Aug. 4, 1964 B. J. BLACKMON 3,143,221

PIPE CAR

Filed Aug. 29, 1963 2 Sheets-Sheet 1

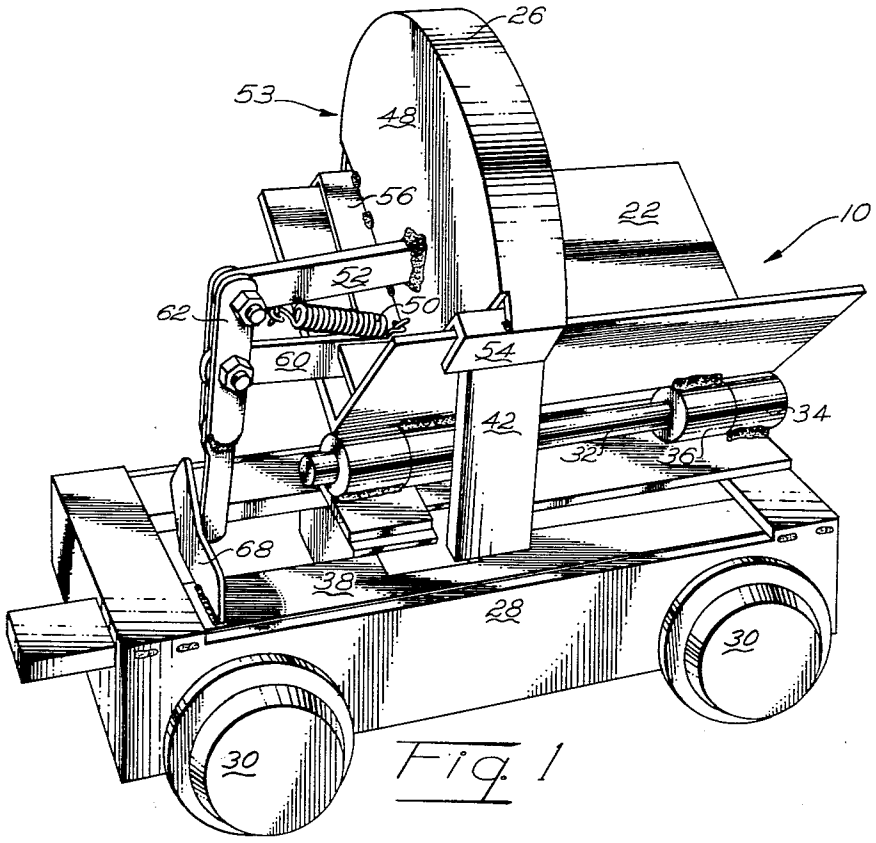


Fig. 1

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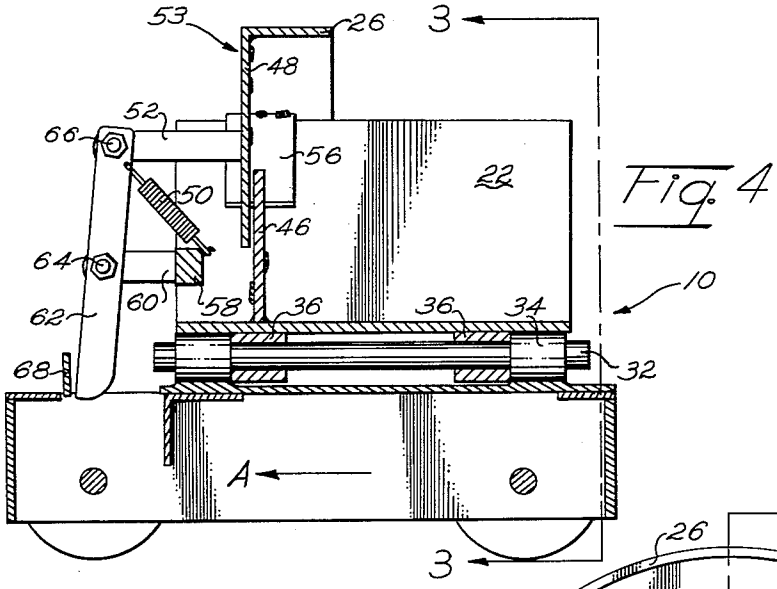


