

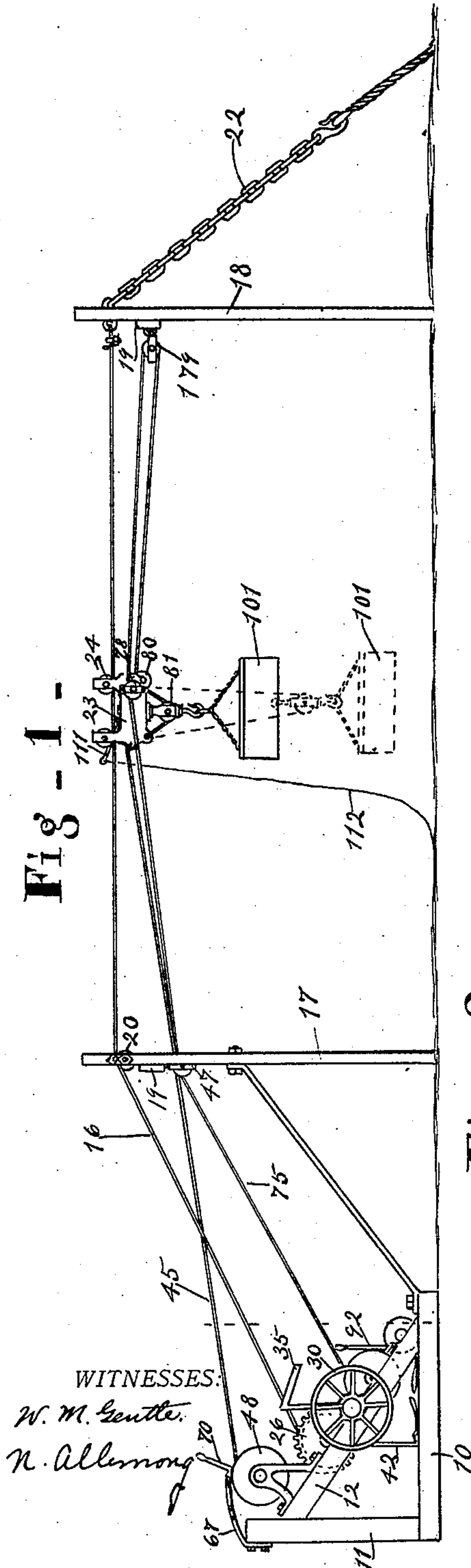
No. 865,777.

PATENTED SEPT. 10, 1907.

