

No. 711,049.

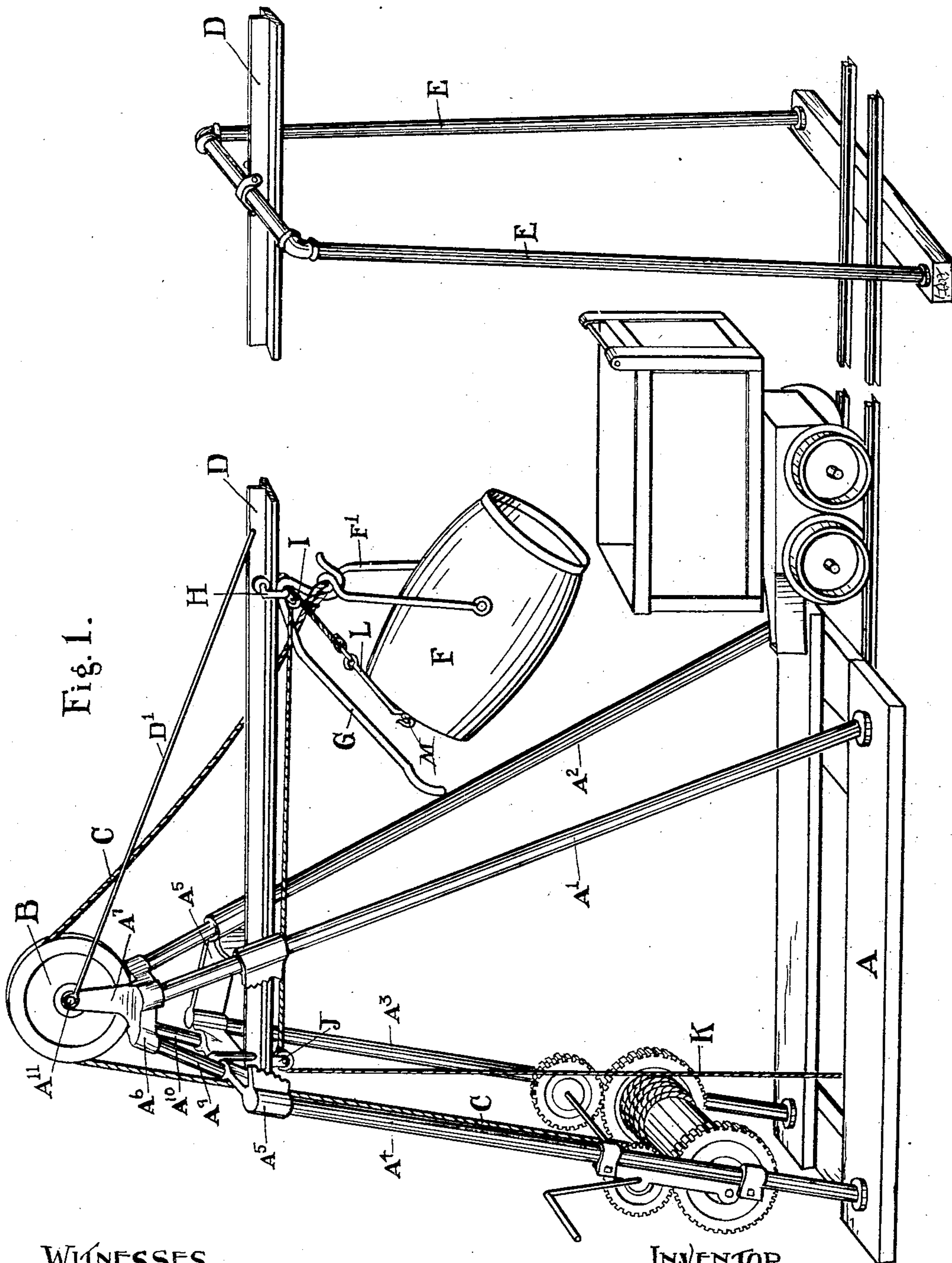
Patented Oct. 14, 1902.

