

No. 686,330.

Patented Nov. 12, 1901.

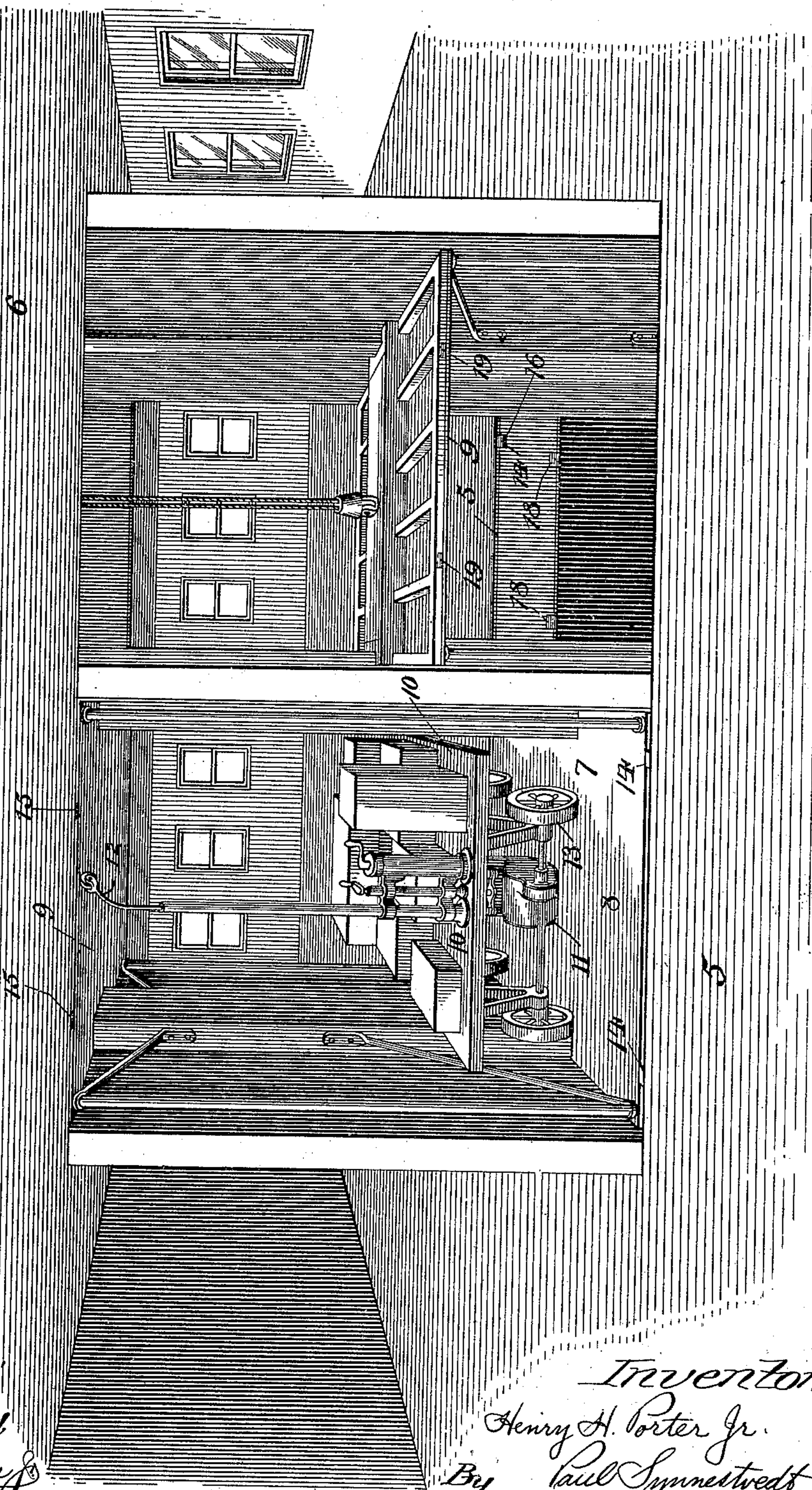
H. H. PORTER, JR.  
ELECTRIC TRANSFER APPARATUS.

(Application filed Apr. 1, 1901.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.