A. & J. M. HALL.
CONVEYING APPARATUS.
APPLICATION FILED DEC. 20, 1906.

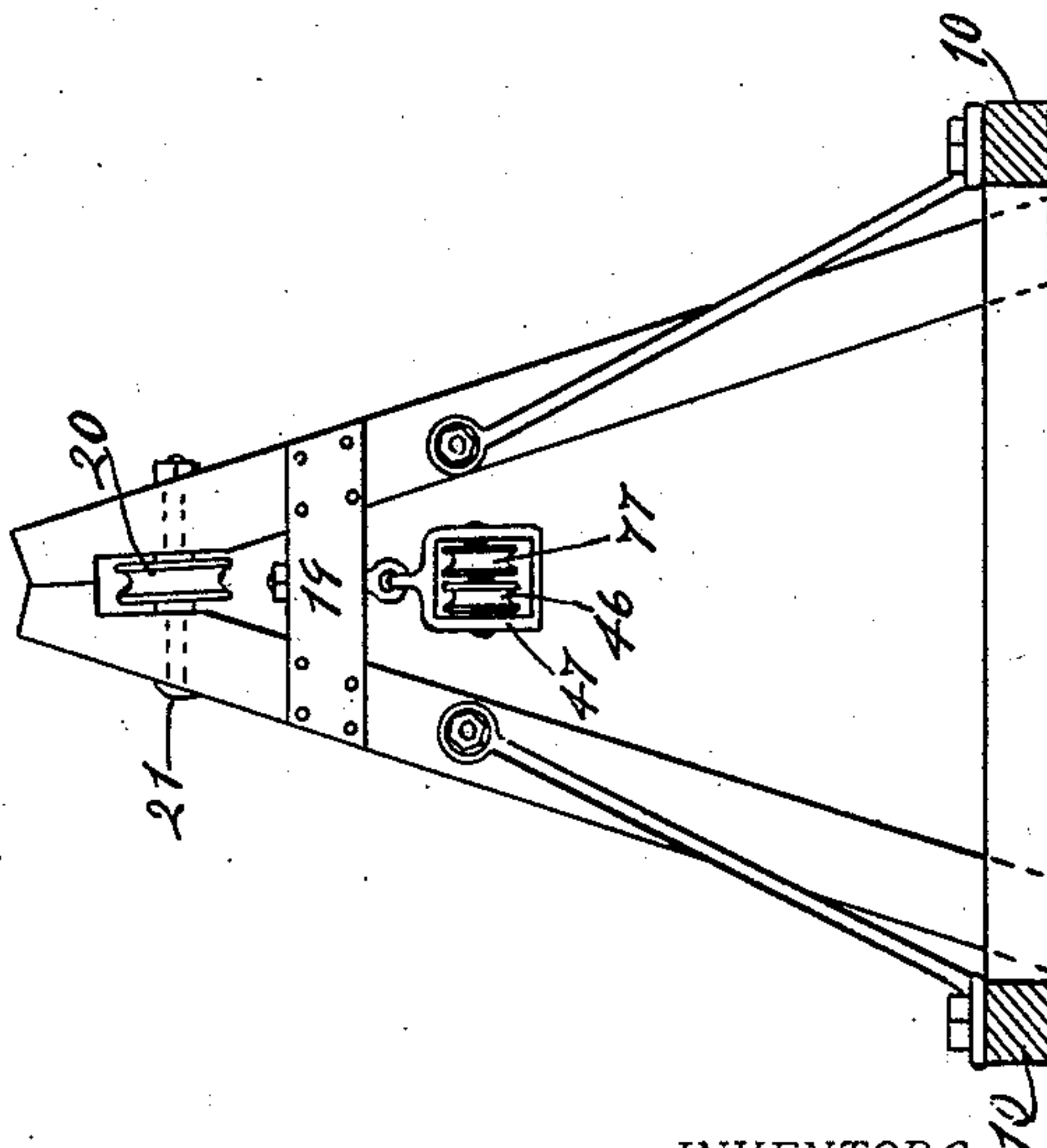
3 SHEETS—SHEET 1.

Fig - 1 -



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Fig - 2 -



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3 SHEETS—SHEET 2.

