

[54] APPARATUS FOR CLASSIFYING FLANGED
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Co., Ltd., Tokyo, Japan[22] Filed: **May 31, 1973**[21] Appl. No.: **365,706**

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209/74

[56]

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[57]

ABSTRACT

An apparatus for classifying flanged pipes which can classify various pipes in length. To this end, the flanged pipe is received and conveyed by a tray and discharged from the tray at a desired position. More particularly, the tray carrying the pipe is lifted by chains and tilted in lifting to discharge the pipe at a predetermined stage.

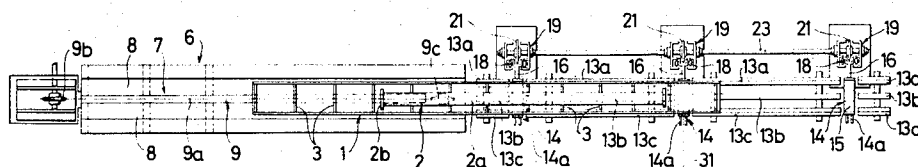
1 Claim, 4 Drawing Figures

FIG. 1

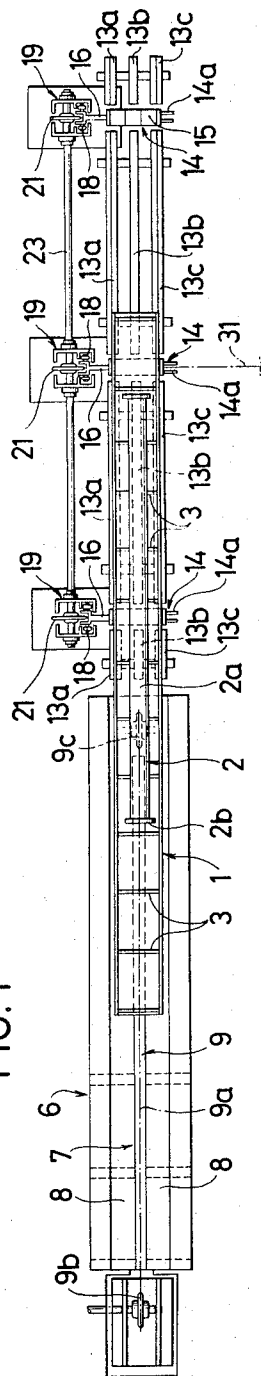


FIG. 2

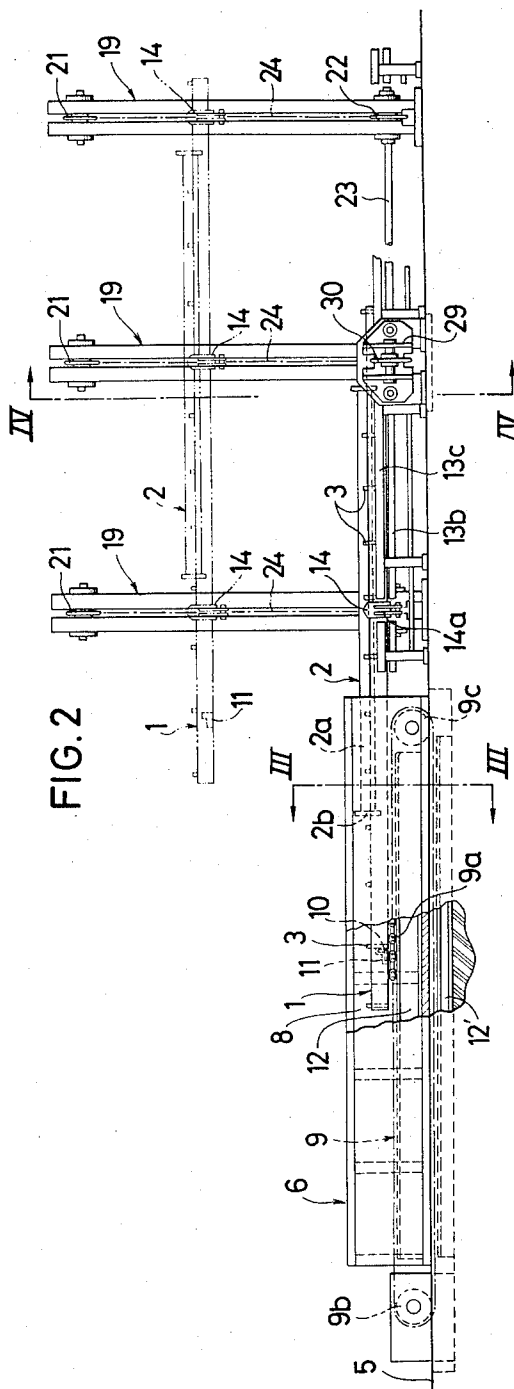


FIG. 4

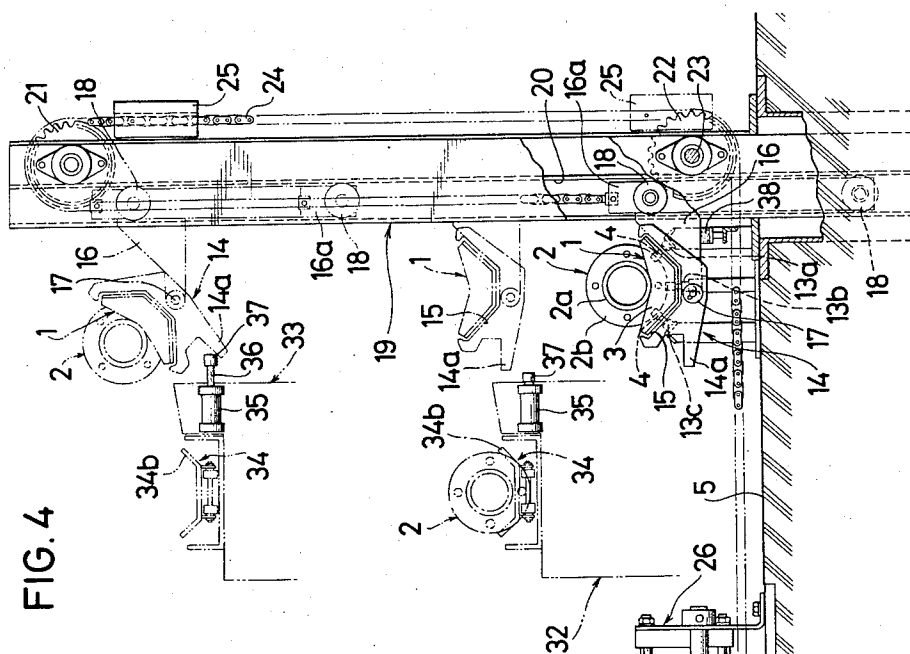
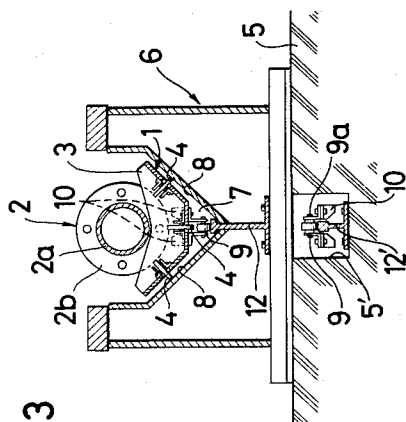


FIG. 3



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APPARATUS FOR CLASSIFYING FLANGED PIPES

The present invention relates to an apparatus for classifying flanged pipes and conveying to the next working stage.

An object of the present invention is to provide an apparatus which can classify and convey various pipes in length with simplified construction.

In the drawings:

FIG. 1 is a plan view of an apparatus in accordance with the present invention;

FIG. 2 is a side view of the apparatus;

