

No. 845,483.

PATENTED FEB. 26, 1907.

W. J. SELLECK.

TROLLEY.

APPLICATION FILED OCT. 10, 1904.

3 SHEETS—SHEET 1.

Fig. 1.

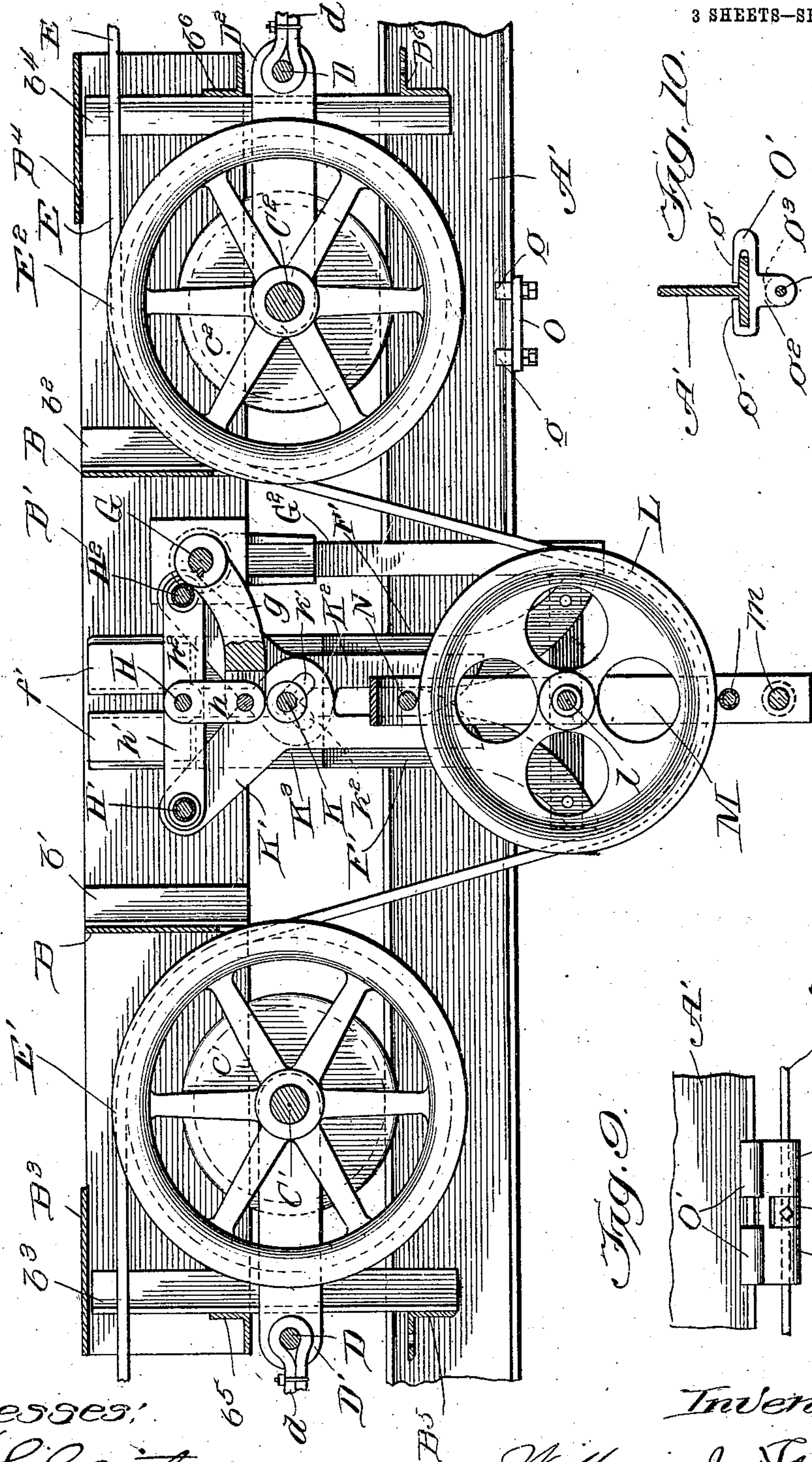
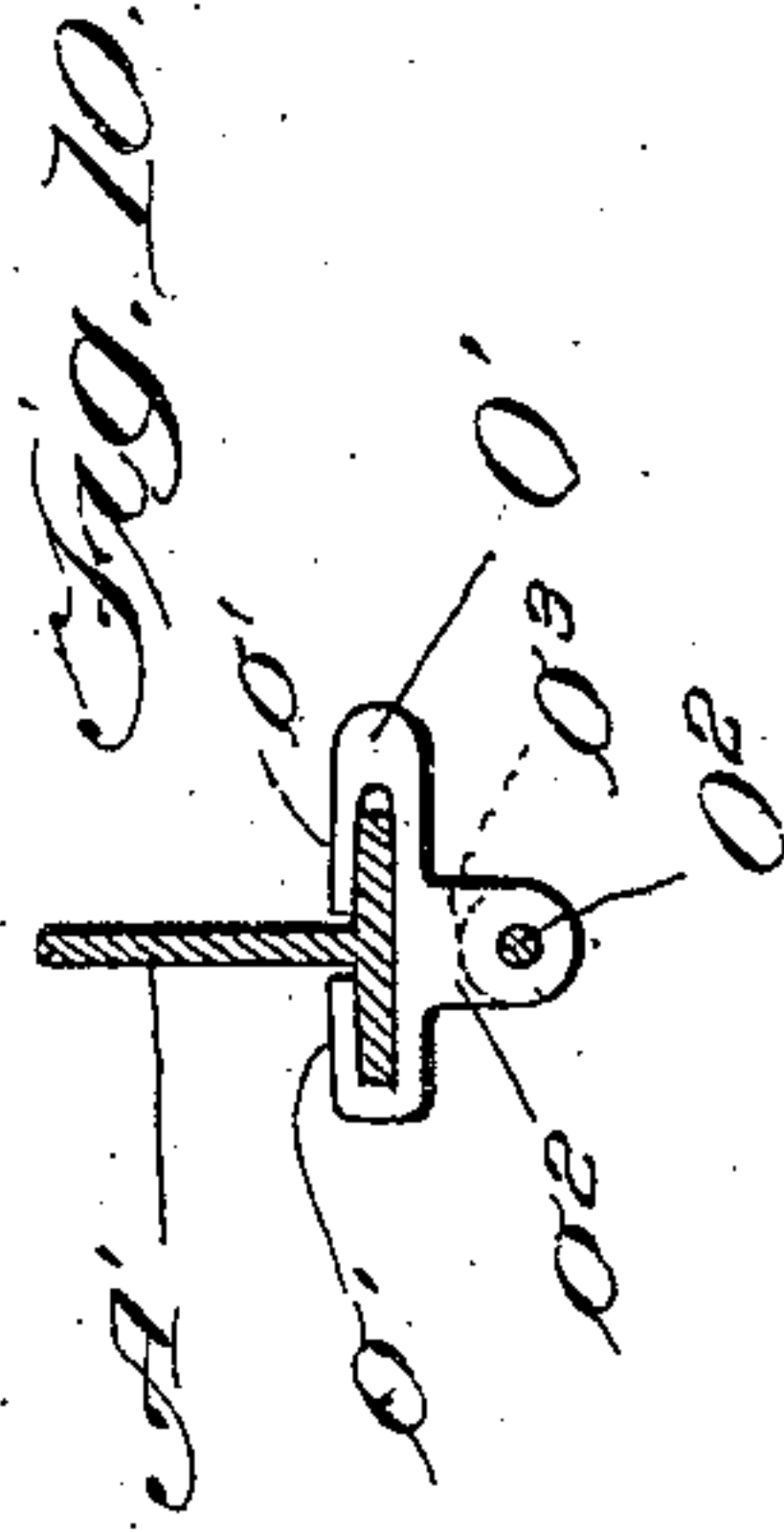
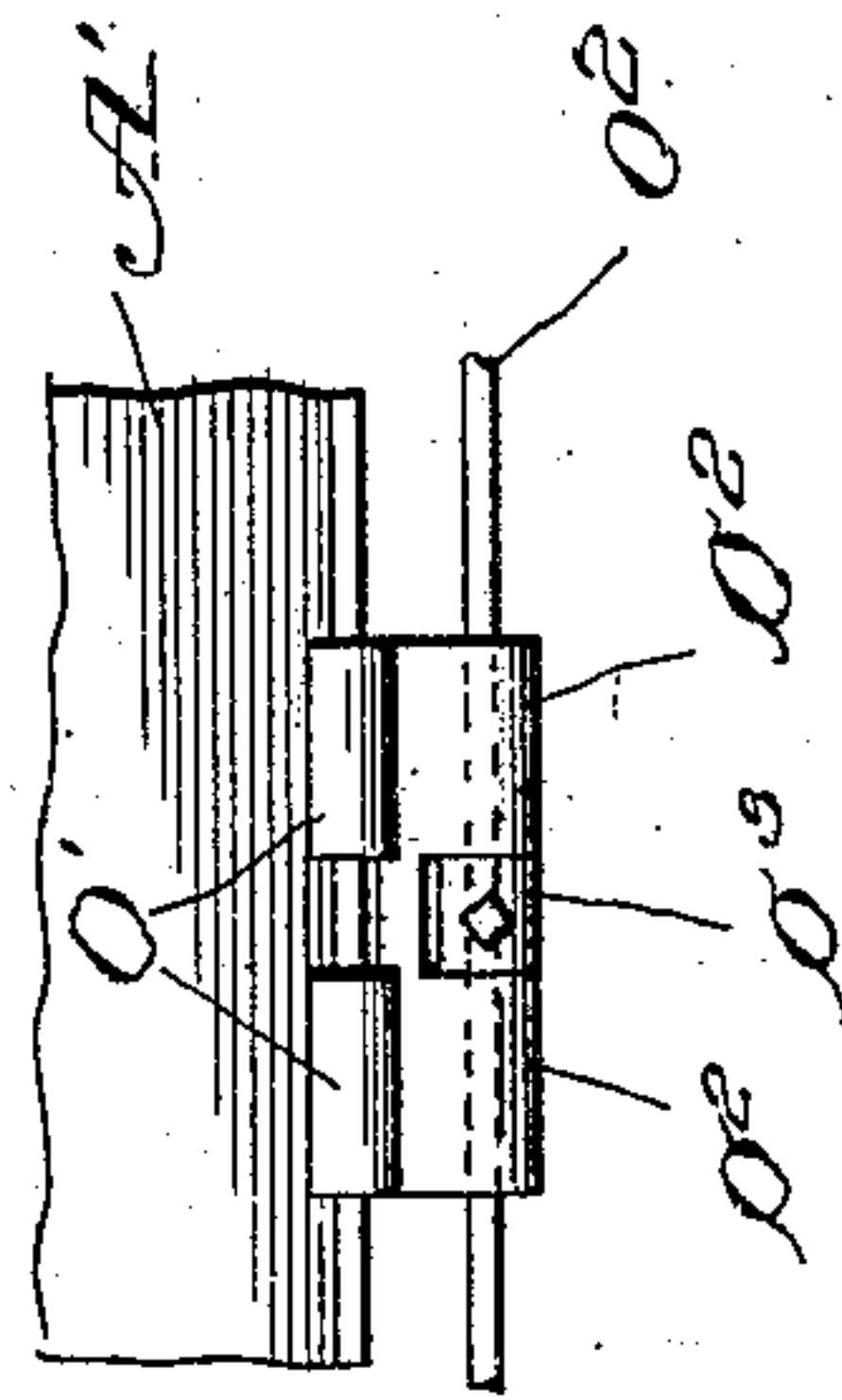


