No. 773,901. PATENTED NOV. 1, 1904.

L. STREULI.

TRANSPORT APPARATUS.

APPLICATION FILED JAN. 19, 1904.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1

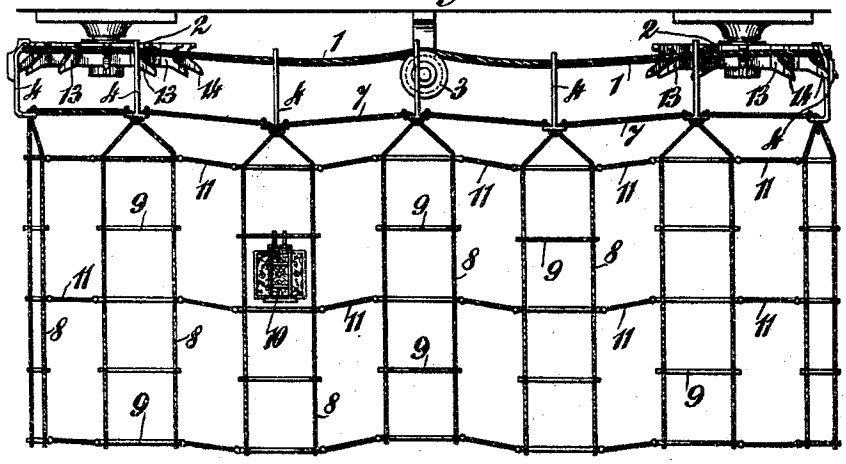
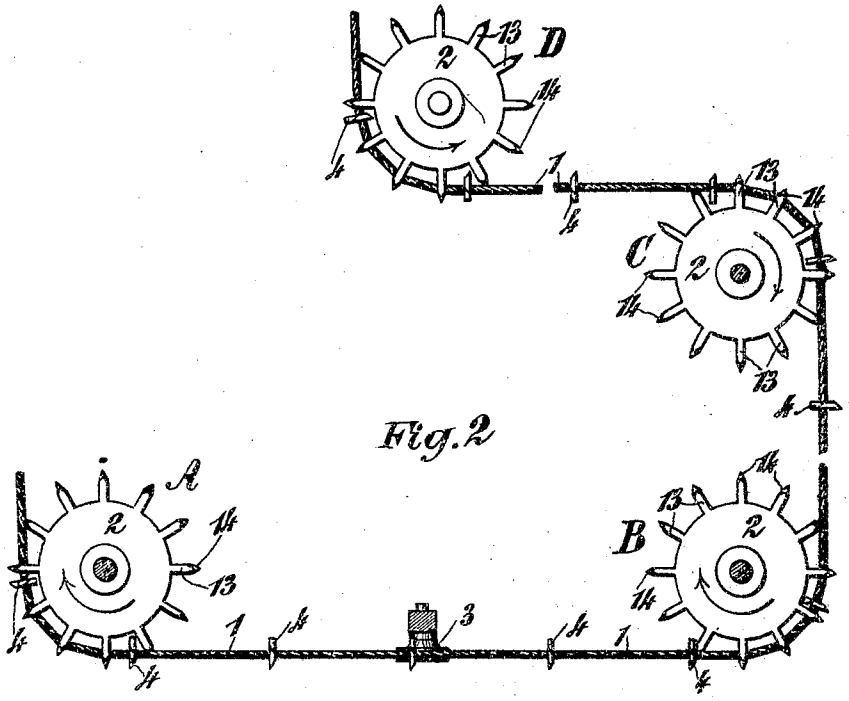


Fig. 2



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NO MODEL. 2 SHEETS—SHEET 2.

Fig. 4

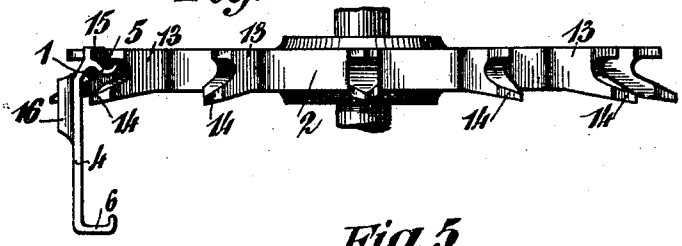


Fig. 3

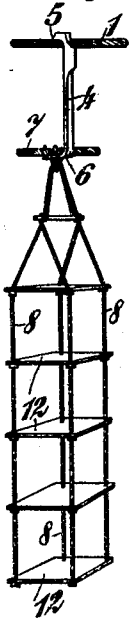


Fig. 5.

