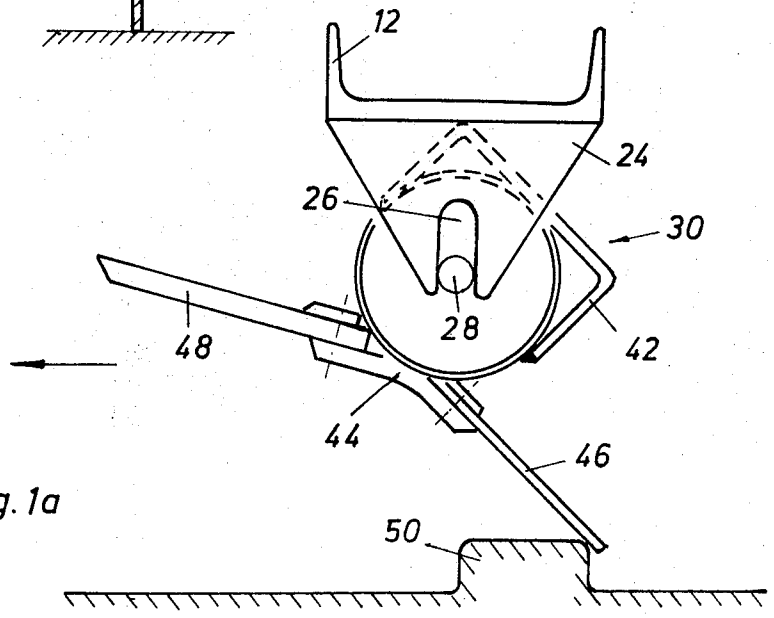
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Fig. 1a

