

No. 681,122.

Patented Aug. 20, 1901.

J. B. HURD.
DINING ROOM SERVICE APPARATUS.

(Application filed Dec. 29, 1900.)

(No Model.)

4 Sheets—Sheet 1.

Fig. 1.

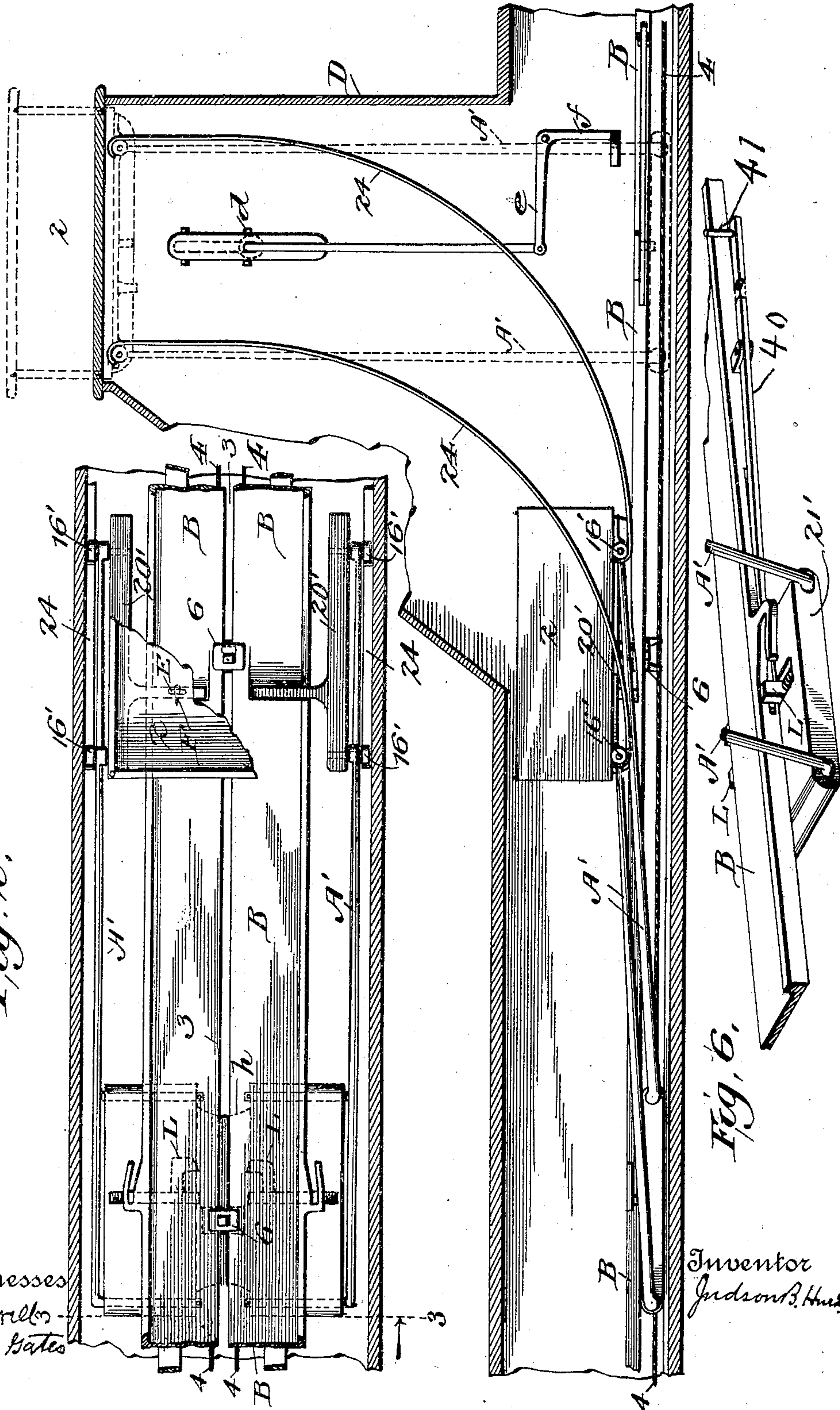


Fig. 2.

Fig. 3.

