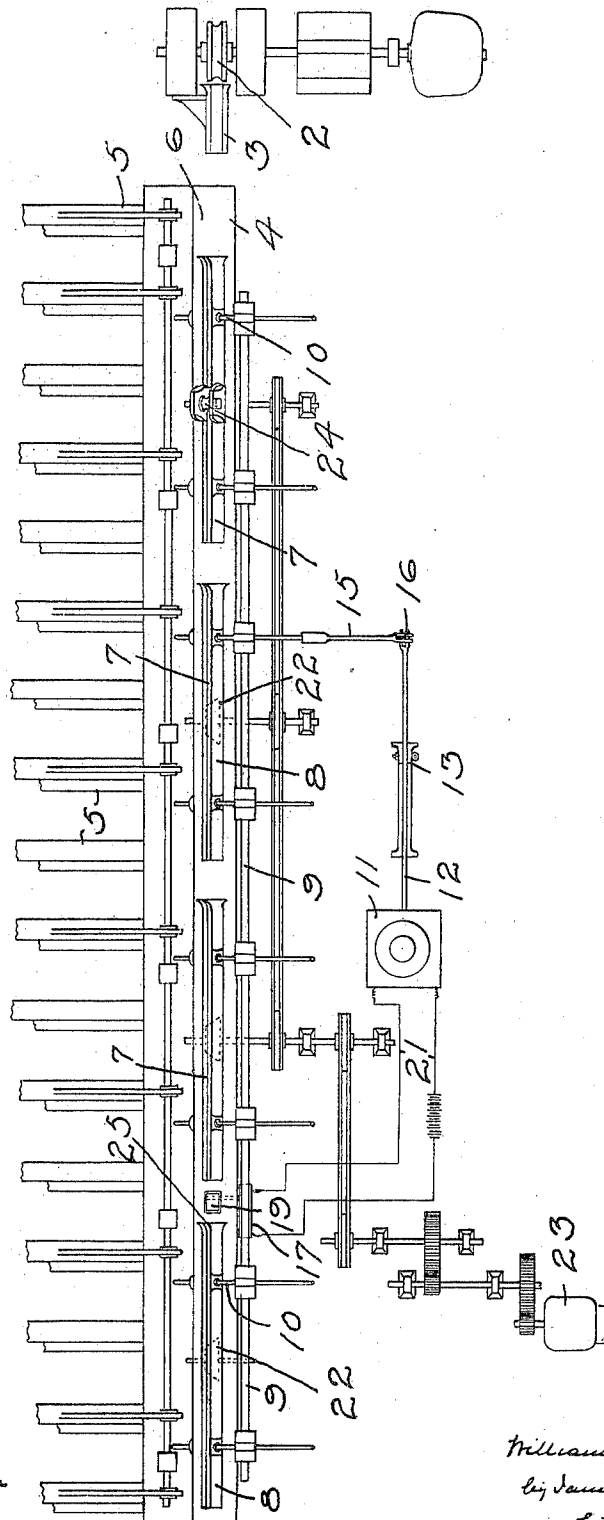


W. E. SANDFORD.
 AUTOMATIC DUMPING APPARATUS FOR PIPE MACHINERY AND THE LIKE.
 APPLICATION FILED JAN. 6, 1909.

950,729.

Patented Mar. 1, 1910.
 4 SHEETS—SHEET 1.