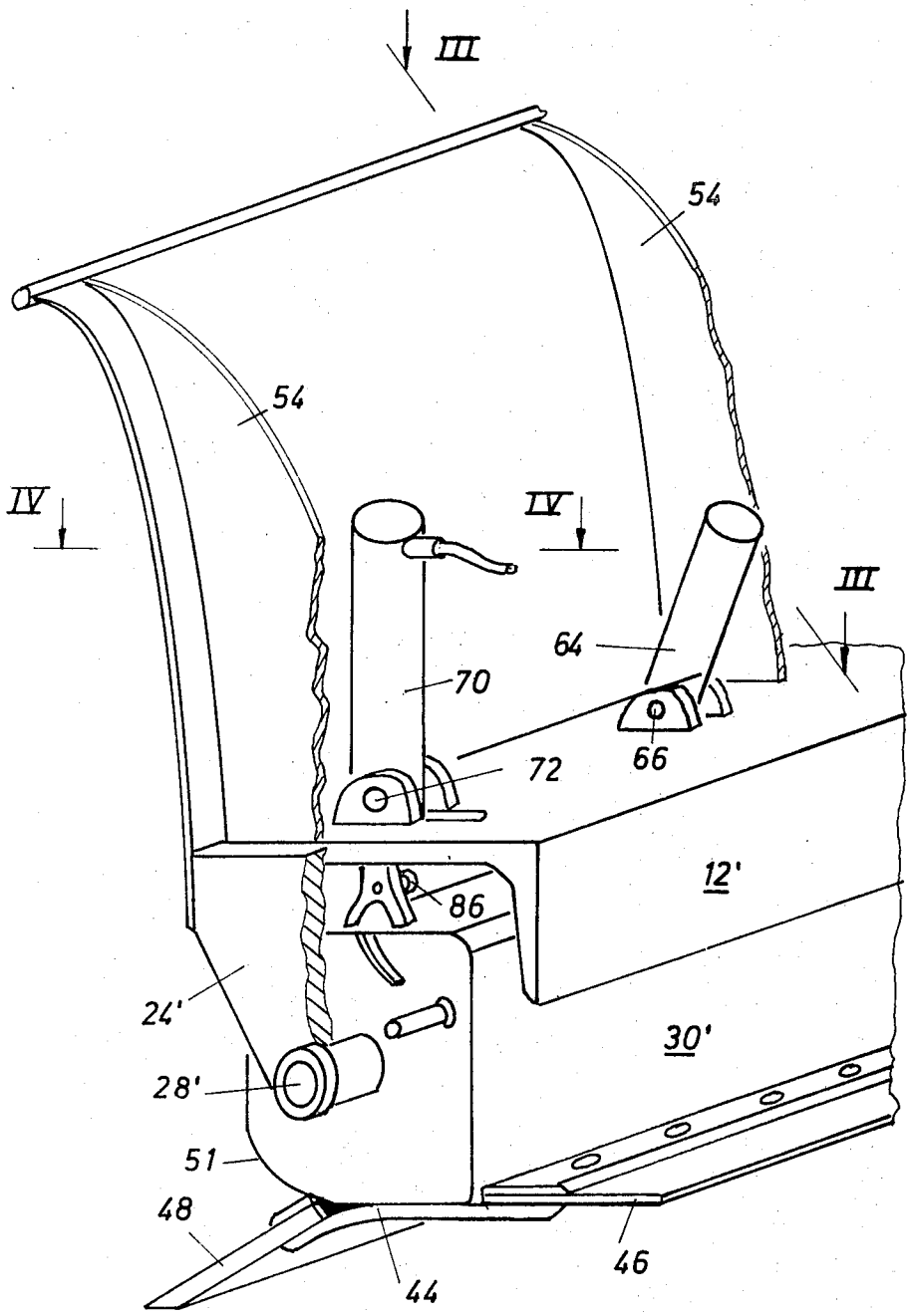

Fig. 2

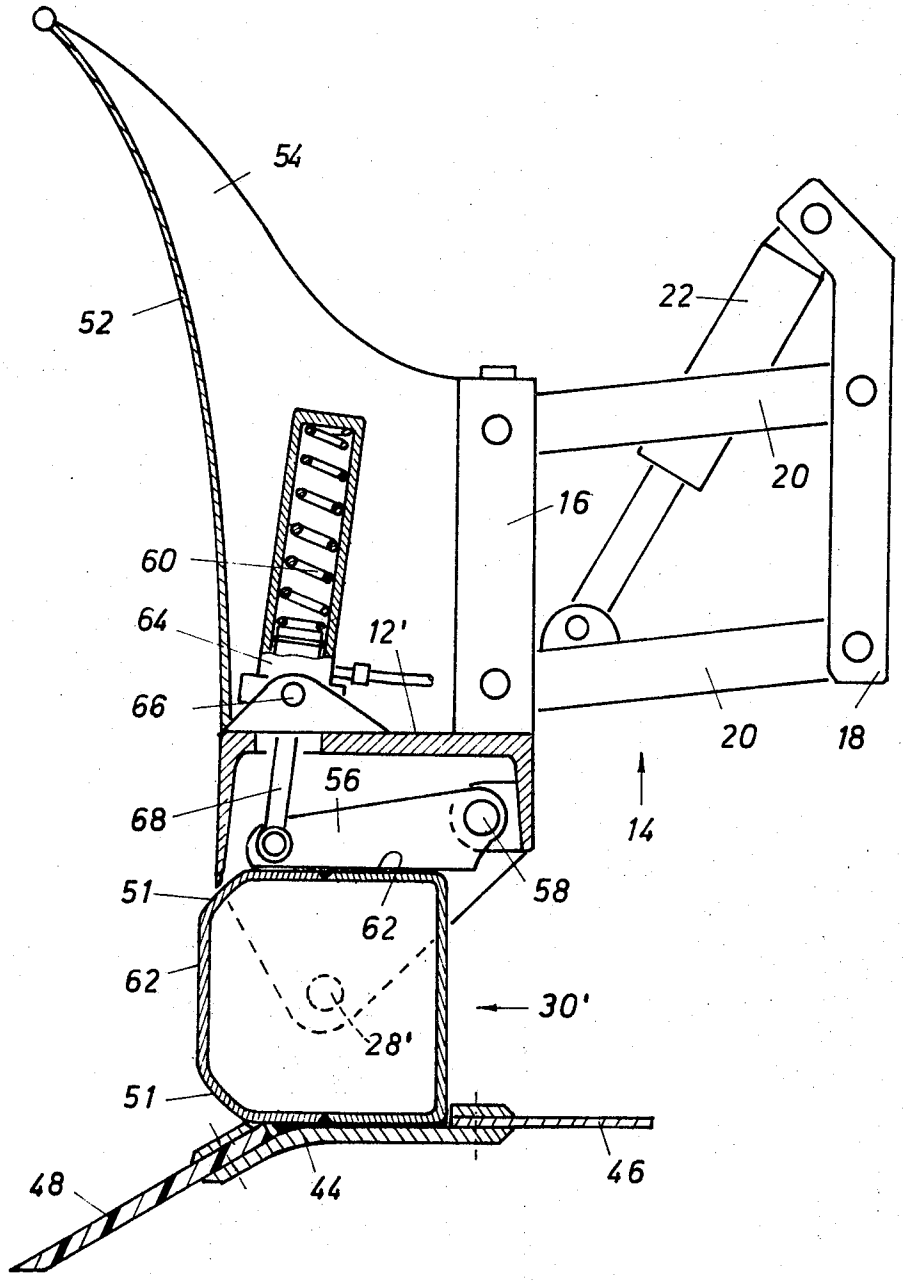

Fig. 3

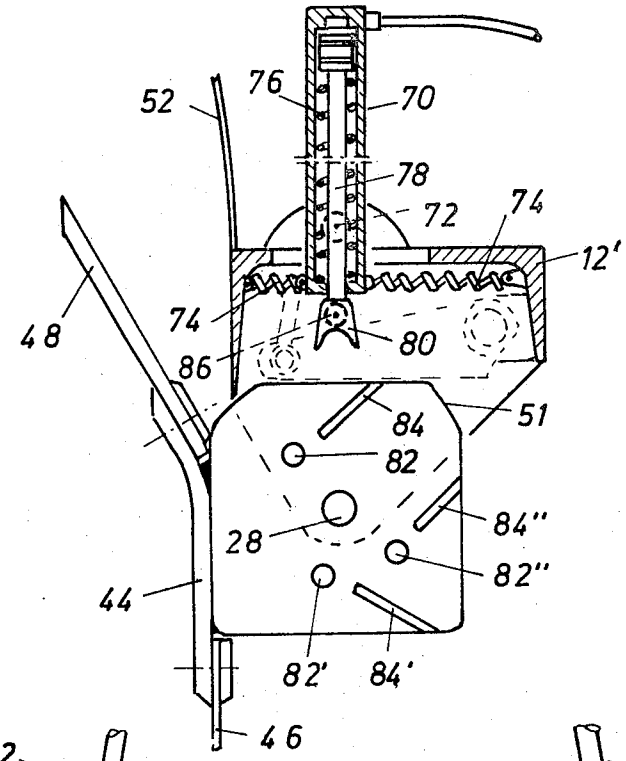

Fig. 4

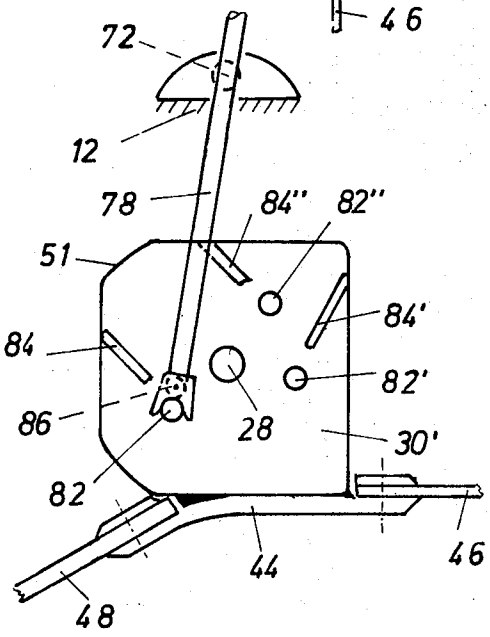

Fig. 4a

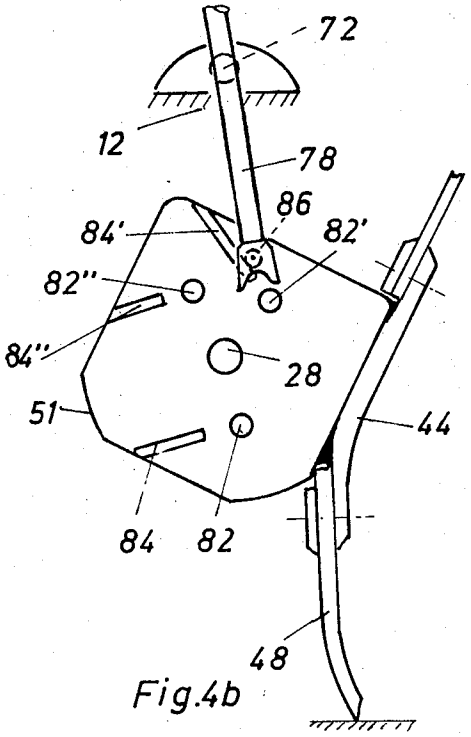

Fig. 4b

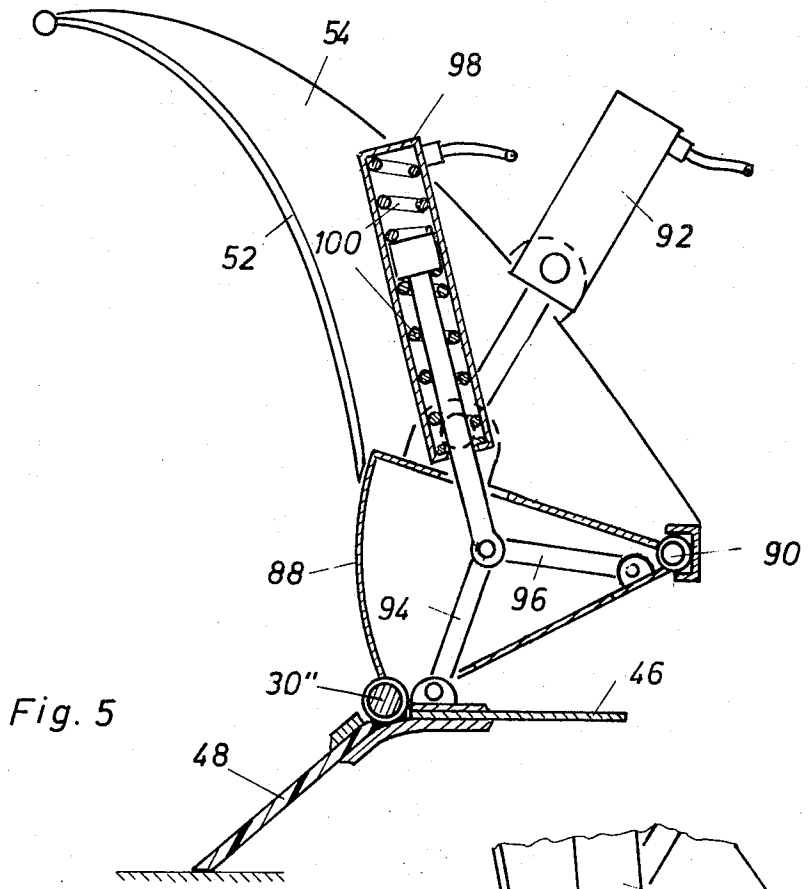

Fig. 5

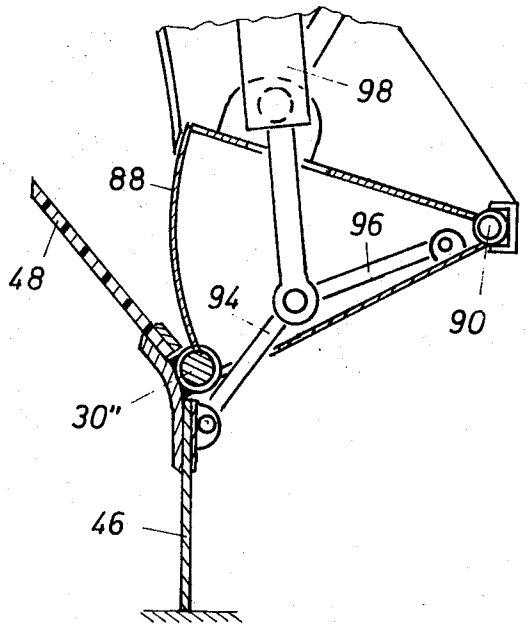

Fig. 5a

DOUBLE BLADED SNOWPLOW WITH OVERLOAD RELEASE

BACKGROUND OF THE INVENTION

A known type of street clearing device is a snowplow to the ploughshare of which is rigidly attached a first scraping blade consisting of steel. A second scraping blade consisting of plastic material is connected over a height adjustment device with a bracing tube supporting the ploughshare from the back in such a manner that it can be dropped from an inoperative position behind the ploughshare into its operating position in which it is held by a spring so as to engage the back of the steel scraping blade and extend beyond the lower edge of the steel scraping blade in a sloping manner towards the front and bottom while the ploughshare with the steel scraping blade is lifted somewhat from the ground. If the plastic scraping blade is caught by an obstacle, it can turn together with the height adjustment device around the bracing tube towards the back while the ploughshare with the steel scraping blade maintains its operative, street-scraping position. Only if the shear pins which hold the steel scraping blade in its operative street-scraping position are sheared off because of an extraordinarily strong thrust does the steel scraping blade tilt with respect to the bracing tube. In the case of this known construction, between the two scraping blades, a more or less wide slot opens up when the plastic scraping blade is turned away towards the back during the driving over an obstacle. The snow or snow slush taken up from the road by the plastic scraping blade during its turn-away motion arrives through this slot in the space between the two scraping blades and can settle in such a manner at the back side of the ploughshare that after