Oct. 17, 1961 M. WALTHER ET AL 3,004,648

DEVICE FOR TRANSPORTING CONSTRUCTION TIMBER

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Fig. 1.

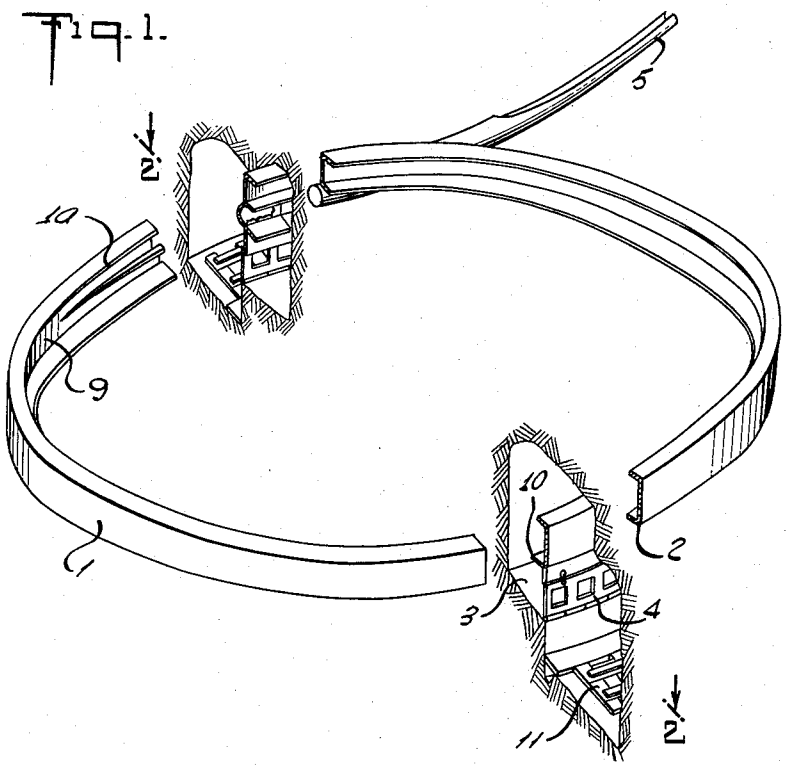
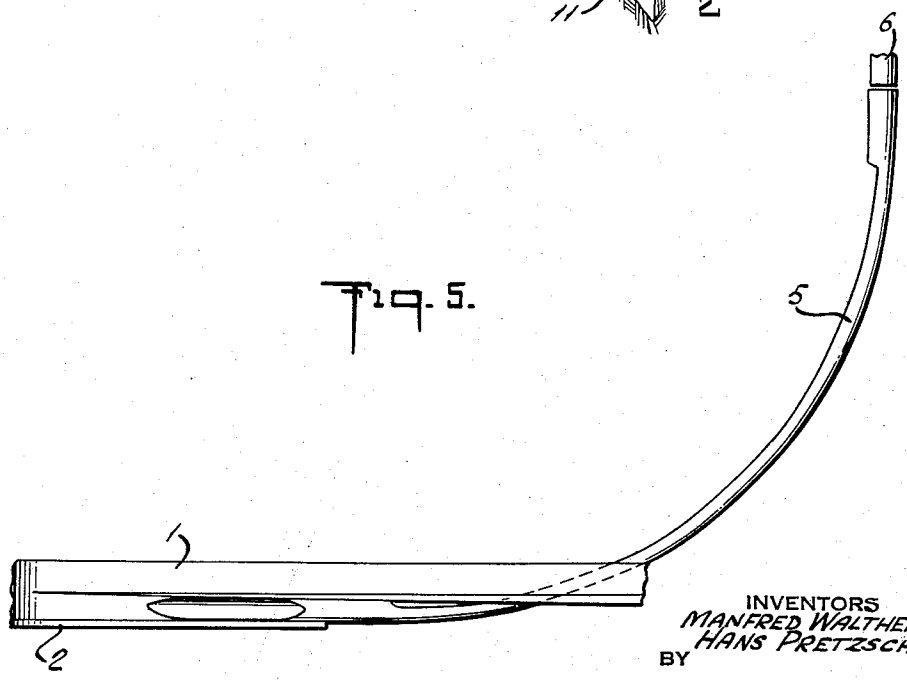


Fig. 5.



