

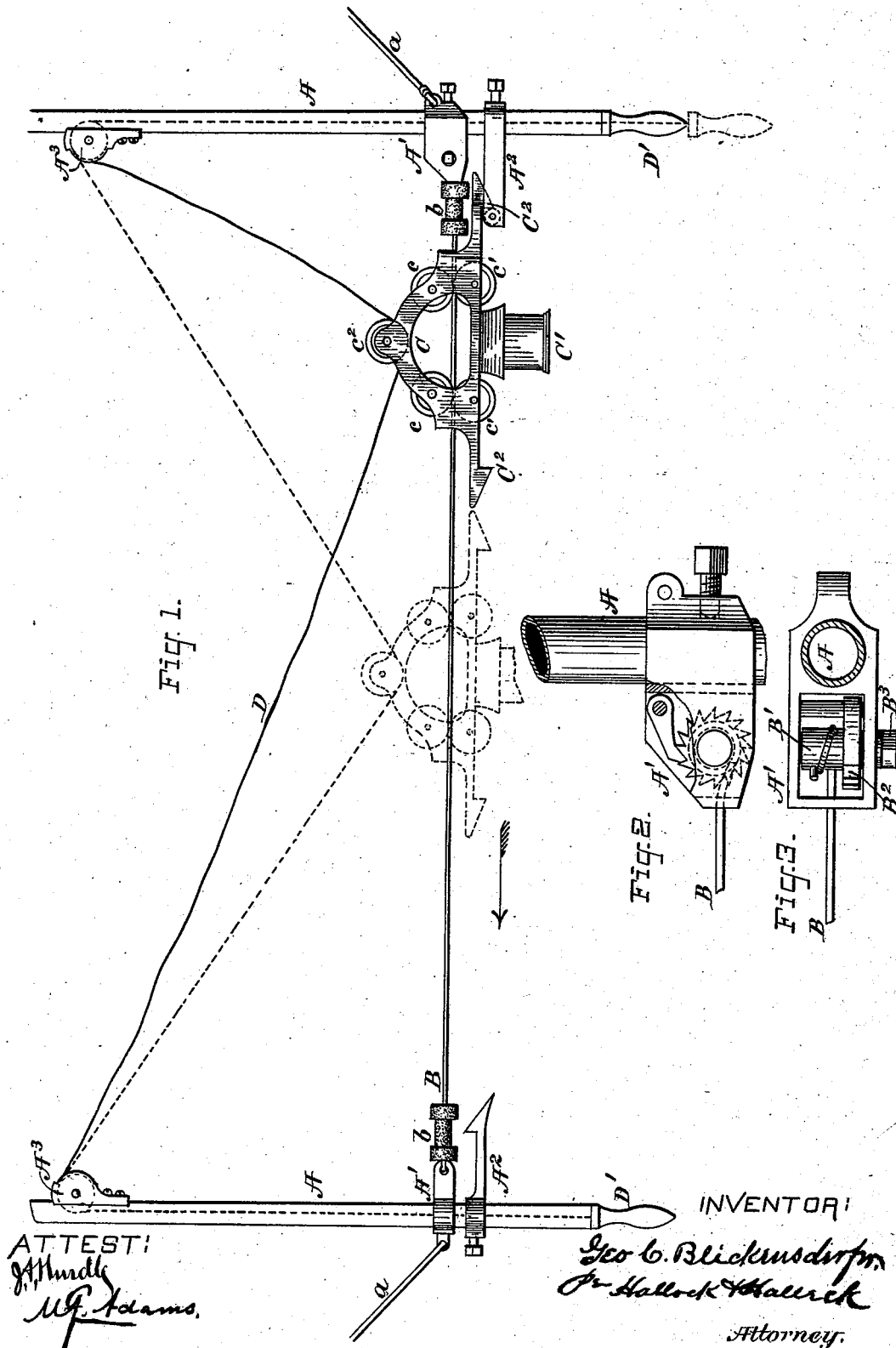
(Model.)

3 Sheets—Sheet 1.

G. C. BLICKENSDERFER.
CONVEYER APPARATUS.

No. 381,322.

