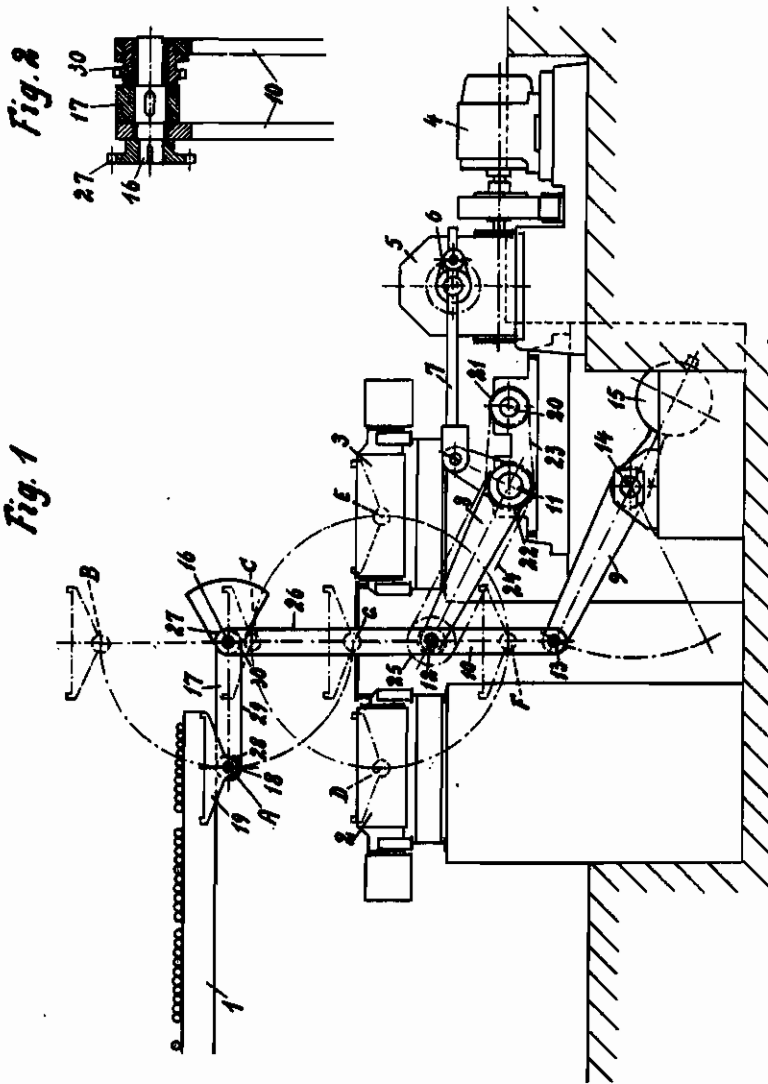


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FROM THE COOLING BED ONTO THE DISCHARGING  
LIVE ROLL GEAR BEDS  
Filed Dec. 6, 1940

