April 19, 1955 E. FRIEDH ET AL 2,706,566

VIBRATING ATTACHMENT FOR HOPPER CARS AND THE LIKE

Filed Dec. 27, 1951

FIG. 1.

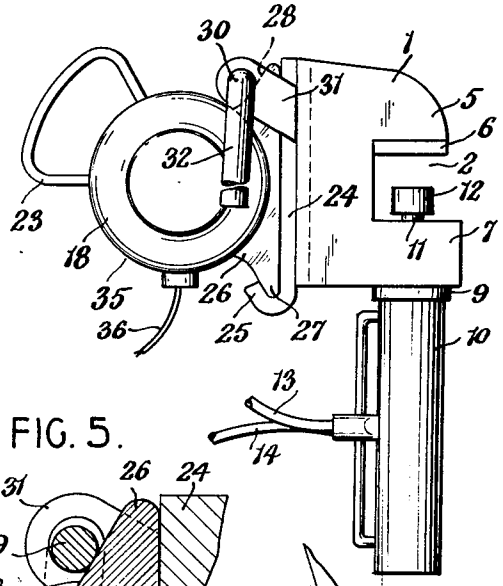


FIG. 2.

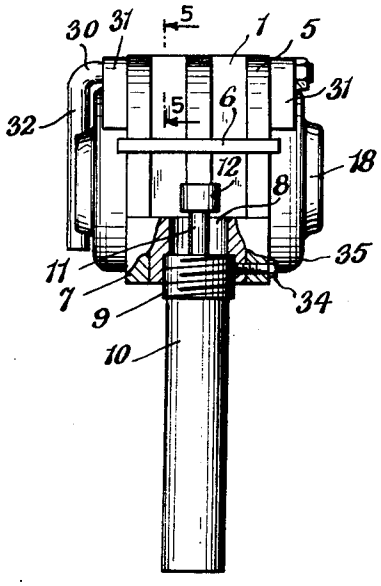


FIG. 5.

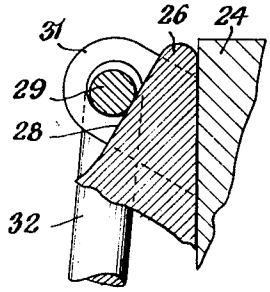


FIG. 3.

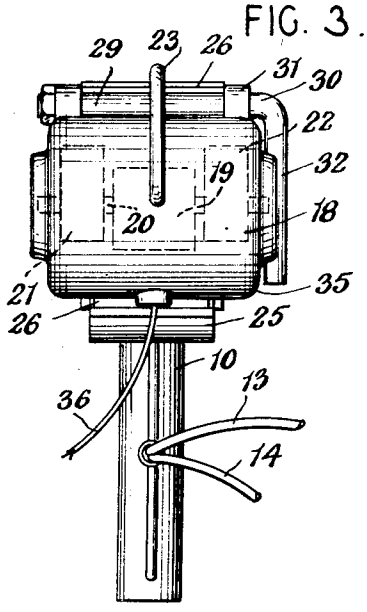


FIG. 4.

INVENTOR.
ERIC FRIEDH
BY HARRY KUENSEL
Eric J. Kuensel
ATTORNEY.

United States Patent Office 2,706,566 Patented Apr. 19, 1955

2,706,566

VIBRATING ATTACHMENT FOR HOPPER CARS AND THE LIKE

Eric Friedh, Jamaica, N. Y., and Harry Kuensel, Riverton, N. J., assignors to Vibro-Plus Corp., Woodside, N. Y., a corporation of Delaware

Application December 27, 1951, Serial No. 263,552

2 Claims. (Cl. 214—83.3)

This invention relates to vibrating devices for freight or hopper cars, and particularly for application to the types of cars used for hauling coal or other loose or pulverized material and from which the contents are unloaded by means of a chute.

In emptying the loose contents from cars of the type just mentioned, it is conventional practice to vibrate or shake the car body to thereby loosen the contents and cause the same to move toward the chute or outlet of the car and thus be continuously delivered. In order to vibrate or agitate the car, a suitable vibrator is usually attached to the body of the car and by its operation will impart a vibratory movement to the body of the car and thus shake down the contents thereof. It has been found difficult to securely, but temporarily, attach such a vibratory device to the car body since the vibratory action of the same usually causes the fastening means to quickly loosen. As a result, the vibrating device requires constant watching while in operation lest it loosen and become completely dislodged from the car.

It is therefore an object of the present invention to provide an improved means for fastening a vibrating device to a car, and one which will securely hold the device in position to enable it to impart its vibratory action to the body of the car, without becoming loose. It is another object of the invention to provide a clamp held in operative position on the car by hydraulic means, with the clamp provided with an improved means for attaching the vibrating device to it.

More particularly, the invention contemplates the provision of a clamp held in position on the flange of a car body by hydraulic means and having a seat on which the vibrating device will be securely, yet removably attached.

In the accompanying drawing, wherein an illustrative embodiment of the invention is disclosed, Fig. 1 is a side elevation of the improved vibrating device and clamping means for attaching the same to the flange of a car; Fig. 2 is a front elevational view of the same, with certain parts broken away and other parts being shown in section in order to disclose construction;

Fig. 3 is a rear view of the device;

Fig. 4 is a side elevation of the device, showing the same as it appears when attached to the flange of a hopper car, and

Fig. 5 is a sectional view, taken on the line 5—5 of Fig. 2, looking in the direction of the arrows.