C. JACKSON.  
HOISTING AND DUMPING DEVICE.

(Application filed Feb. 20, 1901.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES

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Fig. 4.

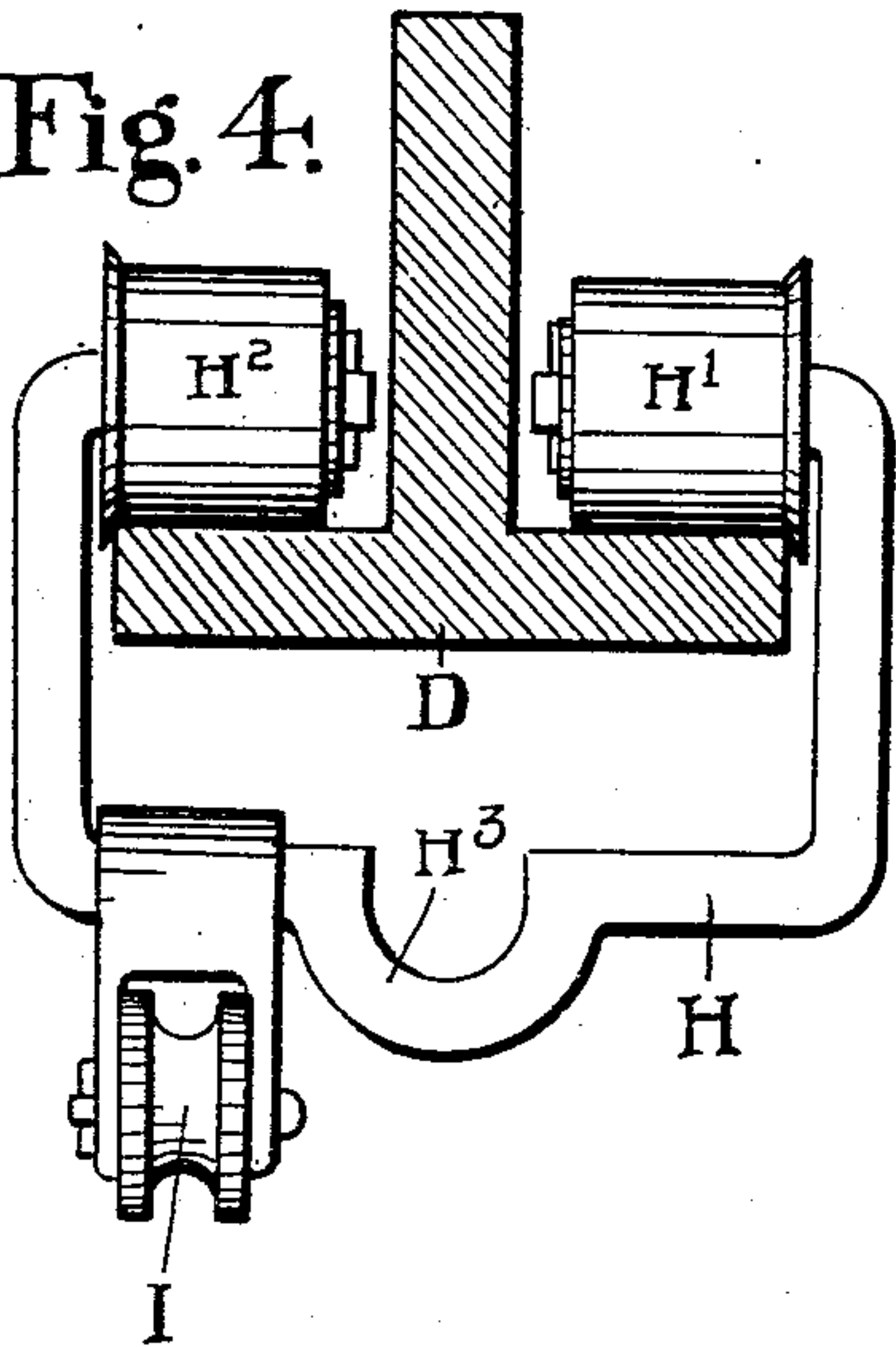


Fig. 3.