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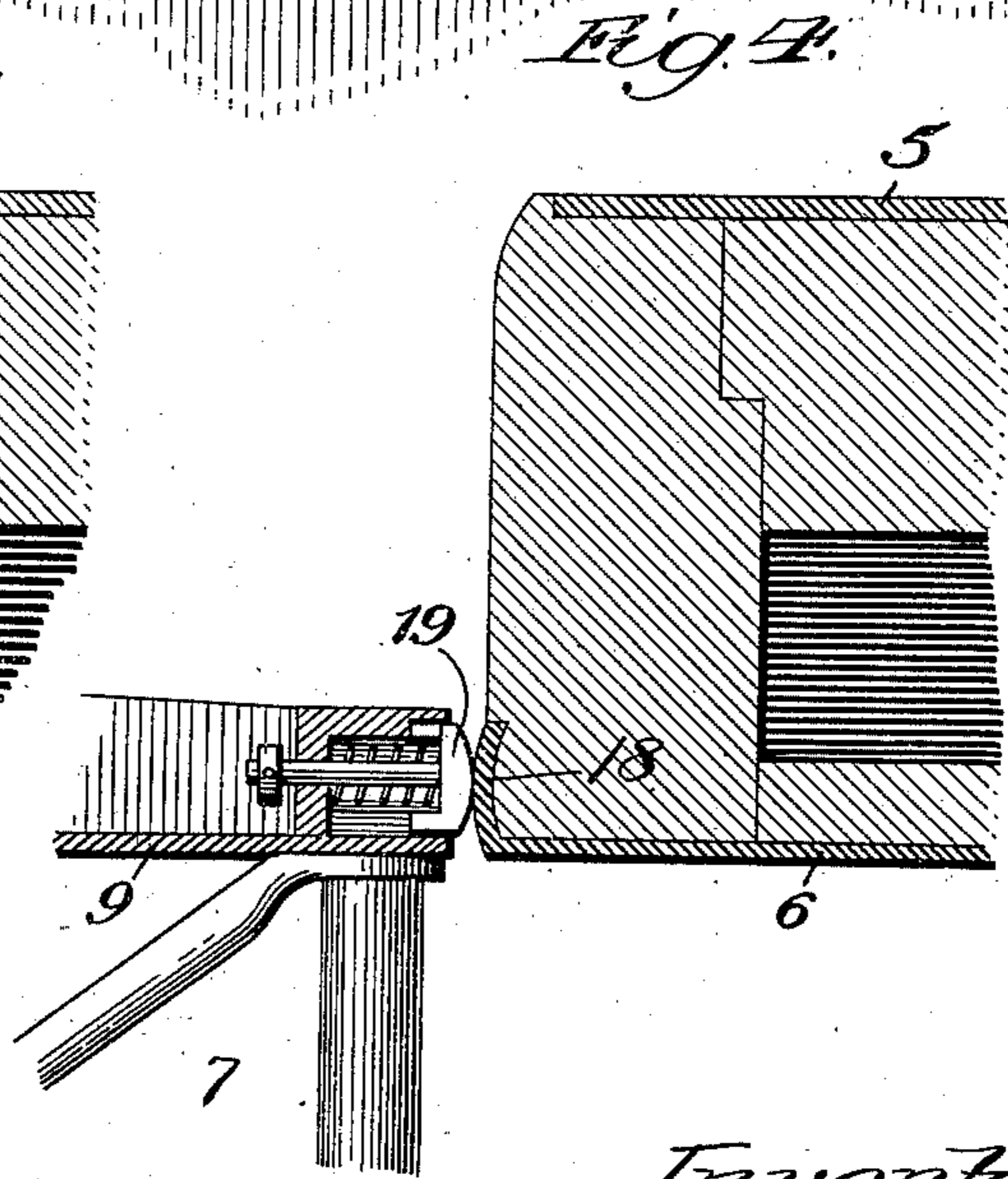
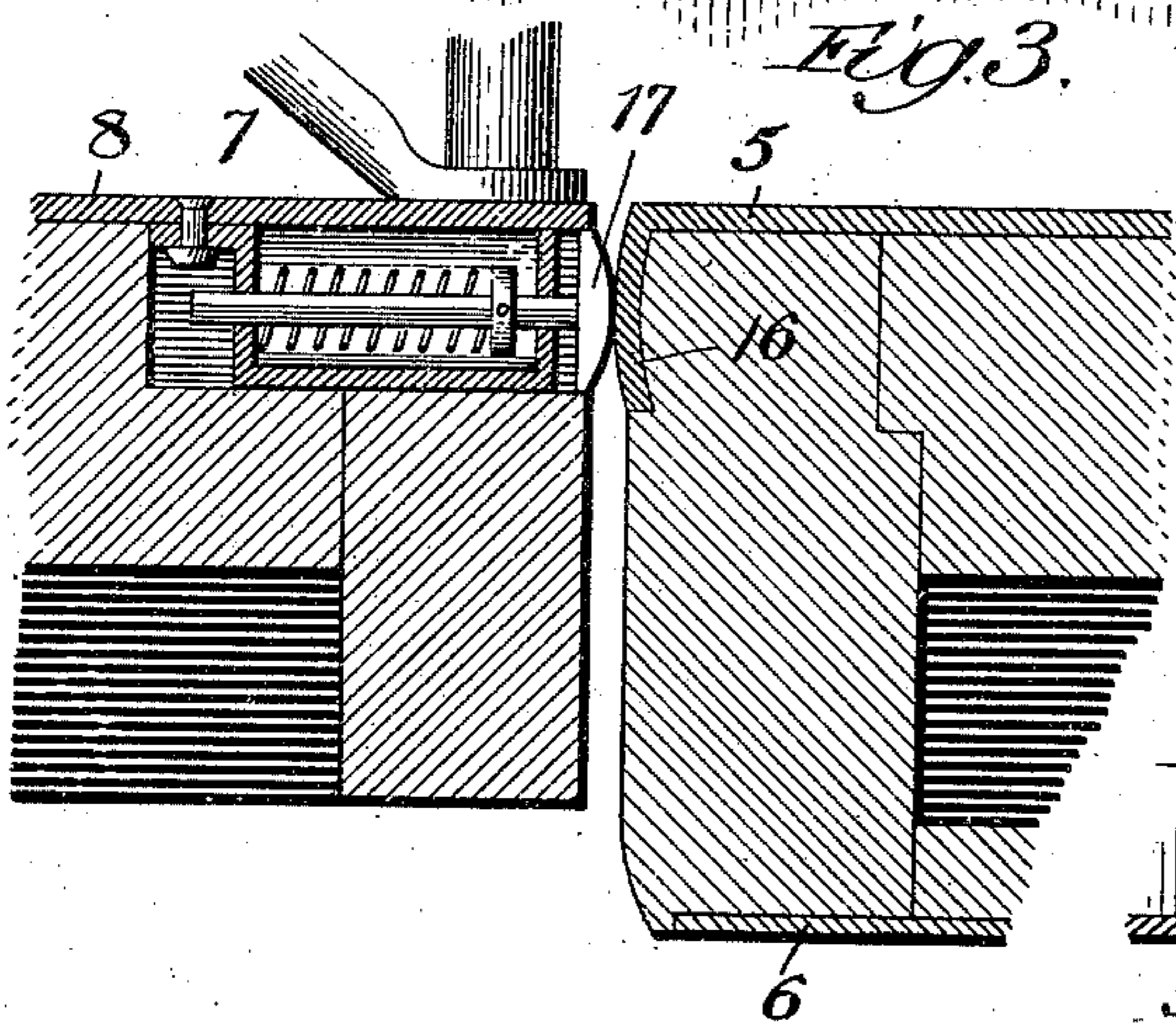
