No. 632,118 Patented Aug. 29, 1899.

E. J. HOOKER.

ELEVATOR CARRIER.

(Application filed Oct. 28, 1898.)

(No Model.)

Fig 1

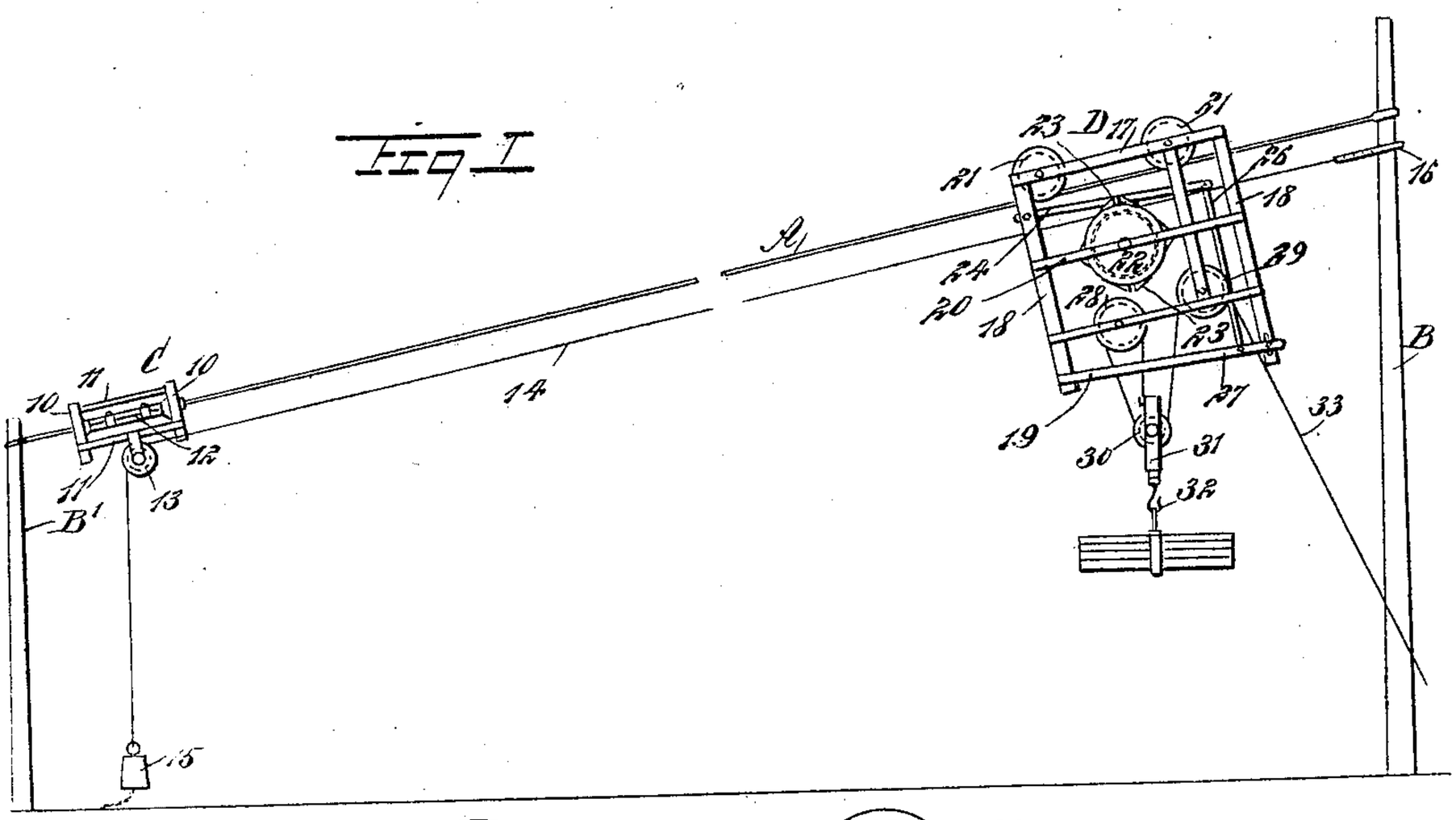


Fig 2

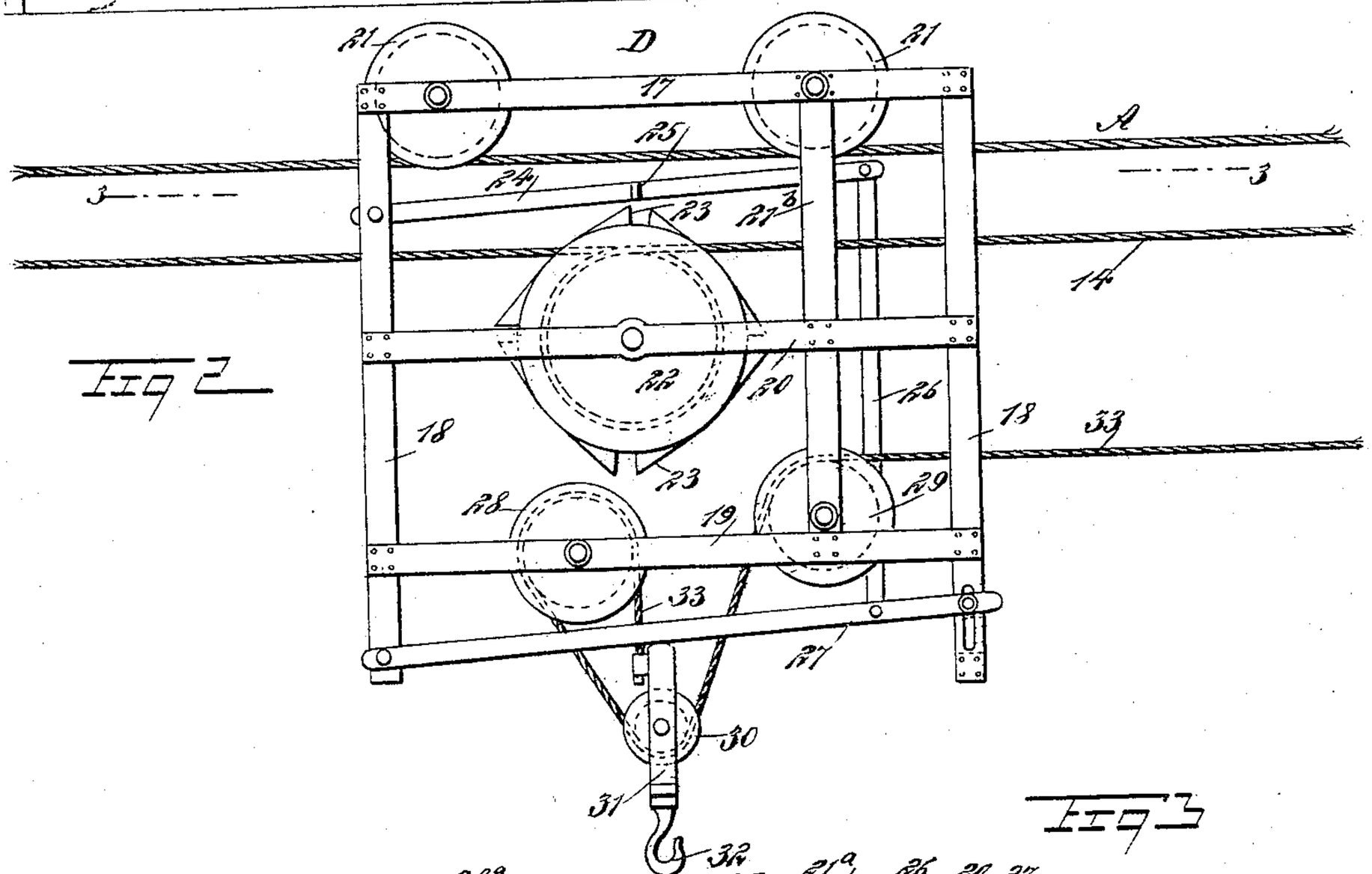
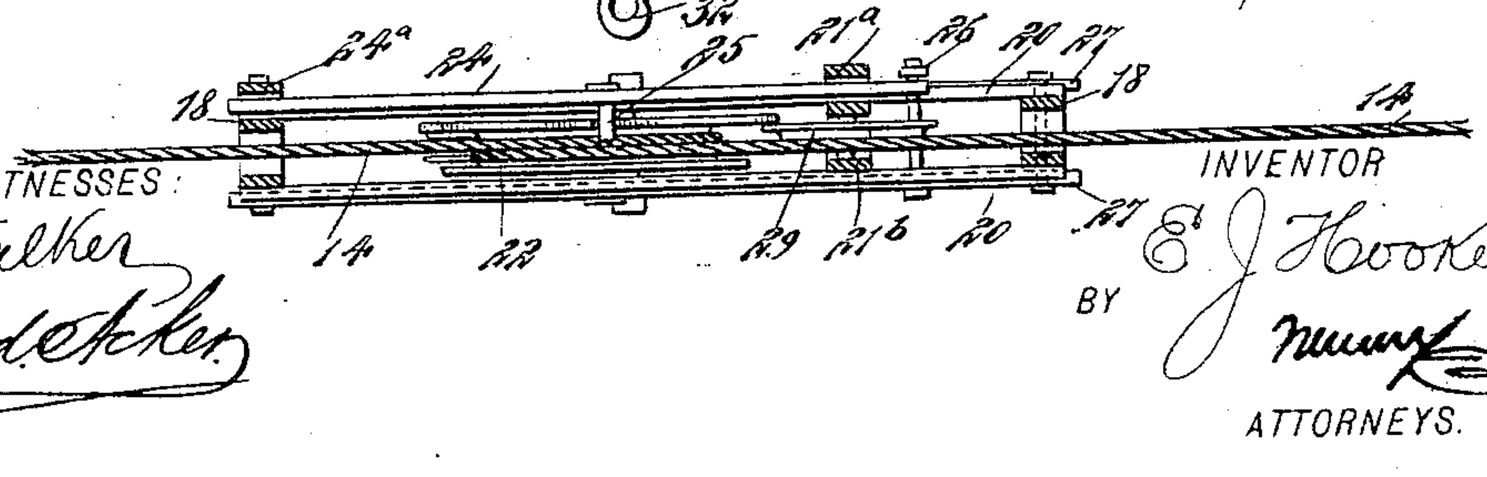