Fig - 3 -

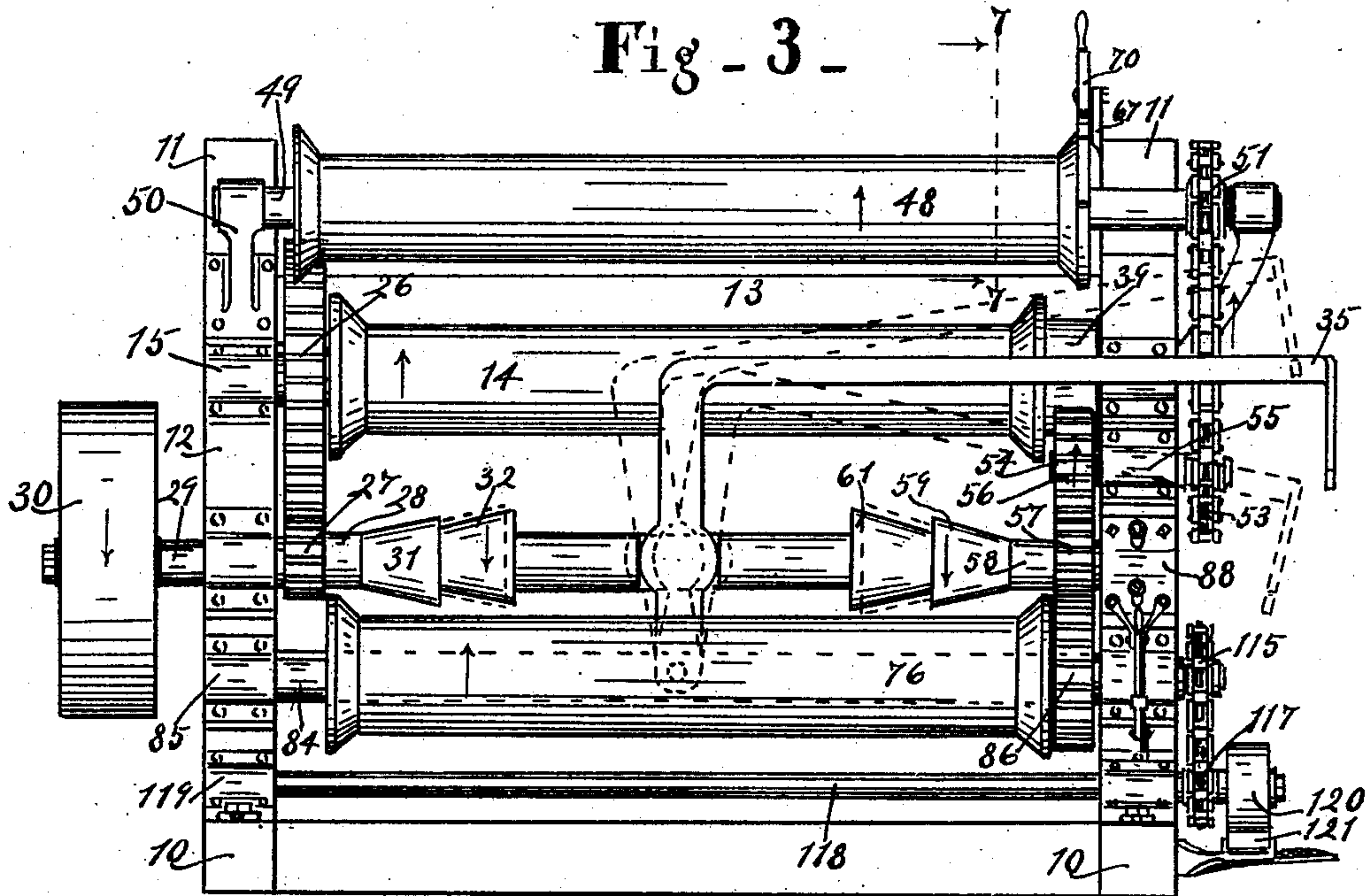


Fig - 5 -