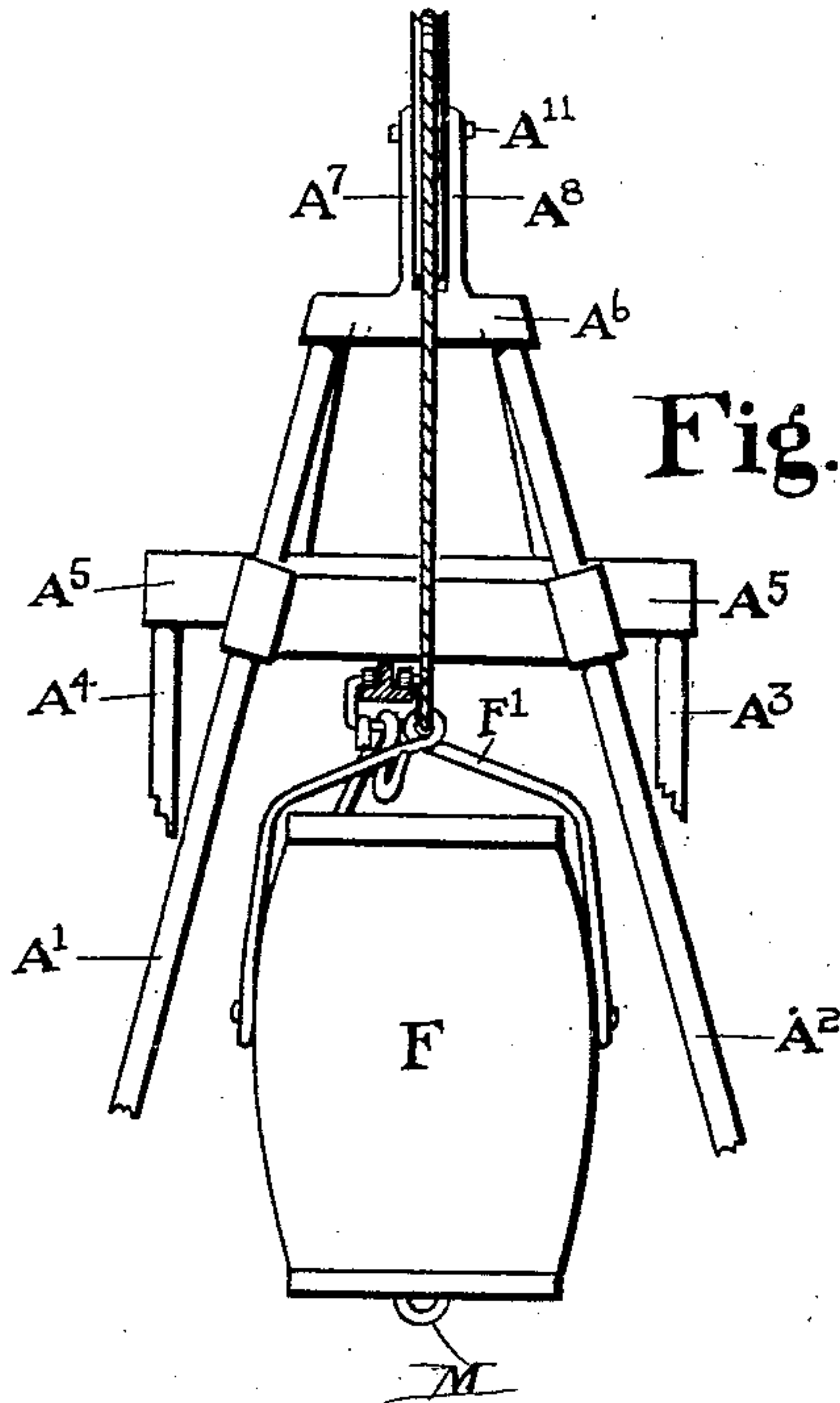
