No. 815,963. PATENTED MAR. 27, 1906.

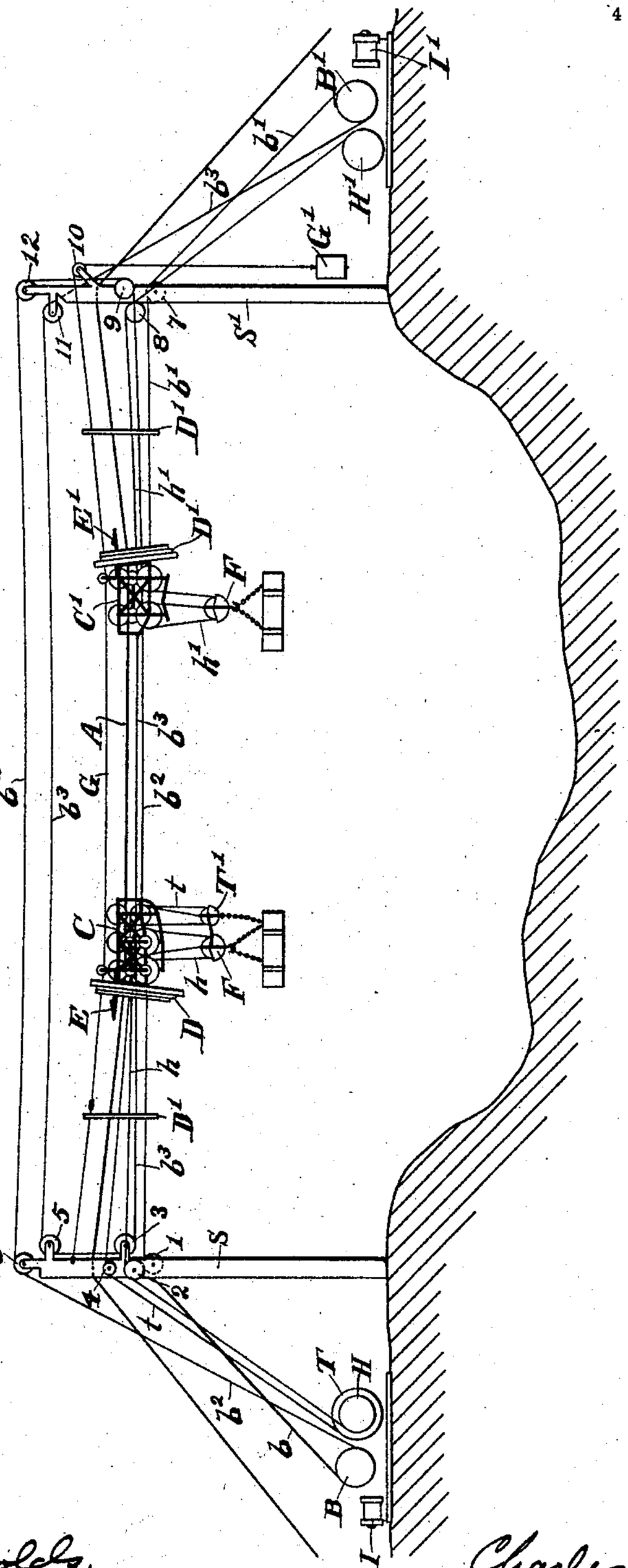
C. H. LOCHER.

CONVEYING APPARATUS.

APPLICATION FILED JUNE 28, 1901.

4 SHEETS—SHEET 1.

Fig. 1.



Witnesses
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4 SHEETS—SHEET 2.