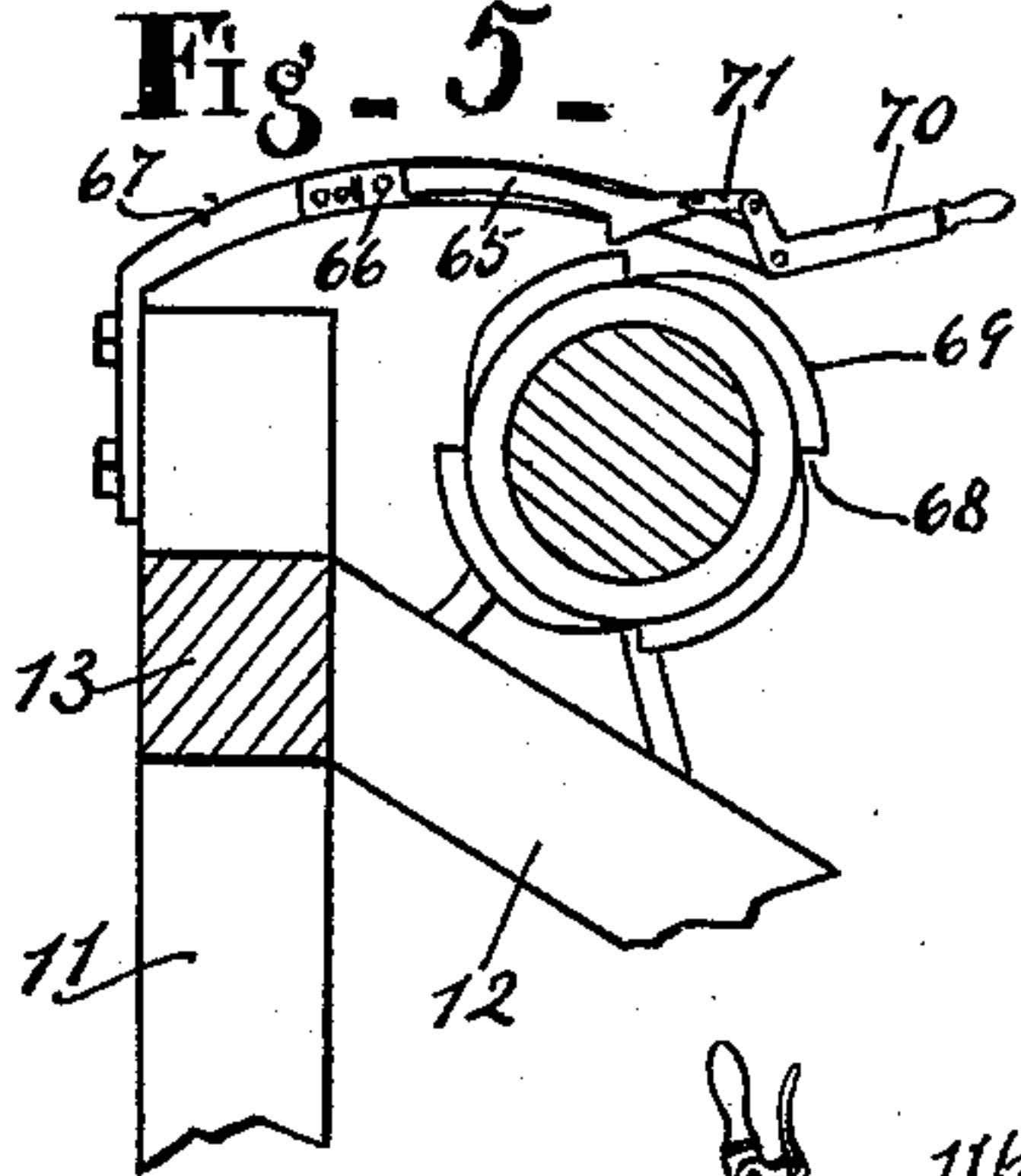
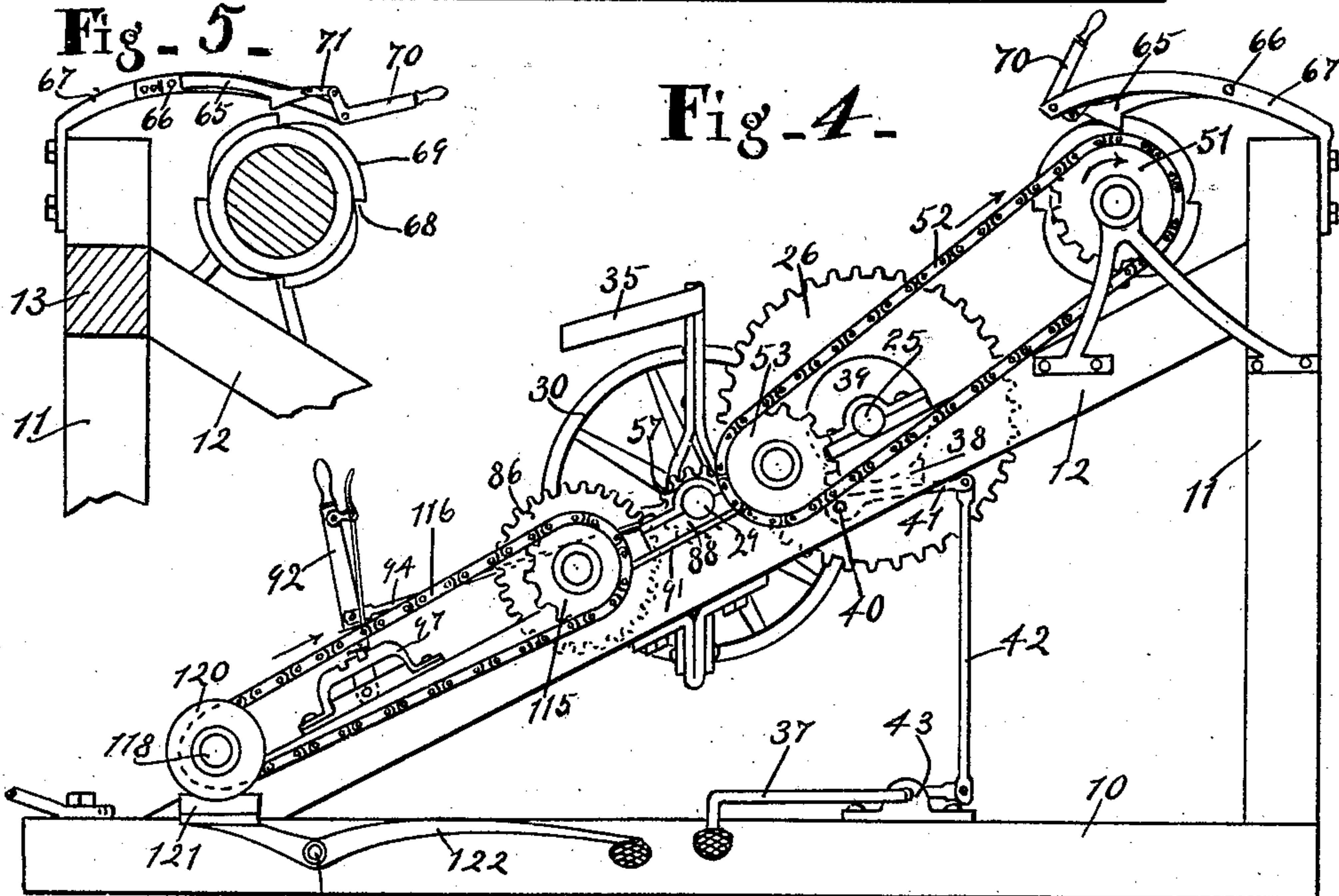