passing over the obstacle, it prevents the plastic scraping blade from returning into its normal operating position. But if the plastic scraping blade is in a steeper position than planned, its clearing performance is reduced and it wears unnecessarily fast. In the case of this known device, the working with the steel scraping blade is particularly crucial because, when it has to turn away towards the back when encountering an obstacle, it effects a turning motion of the entire plough including the height adjustment device of the plastic scraping blade during which process a large mass has to be accelerated so that a soft turning-away of the steel scraping blade is not possible. In order to avoid accidents it is, therefore, only permitted to drive slowly with the steel scraping blade which results, however, with the mostly heavy traffic load of the roads in the fact that soon a column of vehicles is delayed behind the snowplow. Even with low driving speed, the operation of the drive-over safety mechanism of the steel scraping blade results in the undesired fact that the snowplow remains ineffective until the ploughshare with the steel scraping blade has been turned towards the front again; as long as this has not taken place, the plastic scraping blade cannot operate, either. Since with dense road traffic, in particular if visibility is poor, it is too dangerous to interrupt the moving of the snowplow in order to tilt the steel scraping blade towards the front again, the snowplow is often forced to drive in its ineffective position until the next by-pass place so that the portion of the road between the obstacle which has triggered the drive-over safety mechanism and the by-pass location remains uncleared whereby traffic is likewise endangered.

SUMMARY OF THE INVENTION

It is the purpose of the invention to create a road clearing device which guarantees a larger operating and traffic safety than known devices optionally operating with two different scraping blades.

