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J. J. VELING

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POWER APPARATUS

Filed Sept. 24, 1928

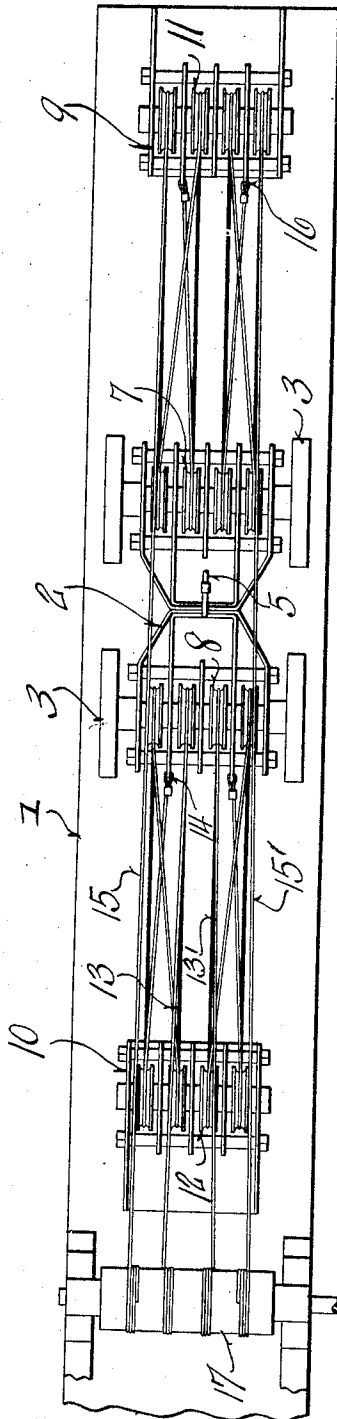


Fig. 1

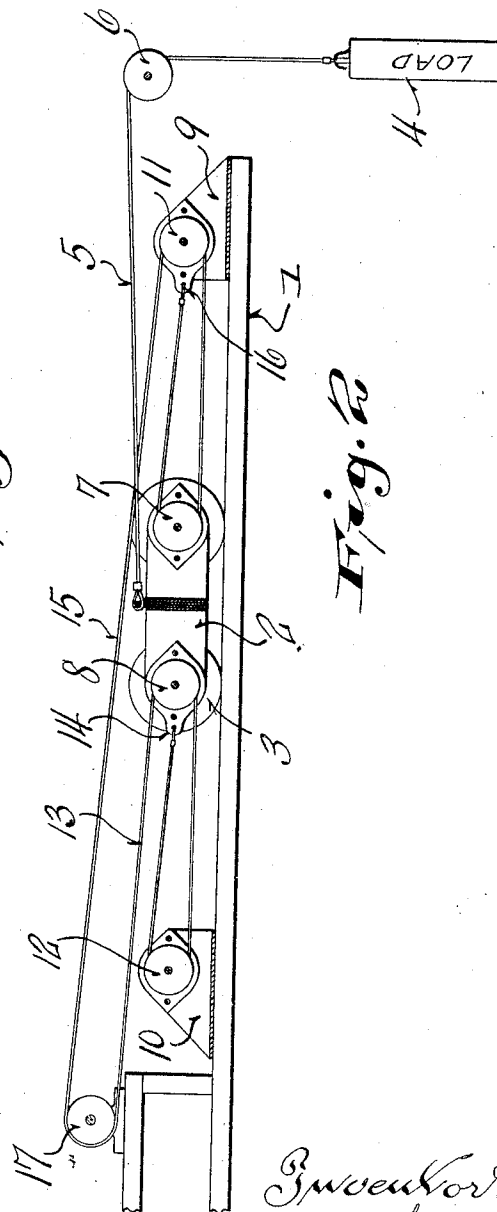


Fig. 2

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UNITED STATES PATENT OFFICE

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POWER APPARATUS

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This invention relates to power apparatus, and is particularly directed to a block and tackle apparatus.

In using block and tackle, it is frequently the case that when it is desired to lower the block without a load that there is not sufficient weight to draw the block downward. Consequently, it becomes difficult to lower the block, and it is necessary either to tie a rope thereto or add a weight to the block.

This invention is designed to overcome the defects noted above, and objects of such invention are to provide a novel form of power apparatus of the block and tackle type, which is so constructed that the travelling member is positively moved forwardly or backwardly and is connected to the load by means of a cable so that the cable is free to move downwardly towards the load as the travelling member is positively moved towards the lowering position.

Further objects are to provide a simple and reliable type of device which is easy to produce and easy to operate.

An embodiment of the invention is shown in the accompanying drawings in which:

Figure 1 is a plan view of the device;

Figure 2 is a diagrammatic view taken at right angles to Figure 1.

