

Feb. 20, 1940.

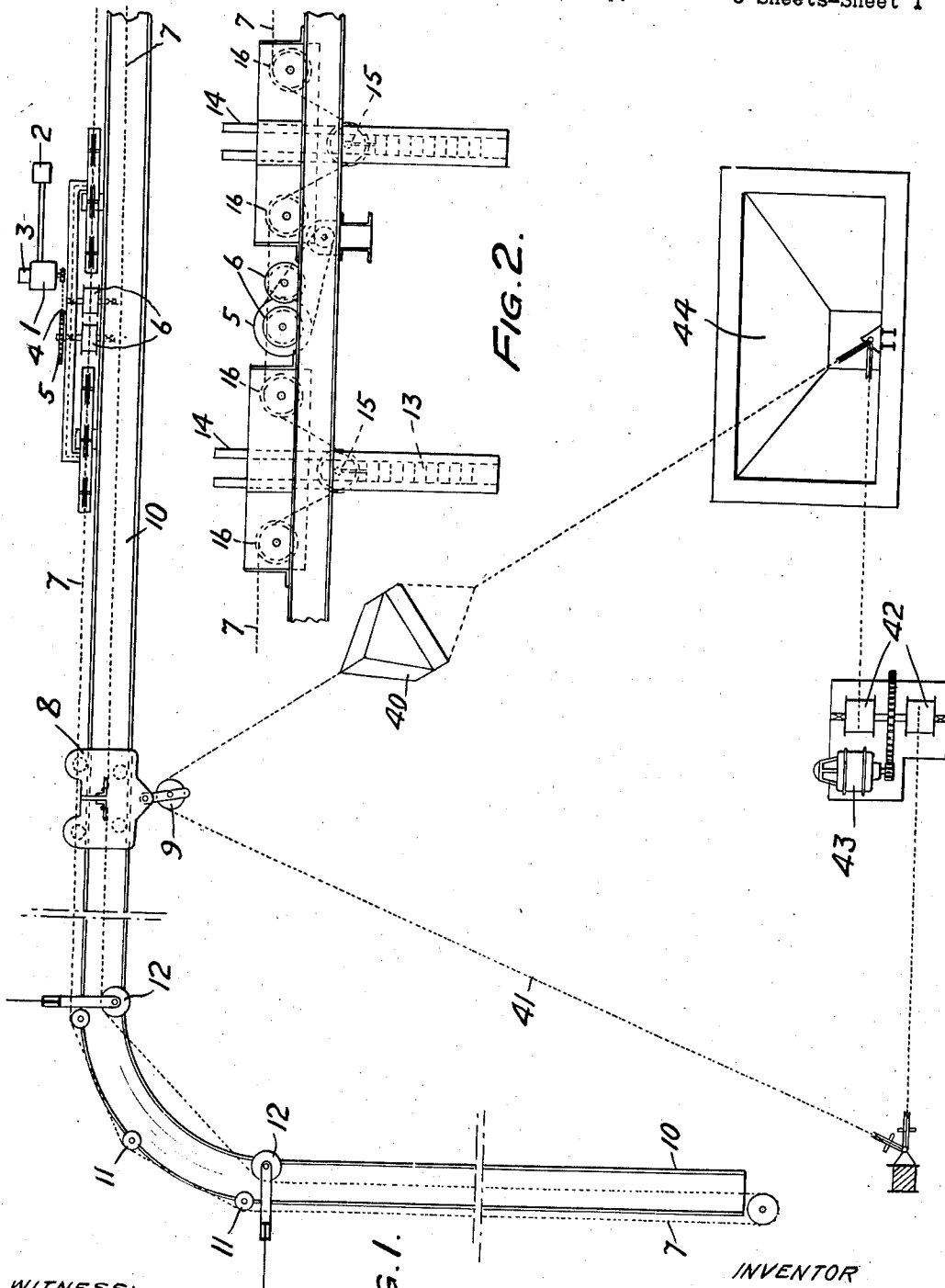
J. H. HAMPTON

2,190,919

REMOTE CONTROLLED MOVABLE TAIL BLOCK

Filed March 2, 1938

3 Sheets-Sheet 1



WITNESS:

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FIG. 1.

