Feb. 9, 1971 D. B. YATES 3,561,284

HANDBRAKE ARRANGEMENT FOR RAILWAY FLAT CARS

Filed April 3, 1969 2 Sheets-Sheet 1

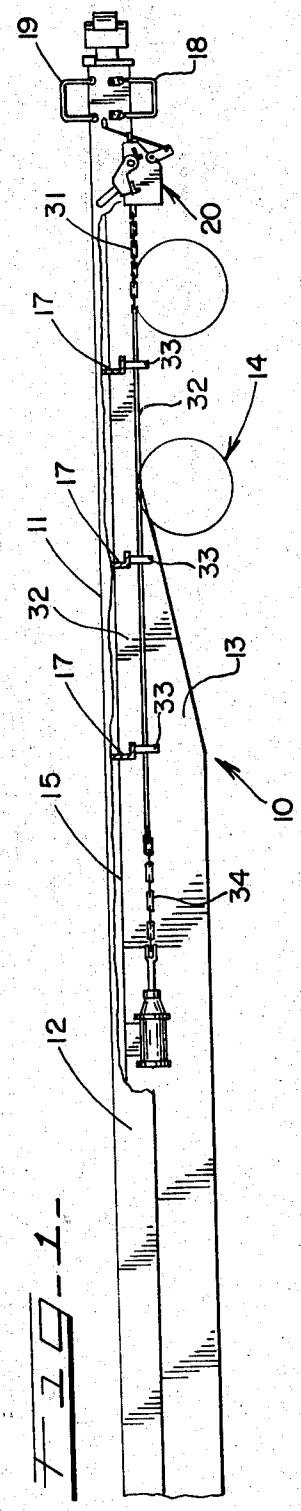


FIG. 1