Patented Apr. 17, 1888.



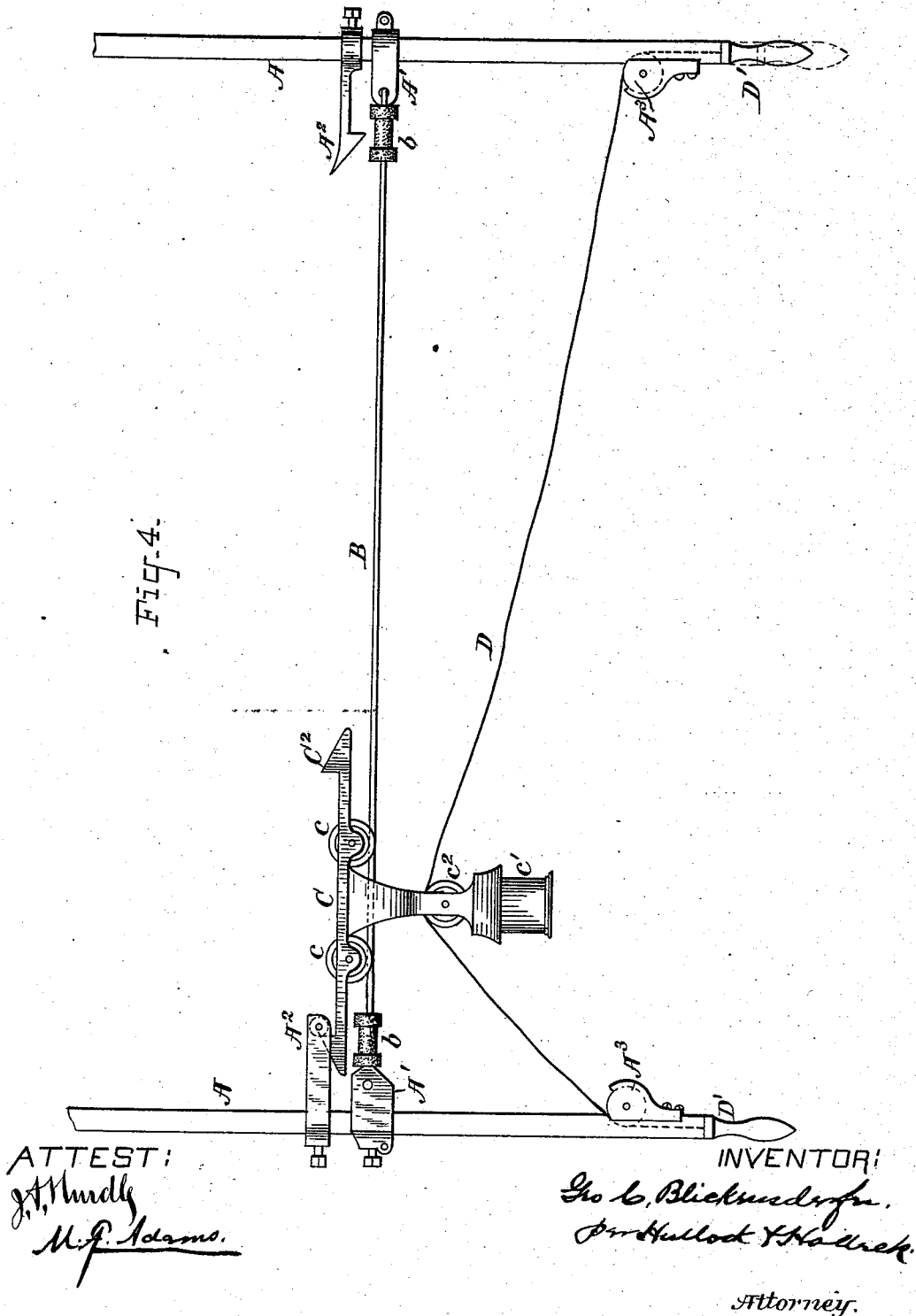
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