FIG. 1



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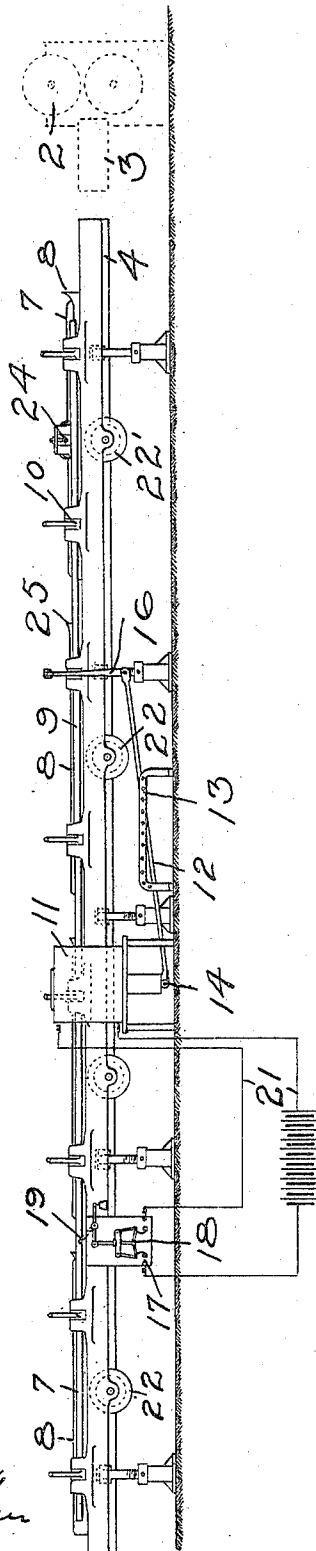
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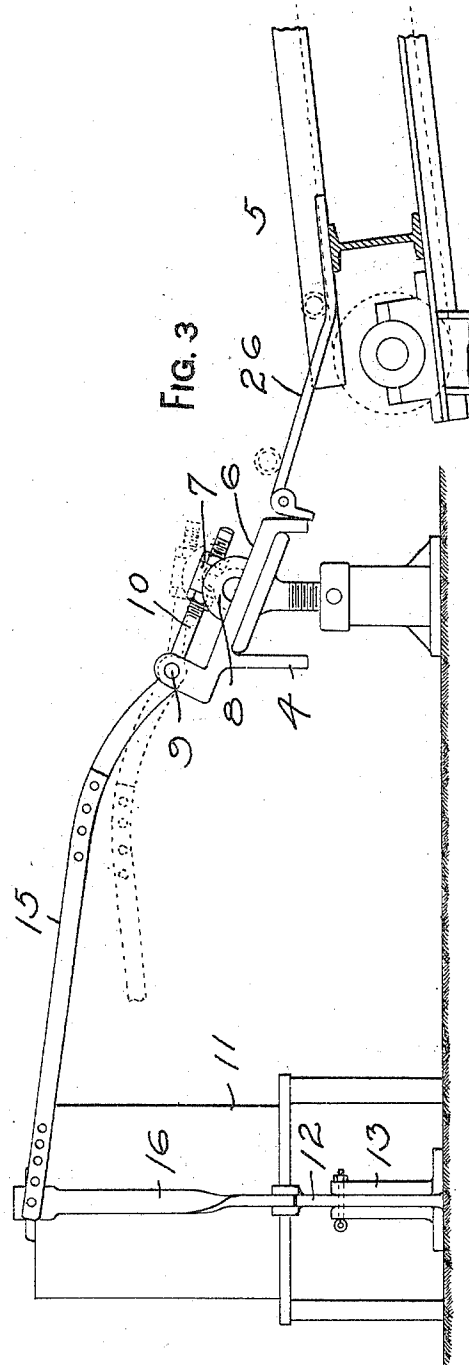
FIG. 2



WITNESSES:

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FIG. 3



INVENTOR

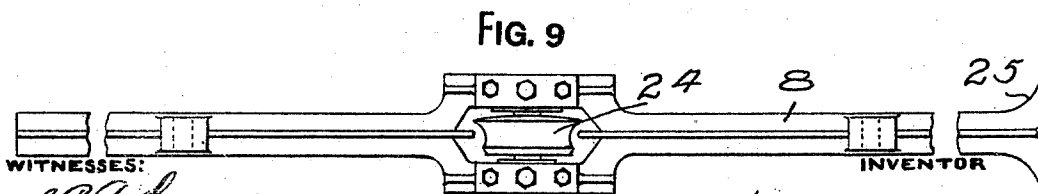
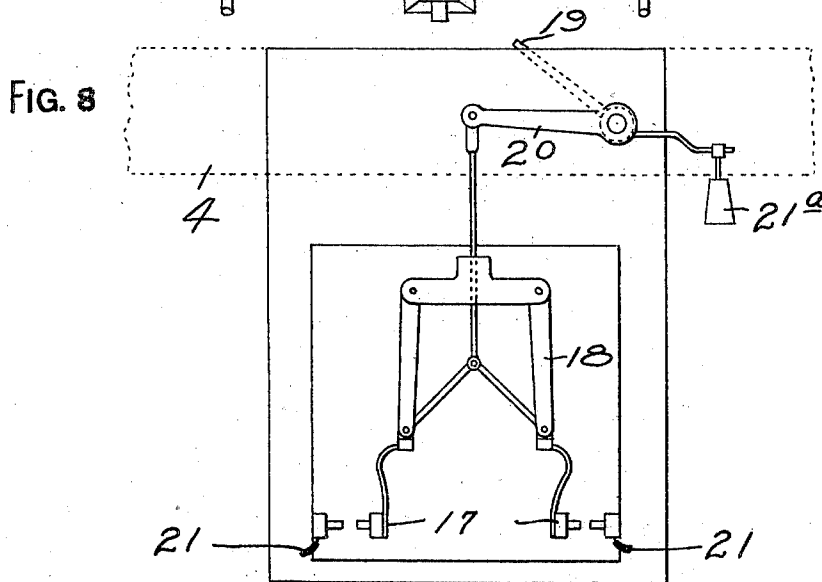
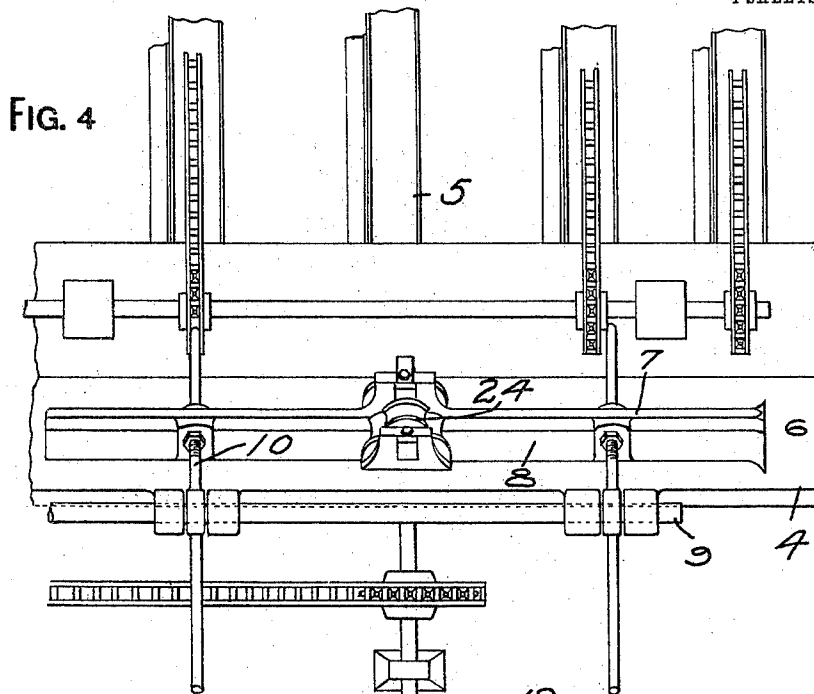
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4 SHEETS—SHEET 3.



WITNESSES:

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4 SHEETS—SHEET 4.

