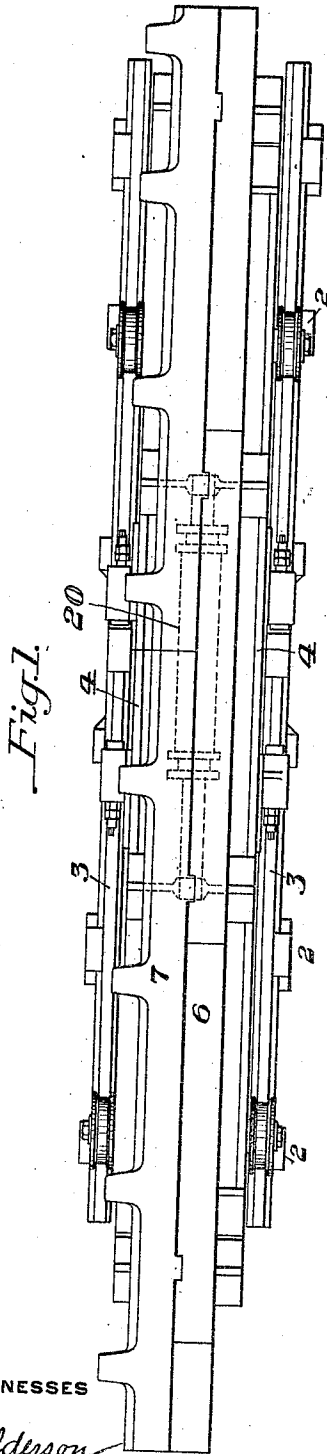


959,433.

Patented May 24, 1910.

3 SHEETS—SHEET 1.

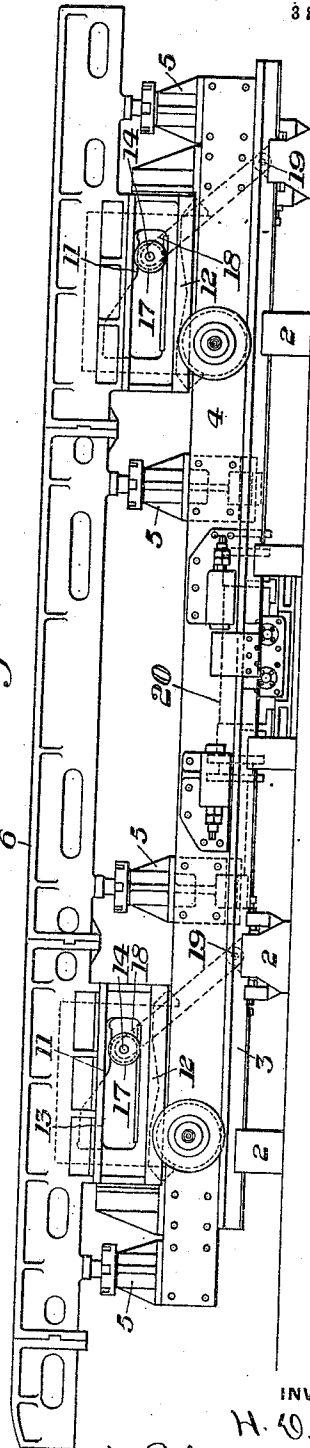


WITNESSES

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Fig. 2.