According to the invention, this task is solved by the feature that in the case of a road clearing device of the kind described in the beginning, both scraping blades are set up at a joint turning element which can be optionally located in a first angle-of-rotation position in which the first scraping blade assumes an operating position and the second one points towards the front or top, or in a second angle-of-rotation position in which the second scraping blade assumes an operating position and the first one points towards the back or top. Also provided is an over-load second position in which the second scraping blade rotates further toward the back to an extent adequate (when combined with the flexibility of the second scraping blade) to pass over an obstacle. If the device according to the invention is caught by an obstacle during the working with the first scraping blade, preferably consisting of steel, so that this scraping blade turns away towards the back, the second scraping blade is automatically rotated to its approximate operating position so that the device can continue scraping directly behind the obstacle without having to adjust the device. If the device encounters an obstacle while the second scraping blade is in its operating position, the second scraping blade automatically rotates into the overload second position and automatically returns to said second position once the second scraping blade passes over the obstacle.

It is expedient for the two scraping blades to enclose an angle of approximately 120° – 160° with one another while the angle-of-rotation distance of the second angle-of-rotation position from the first one amounts to approximately 90°. With this set-up, the second scraping blade cannot hinder the operation of the first one. The first scraping blade is substantially perpendicular to the street or is very slightly tilted forward. The angle-of-rotation distance between the two fixed angle-of-rotation positions of the pivotable blade mounting member is on the other hand so small that a simple drive is sufficient in order to mechanize the turning motions of the pivotable blade mounting member.