Fig. 9.



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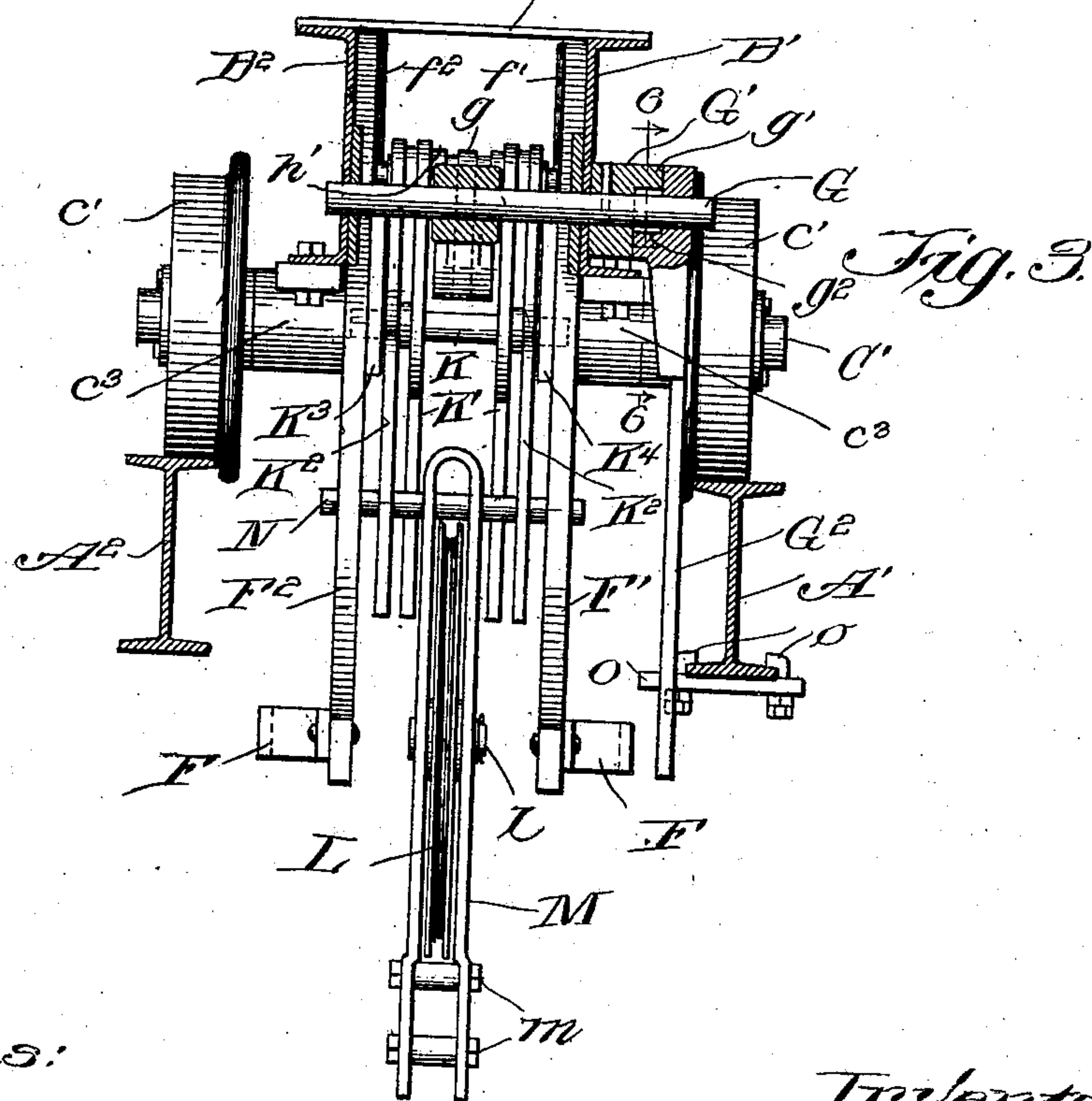
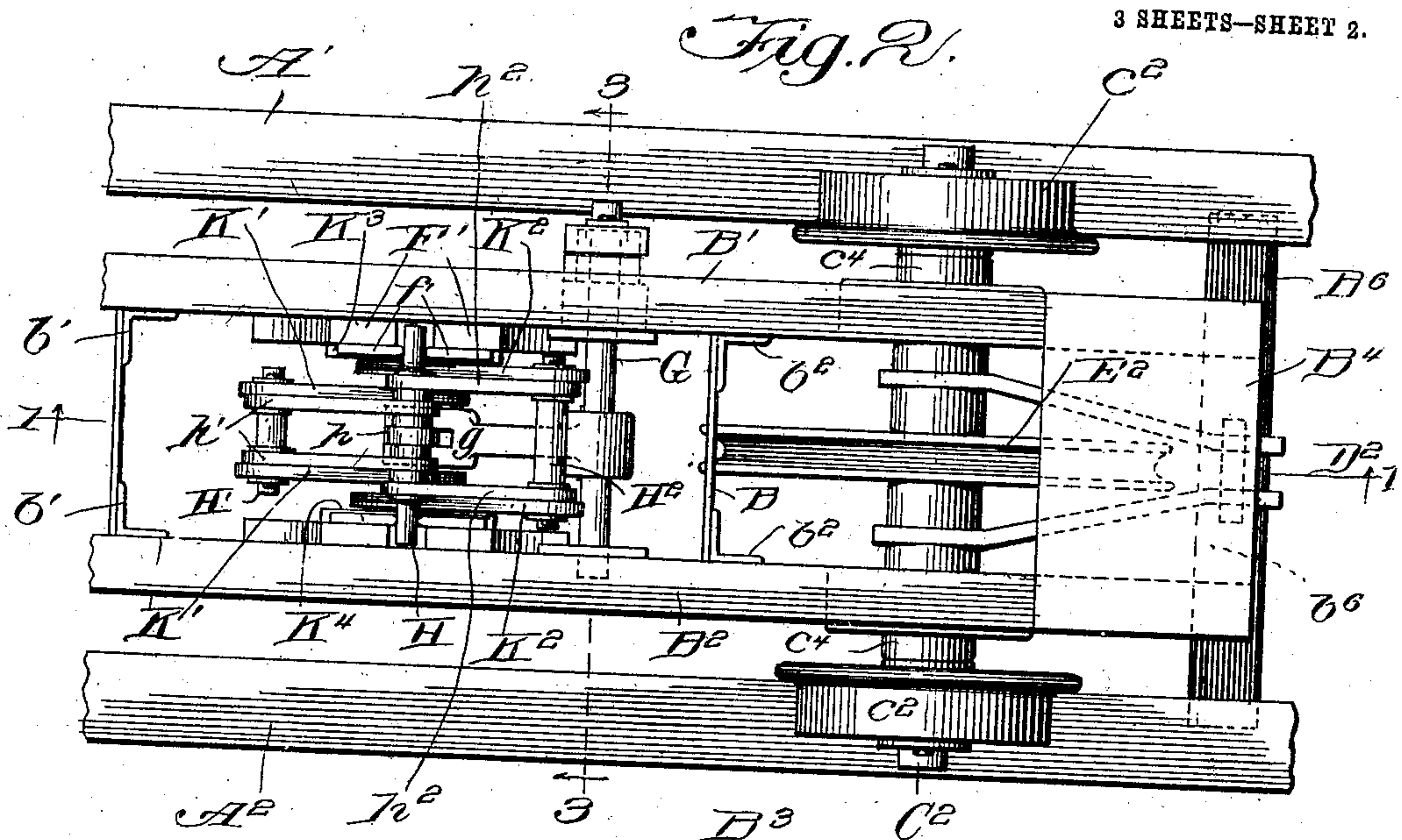
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3 SHEETS—SHEET 2.