Fig 3



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EGBERT J. HOOKER, OF POULTNEY, VERMONT.

ELEVATOR-CARRIER.

SPECIFICATION forming part of Letters Patent No. 632,118, dated August 29, 1899.

Application filed October 28, 1898. Serial No. 694,811. (No model.)

To all whom it may concern:

Be it known that I, EGBERT J. HOOKER, of Poultney, in the county of Rutland and State of Vermont, have invented a new and Improved Elevator-Carrier, of which the following is a full, clear, and exact description.

The object of my invention is to provide a carrier especially adapted for use in quarries, the carrier being so constructed that it will travel upon an elevated track or cable with more or less speed, as desired, and to provide a means of stopping the carrier at any desired point upon the cable or track.

Another object of the invention is to provide a brake for the carrier that will not in the least interfere with the cable or track, the brake being so constructed as to operate independently of the cable.

Another object of the invention is to construct the carrier in a simple, durable, and economic manner and so that when the load is in dumping position the carrier will automatically be held stationary.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the improved carrier and a cable adapted to support the same, the carrier being shown as stationary on the cable. Fig. 2 is a side elevation of the carrier, drawn on a larger scale, the brake having been released from the carrier, enabling the carrier to travel readily upon the cable; and Fig. 3 is a horizontal section taken substantially on the line 3 3 in Fig. 2.

A is a cable which serves in the capacity of a track, the cable being in an inclined position, and the said cable is attached at its end to uprights B and B′ or equivalent supports, the attachment between the cable and supports being made in any suitable or approved manner.