Expediently, the device for the locking of the pivotable blade mounting member is constructed in such a manner that after a revolution is effected through overloading of the first scraping blade, the pivotable blade mounting member engages automatically in its second angle-of-revolution position and only continues to turn to the overload second position in the case of the overloading of the second scraping blade. The angle through which the pivotable blade mounting member can turn from the second operating position to the overload second position only needs to be small if the second scraping blade is sufficiently flexible.

The device for locking the pivotable blade mounting member can comprise a support member substantially radially movable in relation to the pivotable blade mounting member. The pivotable blade mounting member rests flat on the support member when each of the first and second angle-of-rotation positions is achieved, i.e. when each of the two scraping blades is

in its respective operating position. The support member has an eccentric surface formed thereon and includes a spring biased stop means.

If the scraping blade consisting of rubber or the like is in its operating position directed in sloping manner towards the front and bottom, its wear can be considerably reduced if it is given the possibility of adjusting to ground waves through small turning motions towards the front and top. Therefore, in the case of an advantageous embodiment of the invention, the support member and/or the eccentric surface includes a lever arrangement whereby a lesser force need be provided to depress the spring biased stop means when moving the pivotable blade mounting member in the direction of rotation from the second position to the first position than is required to move the pivotable blade mounting member in the direction of the first position to the second position.

The road clearing device according to the invention can, with its first scraping blade preferably consisting of hard steel plate, for example, be used in order to shave off side slopes at streets and roads covered with grass. In contrast to this, a rubber or plastic material blade provided as second scraping blade is especially suitable in order to return fine gravel laterally flung away by vehicles from the edge of the road into the roadway on paved roads.

If the device is supposed to be used for the removal of snow, the body of rotation is preferably partially cylindrical and is set up under a ploughshare in such a manner that the lower edge of the ploughshare acts as a wiper in the front.

In the case of another embodiment of the device according to the invention likewise particularly suitable for the snow removal, the pivotable blade mounting member is set up at the lower front edge of a roller sector which, in a manner known in itself, can be tilted upwards against the resistance of a spring positioned around its geometric axis and lying behind the ploughshare. The circumferential outer surface of the roller sector is in contact with the lower edge of the ploughshare. This embodiment exemplifies that, with the snowplough of the invention, an upward resilient connection may be disposed between the rotatable body carrying both scaper blades on the one hand and the ploughshare on the other hand, thus enabling the scraping blade in operation to avoid an obstacle by moving upwardly without requiring an upward movement of the heavy, relatively inert ploughshare.

In the case of the described spring suspension of the pivotable blade mounting member over a roller sector or another body which can be moved up and down, the roller sector could be constructed as a hollow body through the lower wall of which a shank of a bent lever pivoted at the first scraping ledge extends the second shank of which lever is pivoted at the roller sector, and the piston rod of a pneumatic or hydraulic piston-cylinder unit being pivotally connected to the knee joint for driving the same. A pneumatic or hydraulic cylinder unit can also be provided for the turning back and forth of the pivotable blade mounting member. Such a unit has a stationary mounting and can be tilted around an axis parallel to the axis of rotation of the pivotable blade mounting member. This unit is held in its rest position by an elastic force. The piston rod of such a unit has a fork at its free end. The fork points radially with respect to the pivotable blade mounting member. Each angle-of-revolution position in which the fork can come to rest is determined by an eccentric set-up pin as well as a guide rail leading the fork to the pin during the driving-out of the piston rod. This drive for the pivotable blade mounting member carrying the scraping blades has the advantage that after a working stroke, the piston-rod can be brought in again and can be thereby completely separated from the pivotable blade mounting member so that during the normal operation, the piston-cylinder unit is not subject to any wear and cannot hinger a turning motion of the scraping blades made necessary by an obstacle.

According to a development of the last mentioned embodiment, the guide rails end respectively at such a distance in front of the appropriate pin that a projection or roller, the axis of which is substantially parallel to the pins, working together with the guide rails, can be moved between each pin and the guide rail belonging to it. This construction renders it possible to provide, in addition to the pins and guide rails for the moving back and forth of the pivotable blade mounting member between two angles of revolution, positions in which respectively one scraping blade assumes its operating position, a further pin with a guide rail belonging to it which the fork can engage in order to turn the pivotable blade mounting member back into the operating position of the second scraping blade if this scraping blade has been turned towards the back into the overload second position through driving against an obstacle. If necessary, a further pin with appropriate guide rail can be set up between the two pins respectively assigned to an operating position in order to move the pivotable blade mounting member out of an intermediate position.