Inventor
J. B. Hurd

Witnesses
S. W. Crockett
Napoleon Bates

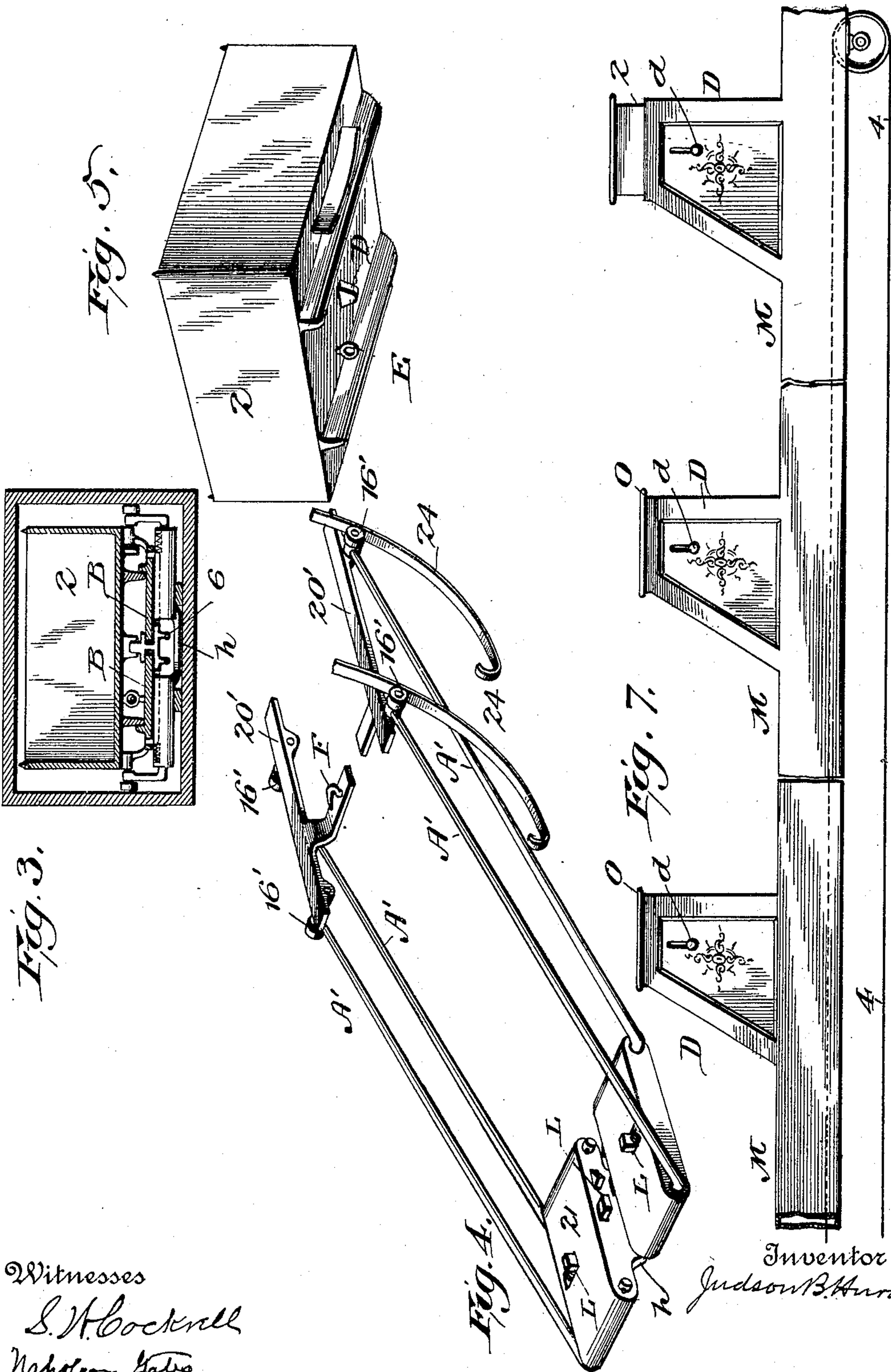
J. B. HURD.

DINING ROOM SERVICE APPARATUS.

(Application filed Dec. 29, 1900.)

(No Model.)

4 Sheets—Sheet 2.



Witnesses
 S. H. Cockrell
 Napoleon Galt

Inventor
 Judson B. Hurd

No. 681,122.

Patented Aug. 20, 1901.

J. B. HURD.

DINING ROOM SERVICE APPARATUS.

(Application filed Dec. 29, 1900.)

(No Model.)

