

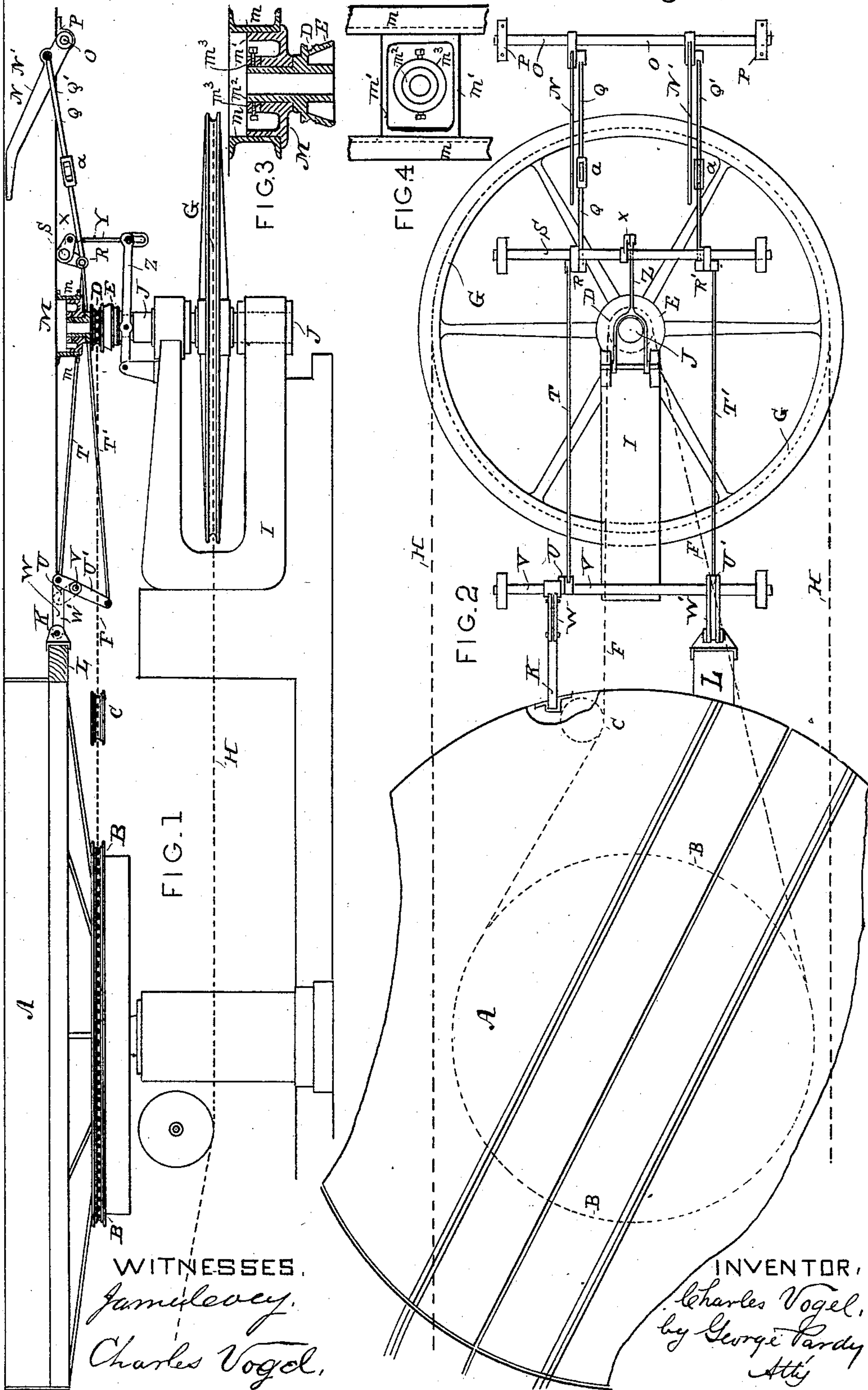
(No Model.)

C. VOGEL.

TURN TABLE FOR CABLE RAILWAYS.

No. 387,608.

Patented Aug. 7, 1888.



UNITED STATES PATENT OFFICE.