C represents a buffer which is secured upon the cable or track A at or near its lower end. This buffer consists, preferably, of two end plates 10, connected by cross-bars 11 and by centrally-located two-part sleeves 12, the sleeves being secured in any suitable or approved manner to the track or cable A. The lower cross-bar connecting the ends of the buffer is arranged to support a pulley 13, over which pulley a rope or a cable 14 is passed, provided with a weight 15 at its lower end, the body portion of the rope or cable 14 being carried parallel with the track or main cable A and secured by a clamp 16 or its equivalent to the upper support B for the said main cable or track. The rope or cable 14 acts in the nature of a tension or check cable, being adapted to regulate the movement of the carriage D. This carriage is supported by the main cable or track A, and the frame of the said carriage preferably consists of parallel upper cross-bars 17, attached to vertical end bars 18, the end bars being usually connected at the top and at the bottom or at both extremities, and the end bars 18 are connected by central parallel cross-bars 20 and lower parallel cross-bars 19.

Track-wheels 21 are journaled in the upper portion of the frame of the carriage, and these track-wheels are adapted to travel upon the cable or track A, as shown in both Figs. 1 and 2, and between the intermediate cross-bars 20 a brake-wheel 22 is mounted to revolve, which brake-wheel is preferably provided with peripheral spurs 23, having their outer surfaces beveled or tangential to the periphery of the brake-wheel and their inner faces more or less straight or at right angles to the periphery of the brake-wheel, as is particularly shown in Fig. 2.

A lever 24 is pivoted at one side of the frame between the upper and the intermediate cross-bars, the said lever being located between outer upright bars 24^a, parallel with one of the end bars 18, as shown in Fig. 3, and an upright bar 21^a, which is parallel with the vertical brace-bars 21^b. (Shown in Figs. 2 and 3.) The end of the lever 24 which is carried past the vertical brace-bars 21^b is connected by a link 26 with shifting bars 27, located at the bottom portion of the frame, the shifting bars being pivoted to the lower portion of the forward upright end bars 18 and having vertical and guided movement upon the rear upright end bars of the frame, as shown in Fig.

2. The lever 24 is provided with a projection 25, which projection when the lever and the shifting bars are in their lower position will engage with one or the other of the lugs 23 on the brake-wheel 22. The check rope or cable 14 is passed once around the wheel or drum 22, as shown in dotted lines in Figs. 1 and 2.

At the lower portion of the frame of the device two guide-pulleys 28 and 29 are mounted, and below the said frame a snatch-block 30 is located, being journaled in a frame 31, carrying a hook 32 or equivalent device. The upper end of the snatch-block is arranged for contact with the shifting bars 27. A cable or a rope 33 is attached to the upper end of the frame of the snatch-block, the said cable or rope being passed around the pulley 28, thence around the pulley of the snatch-block and over the second guide-pulley 29, and the rope or cable 33 is carried from the guide-pulley 29 to the ground, to be operated from that point.

The cable 33 is adapted to raise and to lower the snatch-block. When the snatch-block is in its lowest position—that is, the position to which it will be carried to receive its load—the brake-lever 24 will be in engagement with a lug on the retarding or brake wheel 22, and when the snatch-block, after having received its load, is carried upward to such an extent that it engages the brake-bars 27, as shown in Fig. 2, the brake-lever will be carried out of engagement with the brake-wheel and the carriage will be free to travel along the main cable or track A. When the carriage has reached a point over the place where the load is to be discharged, the rope or cable governing the snatch-block is slackened, whereupon the shifting bars 27 will drop downward and the lever 24 will be brought in engagement with the brake or check wheel 22, stopping the carriage and permitting the load to be readily discharged.