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368,952

3 Sheets-Sheet 1



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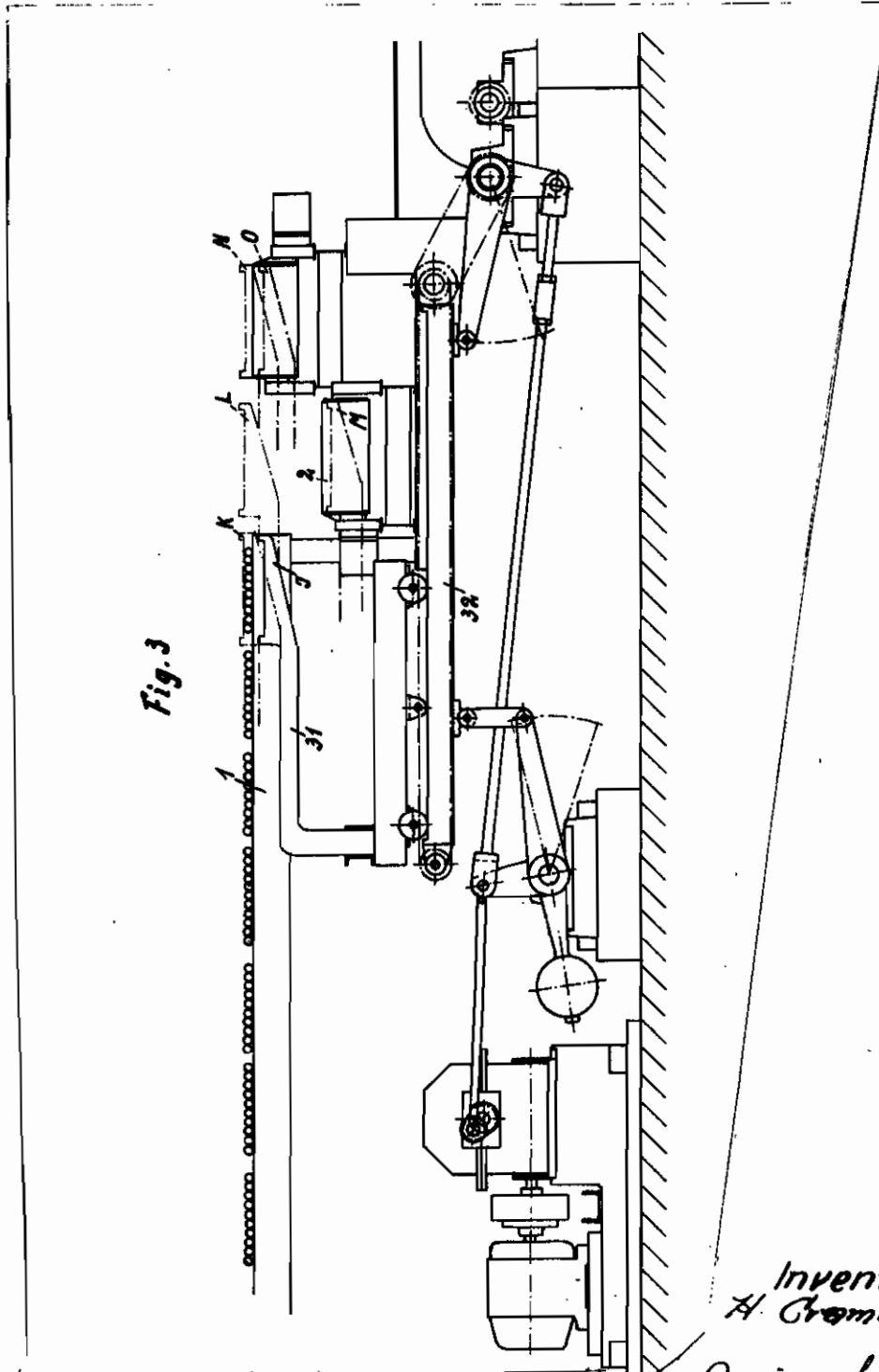


Fig. 3

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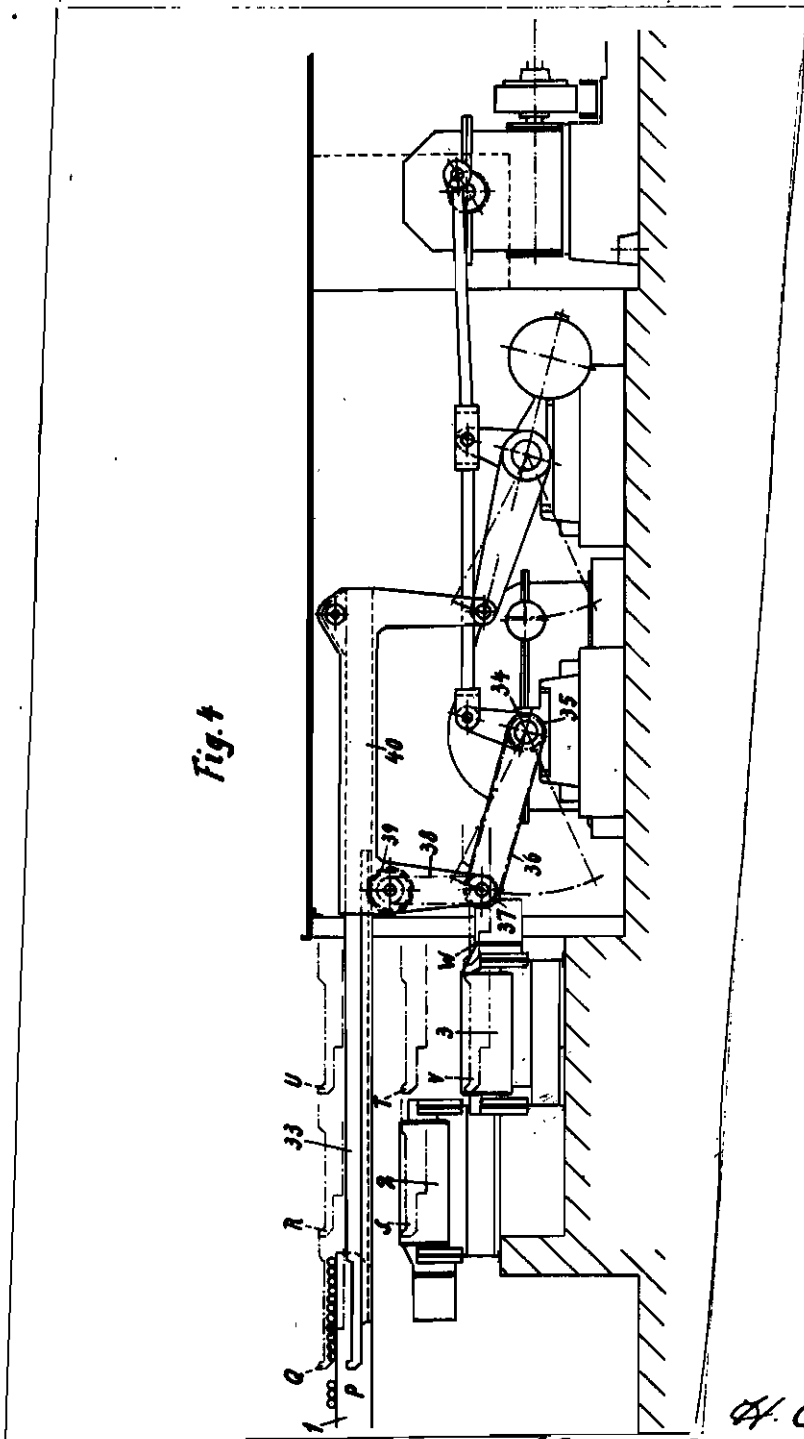
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# ALIEN PROPERTY CUSTODIAN