Fig - 4 -



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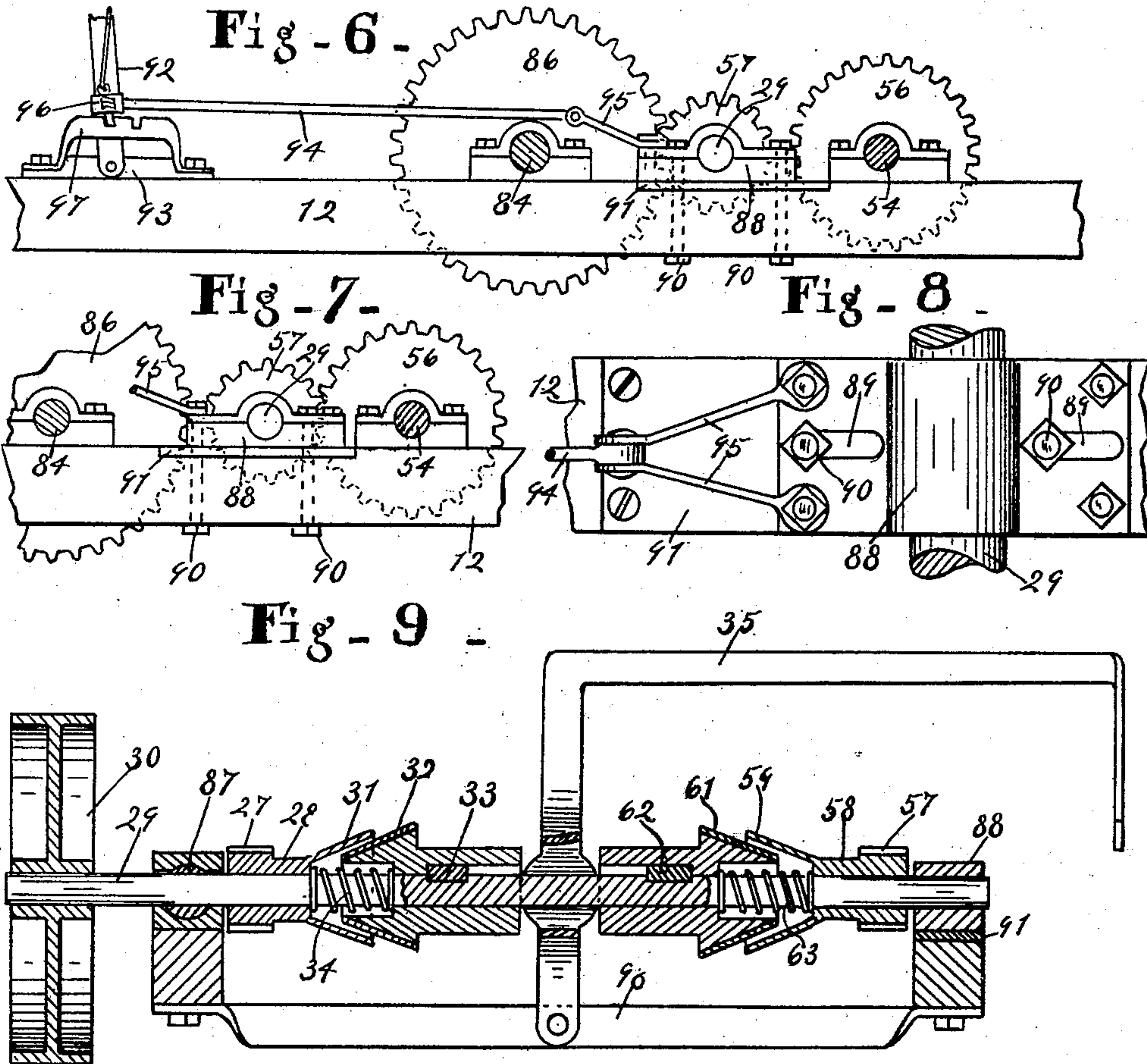
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3 SHEETS—SHEET 3.