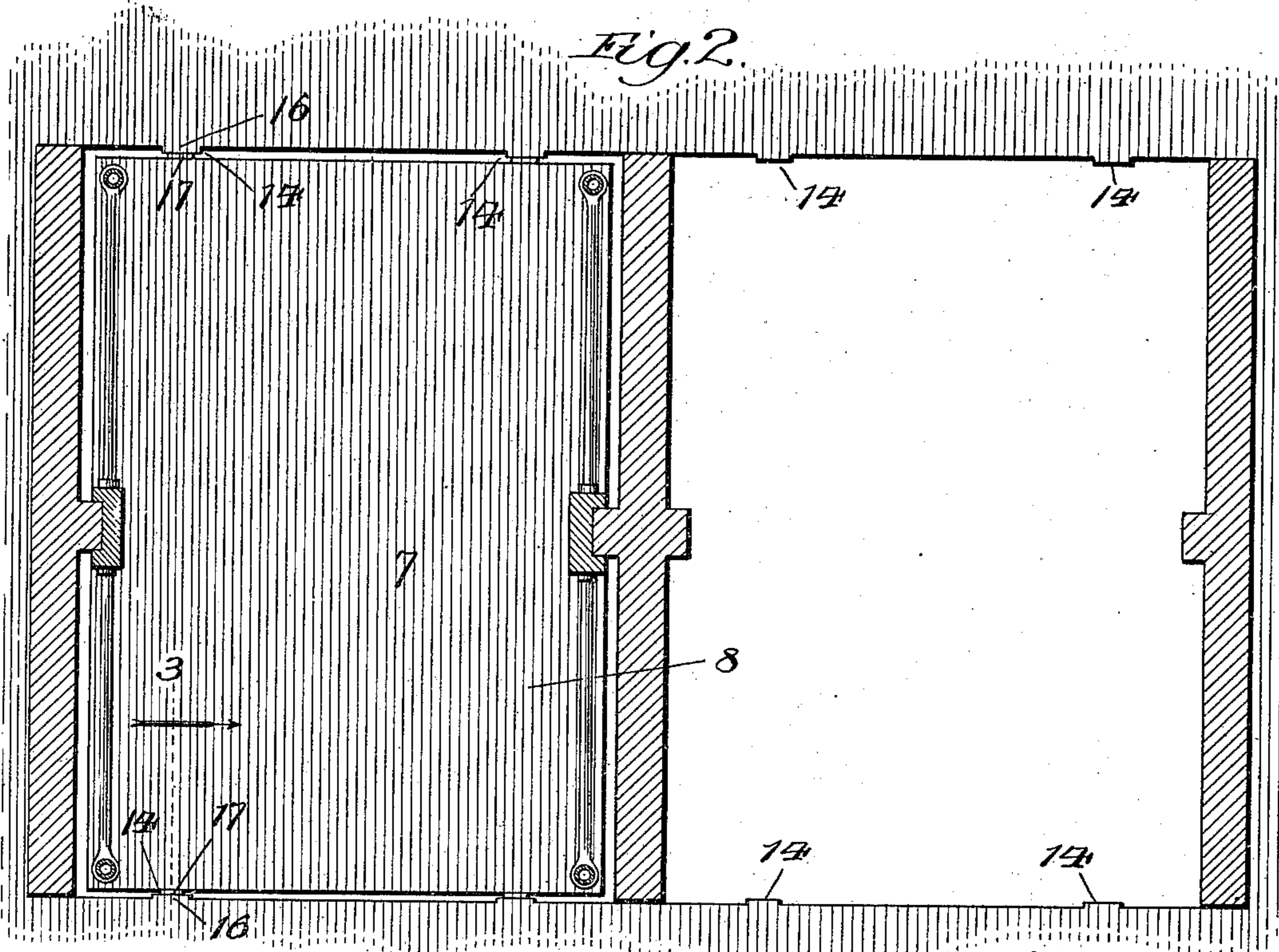
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2 Sheets—Sheet 2.



