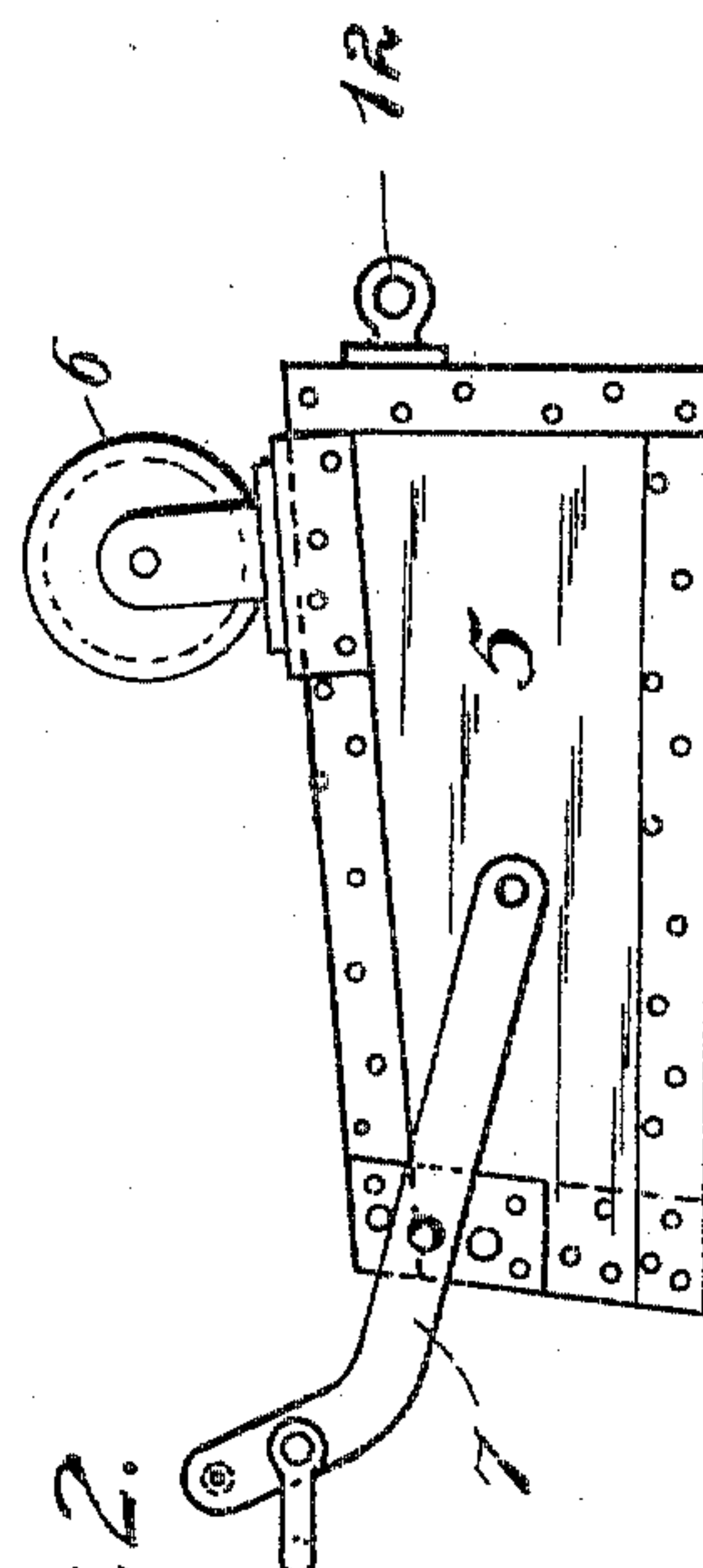