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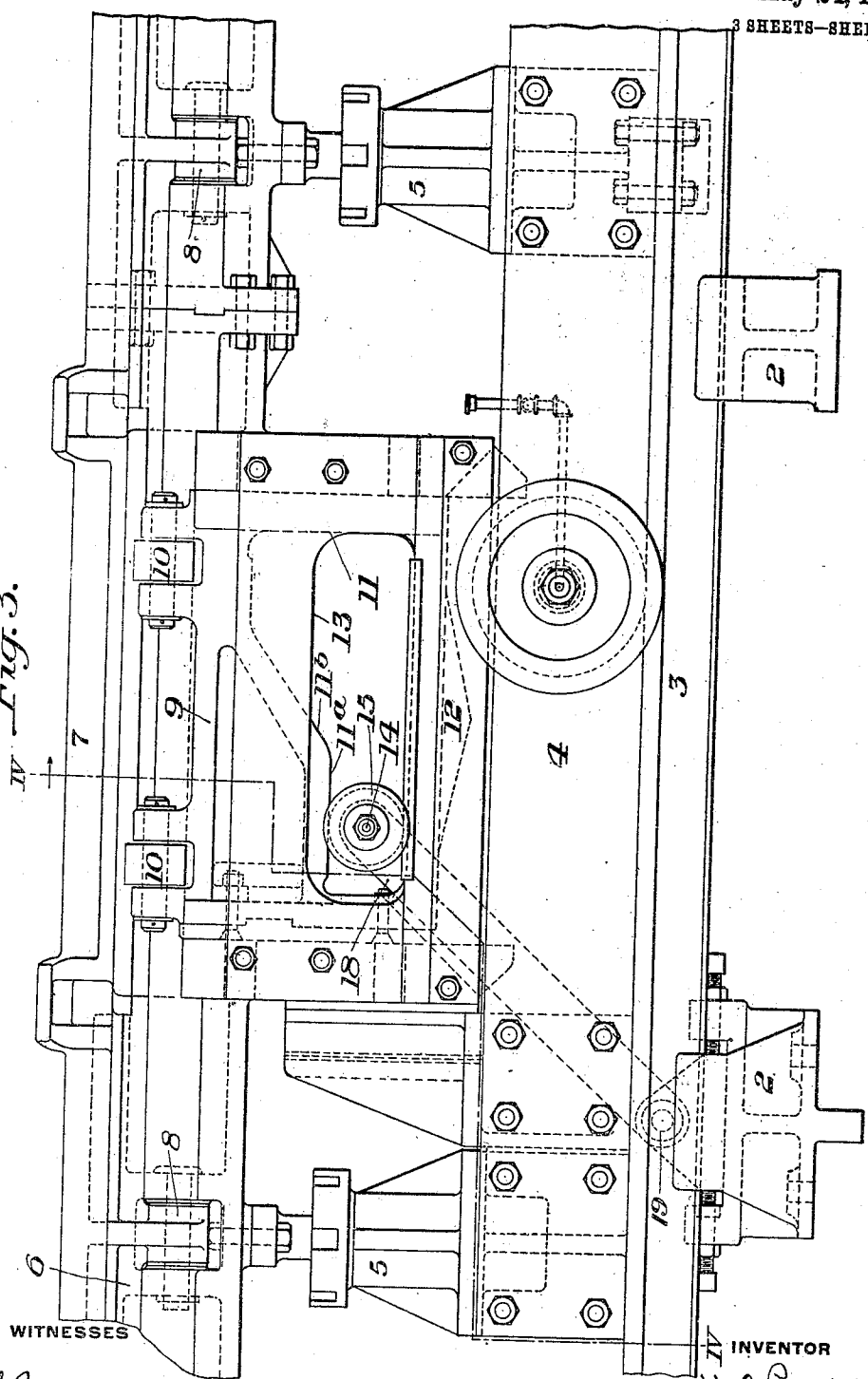
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3 SHEETS—SHEET 2.

Fig. 3.