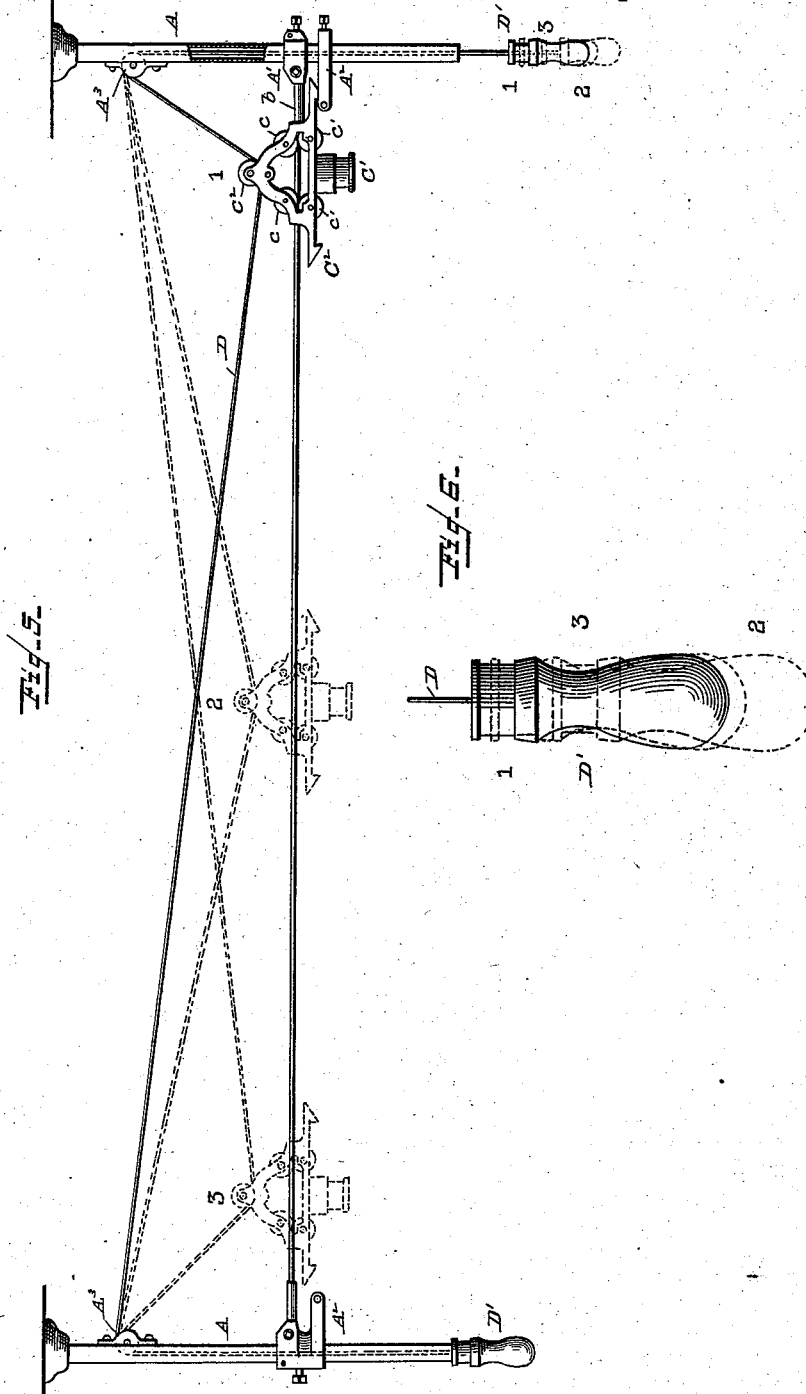
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UNITED STATES PATENT OFFICE.