FIG. 5

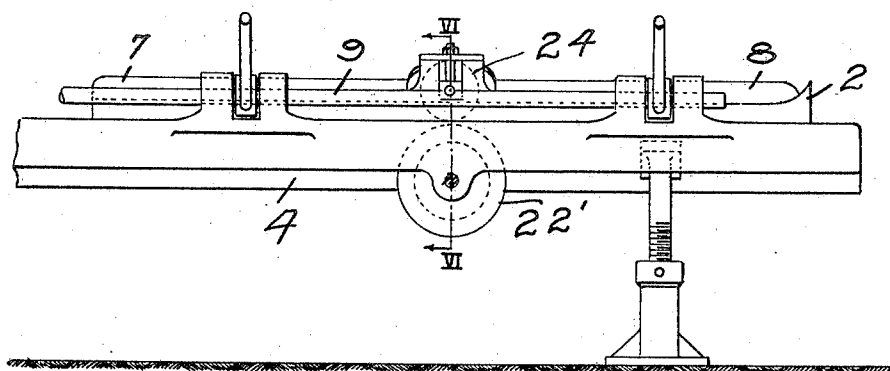


FIG. 6

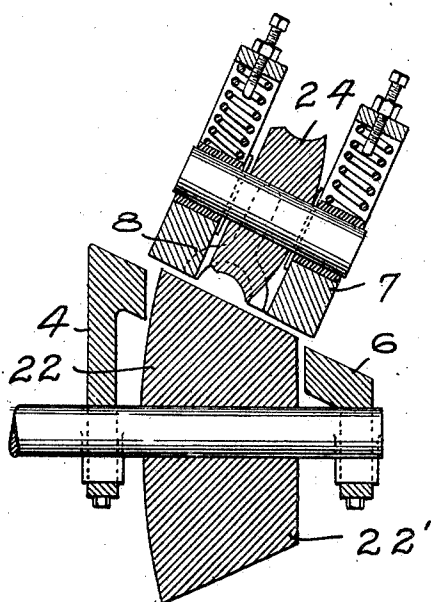
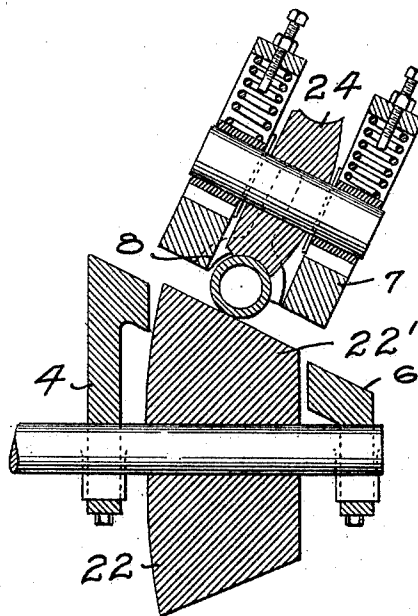


FIG. 7



WITNESSES:

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UNITED STATES PATENT OFFICE.

WILLIAM E. SANDFORD, OF ZANESVILLE, OHIO.

AUTOMATIC DUMPING APPARATUS FOR PIPE MACHINERY AND THE LIKE.

950,729.

Specification of Letters Patent.

Patented Mar. 1, 1910.

Application filed January 6, 1909. Serial No. 470,963.

To all whom it may concern:

Be it known that I, WILLIAM E. SANDFORD, of Zanesville, county of Muskingum, State of Ohio, have invented a certain new and useful Improvement in Automatic Dumping Apparatus for Pipe Machinery and the Like, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to apparatus for automatically transferring pipe or other rolled product from one set of mechanism to another.

It relates more particularly to the transferring or "dumping" of pipe or other rolled shapes after leaving the final rolls, to a cooling rack or table.

The object of my invention is to dispense with hand-manipulation of the product after leaving the rolls, thus removing a source of danger incident thereto; also, to facilitate the speed in handling the product.