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

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

Referring to the drawings, numeral 1 designates an elongated tray for receiving a flanged pipe 2 having a plurality of vertical supporting plates 3 arranged with a spacing on which the pipe 2a is supported and the flanges 2b are located between the supporting plates. The tray 1 has a plurality of rolls 4 by which the tray can move on the inclined plates 8 of V-shaped passage 7 of the guide construction 6. In the bottom of the passage 7, a chain conveyor 9 is provided of which endless chain 9a has an attachment 10 engaged with a recess 11 of the bottom of the tray 1. The chain conveyor 9 is driven by not shown motor connected to the chain sprocket wheel 9b. A guide rail 12 is provided in the guide construction 6 and a guide rail 12' is provided in the recess 5' of the floor 5, thus the endless chain 9a moves on the rails 12 and 12' without loosening. Adjacent to the guide construction 6, four units rails 13a, 13b and 13c are provided on which the tray can be moved by rolls 4. In each gap between units of rails, tray holders 14 are provided, each of which has a receiving portion 15 and pivoted to the bracket 16 by the shaft 17. On opposite ends of the sliding portion 16a of the bracket 16, rollers 18 are provided, thereby the sliding portion 16a may be slid along the guide rails 20 of stands 19. At opposite ends of each stand 19 provided are chain sprocket wheels 21 and 22 of which lower chain sprocket wheel 22 is coupled to the rotary shaft 23 and chain sprocket wheels 21 and 22 of stands 19 of opposite ends are connected by chain 24 respectively. Each sliding portion 16a is connected to the chain 24 and a balance weight 25 is also attached to the chain.

As shown in FIG. 4, an oil hydraulic cylinder 27 is provided in the frame 26 of which piston rod 28 has a bracket 29 provided with a chain sprocket wheel 30. The chain 31 connected to the frame 26 at one end thereof is engaged with the chain sprocket wheels 22 and 21 of the central stand 19 and connected to the sliding portion 16a. Therefore, when the piston rod 28 is moved, all brackets 16 and the tray holders 14 are vertically moved along the guide rails 20. Lower and upper stages 32 and 33 are provided along the pass of the tray holder 14, on each stage the chain conveyor 34 comprising a pallets 34b is provided for discharging pipe according to the size of the pipe and cylinders 35 are provided to project the piston rod 36. Each piston

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rod 36 has a stopper 37 and adapted to project it into the pass of the tray holder 14 to engage with the projection 14a of each tray holder.

In operation, the pipe 1 flanged in the flange welding machine and discharged therefrom is received by the tray 1 and the tray 1 is moved to the right along rails 13a, 13b and 13c by the chain conveyor 9. When the tray 1 reaches to the right end of rails, the attachment 10 is turned around the chain sprocket wheel 9c thereby separated from the tray 1, so that the tray is stayed on the rails 13a, 13b and 13c. Thereafter the cylinder 27 is operated to push out the piston rod 28, so that the chain 31 is moved to rotate the central chain sprocket wheel 22, thereby both side chain sprocket wheels 22 are rotate to drive chains 24. Thus tray holders 14 are raised holding the tray 1 together with the pipe 2.

According to the size of the discharged pipe, the upper or lower stopper 37 is previously projected. Therefore, in raising of the holders 14, projections 14a engage with the projected stopper, so that the holders 14 are rotated about the shaft 17 in the counter clockwise direction as shown in FIG. 4. Thus the tray is inclined to discharge the pipe to the chain conveyor 34 on the desired stage 33 and the pipe is conveyed to the next working stage by the conveyor. Thereafter, the cylinder 27 is reversely operated to retract the piston rod 28, so that the brackets 16 and holders 14 are lowered by own weight and the holder rotated to return to the initial position. The brackets 16 are stopped by the stopper 38, at the same time stopping the operation of the cylinder. On the other hand, the cylinders 35 are operated to retract the piston rods 36 and the stoppers 37. When the brackets 16 are stopped at the lower stroke end, the recess 11 of the tray 1 is engaged with the attachment of the chain conveyor 9. Subsequently, the chain conveyor 9 is reversely driven to return the tray 1 to the initial position.

From the foregoing, it will be understood that this invention provides an apparatus which can easily transmit and classify various pipes in length, since pipes are received and conveyed by a tray.

What is claimed is:

1. An apparatus for classifying flanged pipes comprising an elongated tray having a plurality of vertical supporting plates arranged with a spacing, a guiding means for said tray having a V-shaped passage, a chain conveyor provided along said passage for conveying said tray, an attachment provided in said chain conveyor for engaging with said tray, rails connected terminal end of said guiding means arranged with a spacing for guiding said tray, stands provided near said rails, brackets provided to slide along said stands and adapted to locate between said rails, tray holders pivotally mounted on said bracket for holding said tray, means for sliding said bracket along said stands, stages provided along the pass of said tray holders for discharging the pipe on the tray, conveyor provided on each stage, means for engaging said tray holder provided on each stage for inclining said tray holders to discharge the pipe on the tray.

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