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Fig. 2.

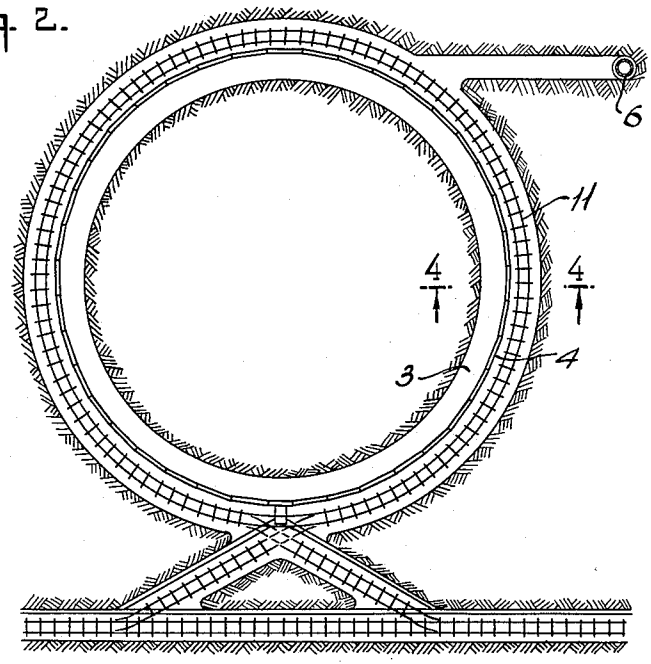
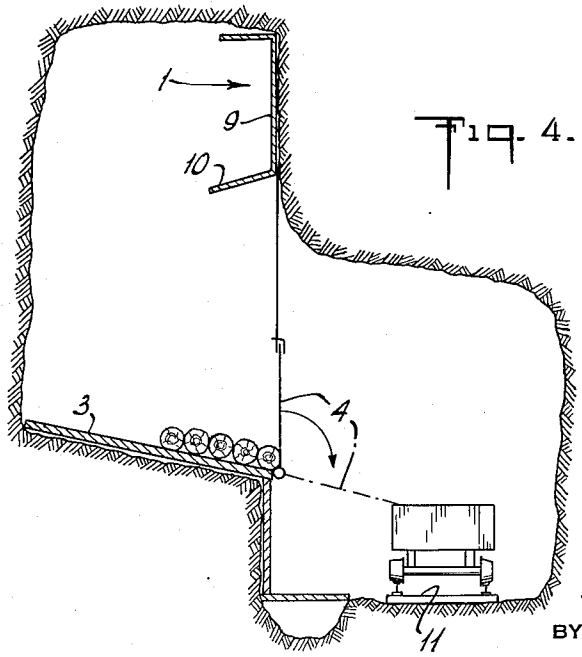


Fig. 4.