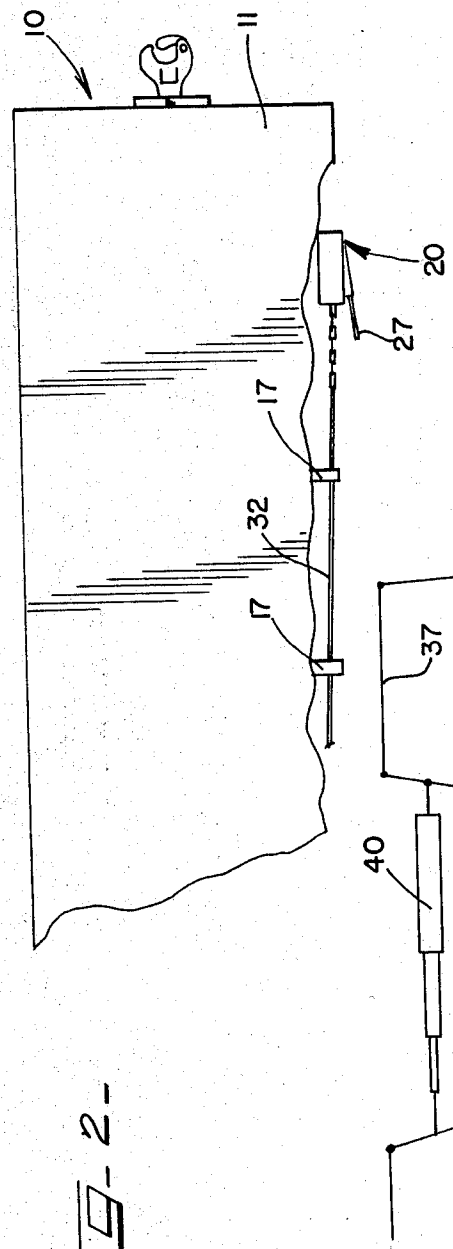


FIG. 2

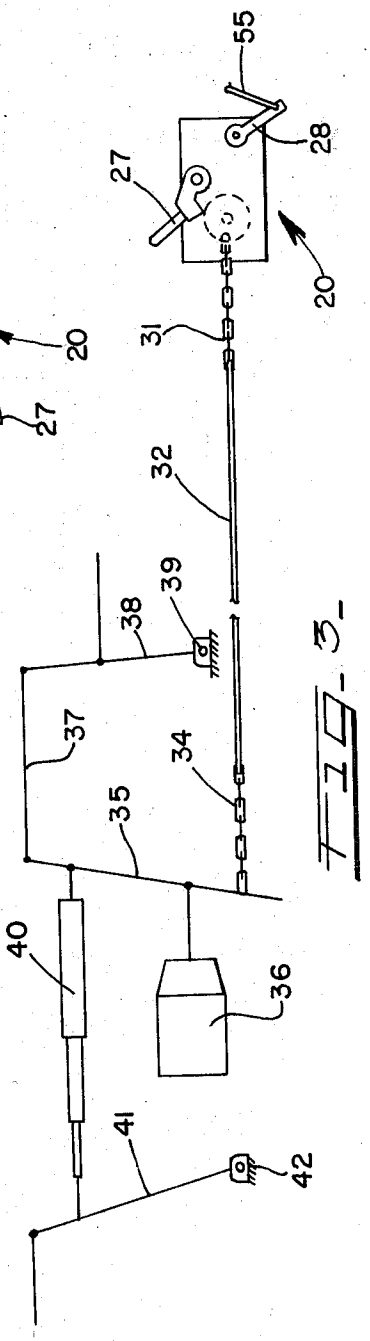


FIG. 3

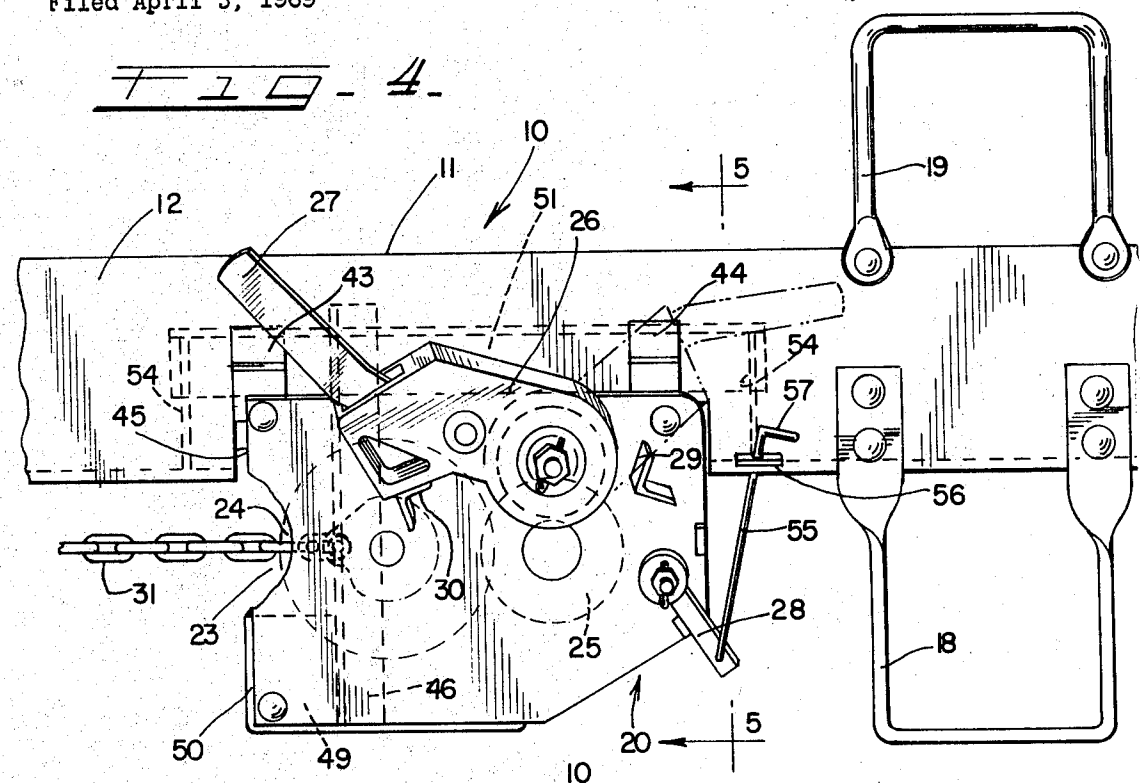
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FIG. 4