GEORGE C. BLICKENS DERFER, OF STAMFORD, CONNECTICUT.

CONVEYER APPARATUS.

SPECIFICATION forming part of Letters Patent No. 381,322, dated April 17, 1888.

Application filed December 15, 1887. Serial No. 257,963. (Model.)

To all whom it may concern:

Be it known that I, GEORGE C. BLICKENS DERFER, a citizen of the United States, residing at Stamford, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Conveyer Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to that class of conveyer apparatus in which there are a suspended track or way, a car or trolley running on said way, and means for sustaining the article to be carried on said trolley; and it consists in certain improvements in the construction thereof, as will hereinafter be fully described, and pointed out in the claims. Conveyer apparatus of this class has heretofore been made wherein the car or trolley is propelled by drawing on a propelling cord or wire which lies substantially parallel with the track. For example, see Patents Nos. 338,704 and 342,557.

The present invention relates particularly to this type of conveyer, and consists, chiefly, in improvements in the arrangement or adjustment of the propelling wire or cord.

The invention is illustrated in the accompanying drawings as follows:

Figure 1 is a side elevation of my improved conveyer apparatus. Figs. 2 and 3 show details of construction and will be explained farther on; Fig. 4, a side elevation showing a modification; Fig. 5, a side elevation similar to that shown in Fig. 1, the car and propelling-wire being shown in three different positions; Fig. 6, an enlarged detail showing the three positions of the handle.

A A are the track-hangers, which are preferably made of pipe secured at the top to the ceiling and stayed by stays *a a*. They are of sufficient length to bring the track to the proper height.

B is the track, which extends from hanger to hanger, and is connected therewith by clips A' A', in one or both of which there may be a tightening-drum and ratchet, B' B', as illustrated in Figs. 2 and 3. This track is held taut and fixed at each end; but by reason of its elasticity it may be deflected slightly by

pulling upon it laterally. At each end of the track I place a buffer, *b*, for obvious reasons.

Immediately above or below the clips A', I place other clips, A², bearing catches. These clips, however, may be solid—that is, in one piece—with the clips A', if desired. The essential feature is that the catches be in proper position to engage with catches C², which are on the car.

C is the frame of the car or trolley, and C' is a receptacle secured to said frame. The frame C embraces the track B, and it is provided with sheaves *c c* above the track and sheaves *c' c'* below the track. On the top of the frame C there is a fifth sheave, *c*², for the slack propelling cord or wire.

On the track-hangers A, or at some other convenient point, I put sheaves A³ A³, over which the slack propelling cord or wire D passes. The propelling cord or wire, after passing over the sheaves A³, comes down inside the hollow hanger A and terminates in handles D', which should be within convenient reach of the attendants, and of such size that when the cord is drawn upon from one end the handle at the other end will hold the cord from being drawn up into the pipes. However adjusted, the cord should be so arranged that when pulled on at either end the other end will be held fast against such pull.

In Fig. 4 the construction is varied by placing the propelling-wire D below the track and changing the form of the trolley-frame accordingly. In this construction there are no sheaves *c' c'*, as the car is not lifted by the action of the propelling-cord, as in the construction shown in Fig. 1.

As shown in the drawings, the wire or cord D is provided with means whereby it can be drawn taut at either end; but this is not essential necessarily, for as by drawing upon it from one end alone the car can be made to move in either direction, it may be always operated from one end only.

In Fig. 1 dotted lines show the wire or cord D drawn taut, and it there appears that when so drawn the car, if free to move, will be thrown to the middle of the track. It makes no difference from which end the wire or cord D is drawn taut, the effect upon the car will be the same—namely, to draw it to the middle point

between the two ends of the cord or wire D, or, in other words, to a point, where the action of the cord D upon the car is the same from each side—that is to say, it is acting directly vertical.

By noting the position of parts in full lines in Fig. 1 it will be seen that by drawing on either handle D' D' continuously the car, when freed from the catch, will be drawn into the position shown by dotted lines, and that when it reaches that point it will stop, as the force exerted by the cord D is alike on each side and is acting directly vertical on the car. Now, then, if the attendant pulls sharply on the cord D when the car is at either end of the track, and then lets go and allows the cord to slacken before the point is reached where the pull is directly vertical on the car, the car will receive sufficient momentum to carry it from end to end of the track. In this manner a person standing at one end of the track, by giving the cord D a sharp pull, may send the car from him to the other end of the track, and then by giving it another pull he may bring the car back to him from the other end.