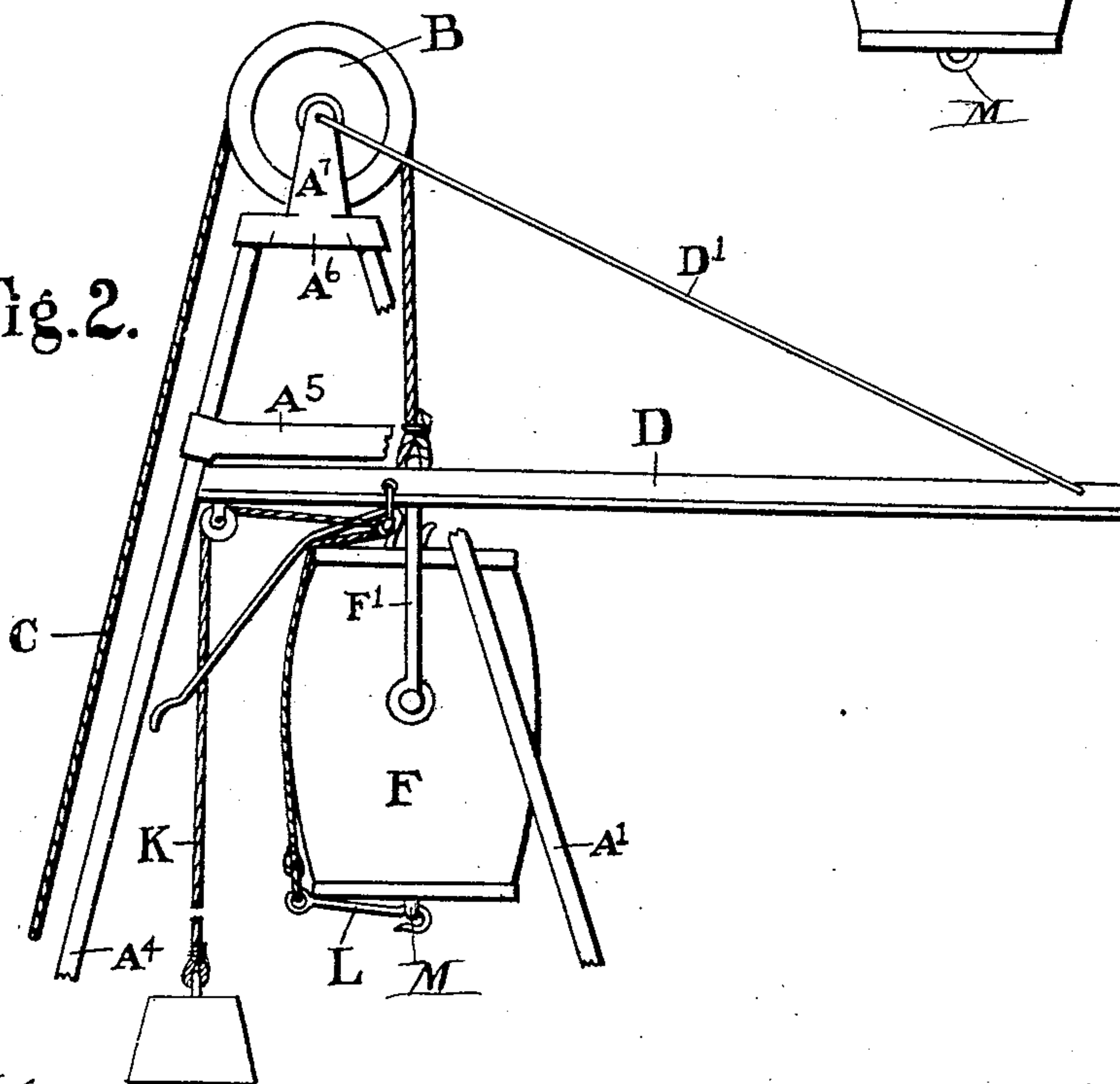