Referring to the drawing, **1** indicates the clamping head which is roughly C-shaped and is thus provided with a notch or recess **2**, into which the flange **3** of a hopper or other freight car body **4** is received substantially as shown in Fig. 4. The clamping head **1** is thus provided with a fixed upper jaw **5** provided with a face plate **6**. A lower fixed jaw **7** is formed on the clamping head **1** and said lower jaw is provided with an aperture **8** (Fig. 2) which threadably receives the threaded portion **9** of a hydraulic cylinder **10**. A set screw **34** holds the cylinder **10** in any desired adjusted position in the jaw **7**.

A ram or piston **11** is operative in the cylinder **10** and is provided at its exposed end with a head **12**. The ram is movable by hydraulic pressure in the cylinder **10** to move its head **12** toward the upper jaw **5** to thereby clamp the car flange **3** between said head **12** and the face plate **6** of the upper jaw in the manner clearly shown in Fig. 4. Flexible inlet and outlet tubes **13** and **14** couple the cylinder **10** to a pump **15**, manually operated by the handle **16**, to supply the fluid under required pressure to

the cylinder **10** to thereby either cause elevating or lowering movement of the ram **12** as required. A valve **17** controls the flow of the fluid to the cylinder in the conventional manner.

The vibrator is generally indicated at **35** and the same, in the form shown, consists of a housing **18** containing an electric motor **19** to which electric current is carried by the cable **36**, and which rotates a shaft **20** carrying eccentric weights **21** and **22** that set up vibration to shake the car body and cause the descent of the loose contents of the same. A bail or handle **23** is provided on the vibrator housing **18** to permit of its handling.

Provided at the back of the clamping head **1** is a mounting plate **24** formed at its lower end with an upturned flange **25** which takes over a tapered edge portion **27** of a mounting shoe **26** secured to the vibrator casing **18**. The opposite tapered edge portion **28** of the shoe **26** is engaged by an eccentric or offset portion **29** (Figs. 3 and 5) of a clamping rod **30** that is manually rotative in a pair of lugs **31** extending from the plate **24**. The clamping rod **30** is provided with an angularly-bent end **32** constituting a handle by which the rod may be manually rotated to cause its offset portion **29** to bear down upon the tapered portion **28** of the shoe **26** to thus cooperate with the flange **25** in securely holding the vibrator firmly and immovably against the plate **24** attached to the clamping head **1**.

From the foregoing, the operation of the device will be readily understood. By the application of hydraulic pressure in the cylinder **10** against the ram **11**, the head **12** thereof will clamp the flange **3** of the car between it and the upper jaw face plate **6**. As long as the hydraulic pressure is maintained in the cylinder **10**, the clamp will remain securely attached to the flange, despite the vibratory action of the vibrator **35**. The vibrator **35** is easily attached to the clamping head **1** by inserting the end **28** of the shoe **26** under the clamping rod **30** and then fitting the opposite end of the shoe **26** under the flange **25** after which the rod **30** is rotated to cause the eccentric portion **29** thereof to clampingly hold the vibrator in position. By release of the hydraulic pressure in the cylinder **10**, ram **11** will be lowered and the clamp thus engaged from the flange **3** so that the device may then be easily detached from the car body.

Having described one embodiment of the invention, it is obvious that the same is not to be restricted thereto, but is broad enough to cover all structures coming within the scope of the annexed claims.

What I claim is:

1. A vibrating device for car bodies comprising a substantially C-shaped head defining spaced jaws between which the flange of a car body is adapted to be fitted, a hydraulic cylinder attached to one of said jaws, said cylinder being provided with a hydraulically-operated ram movable to or from one of the jaws to thereby engage the flange of the car body between it and the said jaw, a seat on the head, a vibrator having a shoe resting against said seat, said seat having a flange overlying a portion of the shoe, said shoe having an inclined surface, and a cam rod rotatively carried by the head and being manually rotative to clampingly engage the inclined surface of the shoe to thereby hold the shoe against its seat with a portion of said shoe disposed under the flange on said seat.

2. A vibrating device comprising a substantially C-shaped head for defining spaced jaws adapted to grip the article to be vibrated between them, an hydraulic cylinder being provided with an hydraulically-operated ram movable to or from one of the jaws to thereby grip the article to be vibrated between it and said jaw, a seat on the head, a vibrator having a shoe resting against said seat, said seat having a flange overlying a portion of the shoe, said shoe having an inclined surface, and a cam rod rotatively carried by the head and being manually rotative to clampingly engage the inclined surface of the shoe to thereby hold the shoe against its seat with a portion of said shoe disposed under the flange on said seat.

(References on following page)

References Cited in the file of this patent

UNITED STATES PATENTS

965,807	Garvey	July 26, 1910
1,211,611	Meyer et al.	Jan. 9, 1917
1,774,977	Jackson	Sept. 2, 1930
2,060,130	Scott	Nov. 10, 1936
2,108,416	Smith et al.	Feb. 15, 1938
2,229,037	Boldman	Jan. 21, 1941
2,235,001	Allen	Mar. 18, 1941
2,260,611	Di Santo	Oct. 28, 1941
2,400,140	Sargeson	May 14, 1946
2,507,749	Bacheldor	May 16, 1950
2,523,212	Hight	Sept. 19, 1950
2,621,813	Bauerle et al.	Dec. 16, 1952