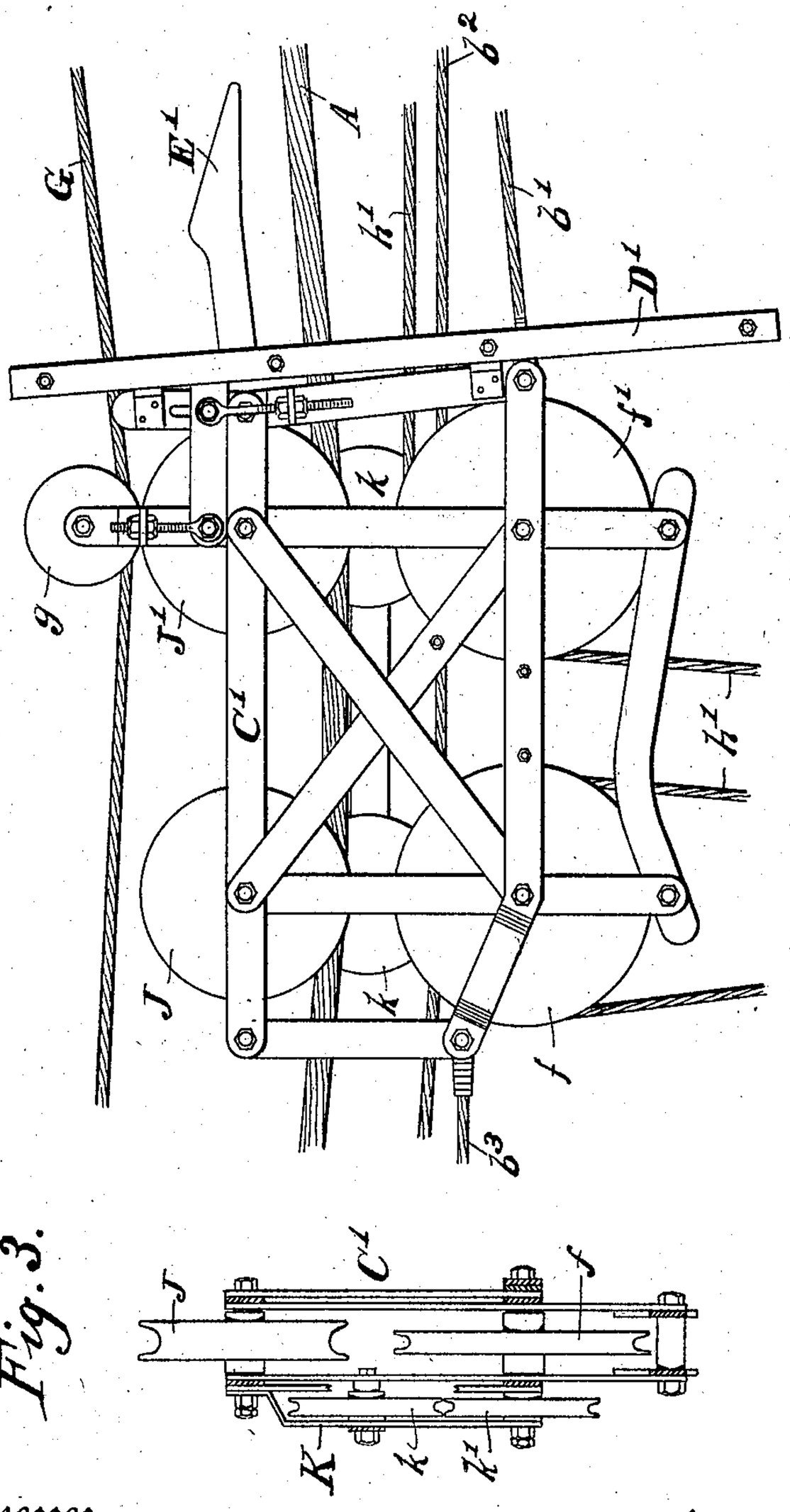

Fig. 2.