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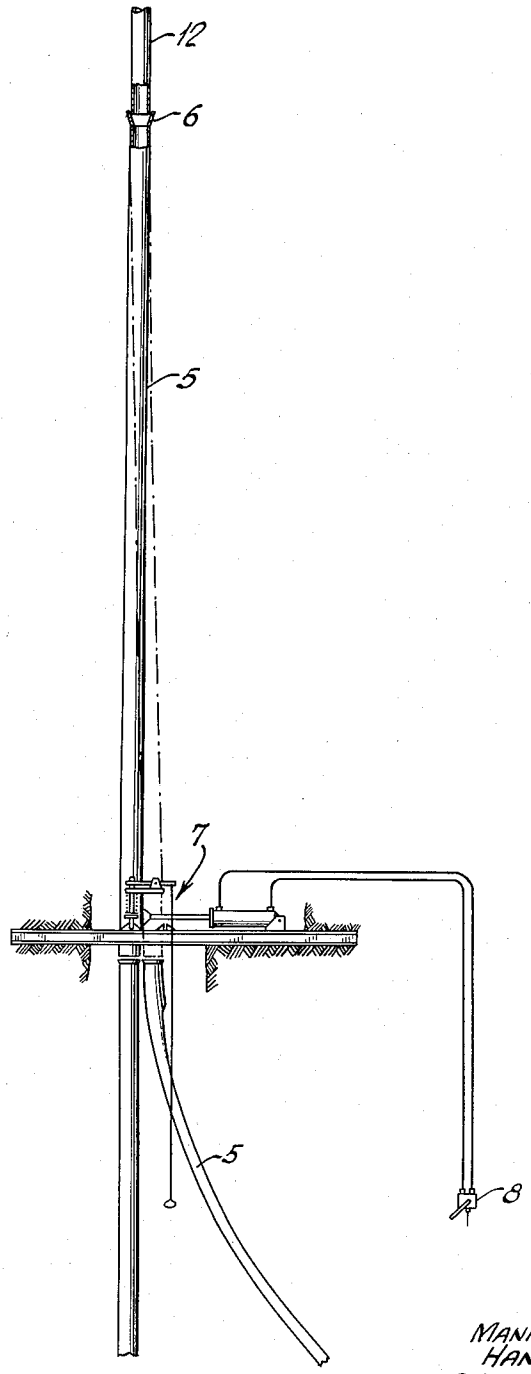
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Fig. 3.



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DEVICE FOR TRANSPORTING CONSTRUCTION TIMBER

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7 Claims. (Cl. 193—40)

This invention relates in general to a device for transporting construction timber or pit wood into the lower floors of a mine installation and in particular to a new and useful timber run for transporting wood to any desired depth in a mine without causing damage to the wood and with a minimum of operational control.

Previously, conduits or pipes had been used to transfer from one mine level to the next and with such devices it is necessary to provide elaborate braking devices at their delivery end. In most instances, the braking devices utilized water as braking medium. Such devices are disadvantageous in that the wood after having been first air dried, is again soaked with water. When this wood is used for building the structures within the mine pit it will decompose much more readily than if the wood had remained dry and additionally there is a danger of mine damp which is increased by the use of wet wood. In general, most previous devices have been expensive and difficult to operate, requiring elaborate braking shoes or water brakes as described and such devices are not feasible when the difference in height between the several floors of the pit is considerable.

In accordance with the present invention, there is provided a novel substantially U-shaped run disposed on each mine level and fed from a timber supply conduit extending from an upper floor downwardly to a lower floor. The arrangement includes means for transferring the timber from the supply conduit in which it is tumbled onto the U-shaped run and allowing the timber to move around on the run and be slowed by the centrifugal force of its movement against the outer face of the run. The arrangement includes a platform adjacent the run at the lower floor which receives the timber as it slows down, the latter dumping by its own weight downwardly onto the platform. The timber is then stored behind a screened opening where it may be removed as desired in the lower pit level. The lower leg of the spirally disposed U-shaped track is inclined toward the storage places at the lower levels and the wood by its own force tumbles into the storage places as the forward force of movement of the lumber decrease with increase of outward centrifugal braking force of the lumber against the inner face of the run. The runs are each provided with a switch to control the feeding of the timber into the run from the supply chute as desired.

Accordingly, it is an object of this invention to provide an improved means for arresting timber transported from an upper level of a mine to a lower one.

A further object of this invention is to provide a device for transporting timber from an upper level to a lower level including a timber chute arranged to discharge into a substantially U-shaped horizontal run disposed in each of the lower levels adapted to slow the timber down by its own outwardly directed centrifugal force against the inner wall of the run.

A further object of the invention is to provide means for arresting timber at a lower mine level which is simple in design, rugged in construction and economical to manufacture.

The various features of novelty which characterize the invention are pointed out with particularity in the claims annexed to and forming a part of this specification. For a better understanding of the invention, its

operating advantages and specific objects attained by its use, reference should be had to the accompanying drawings and descriptive matter in which there is illustrated and described a preferred embodiment of the invention.