The stop C will limit the travel of the carrier and serve also as a support for the pulley of the tension-cable 14 and may be given any position upon the main cable A. While the stop C may be utilized to support the carrier either in dumping or in loading position, the carrier may be held stationary independent of the stop by the action of the stop-lever 24 relative to the brake-wheel 22, since it is obvious that as soon as the frame 21 of the snatch-block raises the shifting bars 27 the stop-lever is disengaged from the brake-wheel and the carrier is free to travel; but whenever the frame of the snatch-block is lowered either for loading or for unloading the shifting bars will drop, causing the stop-lever to drop also and its projections 25 to enter between or be brought in engagement with the nearest lugs 23 on the brake-wheel 22. In this manner the carriage is held stationary at any point between the stop C and the opposite end of the cable until released by the action of the frame of the snatch-block upon the lifting bars when said frame has been brought to its highest point. The snatch-block is raised by drawing upon the rope or cable 33 and is lowered by releasing the said cable, and when the block has been fully elevated further tension upon the rope or cable 33 will draw the carriage to a loading position, in which position it will remain stationary as soon as the snatch-block is permitted to drop.

The device is exceedingly simple, durable, and economic, and it is evident that the brake employed will in no manner interfere with the main track or cable and cannot under any possibility wear upon the same.

It is obvious that the brake-wheel will lock in both directions and that it will be impossible for the carriage to move upon the cable until the drop-wheel or snatch-block raises the shifting bars 27, and consequently the brake-lever 24. The brake-wheel may be placed either under or above the cable, as likewise the detaining-rope.

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

1. In a hoisting or conveying apparatus, a frame, trolley-wheels for the frame, a retaining-wheel located out of the path of the trolley-wheels, a brake-lever arranged for engagement with said retaining-wheel, and means for operating the brake-lever actuated by the movement of the support for the material to be carried, and a tension device connected with a fixed support and with the retaining-wheel, as and for the purpose set forth.

2. The combination, with a trolley for hoisting or conveying apparatus, having a frame provided with wheels arranged for engagement with a cable or track, a retaining-wheel, a locking device for the retaining-wheel, and a shifting mechanism for the locking device, operated by the movement of the material to be carried, of a tension rope or cable attached to a fixed support at one of its ends, said tension rope or cable being carried around the retaining-wheel, and a roller-support for the opposite end of the tension rope or cable, the end of the tension rope or cable passing over the roller-support being weighted, as and for the purpose set forth.

3. The combination, with trolley mechanism for hoisting and conveying apparatus, of a trolley-frame, a retarding-wheel carried by the frame, means for retarding said wheel a brake-lever arranged for engagement with the retarding-wheel, a shifting device connected with the brake-lever, and a carrying device adapted to operate the shifting device, for the purpose set forth.

4. The combination, with a trolley-frame and supporting-wheels for the frame, of a retarding-wheel located below the supporting-wheels, the retarding-wheel being provided with peripheral projections, a tension-cable attached to a fixed support and in frictional engagement with the retarding-wheel a brake-

lever arranged for engagement with the projections on the retarding-wheel, shifting bars located on the lower portion of the trolley-frame and connected with the brake-lever, a carrying device located below the shifting bars, and means, substantially as described, for moving the carrying device to and from the shifting bars, for the purpose set forth.

5. The combination, with a cable, a trolley-frame, supporting-wheels carried by the trolley-frame and arranged to travel on the cable, and a retarding-wheel journaled in the trolley-frame below the cable, of a retarding-cable secured at one end and weighted at the other end, the retarding rope or cable being coiled around the retarding-wheel, a brake-lever arranged for engagement with the retarding-wheel, a shifting device connected with the brake-lever, a carrying mechanism, and means, substantially as described, for bringing the carrying mechanism to an engagement with the shifting device and permitting the carrying mechanism to disengage from the shifting device, for the purpose specified.

6. The combination, with a cable, a trolley-frame the supporting-wheels of which are arranged to travel on the said cable, a retarding-wheel having bearings in the trolley-frame below the said cable, the retarding-wheel being provided with peripheral projections, and a brake-lever arranged for engagement with the projections of the retarding-wheel, of a retarding-cable coiled around the retarding-wheel, a shifting bar connected with the brake-lever, a snatch-block located below the shifting bar, guide-wheels carried by the trolley-frame and located above the shifting bar, and a fall-rope connected with the snatch-block and carried to an engagement with the said guide-wheels, as and for the purpose specified.

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