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2,189,716

SAFETY LATCH FOR COIL FILTERS

Filed June 16, 1938

2 Sheets-Sheet 1

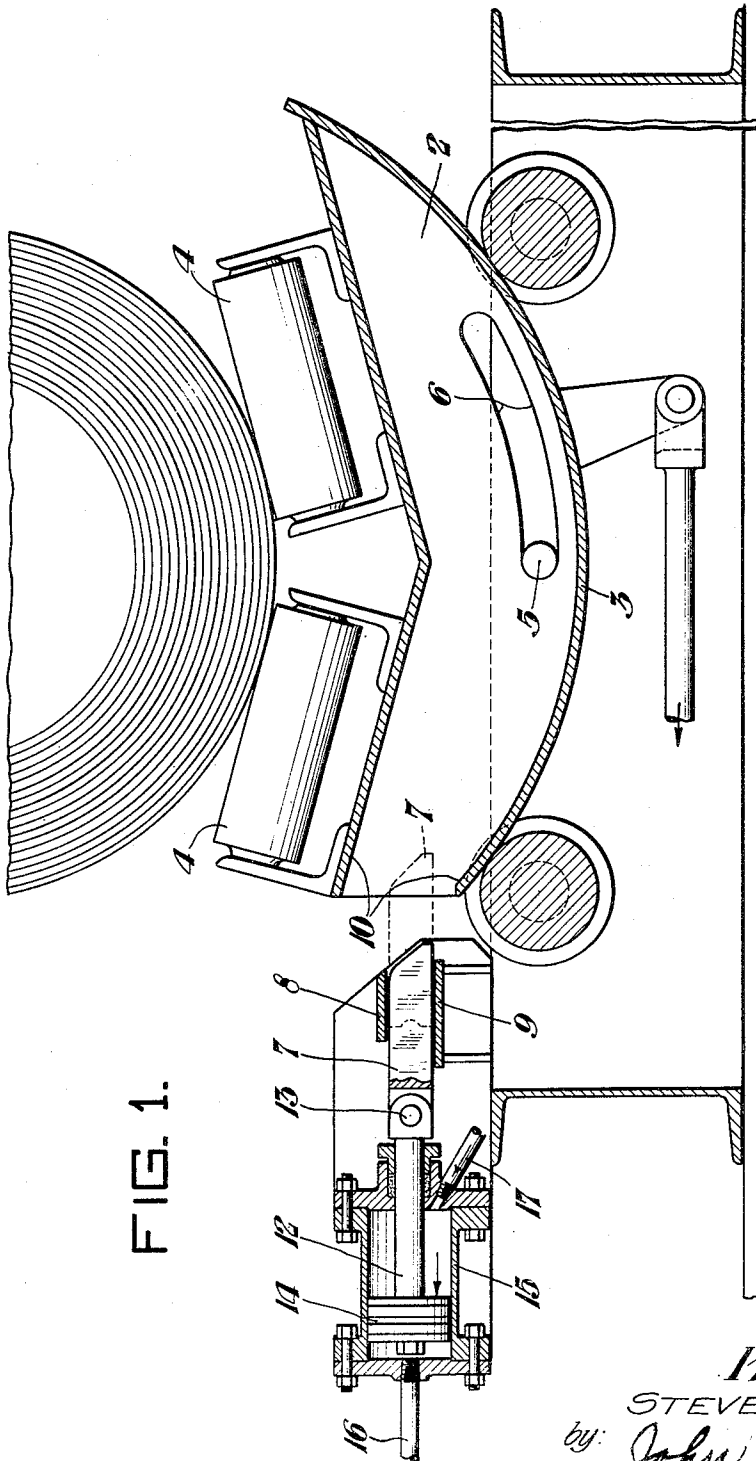


FIG. 1.