## APPARATUS FOR DELIVERING ROLLING MATERIAL FROM THE COOLING BED ON-TO THE DISCHARGING LIVE ROLL GEAR BEDS

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vested in the Alien Property Custodian

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The high efficiency of a modern train of rolls can be mastered by one single, widely built cooling bed, but it is not possible to work up such great production also over one single discharging live roll gear bed connected to the cooling bed, with cutting shears arranged behind the live roll gear bed. In order to overcome this inconvenience, two discharging live roll gear beds have been arranged behind such single cooling bed. The constructions which have been become known up to the present do, however, not allow to fully utilize the discharging live roll gear beds and shears, as the conveying of the material to be rolled from the cooling bed to the two live roll gear beds was not independent on the operation of the live roll gear beds.

It has therefore been proposed, to make liftable and lowerable the live roll gear bed lying nearest in the conveying direction of the cooling bed, so that the material to be rolled can pass under the lifted first live roll gear bed to the second live roll gear bed while the first live roll gear bed is still occupied. But also thereby absolute independence in the attention of the live roll gear beds is not attained as already in the group formation on the cooling bed their arrangement and operation has to be taken into consideration. Further this proposal possesses the serious inconvenience, that the live roll gear bed adapted to be raised and lowered is accessible only difficultly during the operation. For constructive reasons the application of this construction is restricted to quite short cooling beds.

Another proposal shows alternate tipping sliding ways for the attendance of the running off discharging live roll gear beds arranged the one at the side of the other. Owing to the irregular slipping off of the rods taking place at this occurrence it is not possible to bring the material to be rolled in a predetermined order and position in front of the shears, whereby additional delay is caused by the correspondingly required putting in order of the rods.

These inconveniences of the known constructions are the reason, for which double cooling beds, each one with a discharging live roll gear bed, have been rather provided, and one has put up with the much higher expenses for such a plant.

The present invention has for its object, to ensure an absolutely independent attendance of the two live roll gear beds and at the same time the possibility to deposit the rolled rods or the groups of rolled rods onto the live roll gear beds well ordered and convey them to the shears by

a delivering device interposed between the cooling bed proper and the two absolutely independent discharging live roll gear beds and by a corresponding arrangement of the two discharging live roll gear beds.

An embodiment of the invention is shown by way of example in the accompanying drawing, in which

Fig. 1 shows a form of construction of the invention.

Fig. 2 shows a detail of this form of construction.

Figs. 3 and 4 show two other forms of construction of the invention, without, however, exhausting thereby the possibility of modifications according to the invention.