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CONVEYING APPARATUS.

No. 865,777.

Specification of Letters Patent.

Patented Sept. 10, 1907.

Application filed December 20, 1906. Serial No. 348,760.

To all whom it may concern:

Be it known that we, ADRIAN HALL and JOHN M. HALL, of Greenfield, county of Hancock, and State of Indiana, have invented a certain new and useful Con-
veying Apparatus; and we do hereby declare that the
following is a full, clear, and exact description thereof,
reference being had to the accompanying drawings, in
which like letters refer to like parts.

This present invention relates to improvements on
the construction shown in our former Letters Patent,
No. 802,857, dated October 24, 1905, and No. 816,910,
dated April 3, 1906.

The features of the invention relate to the means for
throwing the various drums into and out of operation,
said means including a double clutch; also to means
for locking the drum for holding one of the carrier mov-
ing cables; also to a sliding bearing of the power shaft
and means for operating it.

The nature of this invention will be understood from
the accompanying drawings and the following descrip-
tion and claims.

In the drawings Figure 1 is a side elevation of the ap-
paratus with the lowered position of the load shown in
dotted lines. Fig. 2 is a front elevation of one of the
cable-carrying frames and braces therefor, parts being
in section. Fig. 3 is an elevation of the machine for
operating and controlling the cables, with the clutch-
throwing lever shown in different positions by dotted
lines. Fig. 4 is an elevation of the right-hand side of
the construction shown in Fig. 3. Fig. 5 is a section
on the line 7—7 of Fig. 3. Fig. 6 is a side elevation of
the inclined beam shown in Fig. 4 and parts of the
mechanism mounted thereon to illustrate the sliding
bearing of the power shaft, parts being broken away,
and also the small pinion being in engagement with the
lower or left-hand gear. Fig. 7 shows a portion of what
appears in Fig. 6 with the pinion in engagement with
the right-hand gear. Fig. 8 is a plan view of the slid-
ing bearing and associated parts, some parts being
broken away. Fig. 9 is a vertical section of the ma-
chine shown in Fig. 3 centrally through the power
shaft.

In detail the operating mechanism is mounted on a
frame having a base 10, rear uprights 11, inclined side
beams 12, and a rear crossbeam 13. A little above the
middle of the inclined beams 12 a drum 14 is mounted
in the bearings 15. A supporting cable 16 is secured
to and wound upon the drum 14 and extends there-
from over the frame 17, and is at its remote end se-
cured to the frame 18. These frames 17 and 18 are
A-shaped, being formed of two inclined side bars con-
nected near the upper end by a crossbar 19. The
frame 17 carries a loose pulley 20 on a rod 21 over which

the supporting cable 16 extends and moves. The
frame 18 is held in position against the pull of the cable
16 by a stay 22. The purpose of the drum 14 is to hold
and tighten the cable 16, for said cable carries a load
carrier 23 which is supported upon a pair of pulleys 24
that travel on the cable 16. The shaft 25 of the drum
14 at its left-hand end, as seen in Fig. 3, carries a gear
wheel 26 that meshes with a pinion 27 on a clutch-
sleeve 28 which is on the power shaft 29, which is
driven by the driving pulley 30 from some suitable
source of power, in the direction indicated by the ar-
row in Fig. 3. Said clutch sleeve 28 has a female clutch
member 31 that is engaged by a male clutch member 32
slidable on said shaft 29 and held from rotation by a
key 33, and held normally in its disengaged position
by the spring 34 between said clutch members and
moved into actuating engagement by elevating the
outer end of the clutch lever 35 to the upper dotted
line position shown in Fig. 3. By this mechanism the
drum 14 is actuated to draw the supporting cable 16 so
that it will be taut. When said cable 16 has become
taut, said lever 35 is drawn down so that the clutch
members 31 and 32 disengage each other and the shaft
29 ceases to actuate the drum 14. But before throw-
ing said mechanism out of gear, the pedal 37 is de-
pressed so as to move the brake shoe 38, shown only
in dotted lines in Fig. 4, and engaging the portion
of the drum 14, which is shown in Fig. 3, for locking
and holding said drum in position for maintaining
the cable 16 taut. The brake-shoe 38 is on the under-
side of the drum and is fulcrumed at 40 to the inner
surface on the right-hand inclined beam 12, and is ac-
tuated primarily by the lever 41 and connecting rod
42 that extends from said lever to the pedal 37. This
pedal is fulcrumed on a bearing 43 secured upon the
upper surface of the base beam 10 at the right-hand side
of the frame.