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3 Sheets-Sheet 2

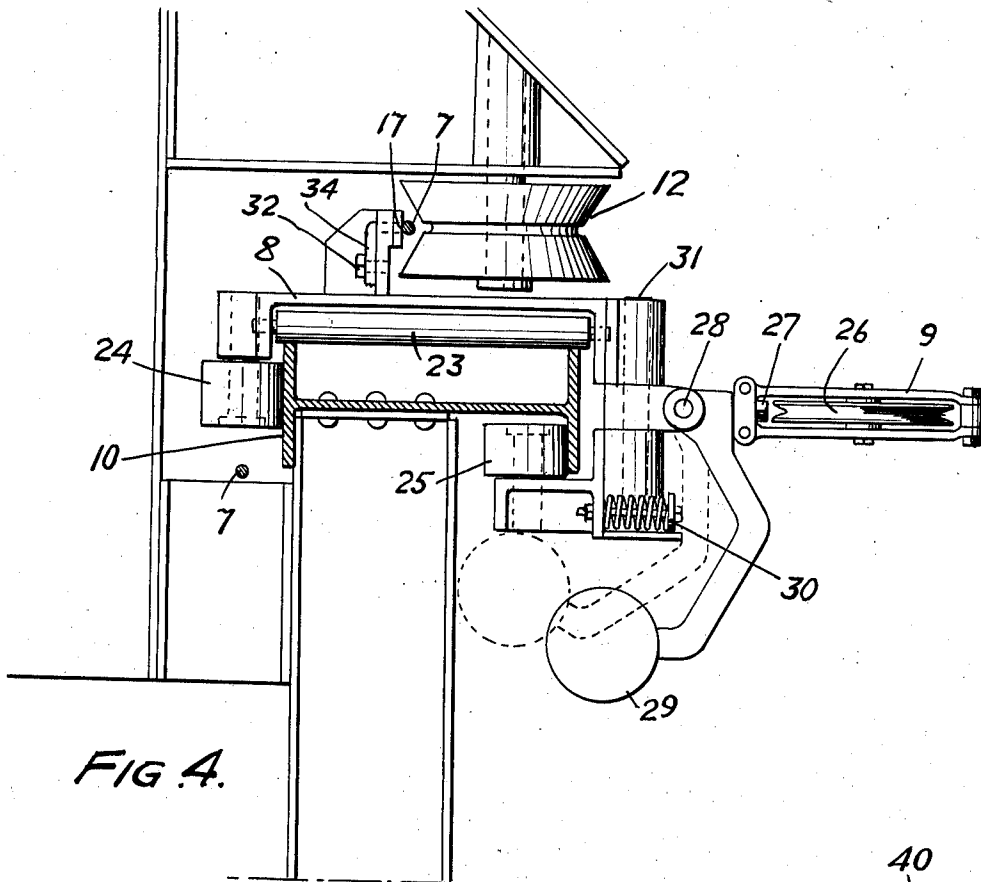


FIG. 4.

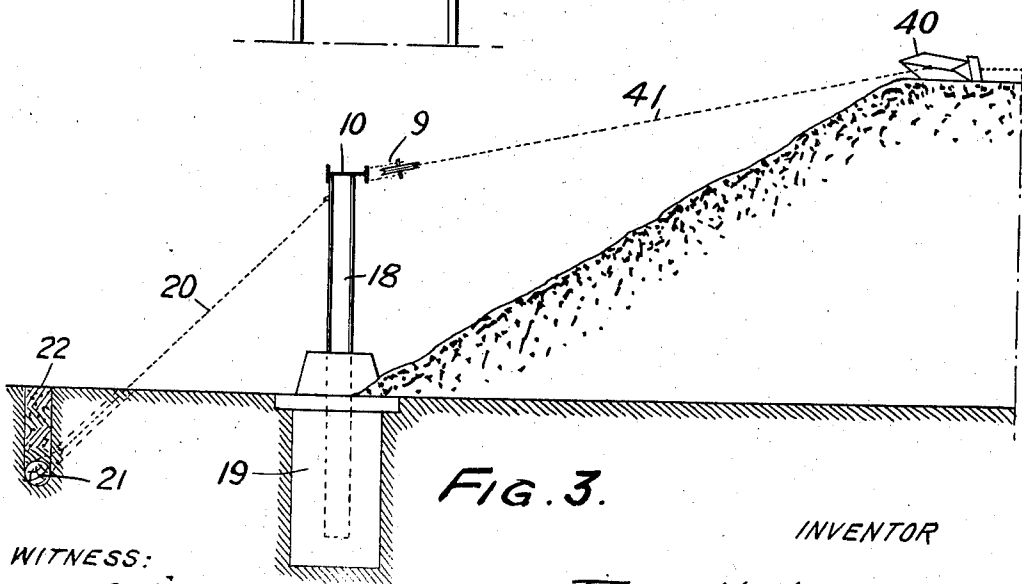


FIG. 3.