In Fig. 1 the cooling bed is designated by 1, the two live roll gear beds by 2 and 3. The motor 4 drives through a gear 5 a crank 6 which in its left hand and right hand dead centre position produces the upper and lower limitation of the position of the supporting lifting system 7, 8, 8, 10. The crank 6 is hingedly connected by a connecting rod 7 with one arm of a two-armed elbow lever 8, which is keyed on the revolvable shaft 11. The other arm of lever 8 engages hingedly on pin 12 of a supporting rod 10. A lever 9, rotatable about a shaft 14 is hingedly mounted on a pin 13 of rod 10. The free arm of lever 9 carries a counterweight 15 for balancing the weight of the whole supporting construction. An arm 17 and a sprocket wheel 27 are keyed on a shaft 16 which is revolvably mounted in the supporting rod 10 and in a sprocket wheel 30. The sprocket wheel 30 is otherwise rigidly connected with the supporting rod 10. The lever 17 carries a pin 18 at its free end and a sprocket wheel 28 is pivotally mounted on this pin 18, the supporting body 19 for the rolled rods being rigidly connected with this sprocket wheel. A chain 20 runs over the two sprocket wheels 28 and 30. A sprocket wheel 21 is keyed on a shaft 20 adapted to be revolved by a drive not shown. A double sprocket wheel 22 which is connected by a chain 23 to the sprocket wheel 21 and by a chain 24 to a double sprocket wheel 25 rotatable about pin 12 of the carrying rod 10 is mounted on shaft 11. The double sprocket wheel 25 is further connected by a chain 26 with a sprocket wheel 27. The shafts 20 and 11 extend along the whole length of the cooling bed; on this cooling bed the delivering devices are arranged at certain distance apart. As the drive 4, 5, 6, 7 is required only once, a simple lever which connects the shaft 11 with the carrying rod 10 is

sufficient for the other delivering devices instead of the elbow lever 8.

The operation of the delivering device according to Figs. 1 and 2 is as follows:

By rotation of shaft 20 the chain 23, the double sprocket wheel 22, the chain 24, the double sprocket wheel 25 and the chain 26 of the sprocket wheel 27 are actuated through the sprocket wheel 21 and thereby the shaft 16 is rotated and lever 17 oscillated, so that the supporting table 19 is brought from the position A shown in full lines into the position B indicated in dot lines. As the sprocket wheel 30 is rigidly connected with the supporting rod 10 and otherwise connected by the chain 29 with the sprocket wheel 28 rigidly fixed on the supporting table 19, a movement of the supporting table 19 relative to the lever 17 takes place not only during the transmission from position A into position B, but also at any other oscillation of the lever 17, so that the supporting table 19 remains always in the horizontal position.

By turning crank 6 the whole supporting construction and therewith also the supporting table 19 is lowered into the position C indicated in dot lines, whereby the supporting rod 10, owing to the parallel guiding by the levers 8 and 9, remains always in the vertical position. The supporting table can be brought then from the position C, by corresponding revolving of shaft 20 and by the oscillation of the lever 17 either into the position D shown in dot lines, or into the position E and thus the rolled material can be deposited on one of the two live roll gear beds 2 or 3. The supporting table is brought from the position D or E by further oscillation into the position F. The delivering device is then lifted by turning of crank 6, the supporting table brought into the position G and from this position by backward oscillation of the lever 17 again into the initial position A shown in the drawing so that a new operation can begin.

As the supporting table takes over the groups of rods in the above mentioned order from the cooling bed and as this order is maintained dur-

ing the delivering to one of the two discharging live roll gear beds, the groups of rods are also brought in similar order to the shears. The live roll gear beds may further be attended independent the one on the other, as the supporting table can be brought, as desired, from the position C either into the position D or E, without disturbing in any way the operation on the other live roll gear bed.

According to Fig. 3 the delivering device 31 proper is shiftable in lateral direction on a table 32 which can be lifted and lowered, so that the delivering device 31, either for depositing the groups of rolled rods onto the live roll gear bed 2 or 3, can be brought from the position J through the position K into the position L. For depositing onto the live roll gear bed 2 the device is brought from the position L into the position M and then back into the position J. For delivering onto the live roll gear bed 3 the device is shifted sideways from position L into the position N, then lowered into the position O, whence it returns into the initial position J in being merely shifted in lateral direction. Owing to the overlapping form of construction of the device 31 the attending of the live roll gear bed 3 is also possible without disturbing the operation on the live roll gear bed 2.

As shown in Fig. 4, a rack 33 serves as delivering device proper, which rack is shiftable in lateral direction by a sprocket wheel 39 driven from the stationary shaft 34 through the intermediary of sprocket wheel 35, chain 36, double sprocket wheel 37 and chain 38. The guide body 40 of rack 33 can be lifted and lowered. By corresponding position arrangement of the two live roll gear beds, both these live roll gear beds may be attended absolutely independent the one on the other also in this form of construction. The attendance of the live roll gear bed is effected through the intermediate positions Q, R, S, T, and the attendance of the live roll gear bed 3 through the intermediate positions Q, U, V, W.

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