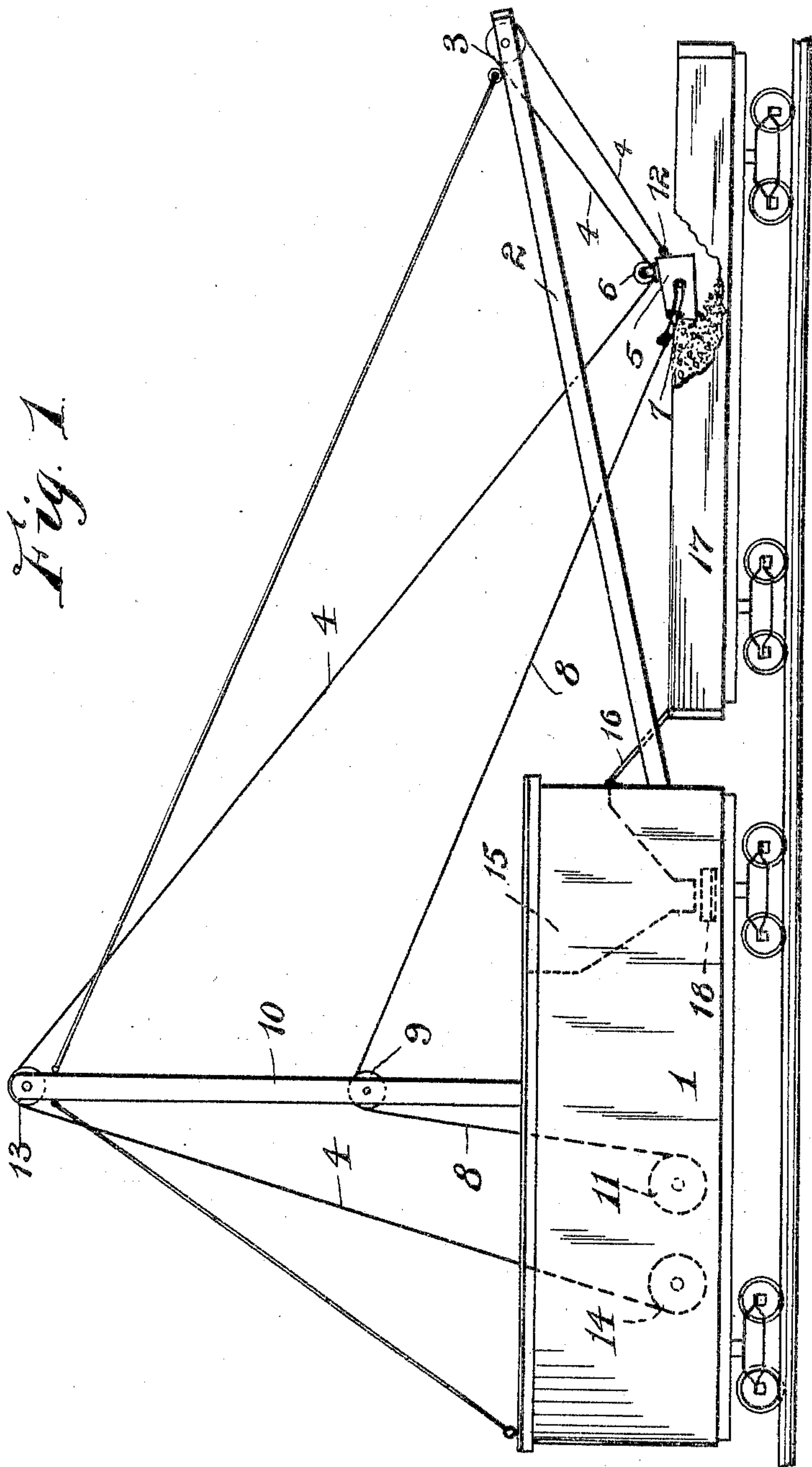