BRIEF DESCRIPTION OF THE DRAWINGS

In the accompanying drawings forming a part of this specification, and in which like reference characters are employed to designate like parts throughout the same:

FIG. 1 is a side elevational view of an apparatus for maintaining streets, which incorporates the invention; illustrating the invention in its first operative position;

FIG. 1A is an enlarged fragmentary side elevational view of the invention illustrated in FIG. 1 but showing the plow blades when driving over an obstacle;

FIG. 2 is a back perspective view of a snowplow;

FIG. 3 is a sectional view taken on line III—III of FIG. 2;

FIG. 4 is a sectional view taken on line IV-IV of FIG. 2;

FIGS. 4A and 4B are two simplified illustrations corresponding to FIG. 4 illustrating different positions of the plow blades;

FIG. 5 is a side elevational view in partial section illustrating a further embodiment of the invention;

FIG. 5A is an elevational view in partial section which corresponds to FIG. 5 and illustrates another operating position of the plow blades.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The device shown in FIGS. 1 and 1A comprises a carrier 12 having a U-shaped profile which extends across the width of the device and which can be connected to a vehicle (not shown) by means of a height adjustment

device 14. The height adjustment device 14 includes a vertical equipment plate 16 which is fastened to carrier 12, a likewise vertical vehicle plate 18 which is adapted to be fastened to the front of the vehicle, parallelogram-type guide rods 20 connecting the two plates 16 and 18 with one another, and a hydraulic piston-cylinder unit 22 the cylinder of which is pivoted at one end to the vehicle plate and the piston rod of which is pivotally connected at one end to the lower parallelogram guide 20.

The carrier 12 has side plates 24 extending downwardly, each side plate including a vertical slot 26 in which is engaging a pivot pin 28 of a pivotable blade mounting member 30. A tie rod 32 is attached to each pivot pin 28 and extends through a hole in carrier 12 and is supported over a lock nut 34 screwed on the tie rod. Also associated with each tie rod 32 is an axial thrust bearing 36, a cap 38, and a pressure spring 40, all disposed at the upper side of the carrier 12 and serving to support the pivotable blade mounting member 30 in a position resting against the lower side of the carrier 12.

The pivotable blade mounting member 30 consists essentially of a tube onto which a U-profile channel 42 is welded. Diametrically opposite to channel 42, a mounting 44 is welded to the pivotable blade mounting member 30 at which mounting a first scraping blade 46, constructed out of steel, and a second scraping blade 48, constructed out of rubber-like plastic material, are fastened. The two scraping blades, 46, 48 enclose an obtuse angle with one another which, in the shown example, amounts to approximately 150°. In this position, the device can for example be used in order to shave off grass at the edge of a road. Under normal operating conditions, the force of the tie rods 32 pulling the pivotable blade mounting member 30 upwards against carrier 12 prevents, in combination with the non-circular shape of the pivotable blade mounting member 30 given by the U-profile of channel 42, any rotation of the pivotable blade mounting member 30.

But, if the scraping blade 46 is caught at an obstacle 50, the pivotable blade mounting member 30 turns according to FIG. 1A against the locking moment of the force of spring 40 in such a manner that the scraping blade 46 rotates towards the back, and if the angle of revolution illustrated in FIG. 1A is exceeded, the scraping blade 48 then rotates to an operative position adjacent the ground and pointing obliquely towards the front and bottom. The resistance against such a turning can be adjusted at locking nuts 34. If it is desired to manually adjust the pivotable blade mounting member 30 from the operating position of the first scraping blade 46 into the operating position of the second scraping blade 48 or in the opposite direction, then the locking nuts 34 are loosened temporarily so that springs 40 become ineffective.

The snowplow shown in FIGS. 2 to 4B has a carrier 12' with U-shaped profile which can be connected over a height adjustment device of the same design as the height adjustment device illustrated in FIG. 1 to a vehicle. Here, to, side plates 24' extend downwardly and are associated with pivot pins 28' of a pivotable blade mounting member 30' having two scraping blades 46 and 48.

In the case of the snowplow according to FIGS. 3 to 4B, the pivotable blade mounting member 30' is rotary around an axis generally parallel to carrier 12' and comprises a hollow profile composed of two U-profiles with angular segments 51 coaxial to the pivot pins 28'. One of the segments 51 rest against the lower edge of a ploughshare 52 in each operating position of the pivotable blade mounting member 30'. Ploughshare 52 is attached to carrier 12' and reinforced with plates 54.

In order to hold the pivotable blade mounting member 30' in one of two positions of revolution the first position shown in FIGS. 3 and 4A where the plastic scraping blade 48 is in the operative position and the second position shown in FIG. 4 where the steel scraping blade 46 is in the operative position, a lever 56 (FIG. 3) is provided on an axle 58 and normally held in abutment at one of two flat surfaces 62 by a pressure spring 60. Flat surfaces 62 are formed in formed in the pivotable blade mounting member enclosing a right angle with one another. Pressure spring 60 is held in a pneumatic cylinder 64 and presses upon the piston of this cylinder. Cylinder 64 is pivotally connected by pin 66 to carrier 12'. Upon actuation of cylinder 64, its piston counteracts spring 60 and swings lever 56 away from the pivotable blade mounting member 30' so that the pivotable blade mounting member can turn freely after the snowplow has been lifted from the ground with the height adjustment device 14. Therefore, the pivotable blade mounting member 30' can be turned manually in order to bring the steel scraping blade 46 into its operating position according to FIG. 4 instead of the plastic scraping blade 48 working in FIGS. 2, 3 and 4A; or in order to return the plastic scraping blade 48 into its operating position after it has been caught at an obstacle in such a manner that the pivotable blade mounting member 30' has reached the angle position shown in FIG. 4B from which it cannot return into an operating position by itself.