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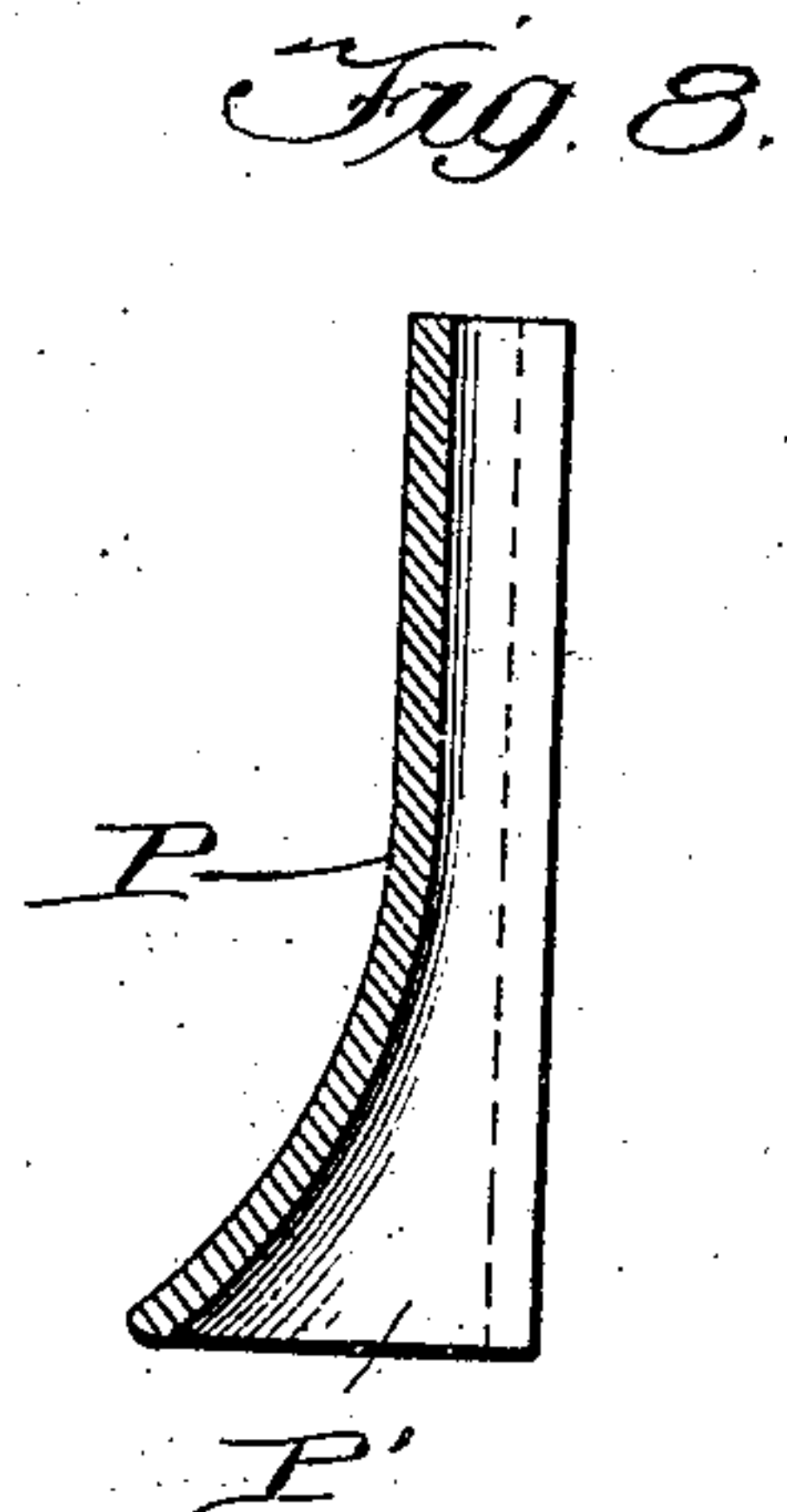
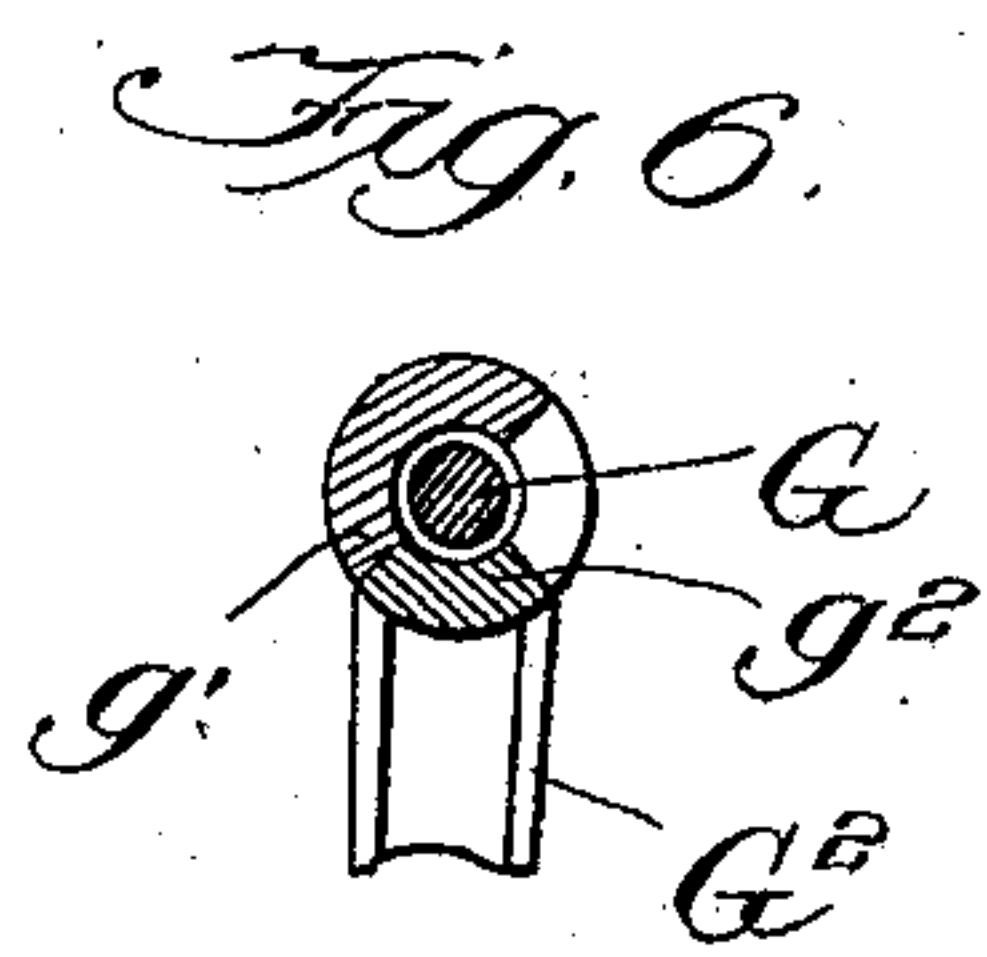
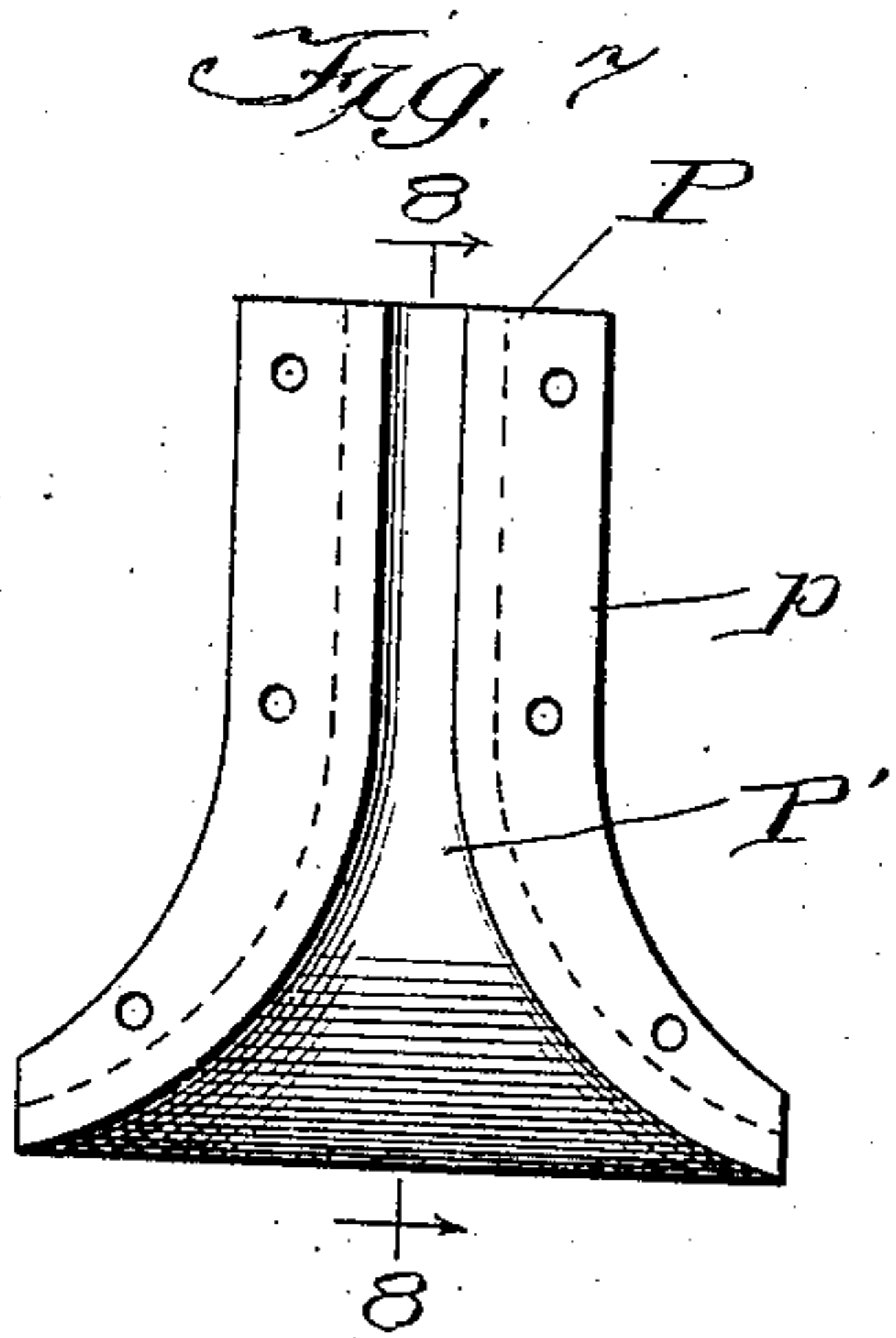