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# UNITED STATES PATENT OFFICE.

HENRY H. PORTER, JR., OF CHICAGO, ILLINOIS.

## ELECTRIC TRANSFER APPARATUS.

SPECIFICATION forming part of Letters Patent No. 686,330, dated November 12, 1901.

Application filed April 1, 1901. Serial No. 53,811. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY H. PORTER, Jr., a citizen of the United States, residing at Chicago, Cook county, Illinois, have invented certain new and useful Improvements in Electric Transfer Apparatus, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention has special reference to the employment of motor-driven trucks or transfer devices in buildings or structures, such as warehouses or factories, having a plurality of stories or floors and elevating mechanism forming a means of transfer between said several floors.

More specifically my invention has reference to the combination, with apparatus of the kind above specified, of devices for driving the motor-driven transfer-trucks by means of electricity.

It has been heretofore proposed to construct a merchandize-transfer apparatus in which a transfer-truck is provided with a motor for driving the same actuated by electricity taken through a trolley running against an overhead trolley-plate, the current being preferably returned through the wheels of the truck by means of a metallic traction-floor. In carrying out my invention I aim to utilize the said improvements in a building having a plurality of floors or stories and in the accomplishment of such end to provide each of the stories of the said building with a metallic traction-floor and a trolley-plate ceiling, suitable contact devices being employed to bring the traction-floor and trolley-plate of the elevator in circuit with the traction-floor and trolley-plate ceiling of each story when the elevator is in position to permit the transfer-trucks to be moved onto or off the same.

In order to make my invention more clear, I have illustrated the same in preferred form in the accompanying drawings, in which—

Figure 1 is a perspective view showing the interior of a building to which my invention has been applied. Fig. 2 is a section taken on a horizontal plane, showing the arrangement of the elevator-shafts. Fig. 3 is a detail showing the contact mechanism employed for the traction-floor, and Fig. 4 is a detail showing the arrangement of the con-

tact mechanism employed for the trolley-plate.