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TURN-TABLE FOR CABLE RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 387,608, dated August 7, 1888.

Application filed February 13, 1888. Serial No. 263,897. (No model.)

To all whom it may concern:

Be it known that I, CHARLES VOGEL, of the city and county of San Francisco, State of California, have invented a new and Improved Turn-Table for Cable Railways, of which the following is a specification.

The invention relates to those turn-tables which are operated to turn the cars around by means of a chain belt connecting between a large chain-sheave attached underneath the table and a smaller one upon the vertical spindle of the tail-sheave pulley, around which the cable passes at the termini of the line.

The invention also relates to an improved arrangement of the locking and brake devices operating to control the table in its movement.

The invention consists in certain improvements in the manner of hanging the friction-clutch forming a part of the mechanism of the table, which is thrown into and out of engagement in the act of moving and stopping the table.

It consists, also, in a novel and improved arrangement of the braking, locking, and clutch levers and connections by which they are more conveniently and effectively handled, and the roadway is left entirely clear of obstruction from their presence when not being actually in operation.

In the accompanying drawings, forming a part of this specification, Figure 1 is a longitudinal elevation, partly in section, and Fig. 2 is a plan, of the turn-table and its parts. Figs. 3 and 4 are respectively a sectional elevation and plan, upon a larger scale than previous figures, of the friction-clutch hanger.

In the several figures the same letters of reference are used to indicate the same parts.

To make the invention the more clearly understood, it may be stated that heretofore the turn-tables having the friction-clutch upon the upper end of the vertical shaft of the tail-sheave, acting in connection with the device for turning the table, have acted defectively, by reason of the upper female half of the clutch, which always rested directly upon a shoulder or collar upon the shaft, getting clogged and binding by reason of the accumulation of dust and dirt at the bearing, and because, as the shoulder supporting it soon wore away, the clutch was permitted to drop down until

it became prematurely engaged, all to the effect of causing the table to have a tendency to move, being held from so doing only by the locking device, which device, being in consequence held bound in its socket by the pressure of the table straining against it, was hard to open; and for other reasons the arrangement of the clutch has been found to be unsatisfactory. Again, in the arrangement and operation of these tables the locking, braking, and clutch-shipping devices have generally involved the use of a set of levers, awkwardly obstructing the roadway, so that where they were used there was a virtual confiscation of a portion of the street for the uses of the railway, to the exclusion of ordinary traffic. These and other defects are designed to be overcome by the present invention.

In the drawings, A is the turn-table, which it is not necessary to show in elaborate detail, for seldom are two made alike. It will be sufficient to indicate it in outline. Attached underneath it is the chain-sheave B.

C is the adjustable tightening-pulley.

D is the chain-sheave, cast on the upper half of the friction-clutch E. The dotted line F denotes the chain belt passing around sheaves B and D.

G is the tail-sheave, around which the cable (shown by dotted line H) passes just beyond the turn-table at the termini.

I is the yoke, which carries the spindle J of the tail-sheave.

K is the latch or lock, which locks the table in position when not being moved.

L is the brake-block, which serves to stop the revolving of the table when the car has been turned around.

None of the above parts have in any essential particular been changed in structure.

M is what may be called the "friction-clutch hanger," constituted of the following parts:

m m are short channel-iron beams fastened to the roof of the tail-sheave pit.

m' is an iron frame nearly square on the outside, but having a round hub in the center bored to fit the sleeve *m*², cast solid with the upper half of the clutch. The frame *m'* is in any suitable way fastened to and between the channel-beams. The upper part of the clutch forming the sleeve *m*² fits upon the spindle of

the tail-sheave, as heretofore; but it is not supported vertically by it, though it is guided in a central position by being closely fitted upon it. The sleeve part is passed through the hub of the frame m' until the shoulder at the bottom strikes the under part of the hub of the frame. Then a separate collar, m^3 , is fitted on the upper end of the sleeve, which projects through the hub, which collar is made fast by tap-screws in ordinary fashion. This arrangement causes the upper half of the clutch to be held suspended at a fixed height without having a tendency to revolve, excepting when the lower male part of the clutch is forced upward to engage with it.