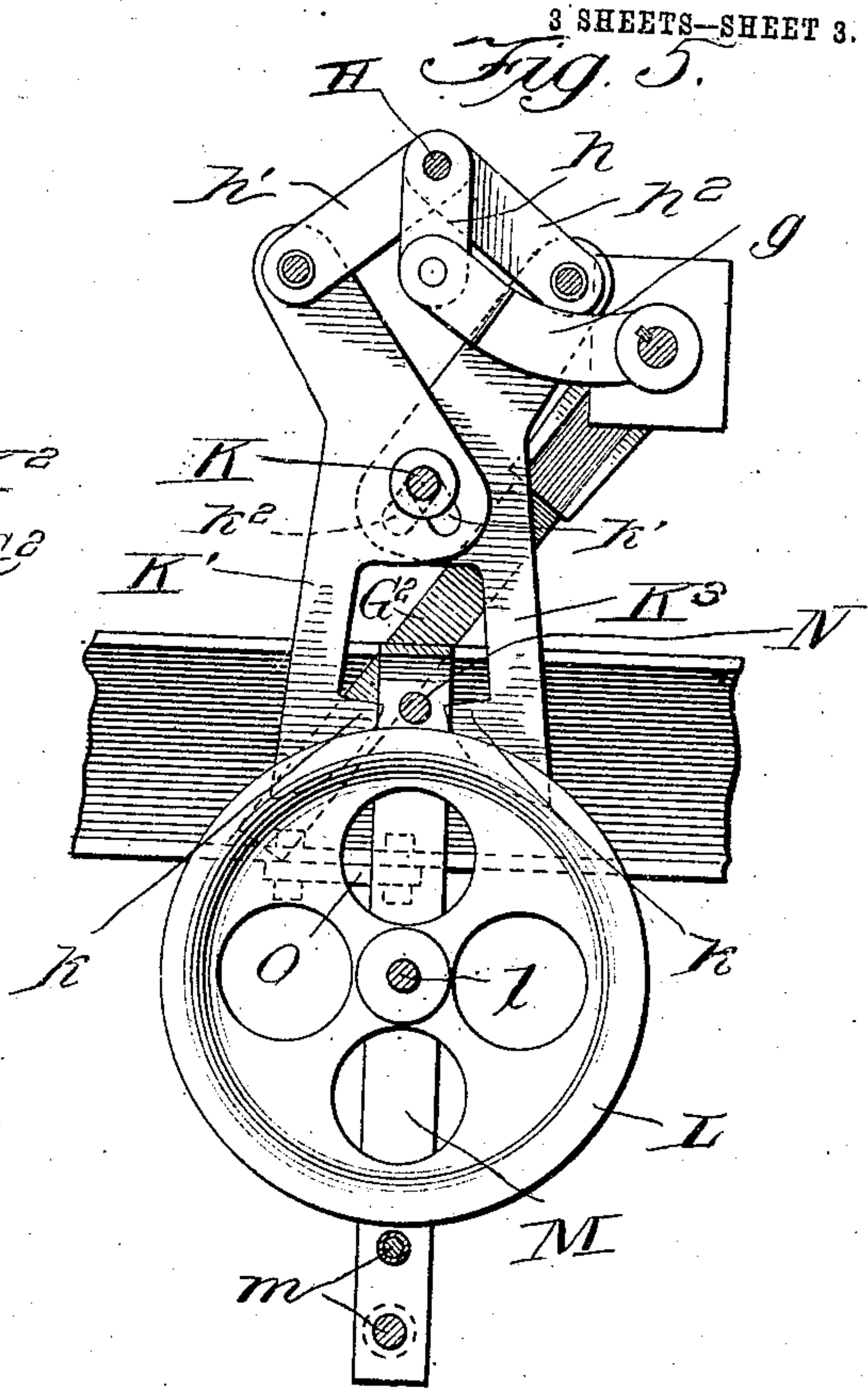
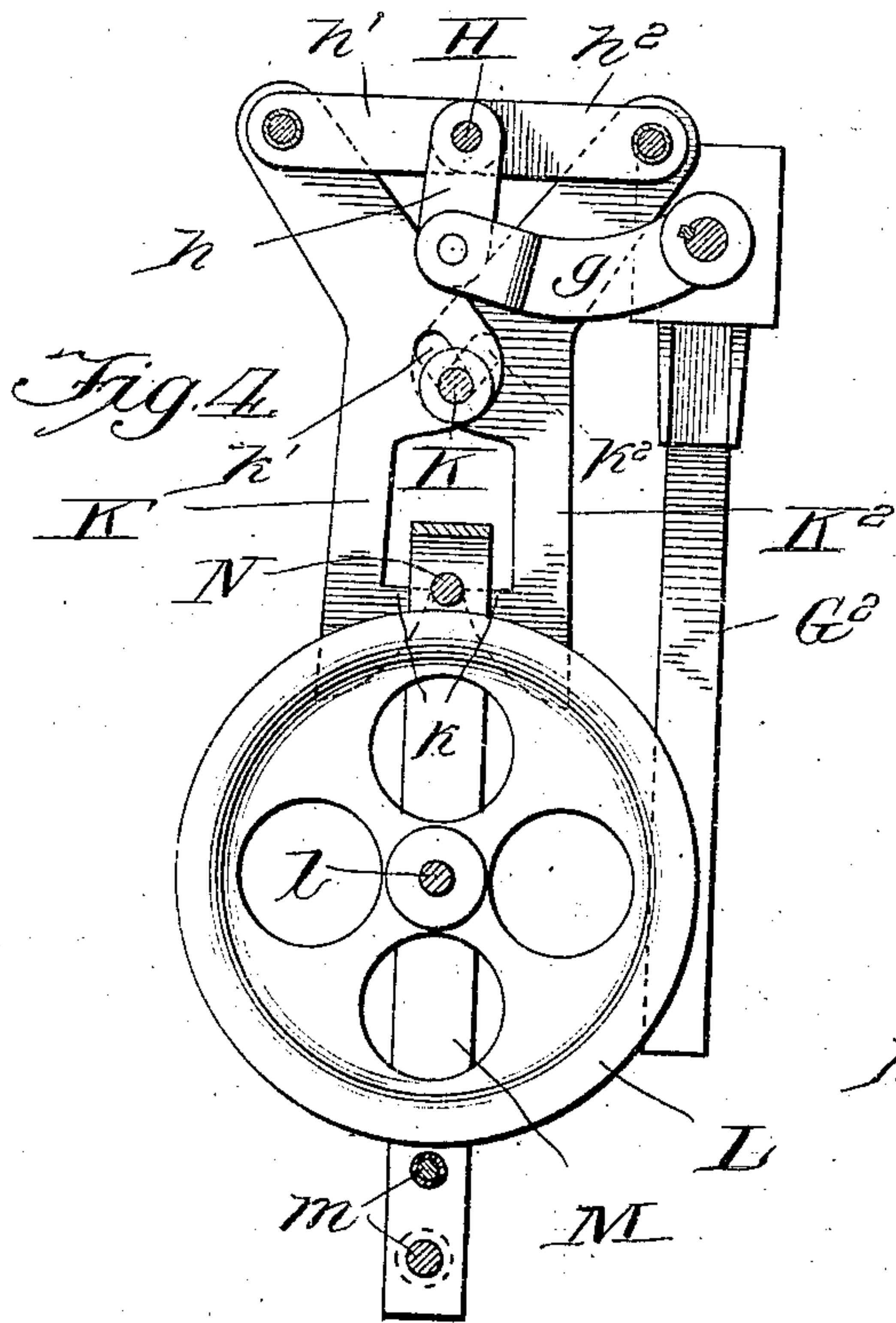
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