The carrier 23 is drawn along the supporting cable by
an actuating cable 45 which at one end is secured to
said carrier and passes over the guide pulley 46 in the
pulley block 47 that is suspended from the cross-bar
19 of the frame 17, as seen in Figs. 1 and 2, and this
extends to the upper drum 48. This drum 48 is on a
shaft 49 mounted in the bearings 50 secured upon the
inclined beams 12 near their upper ends. The shaft
49 at the right-hand end, as seen in Fig. 3, carries a
sprocket wheel 51 from which a sprocket chain 52 ex-
tends to the sprocket wheel 53 on the short shaft 54
mounted in the bearing 55 secured upon the upper sur-
face of the right-hand inclined beam 12. Said short
shaft 54 on its inner end carries a relatively small pulley
56 that meshes at times with a pinion 57 which is se-
cured on a sleeve 58 mounted loosely on the power

shaft 29 near its right-hand end. This sleeve 58 carries a female clutch member 59 which is adapted to be engaged by a slidable gear clutch member 61 that is held from rotation on said shaft by a key 62 and is normally held out of engagement with the female clutch member 59 by a spring 63. Said clutch member 61 is moved into clutching engagement by drawing down the outer end of the clutch lever 35 to the dotted line position shown in Fig. 3. And when this occurs, the drum 48 will be actuated so as to wind upon it the cable 45 and thus draw the carrier 23 towards the actuating mechanism of the apparatus.

The drum 48 is locked in position by a spring catch 65 which is pivoted pawl-like at 66 on an arm 67 that is secured to the upper end of the right-hand rear vertical beam 11. This catch is adapted to engage in notches 68 in the flange 69 in the right-hand end of the drum 48, as appears in Figs. 3, 4 and 5, and when so engaged, the drum 48 will resist any pull on the cable 45. Said catch 65 is released by the bellcrank handle 70 fulcrumed on said arm 67 with a link 71 pivotally connecting the end of the bell-crank 70 with the end of the catch 65, as seen in Fig. 5. When said catch is disengaged, the drum 48 will release the cable 45.

While the drum 48 and cable 45 will pull the load carrier 23 towards the actuating end of the apparatus, said load carrier is moved in the opposite direction by the cable 75 which runs from the lower drum 76 over the pulley 77, seen in Fig. 2, and over a pulley 78 mounted in a bracket 79 at the side of the carrier 23, and thence about the pulley 179 mounted in connection with the frame 18, and returning, said cable 75 passes over pulley 80 mounted in the lower right-hand corner of the carrier 23, as shown in Fig. 4, under the pulley 81 mounted in the hanger 82, and then is secured at 83 to the lower left-hand corner of the carrier 23, as appears in Fig. 1. The drum 76 on the shaft 84 is mounted in the bearings 85 secured upon the side bars 12 near their lower ends, and said shaft 84 near its right-hand end carries a gear 86 that meshes with the gear 57 on the sleeve 58 on the power shaft 29, and by this means said drum 76 is actuated.