It will be observed that it makes no difference whether the points A³ A³ be equally distant from the track B, for if one were higher than the other the only effect would be that the point where the vertical pull on the car occurs would not be in the center of the track, but nearer the point A³ which is nearest the track; and it will be noticed that the farther the points A³ are from the track B the greater the force with which the car can be propelled easily, and also that both points A³ should be at a distance from the track greater than the pulley C².

The catches A² and C², as the car reaches the end of track, engage automatically, and they are disengaged by the action of the cord or wire D. The catches A² and C² are both rigid—that is to say, neither of them springs, as is common in such catches. All the springing is derived from the track B. The said track, being taut, has considerable elasticity and can be sprung up, and it does spring up sufficiently to allow the catches to engage and disengage. It will be seen by observing the car in Fig. 1 that when the cord D is drawn upon the car is lifted, and that the wire B will yield upwardly and the catches will be disengaged, and by observing Fig. 4 it will be seen that as the cord D is pulled the car is drawn down upon, and as the wire B will yield the catches will disengage.

When my device is used in stores for conveying cash or parcels, the salesman at one end of the line will draw on the cord D to send the car to the cashier's desk, and the attendant there will draw on it to send the car back to the salesman; but if the cord should be so arranged as to be drawn on from one end only, then the salesman (if it is at his end that the cord is to be drawn on) will send the car to the cashier's desk, and when he receives a

signal that the car is ready to return he will again draw the cord and bring the car back to him.

I am aware that a conveyer apparatus has been used having two taut-wire tracks passing between sheaves on the trolley, which tracks are made separable at each end, so that as they are separated they will propel the car from the point where they are separated. This device is different from mine, in that the track in my device is fixed and the propelling-cord is separable from it at each end. (See, for example, Patent No. 357,449.) I am also aware that in Fig. 8 of said patent there are shown two taut-wire tracks one of which is separable from the other, and this also is different from my device.

What I claim as new is—

1. In a conveyer apparatus, the combination of a fixed track extending between terminal stations, a car on said track, a slack propeller cord or wire extending between said stations adapted to be moved bodily and to engage said car, and supports fixed at a distance from the track to hold the propeller-cord in a position to propel the car.

2. In a conveyer apparatus, the combination of a fixed track extending between terminal stations, a car on said track which has running-wheels embracing said track and a special propelling-sheave, a slack propeller cord or wire extending between said stations adapted to be moved bodily longitudinally and to engage with said special propelling-sheave on said car, and fixed supports at a distance from the track at both said terminal stations to hold the propeller-cord in position to act propulsively on said car when drawn upon from either end.

3. In a conveyer apparatus, the combination of a fixed track extending between terminal stations, a car on said track, a slack propelling cord or wire extending between said stations out of contact with the track and adapted to engage the car, and fixed supports for said propeller-cord at a distance from said track, all substantially as described.

4. In a conveyer apparatus, the combination of terminal stations, a track connecting said stations, a car running on said track having a special propeller-sheave on said car, sheaves fixed at said stations always at a greater distance from said track than the propeller-sheave on said car, and a slack propeller cord or wire having limited longitudinal bodily movement, which passes about the sheaves at the stations and the propeller-sheave on the car.

5. In a conveyer apparatus, the combination of a track extending between terminal stations, a car on said track having a propeller-sheave, a slack propeller cord or wire extending between the stations, having limited longitudinal bodily movement, and provided with handles or pulls whereby it can be drawn taut from either end, and supports fixed at a

distance from the track, said propeller-cord being adapted to engage the sheave on the car, all substantially as described.

5 6. In a conveyer apparatus, the combination of a track extending between terminal stations, a car on said track having a propeller-sheave, a slack propeller cord or wire extending from station to station adapted to have a longitudinal movement bodily, and supports
10 fixed at a distance from the track, the propeller-cord being adapted to engage the sheave on the car to propel the car either way from each station, substantially as described.

7. In a conveyer apparatus, the combination

of a fixed flexible track, an inflexible catch 15 fixed at each end of said track, a car running on said track having inflexible catches, and a propelling cord or wire acting upon said car, which when drawn upon will lift the car and deflect the track, and thereby disengage said 20 catches.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE C. BLICKENS DERFER.

Witnesses:

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M. F. ADAMS.