Fig. 4

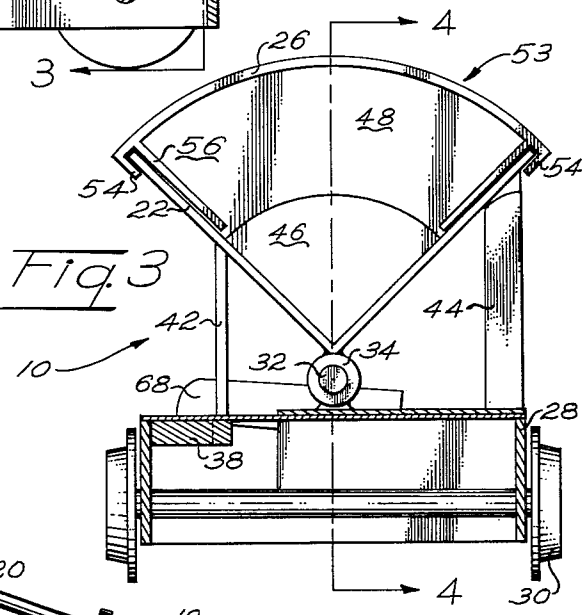


Fig. 3

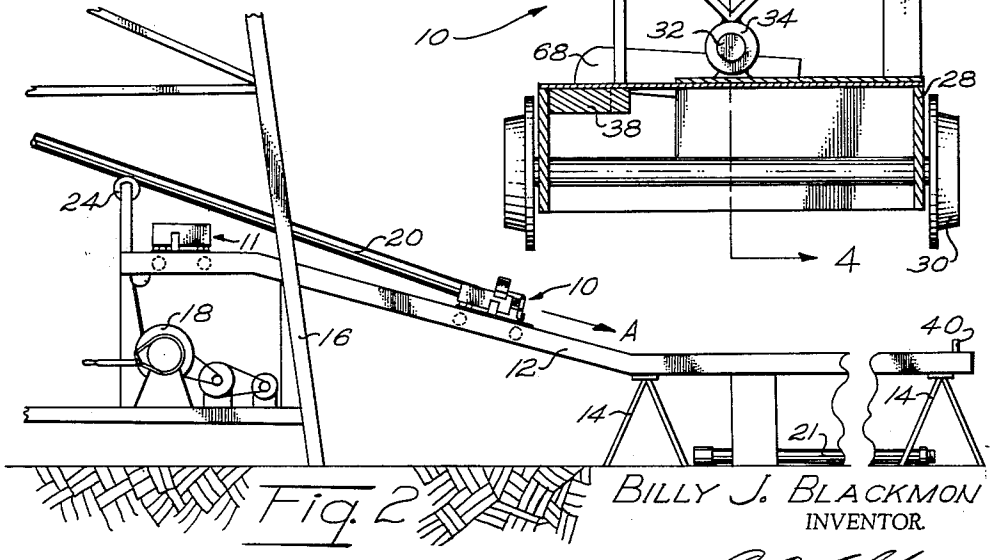


Fig. 2

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United States Patent Office 3,143,221 Patented Aug. 4, 1964

3,143,221

PIPE CAR

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4 Claims. (Cl. 214—2.5)

This invention relates to well drilling, more particularly to a system for laying down the pipe from the derrick, and still more specifically to a car for this purpose.

This invention is an improvement for the device as disclosed by Maydew in U.S. Patent No. 2,852,147, issued September 16, 1958. Experience in operating the Maydew mechanism has shown that on laying down certain heavy type pipe or drill stem called drill collars, that the pipe tends to jump from the lower car. I have found that putting a cover over the open side of the V-shaped body on the lower car prevents the pipe from ever jumping from the lower car. However, it is necessary to remove this cover from the body of the car when the pipe is rolled sideways from the car, otherwise the cover impedes the rolling of the pipe from the car.

An object of this invention is to provide a car for a pipe lay-down mechanism that holds the pipe in the car when it is desired that the pipe be held in the car and releases the pipe when it is desired that the pipe be released.