If preferred, the interior of both the hub of the frame and the sleeve of the clutch may have a lining of anti-friction metal.

The levers operating this clutch also operate the latch or lock in such a manner that when the latch is fully open the clutch is brought into engagement, and when the clutch is released from engagement the latch then commences to enter its socket to lock the table in place. At no time can the latch and the clutch be simultaneously in engagement. To effect this there is a hand-lever, N, fulcrumed on the shaft O, suitably supported in bearings P, fastened to the roof of the pit. From this lever there is a rod, Q, connecting with a short lever, R, made fast upon the shaft S. From this same lever R the rod T extends to connect with the short lever U, loose upon the shaft V, while the links W, connecting with the lever U, continue to connect with the latch K. From another lever, X, on the shaft S a rod, Y, depends. This rod connects with the end of the clutch-lever Z; but it has a slotted connection therewith, as shown in Fig. 1, so that it will not pull the clutch-lever up until the bottom of the slot strikes the pin on the end of the lever. The hand-lever is arranged in connection with the other levers, so that when the table is not being operated the hand-lever will be depressed entirely below the street-surface, as is shown in Fig. 1, there being a slotted way in the road-bed to receive it. The brake-levers are somewhat similar in their arrangement to the latch and clutch levers, excepting that they are entirely independent in action.

There is a hand-lever, N', fulcrumed on the shaft O, loosely turning upon it. From this lever a rod, Q', connects with a short lever, R', loosely turning on the shaft S. From this same lever R' the rod T' extends, to connect with the lower end of the short lever U', swinging loosely on the shaft V. The upper end of said lever attaches to the brake-links W', which extend forward to connect with the brake-block, (see Fig. 1,) which brake-block bears against the periphery of the table some distance below the surface, as shown.

In Fig. 1 of the drawings a portion of the latch mechanism is hidden from view by similar mechanism of the brake, (shown in front,)

the lines indicating the links W and W', rods Q and Q', levers N and N', and small levers R and R' being coincident, while the latch K in this view occupies the same position as the brake-block.

The interposition of the short lever R' on the shaft S is not absolutely necessary, for manifestly it would be as effective to connect with a single rod from the lever N' to the lever U'; but as there are in most instances obstructions in the way of a direct connection it is deemed better to show an indirect one in the present instance.

The long connecting-rods may have turn-buckles in their middles, if preferred, so as to shorten or lengthen them as they may need it. The brake-lever especially should have some sort of a compensating device to take up the wear of the brake-block. A turn-buckle, a , is shown for this purpose.

I am aware that turn-tables have been used involving much of the mechanism herein shown and described. My invention is therefore limited to the arrangement of the clutch and the operating-levers, as below specifically set forth.

What I claim as my invention, and desire to secure by Letters Patent, is as follows:

1. In a turn-table for cable railways operated by a chain-band connection between two sheaves placed one upon the tail-sheave spindle and the other underneath and secured to the turn-table, the herein-described means of throwing the parts into and out of action, consisting, essentially, of a male half of a friction-clutch moving vertically upon and revolving with the tail-sheave spindle, a female half of a friction-clutch having the driving-chain sheave solidly connected therewith, a hanging frame fastened to the roof of the tail-sheave pit and adapted to hold suspended the upper female half of the clutch directly over the lower male half and permit the same to freely revolve when in engagement, and suitable mechanism for elevating and depressing the lower male half of the clutch to bring it into engagement with the upper half, substantially as and for the purpose described.

2. In a turn-table for cable railways, the combination of a hand-lever vibrating on a suitable fulcrum-shaft, a suitable lock or latch applied to the table to hold it from moving, a suitable clutch and its parts to connect and disconnect the table from its moving mechanism, and a suitable set of rods and levers connecting between said hand-lever and the locking and clutching device and adapted to first open the lock to free the table and subsequently to throw the clutch into action by the raising of the hand-lever, the whole arranged and operating in the manner and for the purpose substantially as herein described.

CHARLES VOGEL.

Witnesses:

GEO. PARDY,
JAMES COEY.