Fig. 2.



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# UNITED STATES PATENT OFFICE.

CARL JACKSON, OF DENVER, COLORADO.

## HOISTING AND DUMPING DEVICE.

SPECIFICATION forming part of Letters Patent No. 711,049, dated October 14, 1902.

Application filed February 20, 1901. Serial No. 48,135. (No model.)

*To all whom it may concern:*

Be it known that I, CARL JACKSON, a citizen of the United States, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Hoisting and Dumping Devices; and I do declare the following to be a full, clear, and exact description of my invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

My invention relates to a class of machinery designed for hoisting and dumping ore, rock, or any other substance. It is especially valuable when applied to a prospect where the development of the property is not sufficiently advanced to warrant the expenditure necessary for the erection of an extensive hoisting plant. It is also especially valuable for placer-mining, where it is desired to sink to bed-rock, as one man can hoist the material and dump it into the sluice-box without any assistance, thus facilitating and reducing the cost and expense of placer-mining.

The objects of my invention are to provide a hoisting and dumping device that will be easily operated and adapted to be used over a shaft or place of excavating where it is customary to use an ordinary windlass and a bucket or a steam or electric hoist, as any power-hoist can be used in connection with my new device. It is so constructed that it can be readily attached to any power-hoist; also, to provide for dumping either into the car or at an extended distance from the shaft over the dump. It is simple and durable in its construction and can be manufactured at a very reasonable cost.

The manner of constructing and applying my new hoisting and dumping device is fully illustrated in the accompanying drawings, in which—

Figure 1 is a perspective elevation of my invention, showing the bucket as dumping into an ordinary ore-car. Fig. 2 is a side elevation showing the bucket hoisted ready to be placed upon the truck device. Fig. 3 is a view of the device at right angle to that in Fig. 2. Fig. 4 is a cross-section, on an en-

larged scale, of the track with an end view of the truck. Fig. 5 is a view of the weight.

A represents an ordinary platform which is built around the collar of the shaft. To this platform A is secured four upright oppositely-inclined posts, (designated by A', A<sup>2</sup>, A<sup>3</sup>, and A<sup>4</sup>.) To these posts, near the top, is secured an iron framework, (indicated by A<sup>5</sup>.) Two of the posts, those indicated by A' and A<sup>2</sup>, extend upward through the iron frame A<sup>5</sup> and have secured to the top thereof a cap or frame A<sup>6</sup>, which is provided with lugs A<sup>7</sup> and A<sup>8</sup>. The other posts A<sup>3</sup> and A<sup>4</sup> terminate at the frame A<sup>5</sup>, and to complete the foundation or support for the cap or frame A<sup>6</sup> are provided the posts A<sup>9</sup> and A<sup>10</sup>, which have the lower ends secured into the iron frame A<sup>5</sup> and the upper ends into the cap or frame A<sup>6</sup>. To this cap or frame A<sup>6</sup> is attached, by means of a journal A<sup>11</sup>, running through the lugs A<sup>7</sup> and A<sup>8</sup>, a sheave B, over which is passed the hoisting rope or cable, (designated by C.) An inclined T-rail (indicated by D) is provided and attached to the iron frame A<sup>5</sup>. A supporting-stay D' is attached to the outer end of the T-rail and also attached to the lugs on the cap or frame A<sup>6</sup>. The T-rail D can be of a length adapted to be supported by the stay D', or it can be of any desired length and have provided suitable supporting devices, (indicated by E in Fig. 1 of the drawings.) By this means of extending the T-rail the bucket can be conveyed any convenient distance from the shaft and the contents thereof dumped. This provision is of great utility at times when taking ore from the shaft, as the ore can be dumped into the car and the gang-rock or refuse run out to the dump by means of the extended inclined rail.