In the drawings:

FIG. 1 is a perspective view of portions of a horizontally disposed timber arresting run constructed in accordance with the invention;

FIG. 2 is a section taken along the line 2—2 of FIG. 1;

FIG. 3 is a somewhat schematic view of the incoming run or delivery chute for directing timber into the arresting run;

FIG. 4 is a vertical section taken on the line 4—4 of FIG. 2; and

FIG. 5 is a fragmentary elevation indicating the connection between the chute and the arresting run.

Referring to the drawings in particular, the invention as embodied therein includes an endless substantially U-sectioned arresting run 1 which is arranged substantially horizontal in a lower mine level. The supply of wood is tumbled downwardly in a vertical chute 12 into a large supply chute or conduit 5 and when it is desired to deliver the wood to a respective lower mine level an electric switch control 8 is actuated to operate switching mechanism 7 to direct the wood out of a portion of the conduit 5 and into a portion thereof feeding the run 1. The wood thereupon enters the run at high forward speed and is urged by the curve of the run backwardly against an inner face 9 as it is moved by its own weight and forward velocity around the run.

The arresting run gradually reduces the forward speed of the timber due to the effect of the retarding centrifugal force to a point at which the forward velocity of the timber ceases and each piece rolls off a bottom lip 10 of the run 1 and falls on a platform 3 at the level in which the wood is to be used. The platform 3 is located above a track section 11 so that an operator may open a hingedly mounted screen 4 and remove the timber as desired and load it on to a train for transportation to a desired location at this mine level.

In FIGS. 1 and 5 it can be seen that the arresting run 1 is disposed substantially level, that is, on a horizontal plate at the lower level. However, the last portion of the run indicated 1*a* in FIG. 1 is curved upwardly slightly in order to insure that the timber which is moving to the end of the run will not block the timber delivered through the connecting conduit or chute 5 located below the curved end of the run. FIG. 4, which is somewhat similar to FIG. 1, indicates how the run 1 includes the substantially vertical rear wall or inner face 9 against which the materials are directed. After the materials have been moved around in a circle a sufficient amount to slow the forward velocity of the timber, the piece rolls off the lower lip 10 and onto the platform 3 for eventual removal through the screened opening at 4.

Thus, the invention provides a simple means for delivering wood from one level of the mine to the next and arresting its forward motion without requiring costly braking apparatus and without requiring any operative control other than the directing of the wood into the delivery apparatus and arresting run.

We have described preferred embodiments of our invention, but it is understood that this disclosure is for the purpose of illustration, and that various changes in shape and proportion, as well as the substitution of equivalent elements for those herein shown and described may be made without departing from the spirit and scope of the invention as set forth in the appended claims.

What is claimed is:

1. An installation for tumbling pit wood into the lower floors of a mine comprising a substantially chan-

nel-shaped run disposed in a lower level and having a substantially vertical wood arresting wall extending in a substantially circular horizontal path, and delivery chute means connected to said run to direct said pit wood tangentially into said run against said arresting wall whereby the speed of the wood is checked as it is directed around the curved wall.

2. The installation according to claim 1 wherein the lower leg of the U-shaped run slopes downwardly whereby timber carried between the legs of the run may roll downwardly off the leg at the lower level.

3. An installation according to claim 2, wherein said U-sectioned run is disposed substantially horiontally at the lower level whereby the centrifugal force acting on said timber effects the slowing up of said timber and eventually its falling off said run at the lower level, and switching means connecting said delivery chute and said run to selectively connect said run with said delivery chute.

4. An installation according to claim 3 including a storage platform disposed beneath the lower leg of said U-shaped section run.

5. An installation according to claim 4, wherein said platform is at a level above a track section disposed at said lower mine level.

6. An installation according to claim 4 wherein said storage platform is provided with a screened discharge opening.

7. An installation according to claim 1 including conduit means for directing timber downwardly in said mine and switching means for selectively connecting said conduit means to said run for directing timber into said run.

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