Said drums 48 and 76 obviously need never to be operated simultaneously and, therefore, only one of them need be operated at a time, and frequently need to be alternately operated. They, however, are both operated from the power shaft 29 and the clutch sleeve 58 thereon and the gear 57. This is done by shifting the right-hand end of the shaft 29 so as to move said pinion 57 into engagement with either the gear 56 above or the gear 86 below, as desired. To permit this shifting movement of the right-hand end of the shaft 29, its left-hand end is mounted in the pulley bearing 87, seen in Fig. 9, and the right-hand end of said shaft is mounted in the sliding bearing 88, seen best in Figs. 6, 7 and 8. This bearing consists of a pair of plates of the usual sort with both ends longitudinally slotted at 89, and bolts 90 extending through said slots and through the beam 12. Said bearing is mounted on a bed plate 91 embedded in the upper surface of said beam, as shown in Fig. 7. Said bearing 88 is moved by a hand lever 92 fulcrumed at its lower end in a block 93 secured on the upper surface of the beam 12 towards its lower end, and said hand-lever is connected by a rod 94 to arms 95 that are rigidly

secured to said sliding bearing 88. By this means said bearing is moved so as to bring the pinion 57 into engagement with either gear 56 or 86, as desired, and it is held in such position by the hand-controlled pawl mechanism 96 on the lever 92, said pawl engaging notches in the bar 97, as seen in Fig. 6.

It is observed that a single clutch lever 35 operates both clutches shown in Fig. 9, it being pivoted at its lower end to the crossbar 98, and it loosely surrounds the shaft 29, at which point it is widened so as to engage the adjacent ends of both of the male clutch members 32 and 61. Therefore, when it is moved upward, it will actuate the left-hand clutch, and when drawn downward, it will actuate the right-hand clutch, and when in an intermediate position, as shown by full lines in Figs. 3 and 9, it will maintain both clutches in a disengaging position.

From the foregoing it is seen that we have a comparatively simple and economical device for conveying goods, merchandise, or other articles, from boats or other conveyances or from one place to another, and depositing them upon any desired place. While the drum 48 is held locked so as to hold the carrier 23 in position, the depositing of the load is accomplished by manipulating the drum 76. In order to stop the load or hold it at a desired point, it is necessary that an effective brake mechanism be provided. To this end we provide a sprocket wheel 115 on the extreme end of the shaft 84 of the drum 76 with a chain 116 running therefrom to a sprocket 117 on a shaft 118 mounted on a bearing 119 on the upper surface of the side bars 12 at their lower ends. A friction wheel 120 is rigidly secured on said shaft 118 so as to be engaged by the brake-shoe 121 on the short end of the pedal 122 that is fulcrumed at 123 to the side of one of the base beams 10, as shown in Fig. 6. The operator, therefore, stands at the right-hand side of the machine, shown in Fig. 3, and in a position to operate the clutch lever 35, the lever 92 for shifting the power shaft and two pedals 37 and 122. This enables one man to operate the machine.

What we claim as our invention and desire to secure by Letters Patent is:

1. In a conveying apparatus, a pair of parallel drums for operating the cables, gears for driving said drums, a driving shaft mounted intermediate the gears for driving said drums, a gear loosely mounted on said shaft adapted to engage the gear for driving either drum, a sliding bearing for said driving shaft, means for moving said sliding bearing so as to move the gear on the driving shaft into engagement with the gear for driving the desired drum, and a friction clutch on said shaft for starting and stopping said gear thereon, substantially as set forth.

2. In a conveying apparatus, drums for actuating and holding cables, gears for driving said drums, a driving shaft located intermediate said drums, a gear loosely mounted on each end of said shaft for actuating the drum-driven gears, a spring-withheld friction clutch slidably mounted on each end of said shaft for throwing said gears into and out of operation, and a hand lever fulcrumed away from said shaft and fitting loosely astride the shaft between the clutches and in engagement with them for sliding them and controlling the movements of both clutches and causing the simultaneous engagement of one and disengagement of the other, substantially as set forth.

3. In a conveying apparatus, three parallel drums for actuating and holding cables, gears for driving said drums, two of said gears being located opposite each other and at one side of the machine while the gear for the other drums is located at the other side of the machine, a driving shaft

5 mounted between the upper or oppositely located gears, a gear loosely mounted on said driving shaft adapted to engage either of said oppositely located gears, a gear loosely mounted on the other end of said driving shaft for engaging the gear that drives the third drum, spring-withheld friction clutches slidably mounted on said shaft for throwing said gears into and out of operation, and means for causing simultaneously the engagement of one clutch and the disengagement of the other, substantially as set forth.

In witness whereof, we have hereunto affixed our signature in the presence of the witnesses herein named. 10

ADRIAN HALL.
JOHN M. HALL.

Witnesses:

N. ALLEMONG,
H. B. McCORD.