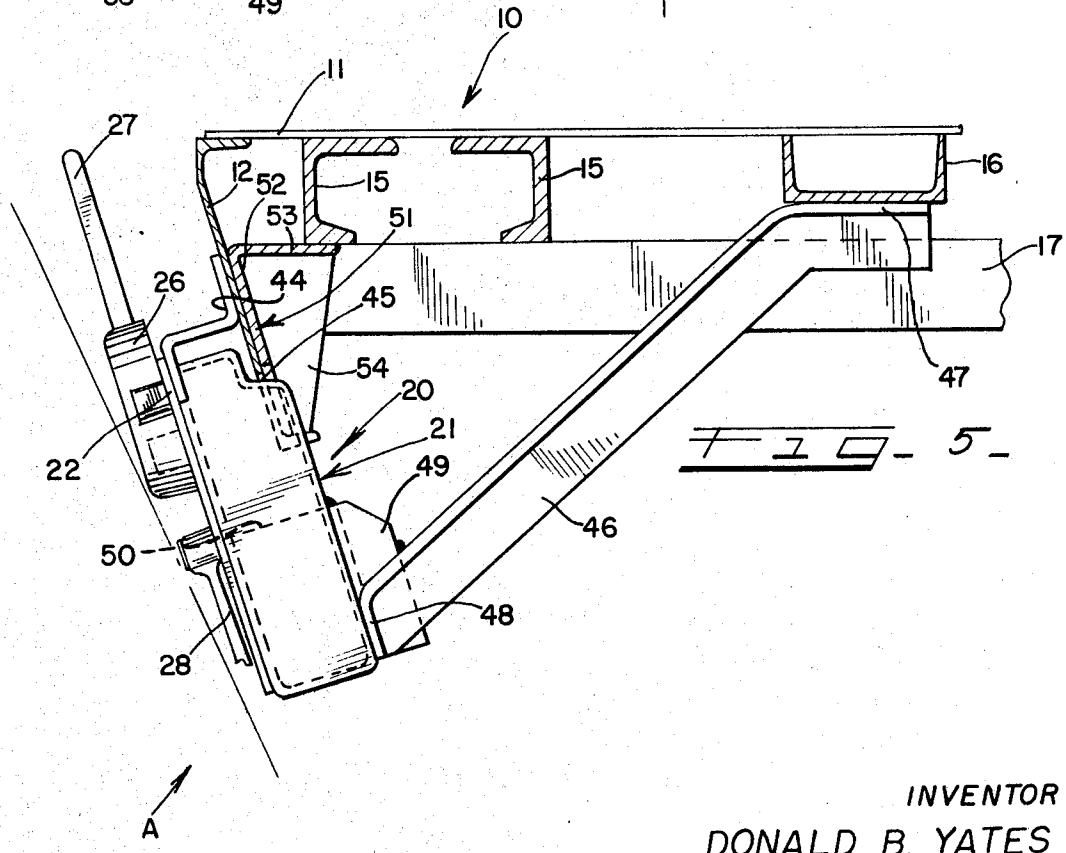


FIG. 5

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HANDBRAKE ARRANGEMENT FOR RAILWAY FLAT CARS

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U.S. Cl. 74—506 4 Claims

ABSTRACT OF THE DISCLOSURE

A handbrake arrangement for a flat deck railway car wherein the handbrake is positioned below the deck and within AAR clearance requirements, the side sill of the car having an aperture accommodating the brake housing, and said housing being so mounted and having provisions whereby the chain and rod mechanism which is connected to the foundation brake rigging and handbrake extends therebetween in a direct linear relation without the requirements of either pulleys or guides.