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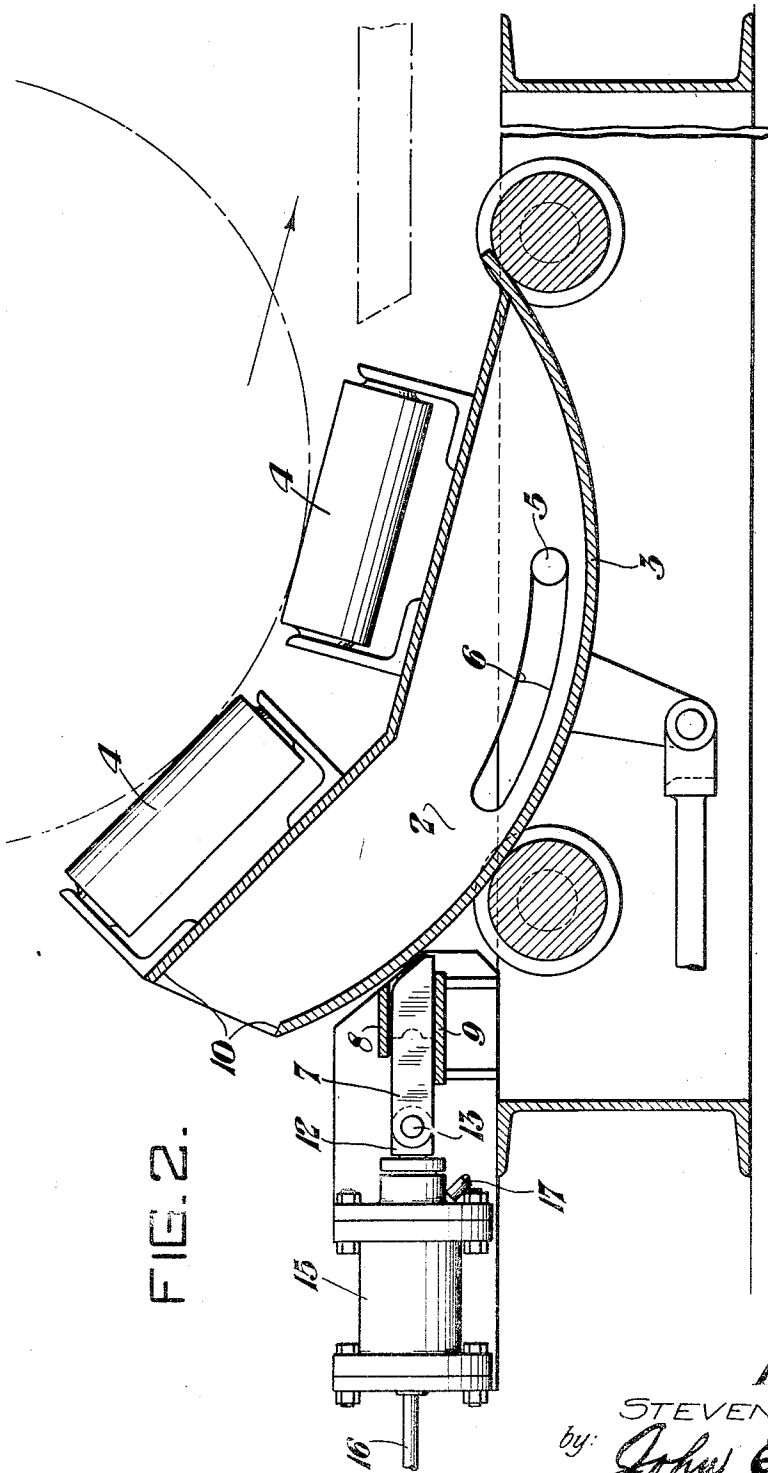
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2 Sheets-Sheet 2



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# UNITED STATES PATENT OFFICE

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## SAFETY LATCH FOR COIL TILTERS

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Application June 16, 1938, Serial No. 214,086

1 Claim. (Cl. 214—130)

This invention relates to tilting devices as used in connection with conveyers for removing articles therefrom, and particularly to a means for locking such tilting devices against accidental movement.

In the manufacture of strip metal, it is usually coiled after each operation, or when it is ready to be shipped, and the coils moved from one operation to the next, or to the place for shipment to their destination, by means of a conventional roll-type gravity trough conveyer. These coils of metal are extremely heavy and usually are delivered from the conveyer by means of a tilting device which is part of the conveyer or a separate unit aligned therewith. The coils are conveyed to the tilting portion or device and automatically rolled off the side thereof by gravity when the tilting portion or device is tilted to the proper angle.

It is desirable that means be provided for aligning such tilting portions or devices with the conveyer to insure movement of the coils thereon and to prevent unintended movement or tilting of the device so as to eliminate any danger of injury to the operator or workman by untimely operation thereof, and it is to such a means that this invention relates.

According to this invention, there is provided a means adapted to cooperate with the tilting portion or device to lock the same against unintended movement, which is controlled by the operator, preferably in a remote position relative to the tilting device.