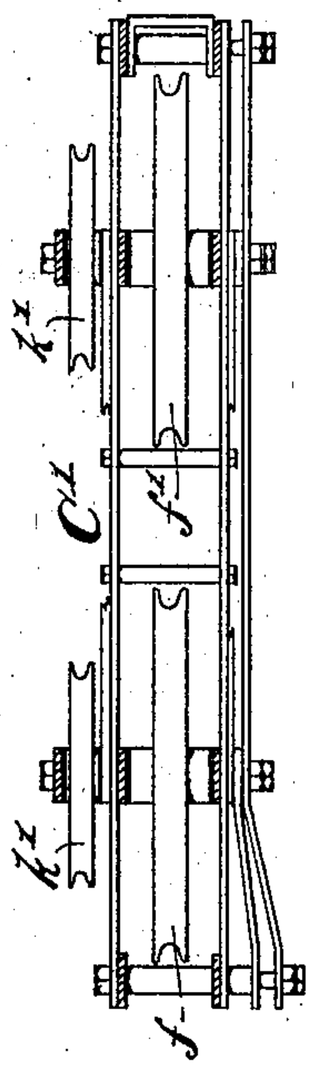

Fig. 4.

Fig. 3.

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4 SHEETS—SHEET 3.

Fig. 6.

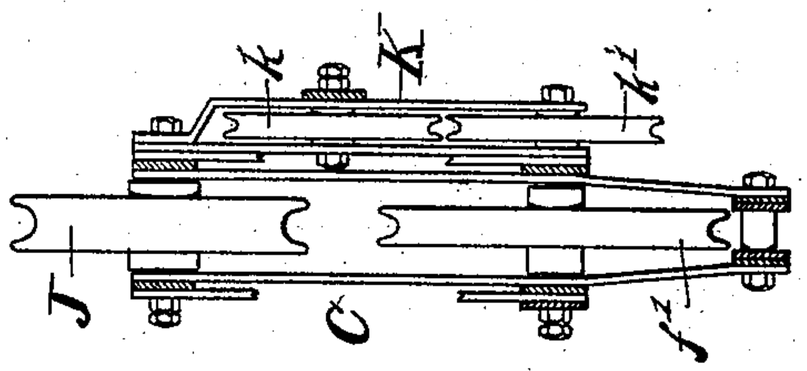


Fig. 5.