In the drawings wherein I have shown my invention applied to pipe machinery, Figure 1 is a plan view of my invention; Fig. 2 is a side elevation of the same; Fig. 3 is an end elevation; Fig. 4 is an enlarged plan view of that portion of the apparatus adjacent the discharging rolls; Fig. 5 is an enlarged side elevation of the same; Fig. 6 is an enlarged transverse sectional view taken on line 6-6 of Fig. 5; Fig. 7 is a similar view showing the mechanism with pipe in position to be discharged; Fig. 8 is an enlarged detail view of the electrical switch mechanism by means of which the pipe retaining mechanism is tripped for discharging the pipe, and Fig. 9 is an enlarged plan view of a portion of the pipe retaining mechanism showing pinch roll.

I shall now describe my invention referring to the accompanying drawings, so that others skilled in the art to which it appertains may understand and construct the same.

In describing the invention, the reference numeral 2 indicates the sizing rolls of pipe forming mechanism. Adjacent these rolls is the guide 3 by means of which the pipe when passing from the rolls is directed onto the table 4. This table 4 which is adjacent to the ordinary cooling rack 5 is provided with the inclined top face 6 which slopes toward the cooling rack. Mounted above this table 4 is the pipe-retaining mechanism

7 which consists of the inverted trough or channel members 8. Instead of the specially constructed members 8 shown, ordinary channel members may be employed. Normally these members 8 are in engagement with the top surface 6 of the table 4, and are caused to be automatically tripped or raised to effect a discharge of the pipe, when the said pipe has been caused to be deposited on the table. This raising or tripping of the retaining mechanism and the consequent discharge of the pipe is accomplished by means of the rocker-shaft 9, to which, by means of the lever-arms 10, the members 8 are operatively connected. This rocker-shaft 9 is operatively connected to the solenoid 11 through the intermediary of the lever 12 which is adjustably fulcrumed to the standard 13, pivoted at 14 to the said solenoid and connected at the opposite end to the lever-arm 15 by means of the link 16. The energization of the solenoid 11 to effect a tripping of the retaining mechanism is accomplished by means of the switch mechanism 17 operatively connected by means of the link arrangement 18 to the rocker plate 19, through the medium of the arm 20. The plate 19 projects at an angle through an opening in the top of the table 4, and is adapted to be rocked or depressed to effect a closing of the circuit 21 (see Fig. 2) by the pipe traveling along the table top. The weight 21^a serves to return the plate 19 to its normal position after the discharge of the pipe.

The pipe is caused to travel along the table top after leaving the rolls, by means of a series of rollers 22 to which a rotatory movement is imparted by means of the motor 23 to which the said rollers are geared. Any suitable mechanism, however, may be employed to operate the rollers. A pinch roller 24 may be provided at the forward end of the retaining apparatus, preferably directly over the table roller 22' of the rollers 22, so as to prevent binding of the pipe, assisting the roller 22' in pulling the pipe from the guide 3, and propelling the same along the table. The channel member of retaining mechanism may be made, if desired, in one continuous length. But for convenience in pattern making and in casting, the construction shown is preferable.

The operation of my apparatus will be readily understood. As the pipe passes from

the rolls 2 it is directed by means of the guide 3 to the table 4 and beneath the retaining mechanism 7 which is forced upwardly with said insertion of pipe. By reason of the momentum due to force of the rolls 2, and by the action of rollers 22, the pipe is caused to travel along the table top 6 underneath the channels 8 until the rocker plate 19 is caused to be depressed by the passing pipe. With the depression of the plate 19, the switch 17 operates to close the circuit 21, energizing the solenoid 11 which, by means of the lever 13 and the link 15 causes the lever-arm 14 to be rocked downwardly, imparting a similar motion to the rocker-shaft 9 which in turn causes a tripping or raising of the retaining mechanism 7. This raising of the pipe retainer causes the pipe to roll down the inclined face 6 of the table, over the guides 26 to the cooling rack 5 (as shown in Fig. 3). The discharge of the pipe is instantaneous, and the pipe retaining mechanism is caused to return to its normal position immediately upon the discharge of the pipe, by reason of the fact that, as soon as the pipe is discharged, the rocker-plate 19 is caused to be returned by the weight 21^a to its original position, breaking the circuit 21, which de-energizes the solenoid 11, allowing the channel members 8 to return to their normal position.