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3 Sheets-Sheet 3

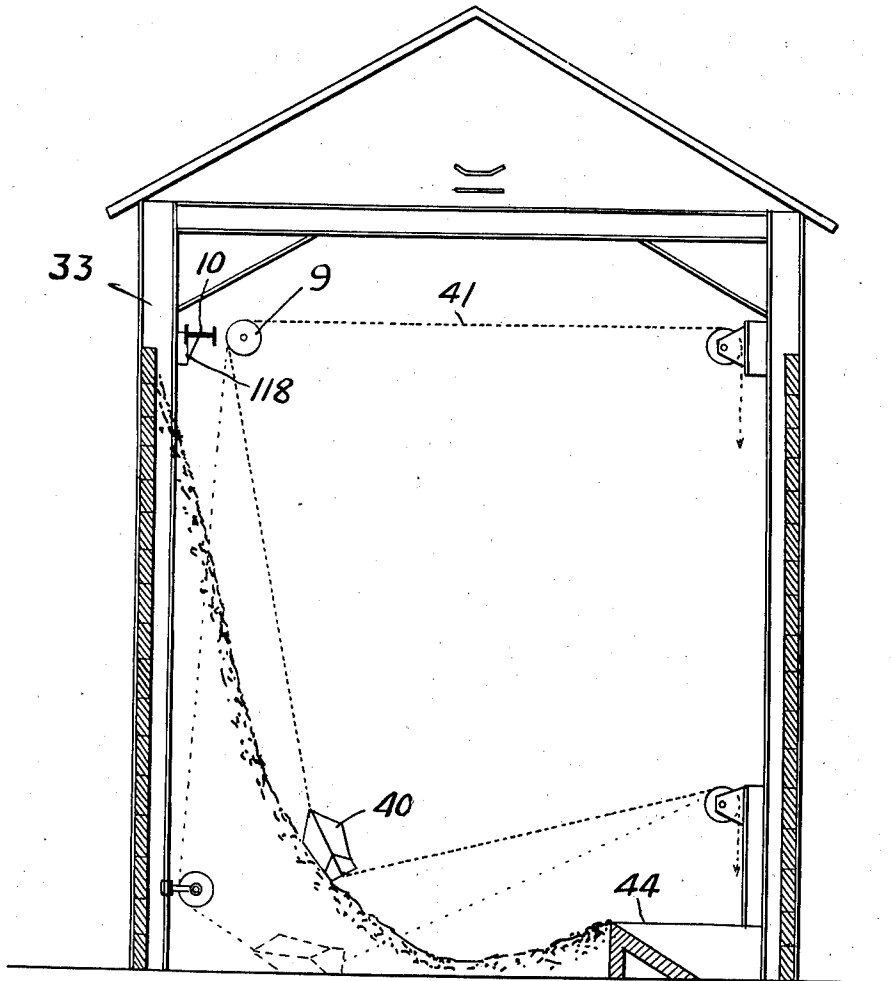


FIG. 5.

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UNITED STATES PATENT OFFICE

2,190,919

REMOTE CONTROLLED MOVABLE TAIL
BLOCK

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a corporation of Pennsylvania

Application March 2, 1938, Serial No. 193,485

2 Claims. (Cl. 104—93)

My invention relates to material-handling systems of the drag scraper type. More specifically, the object of my invention is to provide a movable tail block or pulley sheave which may be controlled from a remote point by the operator of the scraper.

For example, my device consists of a tail pulley block, a trolley on which said block is mounted for universal movement relative to said trolley, a track adjacent at least one edge of the space on which the material is to be piled out and reclaimed and on which said trolley is movable, an endless rope connected to said trolley, a motor, means driven by said motor for actuating said rope and said trolley in either direction, and means for controlling the operation of said motor from a remote point.

For a further exposition of my invention, reference may be had to the annexed drawings and specification, at the end thereof my invention will be specifically pointed out and claimed.

In the drawings:

Fig. 1 is a diagrammatic and schematic plan of a typical installation.

Fig. 2 is an end elevation of the motor and counter-weights.

Fig. 3 is a diagrammatic view in vertical section showing one type of back-post.

Fig. 4 is a view in vertical cross-section through the track and rope, showing the trolley, tail block, and knuckle sheave in side elevation.

Fig. 5 is a diagrammatic view showing my device as installed within a building or housing structure.

In that embodiment of my device selected from among others for illustration in the drawings and description in the specification, my device is shown as consisting of a motor 1, for example an electric motor, having means 2 for controlling the operation of the motor from a remote position. These means are not shown or described in detail as they are well known and form no part of my invention. Motor 1 has a brake 3 applied thereto and interlocked with means 2 so that, when means 2 is operated to stop motor 1, brake 3 is applied. Means 4, such as a belt or chain drives a pulley or sprocket 5 of traction drums 6, around which an endless rope or cable 7 passes a sufficient number of times to insure that the drums 6 will operate the cable 7 in either direction.