Referring to the drawing, it will be seen that the apparatus comprises a bed plate or track 1 upon which a truck 2 travels. This truck is formed of a framework and is supported by a plurality of wheels 3. The truck is connected to the load, indicated diagrammatically by the reference character 4, by means of a cable 5, such cable passing over a pulley 6. It is to be noted that there is no block and tackle between the truck 2 and the load 4, but that such load and truck are connected by a single cable.

The truck is provided with a plurality of pulleys 7 and 8. Further, it is to be noted that end members 9 and 10, which are anchored to the bed plate or track 1, are pro-

vided with a plurality of pulleys 11 and 12. A cable 13 is threaded over the pulleys 8 and 12 and has one end secured to the portion 14 of the truck, as shown most clearly in Figure 2. Similarly, a cable 15 passes over the pulleys 7 and 11, and has one end secured to the member 9 at the portion indicated by the reference character 16 in Figure 2. This construction may be duplicated, the corresponding members being indicated by primes in Figure 1. For instance, the cables 13 and 13' and 15 and 15' perform the same function although distributing the load, with reference to the truck and the end members, over several pulleys and consequently at distributed points transversely of such members.

It is also to be noted that the ends of the cables 13 and 15 and the corresponding cables 13' and 15' are reversely wrapped around a drum 17 (see Figure 1) and have their extreme ends attached thereto. This construction is to prevent slipping of the cables upon the drum 17.

It is, therefore, apparent that as the cables 13 and 13' are wound upon the drum 17 and the cables 15 and 15' are played out from the drum that consequently the truck 2 is moved towards the drum, thus elevating the load. Upon reverse rotation, the cables 13 and 13' are played out and the cables 15 and 15' are wound upon the drum, thus causing the truck 2 to move away from the drum and thereby lower the load. This motion of the truck is, therefore, positive in both directions.

It is to be distinctly understood that any number of pulleys, over which the cables are passed, may be used without departing from the spirit of this invention.

It will be seen that a very simple type of power apparatus has been provided in which the truck connected to the load is positively moved both for load raising and for load lowering motions.

Although the invention has been described in considerable detail, such description is in-

tended as illustrative rather than limiting as the invention may be variously embodied and as the scope of such invention is to be determined as claimed.

5 Although the term "bed plate" is used in the claims and the description, it is intended that such term is to be interpreted as covering a bed plate, as shown, tracks, rods, or other members upon which the truck is carried.

10 I claim:

1. In a device of the class described, the combination of a truck having a plurality of pulleys thereon, a pair of stationary members having pulleys, two sets of cables threaded
15 over said pulleys and adapted to move said truck forwardly or rearwardly, a drum upon which said cables are wound in reverse directions, and a load transmitting member attached to said truck.

20 2. In a device of the class described, the combination of a bed plate, a truck provided with a plurality of wheels adapted to travel upon said bed plate, means connecting said truck to a load, a drum, a plurality of pulleys
25 carried by said truck at opposite ends thereof, a pair of stationary members provided with pulleys, a pair of cables passing over said pulleys and having their ends wound in opposite directions and secured to said drum.

30 3. In a device of the class described, the combination of a bed plate, a truck adapted to travel forwardly and rearwardly upon said bed plate, said truck having a forward set and a rear set of pulleys, a forward stationary
35 member provided with a plurality of pulleys, a rear stationary member provided with a plurality of pulleys, a set of cables passing over the forward pulleys of said truck and the pulleys of said forward stationary member, a
40 second set of cables passing over the rear pulleys of said truck and the rear stationary member, a drum upon which said cables are wound in reverse directions, and means for connecting said truck to a load.

45 4. In a device of the class described, the combination of a bed plate, a truck adapted to travel forwardly and rearwardly upon said bed plate, said truck having a forward set and a rear set of pulleys, a forward stationary
50 member provided with a plurality of pulleys, a rear stationary member provided with a plurality of pulleys, a pair of cables passing over the forward pulleys of said truck and the pulleys of said forward stationary member, a
55 second pair of cables passing over the rear pulleys of said truck and the rear stationary member, a drum upon which said cables are wound in reverse directions, and means for connecting said truck to a load, said forward
60 and rear stationary members each having an even number of pulleys thereon, the forward pulleys of said truck being of the same number as said forward stationary member, and the rear pulleys of said truck being
65 of the same number as the pulleys of the rear

stationary member, each pair of cables being arranged symmetrically with respect to the center line of the truck.

In testimony that I claim the foregoing I have hereunto set my hand at Milwaukee, in the county of Milwaukee and State of Wisconsin.

JACOB J. VELING

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