F represents an ordinary ore-bucket provided with a bail F', to which is attached the rope or cable C. When the bucket is hoisted from the shaft and comes in the position shown in Fig. 2 of the drawings, the bail of same is grasped by the large hook contrivance (designated by G) which is appended to the truck device H. This truck device is provided with two rollers or wheels H' and H<sup>2</sup>, which have suitable flanges designed to keep the truck device from twisting, which would cause friction and prevent it from running



freely and with ease upon the T-rail. A sheave (designated by I) is provided and attached to the truck device H, as illustrated in Fig. 4 of the drawings. Another sheave (indicated by J in Fig. 1 of the drawings) is attached to the iron frame A<sup>5</sup>.

K represents a rope or cable, one end of which is suspended into the shaft and provided with a weight. The other end passes upward through the sheave J and outward under the T-rail to the sheave I, which is attached to the truck device H, is then passed downward through said sheave, and the end provided with a hook, (designated by L.) When the bucket is hoisted to the position shown in Figs. 1 and 2 of the drawings, this hook L, which is attached to the said rope or cable, (designated by K,) is hooked into the ring or eye M, attached to the bottom of the bucket, and after the bucket has been hung upon the large hook G and the hoisting rope or cable C slackened the bucket will roll outward on the T-rail, which is inclined enough to cause it by its gravity to move down on the rail, and when it reaches the desired point adjacent to the ore-car or to the sluice-box or any point where dumping is desired the simple operation of pulling upon the rope (represented by K) to which is attached the weight dumps the bucket, as fully illustrated in Fig. 1 of the drawings.

It is now obvious that when my new hoisting and dumping device has been constructed according to the accompanying illustrations and the foregoing description the successful operation and utility of the same will be as follows: The bucket is hoisted from the shaft by any practical means, (either a geared windlass, as shown in the drawings, a whim, or by any power-hoist,) and when it reaches the position shown in Figs. 2 and 3 of the drawings it is placed upon the large hook contrivance designated by G, which is appended in recessed or depressed portion H<sup>3</sup> of the truck H, provided in the truck device H, which rolls upon the flanges of the T-rail. The outer end of the T-rail is lowered enough to form a proper incline, down which the bucket will roll when placed upon the truck device and the hoisting-rope C released from the drum of the hoist. When the bucket has reached the point where it is desired to dump, the rope or cable designated by K provides means for dumping it, as fully illustrated in Fig. 1 of the drawings. The weight that is provided and appended on the end of the rope or cable K is simply to keep said rope tightened and take up the slack as the bucket is passed backward and forward. After the bucket has been dumped the hoisting rope or cable C is again wound around the drum of the hoist, which draws the bucket up the incline of the T-rail to the position shown in Figs. 2 and 3, where it is released from the large hook G. The hook L, which is attached to the dumping rope or cable K, is released from the ring or eye provided in the bottom

of the bucket, when it is again ready to be let down into the shaft or place of excavation.

It is now manifest that the utility of the extension-rail, in connection with supports similar to the one designated by E in Fig. 1 of the drawings, will in many cases prove great, as by this means the bucket can be conveyed a convenient distance from the shaft or place of excavation and can be readily dumped by one man, who need not leave the means of hoisting, thus enabling him to have charge of the hoisting machinery and also do the dumping.

I do not confine myself to any one mode of constructing my new device nor to any particular means of applying hoisting power to the same, but desire to construct it in various sizes, in any manner, and of such material and apply whatever hoisting power that may prove most efficient and best adapted to the uses and purposes for which it is designed without materially deviating from the principle involved and the construction outlined and claimed. I also wish to construct it either with a short T-rail, supported only by means of its attachments to the frame and the stay-rod, or lengthen the rail and support it by means of a suitable device. (Manifestly illustrated in Fig. 1 of the drawings.)

Having thus described the nature and objects of my invention, with the manner of constructing, applying, and operating same, what I claim as new, and desire to secure by Letters Patent, is—

1. A hoisting and dumping device composed of suitable supports provided with a frame near the top to which is secured a T-rail which extends outward therefrom, the cap or frame placed upon the upper ends of the supports, the sheave secured to the said cap or frame by means of suitable lugs and a journal; the truck device provided with flanged rollers adapted to roll upon the flanges of the said T-rail, the large hook contrivance, adapted to grasp the bail of the bucket, attached to said truck device and the rope or cable passed through a sheave attached to the framework and through another sheave attached to the truck device, one end of which is suspended into the shaft and having a weight thereon and the other attached to the bottom of the bucket, thus providing means for dumping the bucket after it has reached the desired point.