To cable 7 is attached a trolley generally indicated at 8 which will be described later in greater detail, and which bears thereon a tail block generally indicated at 9 and also described later in

greater detail. Trolley 8 is mounted for movement on a path or track 10 shown as consisting of an I-beam. Track 10 may have at least a part thereof curved. To insure that cable 7 passes properly around the curve in track 10, there are provided idler sheaves 11, around which one length of the cable 7 passes, and knuckle sheaves 12, around which another length of the cable 7 passes. As will be seen from Fig. 1, cable 7 is endless in effect, being driven by traction drums 6 and being connected to trolley 8 so as to drive it, but the same effect may be had by attaching the ends of the cable to the separate drums or in any other convenient manner.

As seen in Figs. 1 and 4, when trolley 8 passes around the curve in track 10, the point of attachment 17 between cable 7 and trolley 8 moves away from the knuckle sheaves 12 and the cable 7, instead of forming a diagonal as seen in Fig. 1, forms two sides of a triangle having its point lying within its center line of track 10. It is therefore necessary to provide proper tension in cable 7 and, at the same time, to vary the length of this cable so as to permit the trolley 8 to pass around the curve. This is done by means of the counter-weights shown in Figs. 1 and 2. These counter-weights are mounted closely adjacent traction drums 6 so as to provide proper tension in cable 7 on traction drums 6. The counter-weights 13 are mounted in guides 14 and supported by means of pulley block 15 beneath which passes cable 7. On each side of pulley block 15, cable 7 passes over sheaves 16 which support cable 7 vertically.

In Figs. 3 and 4, track 10 is shown as consisting of an I-beam which may be mounted in an elevated position adjacent the pile of material to be stored by means of a column 18. Column 18 is supported on a pedestal 19 of any suitable material and may have connected thereto a wire cable 20 anchored at its end to a timber or other anchor 21 buried in a trench and covered with tamped earth 22.

Trolley 8 is shown in detail in Fig. 4 and carries thereon one or more supporting wheels or rollers 23. Trolley 8 also carries guide wheels or rollers 24, 25 which resist the strain of the cable passing around sheave 26 pivotally mounted in tail block 9. Tail block 9 may be mounted for pivotal movement about pivot 27 which, in turn, is mounted for limited pivotal movement about pivot 28. Counter-weight 29 may be provided to balance the weight of the cable passing around sheave 26. Buffer 30 limits the downward movement of sheave 26. Pivot 31 permits swinging

movement of tail block and the attached parts about a vertical axis.

When trolley 8 passes one of the sheaves 12, cable 7 is lifted out of the groove of the sheave. To insure that cable 7 is properly fed back into the groove of the knuckle sheave 12, the point of connection between cable 7 and trolley 8, which is indicated at 17, is elevated into a position opposite the groove in knuckle sheave 12, so that the reaches of cable 7 adjacent point 17, which sag slightly in a vertical direction, contact with the lower, sloping edge of sheave 12 and are fed back into the groove of sheave 12 as trolley 8 passes sheave 12. As shown in Fig. 4, the ends 34 of cable 7 may be passed through holes adjacent point 17 of trolley 8 and clamped against trolley 8 by bolts 32 or other convenient means. This is, however, only one type of attachment between cable 7 and trolley 8. Any desired or convenient type may be used.

Fig. 5 shows tail block 9 carried by track 10 which is supported on a support 118 within a housing or structure 33 so that the material to be stored is under shelter. The drag scraper equipment consists of a scraper 40 connected to a cable 41, which is operated by drums 42 of a winding machine 43 of any well-known type. Scraper 40 can be operated by machine 43 to stack out material from any desired point into the pile and to reclaim the material to any desired point such as in reclaiming hopper 44.

In the operation of my device, when it is desired to stack out or to reclaim material to any desired portion of the storage area, motor 1 is operated from the remote position at which controller 2 is located. This position may also be the point of

operation of machine 43. Operation of controller 2 causes motor 1 to operate cable 7 and to thereby draw trolley 8 along track 10 until tail block 9 is in the desired position. Controller 2 is then operated to shut off power to motor 1, which also causes brake 3 to lock motor 1 and consequently cable 7, trolley 8, and tail block 9 in the desired position.

I do not intend to be limited save as the scope of the attached claims and of the prior art may require.

I claim:

1. A trolley for a material-handling system, said trolley having a lever pivotally mounted thereon, a tail pulley-block mounted on said lever for limited movement relative thereto, rollers supporting said trolley for movement along a track, second rollers bearing on said track opposite said block and arranged to transmit strain from said block to said track, and a counterweight connected to said lever on the opposite side of said pivot from said block so as to counterbalance the strain of a pulley on said block.

2. A trolley for a material-handling system, said trolley having a lever pivotally mounted thereon, a tail pulley-block mounted on said lever for limited movement relative thereto, rollers supporting said trolley for movement along a track, second rollers bearing on said track opposite said block and arranged to transmit strain from said block to said track, and a yielding stop on said trolley and located confronting said lever on the opposite side of said pivot from said block so as to cushion the fall of said block against said trolley.

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