It is one of the objects of the present invention to provide an improved means for positioning tilting devices and for preventing accidental operation of the same.

It is another object of the invention to provide an improved safety latch for a tilting device which will, in one position, lock the same against accidental movement or operation, and, in another position, permit the device to tilt to deliver the articles therefrom.

It is still another object of the invention to provide an improved safety latch for tilting devices actuated by means which can be controlled at a position remote from the device.

Various other objects and advantages of this invention will be more apparent in the course of the following specification and will be particularly pointed out in the appended claim.

In the accompanying drawings, there is shown, for the purpose of illustration, one embodiment which my invention may assume in practice.

In these drawings:

Figure 1 is a vertical section through the tilting device and the improved safety latch of my invention, showing the tilting device in its normal position; and

Figure 2 is a similar section through the tilting device showing it in its tilted position.

Referring more particularly to the drawings, there is shown a tilting device 2 which may be a part of the conventional type conveyer for transferring coils of metal from one operation to the next or to a point ready for shipment, or it may be a separate device suitably positioned at the end thereof. This tilting device is of the conventional type and comprises a circular-shaped base 3 having a series of oppositely disposed rollers 4 positioned on the top thereof over which the coils of metal are adapted to move by the force of gravity. This particular tilting device is supported preferably by suitable rollers arranged on the frame, as shown, and is adapted to move in a clockwise direction, the coils of metal automatically rolling therefrom as it moves to the proper angle of inclination. Such a tilting device can be actuated by any suitable means and there is usually provided a stop, such as in this case a pin 5, suitably attached to the frame and arranged in a slotted hole 6 in the base 3 to limit the movement thereof.

According to the invention, there is arranged along the side of the tilting device a means for locking the tilting device in position so as to maintain it in proper alignment with the conveyer when the coils are being moved thereon and to prevent unintended movement of the tilting device. This locking means comprises a latch or bar 7 suitably arranged between a top guide-plate 8 and a lower guide-plate 9. The inner end of the latch 7 is adapted to engage with an aperture 10 in the side of the base 3 of the tilting device and is beveled outwardly to correspond to the circular contour of the same. The outer end of the latch 7 is removably connected to the outer end of a connecting-rod 12 by means of a removable pin 13. The connecting-rod 12 is attached to a piston 14 of a double-acting air-cylinder 15 having an air-inlet 16 at one end to admit the air to move the piston in one direction and an air-inlet 17 in the opposite end thereof to admit the air to the cylinder to move the piston in the opposite direction.

It will be seen that the locking safety latch 7 normally assumes the position as shown in the broken lines of Figure 1, and when it is desired to tilt the tilting device to deliver the metal coil therefrom, the air is turned into the cylinder

15 through the inlet 17, thereby moving the piston to the left, withdrawing the latch from engagement with the tilting device, as shown in the full lines of Figures 1 and 2, and permitting the tilting device to be actuated in a clockwise direction to deliver the coil therefrom. After the coil has rolled from the tilting device, it is again brought back to position in alignment with the conveyer and the air turned into the cylinder through the inlet 16, thereby moving the piston 14 to the right to engage the latch 7 with the aperture 10 in the base 3. That is to say, the latch 7, in one position, locks the tilting device against accidental movement and in alignment with the conveyer, and, in another position, allows the tilting device to be actuated to remove the coil of metal therefrom.

As a result of my invention, it will be seen that I have provided a latch for locking the tilting device in position which can be controlled at a desired point remote from the tilting device itself, thereby making the tilting device safe in its operation by removing the operator from any position of danger near the same while it is being actuated.

While I have, in this application, shown and

specifically described one embodiment which my invention may assume in practice, it will be understood that this embodiment is merely for the purpose of illustration and description, and that various other forms may be devised within the scope of my invention, as defined in the appended claim.

I claim:

In a device adapted to tilt for removing articles therefrom, a latch for preventing unintentional tilting of said device comprising, in combination, a movable bar arranged along the side of said device, said device having an aperture in the side thereof for receiving the inner end of said bar, means for supporting and guiding said bar in its movement, a double-acting air-cylinder arranged adjacent the outer end of said bar with the outer end of the bar being removably attached to the end of the connecting rod thereof, said air-cylinder adapted to move and normally retain said bar in the aperture in said tilting device to prevent the tilting thereof and to retract the same therefrom to permit the tilting of the device.

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