2. In a hoisting and dumping device of the class described, the combination of the hoisting device composed of posts or supports provided with an iron frame near the top, the posts extending upward therethrough, the cap or frame secured to the top of said posts and the lugs forming a part of said cap or frame, the sheave adapted to operate between said lugs and a journal which passes there-through, the hoisting rope or cable operating over said sheave; with the means for carrying and dumping the bucket at a convenient distance from the shaft, consisting of a T-



5 rail secured to the said iron frame and extending outward and slightly downward therefrom provided with a supporting-stay which is secured to the outer end of said T-rail and to the lugs supporting the sheave, the truck device having flanged rollers or wheels operating upon the flanges of the said T-rail, the large hook contrivance swung into the said truck device adapted to grasp the 10 bail of the bucket, the rope or cable which is passed through the sheave attached to the iron frame and thence through the sheave attached to the truck device, one end of said rope being suspended into the shaft to which 15 is attached the weight and the other end provided with a hook designed to be attached to the eye in the bottom of the bucket when dumping, substantially as specified.

20 3. In a hoisting and dumping device of the class described, the combination of the hoist, consisting of the posts or supports, the iron frame secured to said posts, the upward extension posts or supports to the top of which is secured the cap or frame, the said cap or 25 frame provided with lugs, the sheave adapted to operate between said lugs upon a journal passing therethrough, the rope or cable operating over said sheave; with the dumping device, by means of which the bucket is 30 conveyed and dumped at any convenient point from the shaft, consisting of a T-rail secured to the iron frame which is attached to the said posts, the said T-rail extending outward and slightly downward from the point where 35 it is secured to the said iron frame and having a supporting rod or stay secured to the outer end of the said T-rail and to the lugs supporting the sheave, the truck device consisting of the hook suspended from the flanged 40 rollers which operate upon the said T-rail, the large hook contrivance, swung into the semicircular indentation in the hook of the truck device, adapted to grasp the bucket, the rope or cable by means of which the 45 bucket is dumped, adapted to be passed through the sheave attached to the iron frame and thence through the sheave attached to

the truck device, one end of said rope being suspended into the shaft to which is attached a weight the other end provided with a hook 50 adapted to be attached to the bottom of the bucket when dumping, substantially as specified.

4. In a hoisting and dumping device, the combination of the hoist provided with any 55 suitable power, consisting of the supports, the lower ends of which are secured to the platform, the said posts being oppositely inclined and secured to a framework, the upward extension-posts, the cap attached to the 60 top of said posts, the lugs, forming a part of said cap, the sheave-wheel operating between said lugs upon a journal extending there-through, the hoisting rope or cable adapted to operate over said sheave, with the means 65 of conveying and dumping the bucket at a convenient distance from the mine, consisting of the incline formed by means of the T-rail which is provided with suitable supports at the required intervals, said supports be- 70 ing of any suitable construction, the truck device consisting of an appended hook secured to flanged rollers or wheels operating upon the flanges of said T-rail forming the incline; the large hook attached to said truck 75 device adapted to grasp the bail of the bucket, the rope by means of which the bucket is dumped, adapted to be passed through two sheaves, one of which is attached to the framework of the hoist, the other attached to the 80 truck device, one end of said rope being suspended into the shaft to which is appended a weight and the other end provided with a hook adapted to be attached to the eye in the bottom of the bucket when dumping, sub- 85 stantially as specified.

In testimony that I claim the foregoing as my own I hereunto subscribe my name in the presence of two witnesses.

CARL JACKSON.

Witnesses:

BERNARD F. MCCANN, Jr.,  
JAS. H. JACKSON.