WILLIAM J. SELLECK, OF RIVERSIDE, CONNECTICUT.

TROLLEY.

No. 845,483.

Specification of Letters Patent.

Patented Feb. 26, 1907.

Application filed October 10, 1904. Serial No. 227,838.

To all whom it may concern:

Be it known that I, WILLIAM J. SELLECK, a citizen of the United States, residing at Riverside, county of Fairfield, State of Connecticut, have invented a certain new and useful improvement in trolleys; and I declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates in general to trolleys adapted to travel on overhead tracks for transporting a load, and more particularly to mechanism for connecting the load with and in disconnecting it from the trolley.

In the operation of trolleys of the class referred to the sheave, clam-shell bucket, or other supporting means for the load is elevated into engagement with and connected to the trolley at the place from which the load is to be transported, and when the trolley with the suspended load has completed its trip the load-supporting means is uncoupled from the trolley and lowered to the place where the load is to be delivered.

The primary object of my invention is to provide a trolley in which the load-supporting means will be automatically connected to the trolley when the load is elevated into engagement therewith and in which the load-supporting means will be automatically disconnected from the trolley when the latter has reached the place where the load is to be delivered.

A further object of my invention is to provide a trolley of the class referred to which will be simple in construction, comparatively inexpensive in manufacture, and efficient in use.

The embodiment of my invention herein disclosed generally described consists of a trolley, overhead tracks upon which the trolley travels, a transverse shaft carried by the trolley, two pairs of oppositely-swinging bell-crank levers fulcrumed upon said shaft and having slots in intersecting planes through which the shaft extends, toggle-links connecting the diverging upper ends of the bell-crank levers, a rock-shaft journaled upon the trolley, an arm on said rock-shaft pivotally connected to the joint of the toggle-links, a lever depending from said rock-shaft, a clutch between said lever and said rock-shaft, whereby said lever may swing idly in one di-

rection and when swung in the opposite direction will oscillate said rock-shaft, an obstruction fixed to the trolley-track in the path of said depending lever, and normally overlapping hooks carried by the lower ends of said bell-crank levers upon which is adapted to rest a lateral rod of a load-supporting means.

My invention will be more fully described hereinafter with reference to the accompanying drawings, in which the same is illustrated as embodied in a convenient and practical form, and in which—

Figure 1 is a central sectional view on line 1 1, Fig. 2; Fig. 2, a plan view; Fig. 3, a sectional view on line 3 3, Fig. 2; Fig. 4, a detail view showing the parts in the position they assume when the load is elevated into engagement with the trolley; Fig. 5, a view similar to Fig. 4, showing the parts in the position they assume when the load is released from the trolley; Fig. 6, a detail sectional view on line 6 6, Fig. 3; and Figs. 7, 8, 9, and 10, detail views.

The same reference characters are used to designate the same parts in the several figures of the drawings.

Reference characters A' and A² designate the overhead tracks upon which the trolley is adapted to travel. These tracks may be of any suitable construction and for convenience are shown as consisting in I-beams.