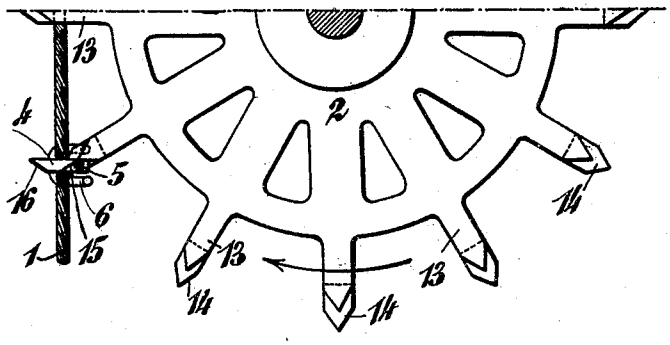


Fig. 6

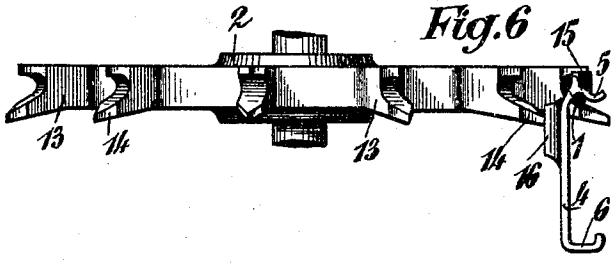
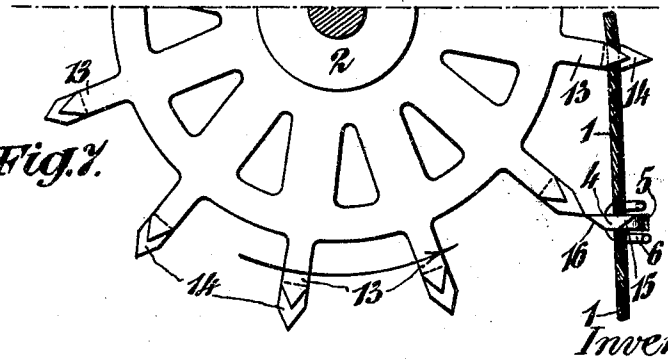


Fig. 7.



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No. 773,901. Patented November 1, 1904.

UNITED STATES PATENT OFFICE.

LOUIS STREULI, OF ZURICH, SWITZERLAND.

TRANSPORT APPARATUS.

SPECIFICATION forming part of Letters Patent No. 773,901, dated November 1, 1904.

Application filed January 19, 1904. Serial No. 189,728. (No model.)

To all whom it may concern:

Be it known that I, LOUIS STREULI, a citizen of the Republic of Switzerland, residing at Zurich, Switzerland, have invented new and useful Improvements in or Relating to Transport Apparatus, of which the following is a specification.

This invention relates to transport apparatus consisting of carriers supported on an endless traveling cable by means of suspension arms or brackets. In the transporter according to this invention the cable is guided by spur-wheels, and from it are suspended at intervals brackets hanging loosely, their upper ends engaging with the cable, while their lower ends are connected together by a cord or the like. Goods-carriers are attached to the lower ends of each of the suspension-brackets in a flexible or movable manner, thus enabling the brackets to yield on striking the projection of a spur-wheel and by reason of the weight of the carriers at once resume their vertical position.

A transporter according to this invention is illustrated, by way of example, in the accompanying drawings, in which—

Figures 1 and 2 are an elevation and a plan, respectively, showing part of a transport system. Fig. 3 shows a modified construction of the carrier. Figs. 4, 5, 6, and 7 are detail views of the transport mechanism, on a larger scale.

An endless cable 1, which may be of any desired length, passes round rotatable horizontal spur-wheels 2, arranged at each point where change of direction of the cable is required. At certain distances between these spur-wheels 2 are arranged vertical guide-pulleys 3, supporting the cable 1. One or more of the spur-wheels is utilized as a driving-wheel and is rotated for this purpose by any suitable means.

Brackets 4 hang on the cable 1 at a fixed distance from one another by means of their hook-shaped upper ends 5, while their lower ends 6, which are bent upward and bifurcated, engage a connecting-cord 7. Carriers are suspended from the cord from between the forked branches of the lower ends of the brackets by means of ropes 8 or the like, these ropes, which are parallel for the rest of their length and which, together with the cross-bars 9, secured to them at any desired level, form goods-carriers. The lower ends of the brackets bearing the carriers are all connected together by the portions of the cord 7 situated between the brackets. The goods-carriers may be also connected by links 11, said links being constituted, say, by connecting rods, wires, ropes, or the like. In this way an endless transport device is formed in which the articles to be transported can be arranged at various levels. In Fig. 1, for instance, a frame 10, carrying a cement plate, hanging from one of the cross-bars 9 of one carrier, is illustrated.