WITNESSES

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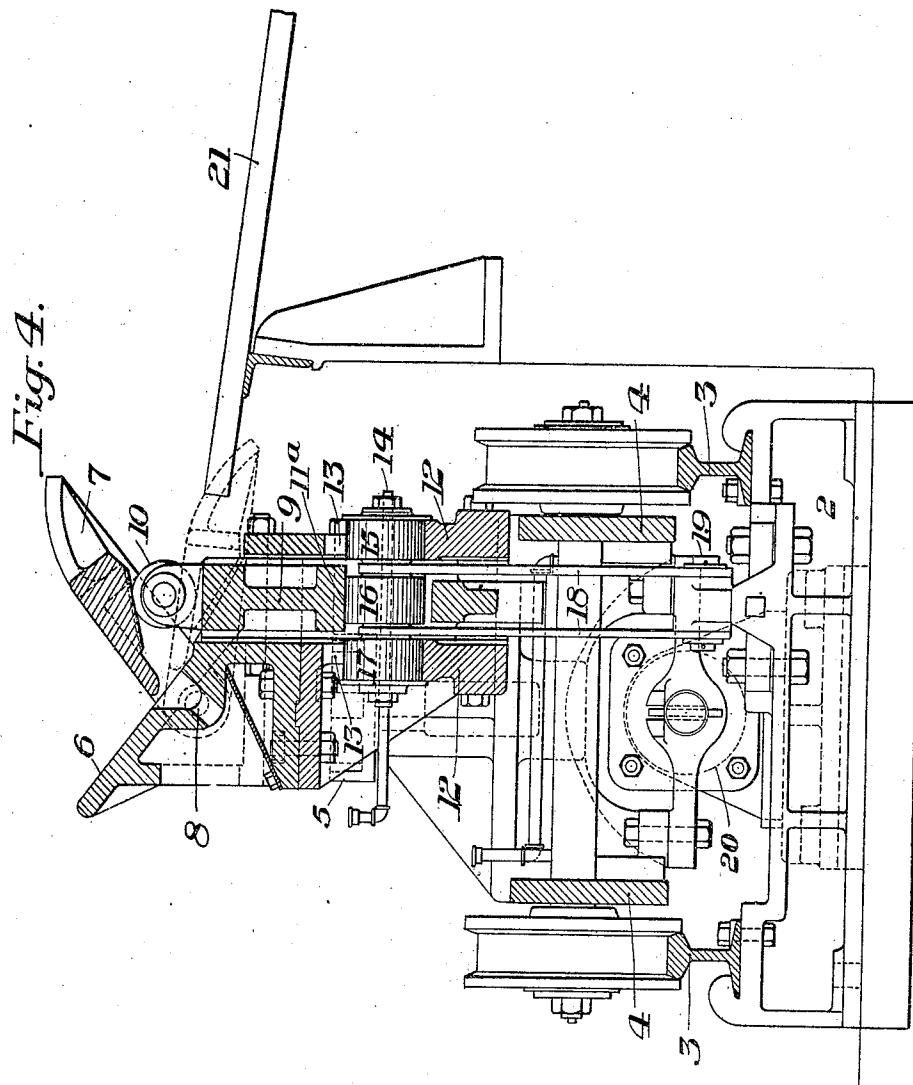
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3 SHEETS—SHEET 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

HARLEY D. PENNINGTON, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO UNITED ENGINEERING & FOUNDRY COMPANY, OF PITTSBURG, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

CROSS-ROLL TROUGH.

959,433.

Specification of Letters Patent.

Patented May 24, 1910.

Application filed March 1, 1910. Serial No. 546,721.

To all whom it may concern:

Be it known that I, HARLEY D. PENNINGTON, of Pittsburg, Allegheny county, Pennsylvania, have invented a new and useful Cross-Roll Trough, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a plan view of a cross roll trough embodying my invention; Fig. 2 is a side view of the same; Fig. 3 is an enlarged side elevation of a portion of the apparatus, looking at it from the opposite side from Fig. 2; and Fig. 4 is a cross section on the irregular line IV—IV of Fig. 3.

My invention relates to cross roll troughs, and is designed to provide a trough having means of simple, novel and efficient character for discharging the pipes or tubes from the trough.

The nature of my invention will be best understood by reference to the accompanying drawings, in which I have shown the preferred embodiment thereof, and which will now be described, it being premised, however, that various changes may be made in the details of construction, arrangement, and combination of the various parts by those skilled in the art, without departing from the spirit and scope of my invention, as defined in the appended claims.