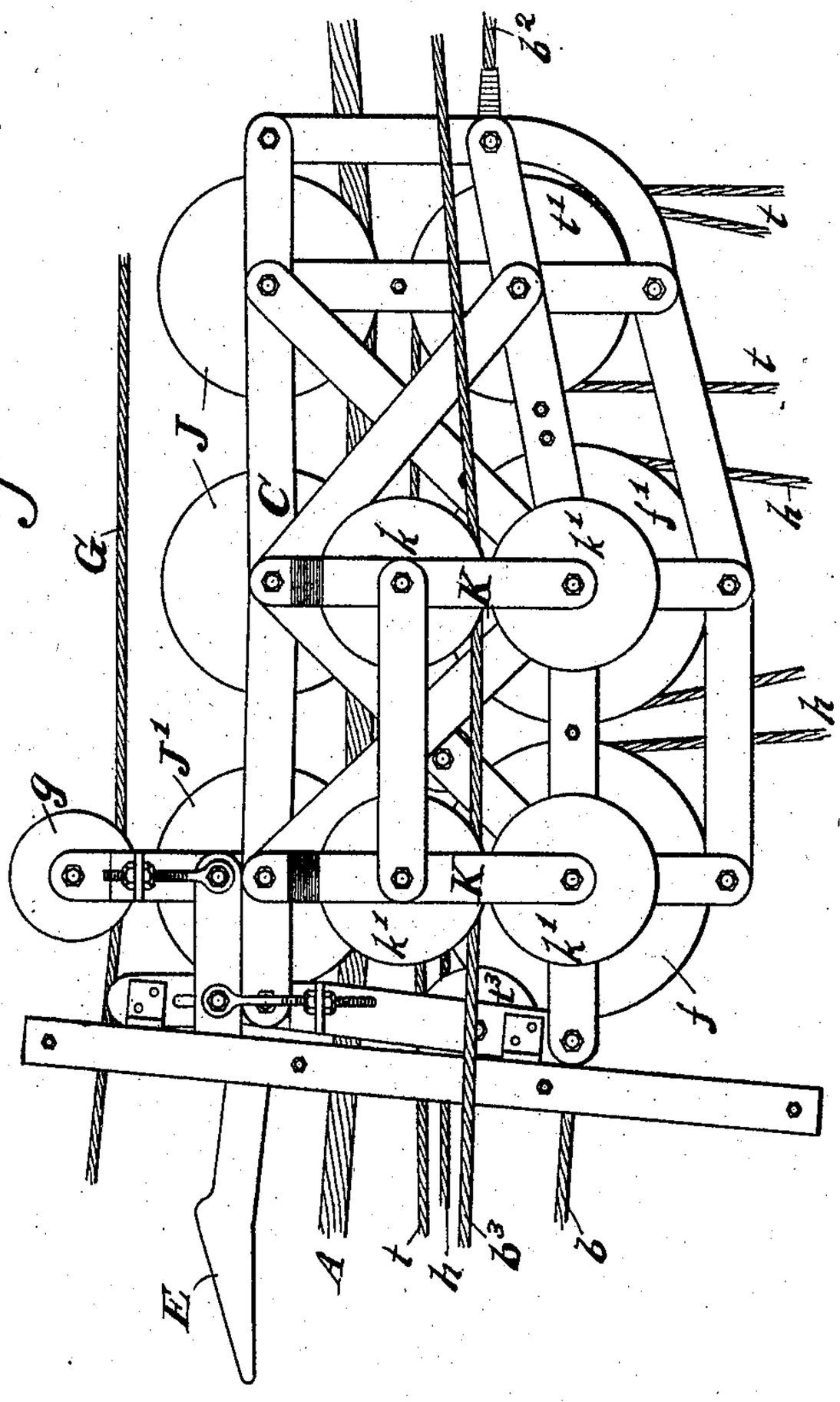
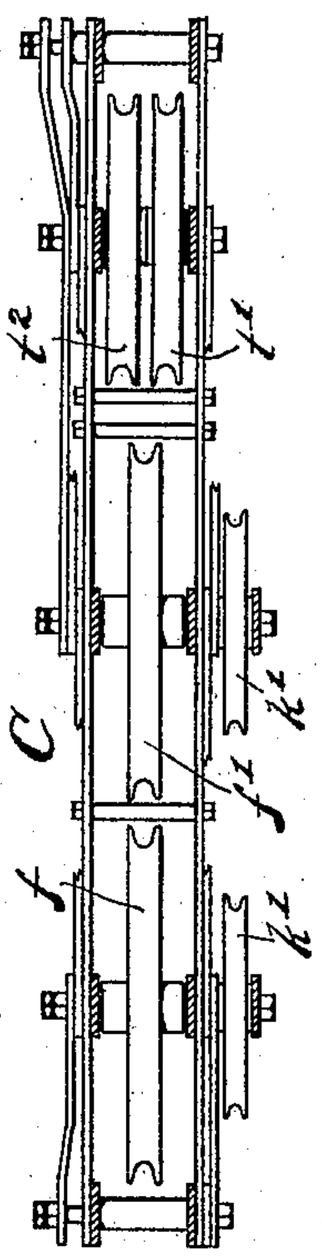


Fig. 7.



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4 SHEETS—SHEET 4.

Fig. 8.