It will be apparent that many changes may be made in the mechanism without departing from my invention. And although I have described my invention as applied to pipe machinery, it will be apparent that it is equally adaptable to the handling of other similar rolled product, also for transferring product from one set of mechanism to another.

By the use of my invention hand-manipulation of the product after leaving the rolls is entirely dispensed with. The device is simple in construction and the action in handling the product speedy and accurate.

Having thus described my invention, what I claim and desire to secure by Letters Patent is—

1. In a dumping apparatus of the character described, a receiving table, retaining mechanism, and means adapted to be engaged by the product to cause a tripping of the retaining mechanism to permit a lateral discharge of the product from the receiving table.

2. In a dumping apparatus of the character described, an inclined receiving table, retaining mechanism, and means adapted to be engaged by the product to effect a tripping of the retaining mechanism to permit the discharge of the product down the inclined face of the table.

3. In a dumping apparatus of the character described, a receiving table, means for

guiding the product in its travel to the receiving table, a retaining mechanism, and means adapted to be engaged by the product to effect a tripping of the retaining mechanism to permit a lateral discharge of the product from the table.

4. In a dumping apparatus of the character described, a receiving table, a retaining mechanism mounted above the said table, and means adapted to be engaged by the product for effecting a tripping of the retaining mechanism to permit a lateral discharge of the product from the table.

5. In a dumping apparatus of the character described, a receiving table, means for guiding the product in its travel to the receiving table, a retaining mechanism mounted above the table, and means adapted to be encountered by the product to effect a tripping of the retaining mechanism for a discharge of the product from the receiving table.

6. In a dumping apparatus of the character described, a receiving table, retaining mechanism, means for propelling the product along the receiving table, and means adapted to be engaged by the product to effect a tripping of the retaining mechanism to permit a lateral discharge of the product from the table.

7. In a dumping apparatus of the character described, a receiving table, means for causing the product to travel along the receiving table, means for guiding the product in its travel along the receiving table, and means adapted to be engaged by the product to effect a swinging of the guiding means away from the product to permit a lateral discharge of the product from the apparatus.

8. In a dumping apparatus of the character described, an inclined receiving table, means for causing the product to travel along the table, means for guiding the product in its travel along the table and means adapted to be engaged by the product to effect a swinging of the guiding means away from the product to permit a discharge of the product down the inclined face of the table.

9. In a dumping apparatus of the character described, an inclined receiving table, means for propelling the product along the table, retaining mechanism mounted above the table and adapted to guide the product in its travel along the table, and means adapted to be engaged by the product to effect a raising of the retaining mechanism to permit a lateral discharge of the product down the inclined face of the table.

10. In a dumping apparatus of the character described, a receiving table, means for causing the product to travel along the receiving table, a channel member arranged above the receiving table and adapted to guide the product in its travel along the ta-

ble, and means adapted to be engaged by the product to effect a tripping of the channel members to permit a lateral discharge of the product from the apparatus.

- 5 11. In a dumping apparatus of the character described, a receiving table, means for causing the product to travel along the receiving table, retaining mechanism comprising a series of channel members, and means
10 adapted to be engaged by the product to effect a rocking of the channel members to permit a lateral discharge of the product from the apparatus.

12. In a dumping apparatus of the character described, a receiving table, retaining
15 mechanism, means carried by the table and adapted to be engaged by the traveling product to effect a tripping of the retaining mechanism for a lateral discharge of the
20 product from the apparatus.

In testimony whereof, I have hereunto set my hand.

WILLIAM E. SANDFORD.

Witnesses:

M. A. BARTH,
M. ARTHUR KELLER.