SUMMARY

It is the prime object of this invention to provide an improved handbrake arrangement for a railway flat car which is mounted below the deck of the car and within the side clearance requirements of the AAR. The mounting arrangement includes a bracket structure which connects the housing enclosing the handbrake mechanism to the longitudinal stringers extending underneath the deck of the car. The side sill is also apertured and suitably reinforced so that a portion of the housing projects inwardly from the side sill. The mounting is such that the chain from the handbrake mechanism extends in a direct linear manner to the brake lever in contrast to a circuitous extension provided by guide pulleys or other guide means which are prevalent in the prior art.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a side elevational view of an end portion of a railway car having portions thereof broken away to show the rigging from a handbrake mechanism;

FIG. 2 is a plan view of the end of a railway car shown in FIG. 1 with portions of the deck broken away;

FIG. 3 is a schematic view showing a handbrake mechanism and its connection to a conventional foundation brake rigging;

FIG. 4 is a side elevational view of the end of a railway car and showing a handbrake mechanism mounting arrangement; and

FIG. 5 is a cross-sectional view taken substantially along the line 5—5 of FIG. 4.

DETAILED DESCRIPTION

Referring to FIG. 1 a railway flat car **10** includes a conventional deck structure **11** provided on opposite sides thereof with side sills **12**. The flat car **10** includes an underframe **13** supported on conventional wheeled trucks **14** (shown schematically). A plurality of longitudinally extending stringers **15**, as best shown in FIG. 5, are connected to the underneath side of the deck structure **11**. A plurality of transversely extending longitudinally spaced supports **17** are connected to the stringers **15**. As best shown in FIG. 4, the car **10** is also provided with a conventional step **18** and a hand-hold **19** projecting upwardly above the deck structure **11**.

Referring now particularly to FIG. 4 the handbrake structure is generally designated at **20** and includes a conventional housing **21**. The details of the handbrake structure and the operation thereof are not described

in detail since it is a commercial product of the Equipco Handbrake Division of Unarco Industries, Inc., 104 S. Michigan, Chicago, Ill. and is designated "High Powered Handbrake, Thin Type Lever, Model No. 5000, AAR Certificate No. 42." The handbrake includes a housing **21** suitably connected to a vertical flat plate **22**, said housing being provided at one end, as best shown in FIG. 4, with an opening **23**. The housing **21** includes a conventional handbrake mechanism in the form of a rotatable gear and reel means **24** operated by a suitable gear or ratchet **25** in turn driven by a pinion arrangement generally designated at **26**. The pinion arrangement **26** is actuated by means of a manual handle **27** which is pivoted in clockwise and counterclockwise relation. A release handle **28** is provided for releasing the gear **24** from a hold or on-brake position. The pinion arrangement **26** and handle **27** are moved between stops **29** and **30** supported on the outer surface of the vertical plate **22**.

A flexible member in the form of a chain **31** is suitably connected to the gear **24** and is, as best shown in FIGS. 1 and 2, connected to a rod **32** which extends in a linear direction from the opening **23** through carriers **33** supported on the transverse supports **17**. The end of the rod **32** is connected to a chain **34** in turn connected to the brake lever **35** which is suitably connected to a brake cylinder **36**. The brake rigging is of a conventional foundation type and includes a link **37** connected to a lever **38** which is pivotally anchored to the car **10** as indicated at **39** and extends to the brakes (not shown) at one end of the car. The lever **35** is also connected to a slack adjuster **40** in turn connected to a brake lever **41** which in turn is pivotally anchored to the car as indicated at **42** and extends to and actuates the brakes (not shown) at the other end of the car.