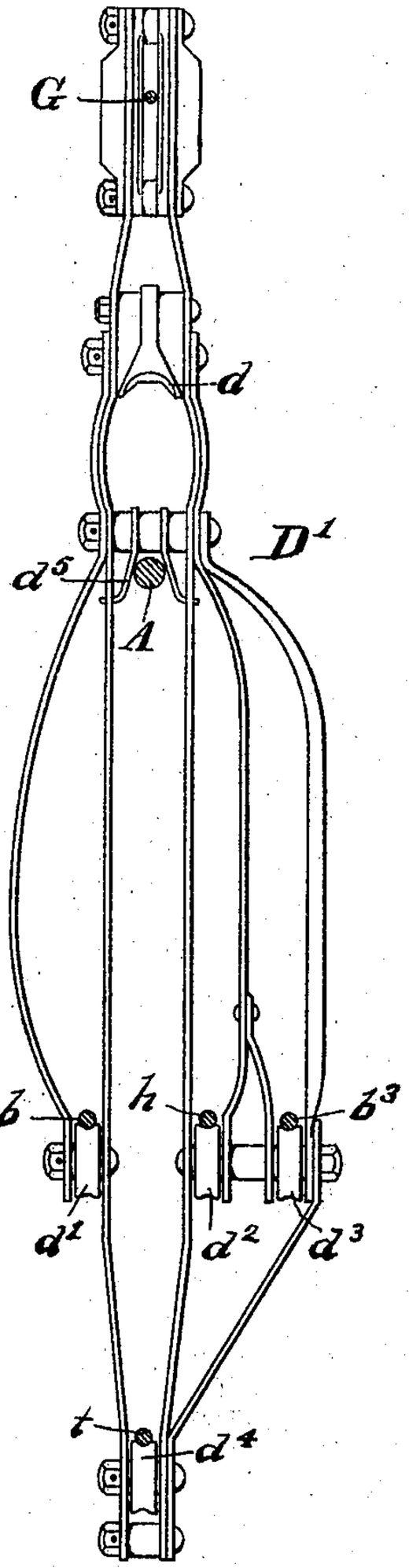
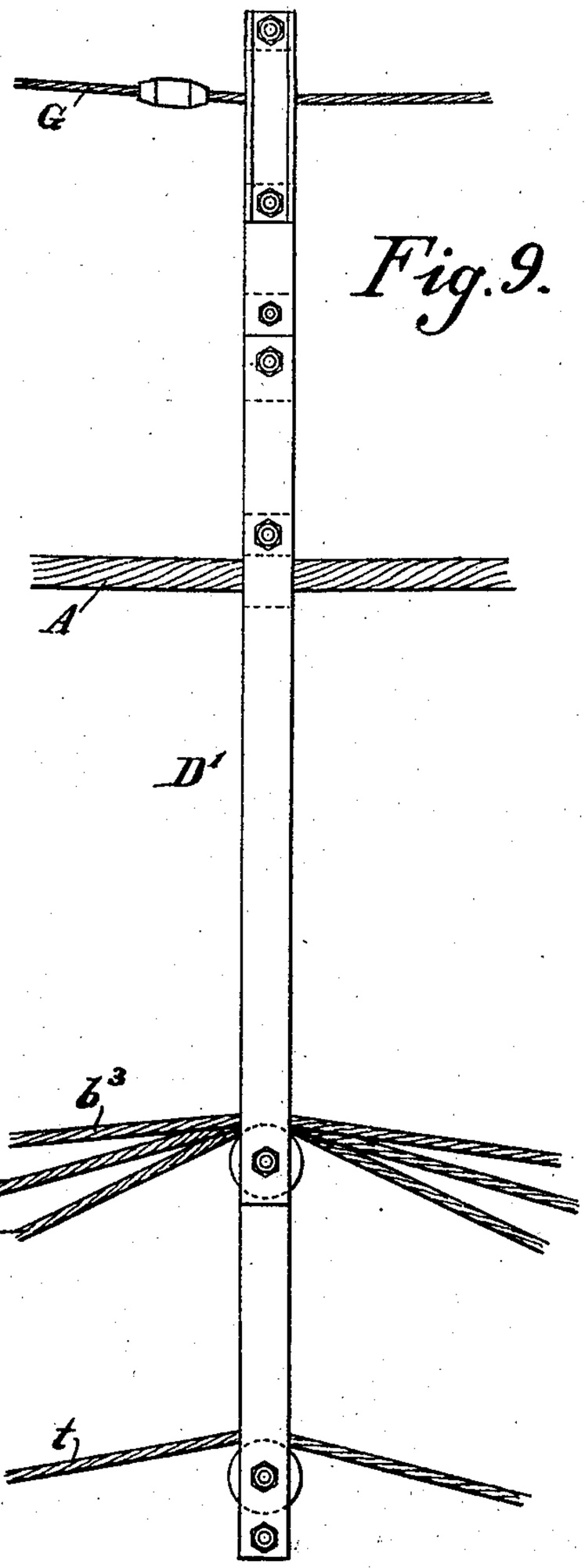