B' and B² designate the side frames of the trolley, which are preferably formed of channel-bars and are rigidly connected by plates B³ and B⁴, extending across the top flanges thereof. The inner surfaces of the side frames B' and B² are provided with pairs of vertical angle-bars b', b², b³, and b⁴. The pairs of angle-bars b' and b² are rigidly united by transverse plates B, while the pairs of angle-bars b³ and b⁴ are connected by transverse angle-bars b⁵ and b⁶. The pairs of angle-bars b³ b⁴ extend downwardly below the top flanges of the tracks A' and A² and are provided with transverse angle-bars B⁵ and B⁶, the ends of which project beneath the inwardly-extending flanges of the tracks, as shown in Fig. 2.

c' c' and c² c² indicate pairs of wheels for supporting the trolley, adapted to travel upon the tracks. The pairs of wheels c' c' are journaled upon an axle C', which is mounted in bearings c³ c³, rigidly secured to the bottom flange of the side frames of the trolley. The pair of wheels c² c² are jour-

naled upon an axle C^2 , supported in bearings c^4 c^4 , also rigidly secured beneath the bottom flange of the side frames of the trolley. Journaled upon the axles C' and C^2 are pulleys E' and E^2 , having peripheral grooves. E designates a cable which extends around and is supported upon the pulleys E' and E^2 and also extends beneath a sheave L upon the load-supporting means.

Any suitable means may be provided for connecting propelling means with the trolley—such, for instance, as pairs of straps D' and D^2 , which project from the respective axles C' and C^2 toward the ends of the trolley.

Each pair of such straps carries a transverse pin D , around which is secured a propelling-cable d .

K designates a transverse rod the ends of which are secured in plates K^3 and K^4 , rigidly secured to the inner surfaces of pairs of depending guides F' and F^2 . The guides F' are rigidly secured at their upper ends to the inner surfaces of the side frame B' of the trolley, while the guides F^2 are rigidly secured to the inner surface of the side frame B^2 of the trolley. The lower ends of the pair of guides F' and F^2 diverge and are rigidly united by braces F , such braces being bent outwardly intermediate of their ends, so as to form passage-ways leading to the space between the guides in each pair.

K' K' designate a pair of bell-crank levers fulcrumed upon the rod K by means of elongated slots k' , while K^2 K^2 designate a second pair of bell-crank levers fulcrumed upon the rod K by means of elongated slots k^2 , through which the rod K extends. The slots k' and k^2 occupy planes which intersect at substantially a right angle. The upper ends of the pairs of bell-crank levers diverge and are connected by means of toggle-links h' and h^2 . The outer ends of the toggle-links h' loosely surround a rod H' , which extends through the upper ends of the bell-crank levers K' , while the outer ends of the links h^2 loosely surround a rod H^2 , which extends through the upper ends of the bell-crank levers K^2 . The inner ends of the pairs of links h' and h^2 overlap and are united by means of a rod H , extending through registering holes in the links.

h designates a link depending from the rod H , to which its upper end is pivotally connected, while its lower end is pivotally connected to the end of an arm g , the latter being rigidly secured to a rock-shaft G . The rock-shaft G is journaled in bearings carried by the side frames of the trolley.

One end of the rock-shaft G projects beyond the side frame B' of the trolley and has fixed thereto a collar G' , carrying a semi-circular lug g' . Loosely surrounding the shaft G adjacent to collar G' is a depending lever G^2 , provided at its upper end with an inwardly-projecting circular lug g^2 of sub-

stantially ninety degrees and located in the same vertical plane as the lug g' . An obstruction O is secured to the track A' and projects into the path of movement of the lever G^2 , so that when the trolley passes above the obstruction the latter will oscillate the lever. Any suitable means may be provided for securing the obstruction O to the track—such, for instance, as hooks o , extending through the obstruction, which is shown in the form of a plate underlying the bottom flanges of the track. The hooks o have inwardly-extending ends which engage the side edges of the flanges of the track. Clamp-nuts surround the hooks o to tightly clamp the obstruction to the track and to permit the obstruction being located at any desired point on the track.

The lower ends of the pairs of toggle-levers K' and K^2 are provided with inwardly-projecting catches or hooks k , which are adapted to overlap and support the ends of a rod N , carried by the load-supporting means. Any suitable load-supporting means may be provided—such, for instance, as a sheave L , journaled within a yoke M , through the upper end of which the rod N extends. The lower ends of the strap M are rigidly united below the sheave by bolts m , to which the load is connected.

f' and f^2 designate guide-plates rigidly secured to the guides F' F^2 , respectively, and between which the ends of the rod H reciprocate.

The operation of my invention is as follows: The trolley with the sheave uncoupled therefrom is propelled along the tracks to a point above the load when the elevating-cable E is slackened to permit the sheave to descend and be secured to the load, after which tension is applied to the elevating-cable E and the sheave lifted upwardly into engagement with the trolley. The laterally-projecting ends of the rod N are received between the diverging lower ends of the pairs of guides F' and F^2 and directed thereby into contact with the curved lower edges of the pairs of hooks k . The upward movement of the rod N separates the pairs of hooks, as shown in Fig. 4, being lifted upwardly by the rod N a sufficient distance to permit the slots k' and k^2 to move around the rod K from the position shown in Fig. 1 to that shown in Fig. 4, which swings outwardly the lower ends of the bell-crank levers and forms a space between the hooks thereon to permit the passage of the rod N to a position above the same. Immediately upon the rod N passing above the hooks the bell-crank levers fall and are swung inwardly at their lower ends by the slots k' and k^2 through their engagement with the rod K . The tension upon the elevating-cable E is discontinued, and the load is supported directly by the rod N , which rests upon the hooks k . The trolley is

then propelled along the tracks toward the right in Fig. 1 to a point above the place where the load is to be delivered. Upon reaching such point the lower end of the lever G^2 engages the obstruction O , which swings the lever, as indicated in Fig. 5, thereby partially rotating the shaft G and swinging upwardly the arm g fixed thereto. The upward movement of the arm g breaks upwardly the toggle-links, thereby swinging apart the lower ends of the bell-crank levers and removing the hooks from beneath the rod N , so that by slackening the cable E the sheave and load suspended thereby may be lowered. By means of the clutch composed of the semicircular lug g' , fixed to the shaft G' , and the lug g^2 , fixed to the upper end of the lever G^2 , the latter may swing idly toward the left in Fig. 1, so that after the lever has passed beyond the obstruction O toward the right in Fig. 1 and the load thereby disengages from the trolley the return movement of the trolley to the left merely results in the lever G^2 being swung idly by the obstruction without oscillating the rock-shaft G .

The obstruction O may be located at any point upon the track where it is desired to automatically disconnect the load-supporting means from the trolley. In order that the obstruction may be readily adjusted so as to vary the point at which the load is disengaged from the trolley, a construction such as shown in Figs. 9 and 10 may be employed. In these figures the obstruction O' is provided with intumed flanges $o' o'$, which overlie the base of the track A' . A pair of lugs o^2 depend from the obstruction O' , through which passes a cable O^2 . Fixed to the cable intermediate of the lugs o^2 is a collar o^3 . In order to locate the obstruction at any desired point on the track, tension is applied to the cable O^2 in either direction, thereby sliding the obstruction along the base of the track to the desired position.