Further objects are to achieve the above with a device that is sturdy, compact, durable, simple, versatile, and reliable, yet inexpensive and easy to manufacture and operate.

The specific nature of the invention as well as other objects, uses, and advantages thereof will clearly appear from the following description and from the accompanying drawing, the different views of which are not necessarily to the same scale, in which:

FIG. 1 is a perspective view of a car according to this invention.

FIG. 2 is a side elevational view of the car taken together with the derrick and track showing the environments wherein the car operates.

FIG. 3 is a cross sectional view of a car taken substantially on line 3—3 of FIG. 4.

FIG. 4 is an axial sectional view taken substantially on line 4—4 of FIG. 3.

As may be seen in the drawings according to this invention, car **10** is to be used in conjunction with another car **11**, both cars being mounted to run upon channel track **12**. A portion of the channel track **12** is supported by legs **14** and a portion is supported by part of derrick **16**. The cars are controlled by a windless mechanism **18**. It will be understood that pipe **20** to be laid down is first placed in V-shaped body **22** of the car **10** and the pipe **20** is supported (at least temporarily) upon feed roller **24**. When the pipe **20** comes off the feed roller **24** and the end of the pipe drops into the car **11**, difficulty has been experienced. Quite often, the end of the pipe **20** will jump from the car **10** and cause difficulty. I have solved this problem by placing cover **26** partially over the V-shaped body **22**.

It will be recognized that the mechanism with the exception of the cover **26** described prior to this time is known to the art through the Maydew disclosure identified above. In addition, it will be understood that the cars have a lower frame **28** to which is journaled wheels **30** which fit onto the track **12**. The V-shaped body **22** is pivoted about pin **32** to the car frame **28** with two hubs **34** on the car frame and two corresponding hubs **36** attached to the V-shaped body **22**. A latch in the form of bar **38** is mounted for movement parallel to the direction of the movement of the car **10**.

The car **10** will be spoken of as moving in direction of arrow A as the forward movement which is the direction of movement when it is moving the pipe **20** from the derrick **16** to the rack area to be placed alongside additional pipe **21** which has already been removed from the derrick. Also the part of the car **10** which will be forward when it is moving in the direction of arrow A will be spoken of as the front of the car and the opposite direction will be referred to as the rear.

Also, pin **32** is parallel to the direction of the movement of the car **10** and therefore, the V-shaped body **22** pivots about an axis which is parallel to the direction of the movement of the car. Stop **40** is provided upon the track **12** so as to align a notch in the bar **38** with strut **42** on the body **22** so that the V-shaped body tilts to dump the pipe **20**. Stanchion **44** is welded to the car frame **28** and prevents the V-shaped body **22** from rotating on the side to which it is attached. The stanchion **44** is attached to the opposite side from the bar **38**.

It will be seen that the V-shaped body **22** is mounted directly over the pin **32**. I have found in practice that there is enough vibration and rocking of the cars so that the pipe **20** dumps once the latch bar **38** is moved so that the strut **42** aligns with the notch.

Pipe stop **46** within the V-shaped body **22** limits the movement of the pipe **20** within the V-shaped body. As stated before, all that which has been described above (with the exception of cover **26**) is substantially as that disclosed by Maydew in his Patent 2,852,147.

The cover **26** is a cylindrical band which extends over a narrow width of the total length of the V-shaped body **22**. It is attached to plate **48**, the plate is held by spring **50** (by linkage explained later) against pipe stop **46**. Pitman **52** is attached to the plate **48**. Cover assembly **53**, including cover **26**, plate **48** and pitman **52**, is held in place on the V-shaped body **22** by tabs **54** as seen in the drawing. Inner tabs **56** provide for smooth movement of the cover assembly **53** along the V-shaped body **22**.