Fig. 9.



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UNITED STATES PATENT OFFICE.

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CONVEYING APPARATUS.

No. 815,963. Specification of Letters Patent. Patented March 27, 1906.

Application filed June 28, 1901. Serial No. 66,390.

To all whom it may concern:

Be it known that I, CHARLES H. LOCHER, a citizen of the United States, and a resident of Lemont, in the county of Cook and State of Illinois, have invented a new and Improved Conveying Apparatus, of which the following is a full, clear, and exact description.

My invention relates to an improvement in conveying apparatus, and comprises the novel features hereinafter described, and particularly pointed out in the claims.

Figure 1 is a side elevation of my device. Fig. 2 is a side elevation of one of the carriages. Fig. 3 is a sectional elevation taken between the supporting-wheels. Fig. 4 is a sectional plan taken beneath the supporting-wheels. Fig. 5 is a side elevation of another form of carriage. Fig. 6 is a sectional elevation taken between the two supporting-wheels at the left in Fig. 5. Fig. 7 is a sectional plan taken below the supporting-wheels. Figs. 8 and 9 are respectively front and side elevations of a fall-rope carrier.

My invention, as shown in the drawings, comprises a cableway upon which are placed two load-carriages, means being provided for independently operating said carriages and the loads carried thereby from opposite ends of the cableway.

In Fig. 1 I have shown a supporting or trackway cable A, carried by two elevated supports S and S′. Upon this trackway are mounted two load-carriages C and C′, which, as shown, are slightly different in construction, such difference not, however, affecting my invention, as they may both be alike and may also be of a different construction from either of those shown.

Two independent operating mechanisms are employed one for each carriage, so that each carriage and its load may be controlled independently of the other, except as limited in position along the cableway by reason of their both traveling on the same trackway. As herein shown, these mechanisms are wholly independent of each other and separated, consisting of engines I and I′ and their drums, placed one at each end of the trackway. It is evident, however, that both engines might be placed at the same end of the trackway, and, in fact, a single engine or other motor might be used to operate both sets of drums. The arrangement shown is, however, the preferred one. Each of these carriage-operating mechanisms comprises a traction or traversing drum, as B B′, a hoisting-drum, as H H′, and a traction-rope, as b b^2 and b' b^3, and a hoisting or fall rope, as h h'.

The traction-drums B B′ are of the winch or endless-rope style, about which the traction-ropes are wrapped. One run b of the rope from drum B passes over a guide-sheave 1 on the support S and is secured to the carriage C. The other run b^2 of the same rope passes over guide-sheave 6 on support S, thence over guide-sheaves 12 and 9 on support S′ and through guides on carriage C′ to an attachment at the other end of the carriage C. The other traction-rope from the drum B′ follows a similar course to its connections with the carriage C′. The run b' thereof passes over guide-sheave 7 upon support S′ and is then secured to the carriage C′. The other run b^3 passes over guide-sheave 11 on support S′, guide-sheaves 5 and 3 on support S, through guides on carriage C and is then secured to the other end of carriage C′.

The hoisting or fall rope h from drum H passes over guide-sheave 2 on support 5 and then to the carriage C, where it passes over suitable guide sheave or sheaves. As shown, it is a three-part fall, employing two sheaves f and f' on the carriage and a sheave on the fall-block F, the end of the rope being attached to the fall-block. The course of the other hoisting or fall rope h' from the drum H′ is similar, it passing over guide-sheave 8 on support S′ to the carriage C′.