In lieu of the braces F , which unite the lower ends of the pairs of guides F' and F^2 , castings, such as shown in Figs. 7 and 8, having funnel-shaped grooves, may be employed. The casting P is provided with side flanges p , which are adapted to be united to the outer surfaces of the lower diverging ends of each pair of guides F' and F^2 . The channel P' within the casting flares outwardly at its lower end, so that the laterally-projecting ends of the rod N are received within the lower flaring ends of the channels and directed thereby to the spaces between the pairs of guides F' and F^2 . By employing the castings shown in Figs. 7 and 8 the rod N is readily directed into the guides when the load is elevated into engagement with the trolley.

From the foregoing description it will be observed that I have invented an improved trolley for transporting a load in which the

load-supporting means is automatically coupled to the trolley when elevated into engagement therewith and in which the load-supporting means is automatically uncoupled from the trolley when the point has been reached where it is desired to deliver the load.

While I have described more or less precisely the details of construction, I do not wish to be understood as limiting myself thereto, as I contemplate changes in form, the proportion of parts, and the substitution of equivalents as circumstances may suggest or render expedient without departing from the spirit of my invention.

I claim—

1. The combination with a trolley for transporting loads, of a track upon which the trolley travels, oppositely-swinging bell-crank levers fulcrumed upon said trolley, toggle-links uniting the diverging upper ends of said bell-crank levers, cooperating hooks carried by the lower ends of said bell-crank levers, means for automatically suspending a load from said hooks when the load is elevated into engagement with the trolley, and means for breaking said toggle-links and thereby swinging the hooks apart to release the load from the trolley.

2. The combination with a trolley for transporting loads, of a track upon which the trolley travels, oppositely-swinging bell-crank levers fulcrumed upon but bodily movable relatively to said trolley, cooperating hooks carried by the lower ends of said bell-crank levers, means for automatically bodily moving said bell-crank levers relatively to said trolley thereby swinging said hooks to receive a load when the load is elevated into engagement with the trolley, and means for relatively moving the upper ends of said bell-crank levers thereby swinging the hooks apart to release the load from the trolley.

3. The combination with a trolley for transporting loads, of a track upon which the trolley travels, oppositely-swinging bell-crank levers having overlapping diverging slots therein, a rod supported upon said trolley and extending through the slots in said bell-crank levers, cooperating hooks carried by the lower ends of said bell-crank levers adapted to be swung apart when engaged from beneath to receive a load-supporting means, and means for relatively moving the upper ends of said bell-crank levers and thereby separating the hooks to release the load.

4. The combination with a trolley for transporting loads, of a track upon which the trolley travels, oppositely-swinging bell-crank levers having overlapping diverging slots therein, a rod supported upon said trolley and extending through the slots in said bell-crank levers, cooperating hooks carried by the lower ends of said bell-crank le-

vers adapted to be swung apart when engaged from beneath to receive a load-supporting means, and automatic means for relatively moving the upper ends of said bell-crank levers when the trolley has traveled a predetermined distance thereby separating said hooks and releasing the load from the trolley.

5. The combination with a trolley for transporting loads, of a track upon which the trolley travels, oppositely-swinging bell-crank levers having overlapping diverging slots, a rod supported upon the trolley and extending through the slots in said bell-crank levers, cooperating hooks carried by the lower ends of said bell-crank levers adapted to be swung apart when engaged from beneath to receive a load-supporting means, toggle-links connecting the diverging upper ends of said bell-crank levers, and means for breaking said toggle-links and thereby relatively swinging said bell-crank levers to disengage said hooks from the load-supporting means.

6. The combination with a trolley for transporting loads, of a track upon which the trolley travels, oppositely-swinging bell-crank levers having overlapping diverging slots, a rod supported upon the trolley and extending through the slots in said bell-crank levers, cooperating hooks carried by the lower ends of said bell-crank levers adapted to be swung apart when engaged from beneath to receive a load-supporting means, toggle-links connecting the diverging upper ends of said bell-crank levers, a rock-shaft journaled upon the trolley, an arm fixed to said rock-shaft and pivotally connected to said toggle-links, and means for partially rotating said rock-shaft to break the toggle-links.

7. The combination with a trolley for transporting loads, of a track upon which the trolley travels, oppositely-swinging bell-crank levers having overlapping diverging slots, a rod supported upon the trolley and extending through the slots in said bell-crank levers, cooperating hooks carried by the lower ends of said bell-crank levers adapted to be swung apart when engaged from beneath to receive a load-supporting means, toggle-links connecting the diverging upper ends of said bell-crank levers, a rock-shaft journaled upon the trolley, an arm fixed to said rock-shaft and pivotally connected to said toggle-links, and a lever depending from and operatively connected to said rock-shaft.

8. The combination with a trolley for transporting loads, of a track upon which the trolley travels oppositely-swinging bell-crank levers having overlapping diverging slots, a rod supported upon the trolley and extending through the slots in said bell-

crank levers, cooperating hooks carried by the lower ends of said bell-crank levers adapted to be swung apart when engaged from beneath to receive a load-supporting means, toggle-links connecting the diverging upper ends of said bell-crank levers, a rock-shaft journaled upon the trolley, an arm fixed to said rock-shaft and pivotally connected to said toggle-links, a lever depending from and operatively connected to said rock-shaft, and an obstruction fixed to the track in the path of said lever for swinging the same and thereby oscillating said rock-shaft.

9. The combination with a trolley for transporting loads, of a track upon which the trolley travels, oppositely-swinging bell-crank levers having overlapping diverging slots, a rod supported upon the trolley and extending through the slots in said bell-crank levers, cooperating hooks carried by the lower ends of said bell-crank levers adapted to be swung apart when engaged from beneath to receive a load-supporting means, toggle-links connecting the diverging upper ends of said bell-crank levers, a rock-shaft journaled upon the trolley, an arm fixed to said rock-shaft and pivotally connected to said toggle-links, a lever depending from and operatively connected to said rock-shaft, and a clutch interposed between said lever and rock-shaft whereby said lever may swing idly in one direction and when swung in opposite direction will oscillate said rock-shaft.

10. The combination with a trolley for transporting loads, of a track upon which the trolley travels, oppositely-swinging bell-crank levers having overlapping diverging slots, a rod supported upon the trolley and extending through the slots in bell-crank levers, cooperating hooks carried by the lower ends of said bell-crank levers adapted to be swung apart when engaged from beneath to receive a load-supporting means, toggle-links connecting the diverging upper ends of said bell-crank levers, a rock-shaft journaled upon the trolley, an arm fixed to said rock-shaft and pivotally connected to said toggle-links, a lever depending from and operatively connected to said rock-shaft, a clutch interposed between said lever and rock-shaft whereby said lever may swing idly in one direction and when swung in opposite direction will oscillate said rock-shaft, and an obstruction adjustably secured to the track in the path of said lever for swinging the same.

In testimony whereof I sign this specification in the presence of two witnesses.

WILLIAM J. SELLECK.

Witnesses:

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