But these turning motions of the pivotable blade mounting member 30' can also be executed mechanically and can, for example, be controlled from the driver's cabin of the vehicle pushing the snowplow. For this purpose, according to FIGS. 2 and 4, a further pneumatic piston-cylinder unit is provided having its cylinder 70 pivotally connected to carrier 12' to permit its swiveling around an axis 72 parallel to the pivotable blade mounting member 30', the cylinder extends through a recess provided in carrier 12' and is braced with the lateral flanges of the carrier by return springs 74 in such a manner that after each deflection of the blades, it strives to return to its vertical mid-position. The piston-rod 78 carried in cylinder 70 is prestressed in an upward direction by a pressure spring 76 so that the piston-rod assumes its upper end position as illustrated in FIGS. 2 and 4 with a pressureless cylinder. At the lower end of piston-rod 78, a fork 80 is formed which, during the driving-out of the piston-rod 78 can, according to the position of the pivotable blade mounting member 30', engage one of three axis-parallel pivot pins 82, 82' or 82''. In order to lead piston-rod 78 and therewith cylinder 70 away from the vertical mid-position to a specific pivot pin 82, 82' or 82'', there are provided guide-rails 84, 84' and 84'' associated with each pin and which act together with a roller 86 set up laterally next to the fork 80 at the free end of piston-rod 78. The guide rails terminate at a distance (FIG. 4) from the pivot pin associated therewith, thereby permitting the roller to pass between each guide rail and pivot pin.

In the case of the position of the pivotable blade mounting member **30'** illustrated in FIG. **4**, roller **86** strikes during the driving-out of piston-rod **78** upon guide-rail **84** so that fork **80** is deflected towards the left side and engages pivot **82** and presses it downwards whereby the pivotable blade mounting member **30'** is turned into the position evident from FIG. **4A** in which the plastic scraping blade **48** assumes its operating position and the steel scraping blade **46** points towards the back. In this new position the pivotable blade mounting member **30'** is held by lever **56** (FIG. **3**) under the effect of spring **60** (FIG. **3**) so that immediately after the turning of the pivotable blade mounting member, piston-rod **78** can be returned into the cylinder with the cylinder **70** returning into its vertical position evident from FIG. **4**.

In corresponding manner, the pivotable blade mounting member **30'** is, after it has arrived in the position according to FIG. **4B** through catching of the scraping blade **48** at an obstacle, returned back into the position according to FIG. **4A**, in which case the fork **80** works together with pivot **82'** and roller **86** works together with guide-rail **84'** when the piston-rod **78** is driven out. If the pivotable blade mounting member **30'** is supposed to be turned back from the position according to FIG. **4A** into the position according to FIG. **4**, the piston-rod **78** is again driven out, and in this case fork **80** acts together with pivot **82''** and roller **86** acts together with guide-rail **84''**.

With sufficiently strong dimensioning of the piston-rod unit **70, 78**, the pivotable blade mounting member **30'** can also be turned against the resistance of the holding moment reduced by spring **60** so that cylinder **64** and the piston belonging to it can be omitted and the pivotable blade mounting memberis solely controlled by piston-cylinder unit **70, 78** which, during normal operation, is relieved and completely separated from the pivotable blade mounting member so that it is not worn through the continuous small angular motions of the pivotable blade mounting member.

In the case of the snowplow shown in FIGS. **5** and **5A**, the pivotable blade mounting member is here marked **30''** and with a very much smaller diameter than in the case of the previously described embodiments. It is connected with the main part of the snowplow which again is formed by a ploughshare **52** and reinforcement plates **54.** The connection is such as to permit resilient movement of members **30''** in a vertical direction. The connection is produced by a roller sector **88** which is pivotally connected around an axis **90** on a U-rail welded to the plates **54,** the roller sector **88** rests with its cylindrical surface against the lower edge of the ploughshare **52.** The roller sector **88** is connected with the piston rod of a pneumatic piston-cylinder unit **92,** the cylinder of which is pivotally connected to one of the plates **54.**

The lower wall roller sector **88** is designed as a hollow body and its has a recess through which a shank **94** of a knee-lever pivoted at the steel scraping blade **46** extends. The second shank **96** has one end pivotally connected to the inside of the roller sector **88** close to the axis of revolution **90.** The piston rod of a piston cylinder unit **98** is pivotally connected at the knee-joint of this knee-lever, which, in a first position is extended so that the steel scraping blade is in its operating position. On encountering an obstacle, the knee-joint flexes and the plastic scraping blade assumes its operating position, the piston of the piston-cylinder unit **98** belongs held in floating manner between pressure springs **100,** the cylinder being in a pressureless state where, according to FIG. **5,** it assumes a position in which the knee-levers **94, 96** are strongly bent and the plastic scraping blade **48** assumes its working position. When the piston-cylinder unit **98** is operated by being acted upon by compressed air, knee-levers, **94 96** become relatively unbent with respect to each other, and the pivotable blade mounting member **30''** is returned into the position according to FIG. **5A** in which the steel scraping blade **46** assumes its working position.

It is to be understood that the form of this invention herewith shown and described is to be taken as a preferred example of the same, and that various changes in the shape, size, and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claims.