Fall-rope carriers D D′ are provided, which support the fall-ropes and the traction-ropes. These may be distributed and controlled by any suitable mechanism. Horns E and E′ upon the two carriages and a button-rope G are shown, the button-rope being kept under tension by a weight G′.

The carriage C′, which is shown in detail in Figs. 2, 3, and 4, is in the main of a common construction. It has wheels J and J′, which run upon the trackway-cable A, sheaves f and f' receiving the fall-rope h', a wheel g guiding the button-rope G, and a horn E′ for the reception of the fall-rope carriers D′. The two ends b' and b^3 of the traction-rope for operating this carriage are connected to opposite ends thereof. The run b^2 of the traction-rope operating the other carriage extends past this carriage and is retained within guides formed by the wheels or sheaves k k',

which are journaled in the frame of the carriage and an auxiliary frame K and embrace the rope b^2 by their flanges.

The carriage C is like the carriage C′, except that it has the additional sheaves and other parts necessary for the operation of an aerial dump. This may be omitted from or placed upon either or both carriages. These parts comprise the two sheaves t' and t^2, which are journaled upon a common axis, the trip-rope t, and the guide-sheave t^3. A trip fall-block T′ is combined with the fall-block F, a trip-drum T is provided on the engine, and a guide-sheave 4 on the support S. This carriage is also provided with the guide-sheaves k k' for the traction-rope of the other carriage.

The fall-rope carriers D′ are shown in detail in Figs. 8 and 9. These are provided with inclined members d^5, adapted to engage the trackway-cable A, a block d for engagement by the horn, a pulley d' for supporting the traction-rope b, a pulley d^2 for supporting the hoist or fall rope h, a pulley d^3 for supporting the traction-rope b^3, and a pulley d^4 for supporting the dump-rope t.

In operating my device it is designed that one carriage should travel outward while the other is moving inward, or at least while the other is sufficiently near its end of the cableway as to not interfere with the travel of said carriage to the desired point. By properly timing the movements of the carriages either carriage may be used to transfer loads to or from substantially the whole length of the trackway, although each carriage would preferably be employed as nearly as possible to cover the space beneath its half of the cableway, thus saving travel of the carriages and time. In cases where material may be taken from or delivered to either end of the cableway this arrangement will largely increase the capacity of the cableway without proportionally increasing its cost. By properly dividing the work between the two carriages they need never interfere with each other.

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

1. In a cableway, in combination, a single trackway, two carriages thereon, separate hoisting and traversing mechanisms for each carriage, a hoisting-rope carrier for the hoisting-rope of each of said carriages and a single button-rope supporting the carriers of both hoisting-ropes.

2. As an article of manufacture a rope-carrier containing, in combination, members for engaging, respectively, two carriage traction-ropes, a hoisting-rope, the supporting-cable, a button-rope and the carriage-horn.

3. In a cableway, in combination, a single trackway, two carriages thereon, separate hoisting mechanisms for each carriage, an outhaul traction-rope for each carriage, a hoisting-rope carrier for each hoisting-rope and means of engagement on each carrier with both outhaul traction-ropes.

4. In a cableway, in combination, a single trackway, two carriages thereon, separate hoisting mechanism for each carriage and two endless traction-ropes each affixed to one carriage and forming a running engagement with the other carriage.

5. In a cableway, in combination, a single trackway, two carriages thereon, separate hoisting mechanisms for each carriage, a separate carrier for each hoisting-rope and two endless traction-ropes each affixed to one carriage and forming a running engagement with the other carriage and with said hoisting-rope carriers.

6. In a cableway, in combination, a single trackway, two carriages thereon, a separate hoisting-rope carrier coöperating with each carriage and a single button-rope forming a running engagement with all of said carriers and carriages.

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