No. 780,030.

PATENTED JAN. 17, 1905.

S. B. FLEMING.
COAL HANDLING MACHINE.
APPLICATION FILED JAN. 23, 1904.



Witnesses:

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UNITED STATES PATENT OFFICE.

SAMUEL B. FLEMING, OF CHICAGO, ILLINOIS.

COAL-HANDLING MACHINE.

SPECIFICATION forming part of Letters Patent No. 780,030, dated January 17, 1905.

Application filed January 23, 1904. Serial No. 190,312.

To all whom it may concern:

Be it known that I, SAMUEL B. FLEMING, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Coal-Handling Machines, of which the following is a specification.

This invention relates to apparatus providing means for gathering and unloading coal from a car into a suitable receptacle or temporary hopper, and suitable actuating and governing means for the apparatus. While such apparatus may be employed for general purposes, it is especially designed and adapted for use in burning ballast in the open air and will be described in that connection.

The objects of the present invention are to greatly simplify the devices used, to decrease the cost of construction, and to provide an apparatus that will be more economical, efficient, and durable in operation.

It consists in the various devices and combinations which will be described and claimed hereinafter and which are shown in the accompanying drawings.

In the drawings, Figure 1 is a view showing the devices and method of operation for unloading the coal from a coal-car to the hopper-car, which will be designated hereinafter as the "distributing-car." Fig. 2 is an enlarged view of the coal-shovel.

A distributing-car 1, which is adapted to support and carry the coal-handling apparatus, is preferably arranged to be automatically driven by the engines which it carries, the gearing therefor not being shown. At one end of the car a boom 2 projects out a distance substantially the length of the coal-cars to be loaded. At its outer extremity this boom carries a sheave 3 for the shovel supporting and operating cable 4. The shovel 5 is provided with a sheave 6 and adjustable drag-arms 7. The shovel is drawn forward or toward the car by a cable 8, secured to said arms and passing over a sheave 9 on a mast 10, fastened in the distributing-car and down to a winding-drum 11, which is a part of a hoisting-engine or which is driven in any suitable manner.

An important feature of this invention is the attachment and operation of the cable 4,

which combines the functions of supporting the shovel, drawing it back, and controlling it as it is filled. This cable is attached at 12 to the back of the shovel, passes up and around the sheave 3, then back under the sheave 6 on the shovel 5, and up over a sheave 13 on the mast 10 and down to its winding-drum 14. At the forward end of the car 1 is a hopper 15, of any suitable form, which is adapted to receive the coal from the shovel and discharge it, as desired, into the distributing-conveyer. An apron or hinged plate 16 is adapted to close over the space between the distributing-car and the car 17 about to be unloaded. When the car 17 has been switched into position for unloading, the cable 4 is wound up and the cable 8 correspondingly unreeled until the shovel is brought to the back end of the car, or the end farthest from the distributing-car. The operation of the cable 4 is such that the shovel can be brought to the extreme end of the car and started, so that the coal will be substantially all taken from the end of the car. This is an important feature which cannot be readily accomplished when the shovel is simply supported on a cable and is not provided with the back-hauling attachment. The shovel being started in the material is filled and drawn forward by the cable 8 along the top of the coal and up the apron 16, being at all times under the additional control of the cable 4. When the shovel reaches the upper edge of the hopper 15, it is balanced on the edge and then the forward cable 8 slackened, which allows the shovel to dump its contents into the hopper. This does away with the cumbersome automatic dumping-shovels, with their necessary tripping-levers, catches, springs, &c., which are a source continual repair and trouble.

Having described my invention, which I do not wish to limit to the precise forms and uses described, what I claim, and desire to secure by Letters Patent, is—

1. In an apparatus for unloading coal from cars and delivering into a suitable hopper, the combination of a framework, a boom projecting from said framework carrying a sheave, a shovel provided with a supporting-sheave, a cable attached to said shovel, then

passing around the boom-sheave, then back under the shovel-sheave, said cable attachment and mounting of the shovel-sheave being immediately at the back of the shovel, said cable
5 then passing over a guide-sheave on said framework to a winding-drum and a second cable attached to the other end of said shovel, then passing over a guide-sheave to a winding-drum, the winding-drum, and actuating means
10 for said drum.

2. In combination, a car provided with a hopper, a boom on said car, a sheave on said boom, a shovel provided with a supporting-

sheave immediately adjacent to its back, a cable attached to the rear of said shovel passing over the boom-sheave then under the supporting-sheave and then to a winding-drum, a guide-sheave on said car for said cable, drag-arms on said shovel, a cable secured to said arms and passing to a winding-drum in said
20 car, a guide-sheave on said car for the drag-cable and means for operating said drums.

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