Supposing Fig. 1 to represent the second floor of a warehouse, it will be seen that the story shown has a metallic traction-floor 5 and a metallic trolley-plate ceiling 6, which may be insulated by any suitable means, (not forming any special part of my present invention,) and that as a means for carrying the transfer-trucks from one story of the building to another I have provided an elevator 7 or, as shown, a plurality of elevators, each of which has a metallic traction-floor 8 and a trolley-plate ceiling or top 9, arranged so that when the transfer-truck 10 is to be taken from one story of the building to another it can be run directly onto the elevator by its own motor 11, current for the same being supplied through the trolley-wheel 12 by means of contact of the same with the trolley-plate and through the traction-wheels 13 by means of contact of the latter with the traction-floor. At points which I have marked 14 I have placed contact devices for the traction-floor and at points marked 15 contact devices for the trolley-plates, the detailed construction of the same which I prefer being indicated clearly in Figs. 3 and 4, which I shall now describe, as follows: Connected with the metallic surface of the traction-floor 5 of the main portion of the building is a downwardly-projecting metallic flange 16, adapted to register with a spring-pressed contact-button 17, which is in circuit with the traction-floor 8 of the elevator when the elevator-floor is on a level with the floor of the building. A like arrangement of devices is employed in connection with the trolley-plates, as is clearly shown in Fig. 4, wherein 18 is the flange, connected with the trolley-plate ceiling, and 19 the electrical contact or device, which is in circuit with the trolley-plate 9 of the elevator. In order to prevent the contact-piece 19 from rubbing against both the flanges 18 and 16, the latter are arranged at different distances from the center of the elevator-shaft, as shown in Fig. 1. Contact devices arranged to be operated by hand instead of automatically could be used, if desired; but I prefer the automatic arrangement because of its greater convenience and less liability to derangement, such as would result with a hand-op-

erated contact should the operator neglect to throw it over properly before moving the elevator.

Instead of making the entire ceiling or floor of the elevator into a conducting-plate a narrow trolley-strip or track-rail with or without flanges or even a trolley-wire or T-rail could be used on the elevator, if preferred, as the transfer-trucks could be moved onto or off the elevator in about the same position at all times, if necessary, it being only necessary that the trucks when off the elevator should be free to run in any direction without any interference one with another.

The operation of my invention is as follows: Goods having been loaded upon the transfer-truck 10, the elevator is brought to a position on a level with the floor upon which the said truck stands, in which position the traction-floor and trolley-plate on the elevator through the instrumentality of the contact devices already described have their circuits completed, after which the truck can be run by its own motive power onto the elevator, ready to be carried up or down, as the case may be. The elevator is now started, which immediately results in automatically breaking the contacts, so as to make inadvertent movement of the truck impossible while the elevator is in motion between the several floors, the circuits being again automatically completed at each floor, so that at any one desired, when the elevator is brought to rest, the trucks can be run off and about the building by their own motive power.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of a structure having a plurality of stories, a plurality of trolley-plate ceilings in said structure, an elevator,

a trolley-plate or equivalent for said elevator, contact devices for completing the circuit between the elevator trolley-plate and any of said trolley-plate ceilings, and means forming a return-circuit for the current received through said trolley-plate ceilings and elevator trolley-plate, whereby an electrically-driven transfer-truck may be run on or off said elevator by its own power, substantially as described.

2. A transfer apparatus, comprising a structure having a plurality of stories, a traction-floor and trolley-plate for a plurality of said stories, an elevator, a traction-floor and trolley-plate or equivalent for said elevator, and contact devices for completing the circuit between the elevator traction-floor and trolley-plate and the adjacent traction-floor and trolley-plate of the main structure, when the elevator is at the level of any of the said stories, substantially as described.

3. A transfer apparatus, comprising a structure having a plurality of stories, a traction-floor and trolley-plate for a plurality of said stories, an elevator, a traction-floor and trolley-plate or equivalent for said elevator, contact devices for completing the circuit between the elevator traction-floor and trolley-plate and the adjacent traction-floor and trolley-plate of the main structure, when the elevator is at the level of any of the said stories, and means for automatically actuating said contact devices, substantially as described.

In witness whereof I have hereunto set my hand in the presence of two subscribing witnesses.

HENRY H. PORTER, JR.

Witnesses:

PAUL CARPENTER,  
H. W. SMALLEY.