Brace **58** is attached from one side to the other of the V-shaped body **22** at the forward end thereof. Stiff arm **60** extends forwardly from brace **58** at the center thereof. Lever **62** is pivoted by bolt **64** to the stiff arm **60**. The pitman **52** is pivoted to the lever **62** by bolt **66**. The spring **50** attaches to the lever **62** adjacent to bolt **66** and the other end of the spring **50** is attached to the brace **58**. Therefore, it may be seen that the tension spring **50** will maintain the cover assembly **53** in its rearward position. The cover is moved to a forward position when projection **68** on the bar **38** moves rearward against the lower end of the lever **62**. The bar **38** is moved rearward by the stop **40** on the track **12**.

When the bar **38** contacts the stop **40** and moves rearwardly it causes two things to happen: one, projection **68** moves against the lever **62** moving the cover **26** forward so as to free pipe **20** within the V-shaped body **22**. Also, the movement of the bar **38** aligns the notch therein with the strut **42** allowing the V-shaped body **22** to rotate in that direction. I.e. that the strut means for supporting the V-shaped body no longer supports the V-shaped body when the notch in bar **38** is aligned with the strut. It will be noted that the linkage mechanism for moving the cover assembly **53** is attached to the V-shaped body and rotates about the axis of pin **32**. Therefore, at the point the projection **68** bears against the lever **62**, there will be little if any translational movement of the lever **62** inasmuch as the projection **68** is approximately aligned with the axis of the pin **32**.

Therefore, it may be seen that I have provided a simple mechanism whereby the cover **26** is provided to hold the pipe **20** within the V-shaped body **22** during travel of the V-shaped body, but will remove the cover **26** from over the pipe **20** at the time the V-shaped body is rotated to dump the pipe therefrom.

It will be apparent that the embodiment shown is only exemplary and that various modifications can be made in

construction, materials and arrangement within the scope of the invention as defined in the appended claims.

I claim as my invention:

1. In a car for laying down pipe from a derrick, said car including

(*a*) wheels on the car positioned to run on a track,

(*b*) a V-shaped body pivoted to the car,

(*c*) strut means for supporting the V-shaped body in an upright position, and

(*d*) a latch mounted in the car for retaining the strut means in a supporting position; the improvement comprising in combination:

(*e*) a cover partly over the open side of the V-shaped body

(*f*) said cover mounted for movement along said V-shaped body, and

(*g*) means attached to the body for moving said cover,

(*h*) said means for moving said cover responsive to the latch; so arranged and constructed that the cover is effective to hold pipe in the V-shaped body until the latch moves which in turn moves the cover to release the pipe in the V-shaped body and releases the strut permitting the V-shaped body to move from the upright position.

2. The invention as defined in claim 1 wherein said means for moving the cover includes

(*i*) a stiff arm connected to the V-shaped body,

(*j*) a lever pivoted to the stiff arm,

(*k*) a pitman connected to the cover,

(*l*) said pitman pivoted to the lever, and

(*m*) a projection on the latch contacting the lever to move same on movement of the latch.

3. In a car for laying down pipe from a derrick, said car including

(*a*) wheels on the car positioned to run on a track,

(*b*) a V-shaped body pivoted to the car about an axis which is aligned with the direction of movement of the car,

(*c*) strut means attached to said V-shaped body for supporting the V-shaped body in an upright position, and

(*d*) a latch mounted on the car for retaining the strut means in an upright position,

(*e*) said latch in the form of a bar mounted for movement parallel to the movement of said car so that a stop on the track causes movement of the latch; the improvement comprising in combination:

(*f*) a cover partly over the open side of the V-shaped body,

(*g*) said cover mounted for sliding movement along said V-shaped body parallel to the movement of said latch, and

(*h*) means attached to the body for moving said cover,

(*i*) said means for moving said cover responsive to movement of the latch; so arranged and constructed that the cover is effective to hold pipe in the V-shaped body until the latch moves which in turn moves the cover to release the pipe in the V-shaped body and releases the strut permitting the V-shaped body to move from the upright position.

4. The invention as defined in claim 3 wherein said means for moving the cover includes

(*j*) a stiff arm connected to the V-shaped body,

(*k*) a lever pivoted to the stiff arm,

(*l*) a pitman connected to the cover,

(*m*) said pitman pivoted to the lever, and

(*n*) a projection on the latch contacting the lever to move same on movement of the latch.

No references cited.