The numeral 2 designates the stationary supports of the apparatus, upon which are mounted the longitudinally extending parallel track rails 3. Mounted upon these track rails is an elongated carriage 4, having the adjusting supports 5, which carry the trough. This trough is composed of the relatively fixed inclined sections 6, forming one side of the trough, and the pivoted section 7, forming the other side of the trough, in which the pipes are received from the cross roll machine. The member 7 of the trough is pivoted at 8, and is normally supported in the position shown in full lines in Fig. 4, by means of the vertically movable members 9, which are preferably provided with antifriction rollers 10, at their upper ends, which form the direct supports for the pivoted trough section. In the apparatus illustrated, two of these supporting

members 9 are shown, one near each end of the trough, but any desired number may be used according to the length of the trough. 55

The vertically movable supporting members 9 are each formed with a longitudinally elongated slot 11. The upper wall of this slot has a straight portion 11^a and an upwardly inclined portion 11^b. The frame 60 members 12 of the carriage at each side of the vertically movable supporting members 9 and between which said members move, are formed with longitudinal slots 13. Extending through the slots 11 and 13 is a 65 shaft 14, upon which are mounted three rollers 15, 16 and 17. The rollers 15 and 17 are arranged to travel on the lower edges of the slots 13, while the roller 16 engages the upper wall of the slot 11 and forms the 70 support for the members 9. Each shaft 14 is carried at the upper end by an oblique arm 18, pivoted at its lower end 19 to one of the supports 2 of the apparatus.

The carriage is arranged to be reciprocated on the track rails 3, by means of a hydraulic cylinder 20, or other suitable motive device, capable of giving the carriage a longitudinal reciprocating movement somewhat less than the length of the slots 11. 80

The operation is as follows: The supporting rollers 16 are normally in the positions shown in Figs. 2 and 3, being in engagement with the straight portions 11^a of the upper walls of the slots 11. In this position, said 85 rollers hold the vertically movable members 9 in the position shown in Fig. 4, to keep the pivoted trough member 7 in trough-forming position. When, however, it is desired to discharge the pipes from the trough on to a 90 receiver, such as the table 21, the cylinder 20 is actuated to move the carriage longitudinally to the right (looking at Figs. 1 and 2), and the rollers 16 will ride up the inclined portions 11^b of the slots 11, thus 95 permitting the supporting members 9 to drop to this extent and permitting the pivoted trough 7 to assume the discharging position shown in dotted lines in Fig. 4. The pipes or tubes are thus permitted to roll out 100 on to the receiving table 21. The reverse movement of the carriage on the tracks will return the rollers 16 into engagement with the straight portions 11^a of the slot walls,

and will raise the supporting members 9, and thereby the trough section 7 to its normal receiving position.

The apparatus described forms a very simple and efficient one for the purpose, and is capable of ready manipulation.

I claim:

1. A cross roll trough, comprising a longitudinally movable carriage, a trough carried thereby, said trough having a pivoted member, and a vertically movable support for the pivoted member, together with means whereby the longitudinal reciprocating movement of the carriage will raise and lower the support, substantially as described.

2. A cross roll trough, comprising a longitudinally movable carriage, a trough carried thereby, said trough having a pivoted member, a pair of vertically movable members supporting the movable section of the trough near opposite ends thereof, and connections operated by the longitudinal reciprocating movement of the carriage for raising and lowering said members, substantially as described.

3. A cross roll trough, comprising a longitudinally movable carriage, means for reciprocating the carriage, a trough supported by the carriage and having a pivoted side member, a vertically movable member forming a support for the pivoted side member, and a relatively stationary arm or lever engaging the supporting member to raise and

lower the same when the carriage is reciprocated, substantially as described.

4. A cross roll trough, comprising a longitudinally movable carriage, means for reciprocating the carriage, a trough carried by the carriage and having a pivoted side member, a plurality of vertically movable members forming a support for the pivoted side member, said supporting members having cam slots therein, and arms or levers pivotally connected to the stationary bed of the apparatus and having rollers engaging said cam slots, substantially as described.

5. A cross roll trough, comprising a longitudinally movable carriage, means for reciprocating the carriage, a trough carried by the carriage and having a pivoted side member, a plurality of vertically movable members forming a support for the pivoted side member, said supporting members having cam slots therein, and arms or lever pivotally connected to the stationary bed of the apparatus and having rollers engaging said cam slots, said arms or levers also carrying other rollers and the carriage having bearings for said rollers, substantially as described.

In testimony whereof, I have hereunto set my hand.

H. D. PENNINGTON.

Witnesses:

R. A. BALDERSON,
GEO. H. PARMELEE.