Having thus described the invention, I claim:

1. A street clearing device comprising:

an elongated blade mounting member pivotally mounted on a carrier supported on the street clearing device in a position substantially transverse to the path of travel of the device said pivotable blade mounting member being pivotal between a first position and a second position disposed approximately 90° from said first position about an axis extending longitudinally of the carrier and through an additional acute angle of rotation between said second position and an overload second position, the total extent of pivotal movement of said pivotable blade mounting member being less than 180° and being in both a clockwise and a counterclockwise direction;

an elongated first scraping blade formed of steel having one elongated edge portion secured to the mounting member with the opposite elongated edge projecting away from the mounting member to engage a street in an operative position that is substantially vertical to the street when said pivotable blade mounting member is in the first position;

an elongated second scraping blade disposed about 120° to 160° relative to said first scraping blade, said second scraping blade being formed of resilient material having one elongated edge portion secured to the mounting member with the opposite elongated edge projecting away from the mounting member to engage the street in an operative position at an acute scraping angle when said pivotable blade mounting member is in said second position, said acute scraping angle being formed by the street and the surface of said second scraping blade that faces the rear of said street clearing device;

said second scraping blade being in an operative position that is spaced from the street and directed substantially upwardly and forwardly of the carrier when the pivotable blade mounting member is in first position and th first scraping blade is in its operative position;

said first scraping blade being in an inoperative position that is spaced from the street and directed substantially upwardly and rearwardly of the carrier when the pivotable blade mounting member is in said second position and the second scraping blade is in its operative position;

a spring biased stop means operatively associated with the mounting member for urging the same into either the first or second positions while permitting movement from the first position to the second position upon the exertion of a force on the front surface of the first scraping blade, said force resulting in a torque exceeding a predetermined torque which is transmitted to and overrides said spring biased stop means;

said spring biased stop means also permitting movement from the second position back to the first position upon the exertion of a force transmitted through the pivotable blade mounting member to the spring biased stop means, said force resulting in a torque exceeding said predetermined torque;

said spring biased stop means also permitting movement from said second position to said overload second position upon the exertion of a force on the front surface of the second scraping blade while the street clearing device is moving in the forward direction, said force resulting in a torque which is transmitted to and partially overrides said spring biased stop means, whereby in combination with the resiliency of the second scraping blade said second scraping blade automatically passes over an obstruction and said pivotable blade mounting member returns to said second position;

whereby each scraping blade operates at its optimum angle with respect to the street and obstructions are automatically passed over while either blade is in its operative position.

2. The street clearing device according to claim **1** further comprising a hydraulic piston-cylinder unit, the cylinder being pivotally connected to the carrier for pivoting about an axis parallel to the axis of rotation of the mounting member, spring means normally holding the hydraulic piston-cylinder unit in a position in which its piston rod is radially spaced from the axis of rotation of the mounting member, the piston rod having a fork on its free end which engages at least one of two pivot pins which are eccentrically secured to a lateral face of the mounting member, one pivot pin being provided for each stationary position of the mounting member, the lateral face having thereon guide rails leading the fork to the respective pivot pin when the piston rod is driven out of its cylinder.

3. The street clearing device according to claim **2** wherein a roller projects laterally from the fork to cooperate with the guide rails, the guide rails ending at a distance from the associated pivot pin to allow the roller to pass between each guide rail and the associated pivot pin.

4. A street clearing device according to claim **1** wherein the pivotable blade mounting member has at least two flat surfaces that form an eccentric surface which extends substantially over the entire length of the pivotable blade mounting member, the carrier has a flat bottom surface, one of the flat surfaces of the pivotable blade mounting member being in direct engagement with the flat bottom surface of the carrier in the first and second position respectively, and the pivotable blade mounting member being suspended from and held in engagement with the carrier by the spring biased stop means.

5. A street clearing device according to claim **1** wherein the elongated mounting member has at least one partially cylindrical circumferential face cooperating in at least one of the positions with the bottom edge of the carrier.

6. The street clearing device according to claim **1,** wherein said spring biased stop means comprises a spring biased lever engaging said pivotable blade mounting member, sai lever being pivotable about an axis disposed rearwardly of said pivotable blade mounting member, thereby facilitating a slightly upward and forward movement of the second scraping blade in response to uneveness of the street to prlonge the life of the said second scraping blade.

7. A street clearing device according to claim **1,** wherein the carrier is attached to a snowplough and is disposed substantially behind the lower edge of a ploughshare carried by the snowplough.

8. A street clearing device according to claim **7** wherein the carrier is in the form of a roller sector having a cylindrical circumferential surface, said roller sector being pivotally connected to the snowplough on an axis extending parallel to and behind the lower edge of the ploughshare, the roller sector being suspended from the snowploug by the spring biased stop means so as to snowplough engaged along a portion of the cylindrical circumferential surface by the lower edge of the ploughshare, the pivotable blade mounting member being journalled at a forwardly and downwardly directed edge defined by said portion of the cylindrical circumferential surface and a bottom surface of the roller sector.

9. The street clearing device according to claim **8** wherein the roller sector is a hollow body through the bottom surface of which a first shank of a knee-lever extends, the first shank being pivotally connected to the first scraping blade connected to the roller sector and the knee-joint of the knee-lever, a fluid pressure operated cylinder-piston unit having a cylinder which is likewise pivotally connected to the roller sector, the piston-rod of the cylinder-piston unit having one end pivotally connected to the knee-joint for drivingly moving the same.

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