The spur-wheels 2 are provided with radial "teeth" or projections 13, having bifurcated ends in which the cable 1 is guided and by which it is partially supported, the lower fork branch 14 of each arm being directed downward for the purpose of insuring the cable, which is traveling upward owing to the sag, being engaged. The fork ends of the projections 13 are both wedge-shaped, and the brackets 4 are provided on their upper hooked ends 5 and at the back with wedge-shaped projections 15 and 16, respectively, which prevent jamming when the brackets come against the forked ends. As shown in Figs. 4 and 5, the projection 15 becomes operative when the cable forms at a change of direction a salient angle—as, for instance, at A, B, and C, Fig. 2. The projection 16 will become operative, Figs. 6 and 7, when during the change of direction the structure would form a reëntrant angle, (shown at D in Fig. 2,) the back of the bracket then facing the spur-wheel.

When a bracket comes against a projection of a spur-wheel, being loose on the cable 1, its upper end will be able to yield in one or the other direction in order to allow the passage of the projection of the spur-wheel. It will then assume an oblique position, but will return to its original vertical position immediately afterward, actuated by the weight of the carrier which is suspended from its lower end.

The goods to be transported are placed in the carriers of the transporter, which move forward in a line and are transported to their destination, where they are removed. As the

carriers may be made of any desired length, it is possible to use them simultaneously for two floors situated one above the other, the upper parts of the carriers being loaded from the upper and the lower parts from the lower floor.

The carriers may be constructed in several ways, one of which is shown in Fig. 3, the cross-bars 9 being replaced by superposed plates or boards 12, carried by four ropes 8 or the like.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. A cable carrier system comprising a traveling cable and interconnected and spaced hangers loosely hooked to said cable, for the purpose set forth.

2. A cable carrier system, comprising a traveling cable, hangers loosely hooked thereto and having a lateral bifurcated foot and an endless rope passing over the foot of the hangers, for the purpose set forth.

3. A cable carrier system comprising a traveling carrier-cable, hangers suspended therefrom, carriers suspended from the hangers, said carriers provided at different levels with means for the reception of material to be transported from one point to another and from and to correspondingly-different levels, for the purpose set forth.

4. A cable carrier system comprising a traveling carrier-cable, interconnected hangers suspended therefrom, interconnected carriers suspended from said hangers, said carriers provided at different levels with means for the reception of material to be transported from one point to another and from and to correspondingly-different levels, for the purpose set forth.

5. A cable carrier system comprising a traveling carrier-cable, hangers suspended therefrom, flexible connections connecting the hangers in series, carriers suspended from said hangers, said carriers provided at different levels with means for the reception of material to be transported from one point to another and from and to correspondingly-different levels, for the purpose set forth.

6. A cable carrier system comprising a traveling carrier-cable, hangers suspended therefrom, flexible connections connecting the hangers in series, carriers suspended from said hangers, flexible connections connecting the carriers in series, said carriers provided at different levels with means for the reception of material to be transported from one point to another and from and to correspondingly-different levels, for the purpose set forth.

7. A cable carrier system comprising a traveling carrier-cable, hangers suspended therefrom and having an upwardly-bent bifurcated foot, an endless rope running over the foot of all the hangers, carriers suspended from said rope between the branches of the fork of the hanger-feet, said carriers provided at different levels with means for the reception of material to be transported from one point to another and from and to correspondingly-different levels, substantially as set forth.

8. A cable carrier system comprising a traveling carrier-cable, hangers suspended therefrom and having an upwardly-bent bifurcated foot, an endless rope running over the foot of all the hangers, carriers suspended from said rope between the branches of the fork of the hanger-feet, flexible connections connecting the carriers in series at different levels, said carriers provided at different levels with means for the reception of material to be transported from one point to another and from and to correspondingly-different levels, as set forth.

9. The combination with a traveling cable, hangers suspended therefrom and provided with the wedge-shaped projections 15 and 16; of a spur-wheel having bifurcated wedge-shaped teeth for the reception of the cable, the branches of said teeth of different length, the longer branches inclining downwardly beyond the rope, said shorter and longer branches of the fork of said teeth in the path of the aforesaid wedge-shaped projections 15 and 16, respectively, of the hangers, for the purposes set forth.

10. A cable carrier system, comprising a traveling carrier-cable, hangers suspended therefrom and having an upwardly-bent bifurcated foot, an endless rope running over the foot of all the hangers and carriers suspended from said rope between the branches of the fork of the hanger-feet, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

LOUIS STREULI.

Witnesses:
A. LIEBERKNECHT,
MORITZ VEITH.