As best shown in FIGS. 4 and 5, the handbrake structure **20** is connected to the side sill **12** by means of a pair of longitudinally spaced Z-shaped brackets **43** and **44** which in turn are suitably connected to the flat plate **22**. The side sill **12** on one side of the car **10**, as shown in FIG. 4, is provided with a rectangular aperture **45** through which the inner side of the housing **21** projects inwardly of said side sill **12**. A diagonal brace **46** is connected by means of a horizontal flanged end **47** to a channel member **16** connected to the deck **11** and is connected at its lower end by means of a flanged portion **48** to the housing **21**. A bracket **49** is suitably welded to the inner face of the housing **21** and is also connected to the brace **46**, the said bracket **49** including a vertical and transversely extending portion **50** which is wrapped around the vertical plate **22**. An angle-shaped reinforcement **51** includes a flange **52** connected to the inner face of the side sill **12** and a horizontal flange **53** in turn connected to one of the stringers **15**. The flanges **52** and **53** have suitably connected thereto at opposite ends thereof, gussets or webs **54** as shown in FIGS. 4 and 5.

Upon actuation of the manual lever **27** in a clockwise movement, as operated by the brakeman standing on the step **18**, and grasping the hand-hold **19**, the brake mechanism can be operated to set the brakes as desired in a conventional manner. The mounting of the handbrake structure **20** is such that easy access and operation is provided for the brakeman and the direct linear relation of the chain and rod provides for a prompt and positive braking action and operation of the lever **35** since conventional idler pulleys used in circuitous routing have been eliminated. The structure **20** is disposed below the deck so therefore is in an out-of-the-way position and is recessed sufficiently inwardly through the aperture **45** in the side wall **12** to provide the clearance desired. As shown in FIG. 4, after the brakes have been set, the release thereof may be accomplished in a simple fashion

by the brakeman pulling upwardly on the link **55** which is pivotally connected to the release lever **28**. The link **55** extends through the apertured plate **56** mounted on the side sill **12** and the operator has ready access to the handle **57** of the link **55** for releasing the brakes. Thus it is believed clear that the object of the invention has been fully achieved by the structure shown and described.

What is claimed is:

1. A railway car having a substantially flat deck structure including an underframe supported on wheel trucks, said deck structure having connected thereto on opposite sides thereof longitudinally extending vertical side sills, a plurality of longitudinally extending stringers supporting said deck structure and being positioned in horizontally spaced relation relative to each other and said side sills, a plurality of transversely extending support members supporting said longitudinal stringers, and an operator's step and hand support connected to said car adjacent one end thereof, the improvement comprising: a handbrake structure comprising an operating mechanism including a housing containing rotatable means adapted to receive and dispense a flexible member in winding and unwinding relation, a supporting structure for attaching said brake structure to one of said side sills substantially adjacent to said step and hand support, said housing projecting downwardly below and outwardly with respect to one of said vertical side sills, said housing including an open end disposed in a vertical plane disposed laterally outwardly from said last vertical side sill, a hand lever projecting outwardly and vertically upwardly from said housing and said side sill adapted to be manually moved in clockwise direction for actuating said operating mechanism, a brake cylinder mounted on said car below said deck structure, a brake lever connected to said brake cylinder, and a flexible member connected to said brake lever and to said mechanism,

said flexible member extending longitudinally and directly linearly below said deck structure from said brake lever through said open end to said rotatable means.

2. The invention as defined in claim **1** wherein said side sill adjacent said step and hand support having a portion apertured to receive an upper portion of said housing, and said supporting structure including a first bracket connected to a rear portion of said housing and to an outer portion of said sill, and a second bracket connecting a rear portion of said housing with the underside of said deck structure.

3. The invention as defined in claim **2** including a reinforcing member connected to an inner, portion of side sill adjacent said apertured portion and being connected to one of said longitudinal stringers.

4. The invention in accordance with claim **3**, including a manual release lever pivotally connected to said housing below said hand lever, and an actuating link connected to said release lever and supported on said side sill adjacent said step support.

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105—368