4 Sheets—Sheet 3.

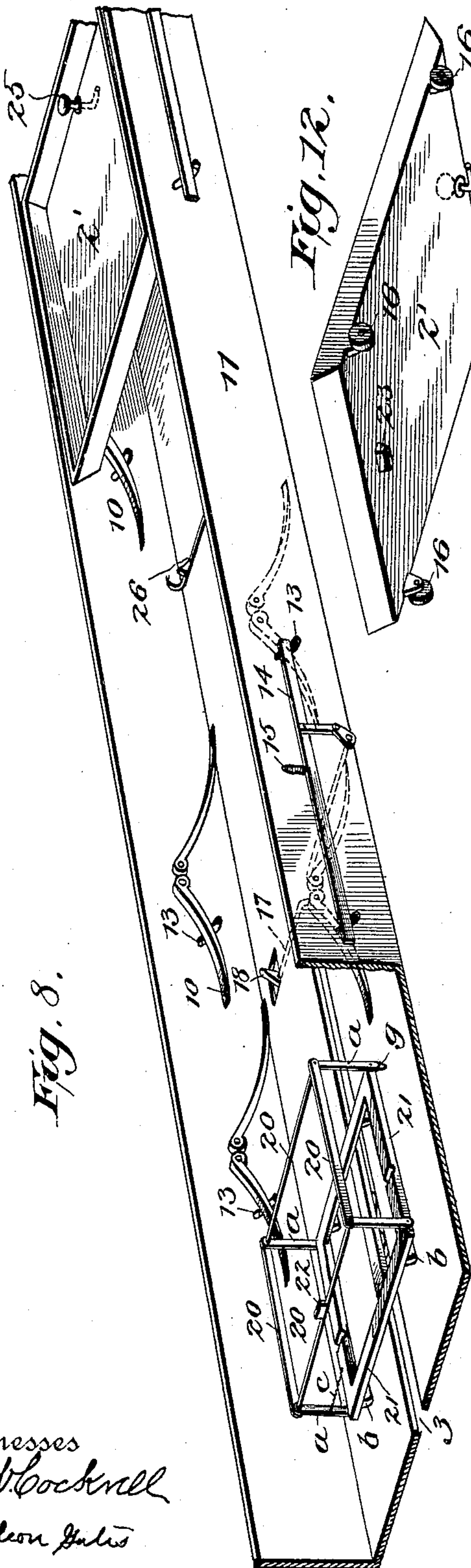


Fig. 12.

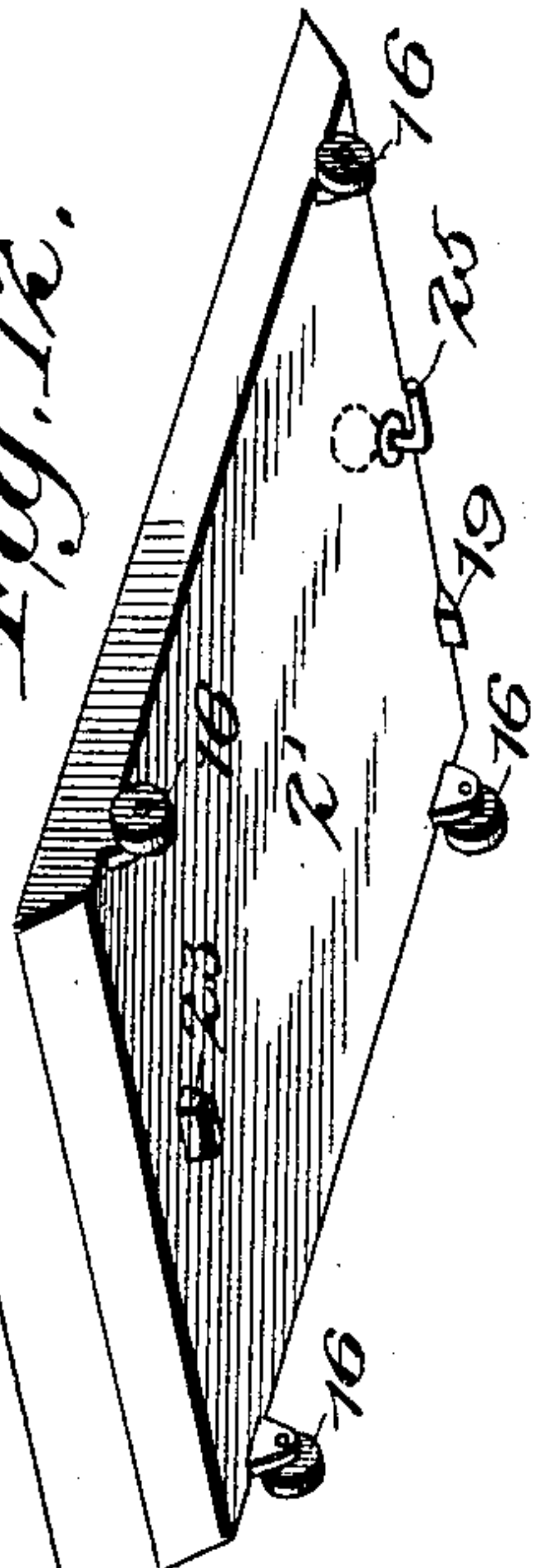


Fig. 11.

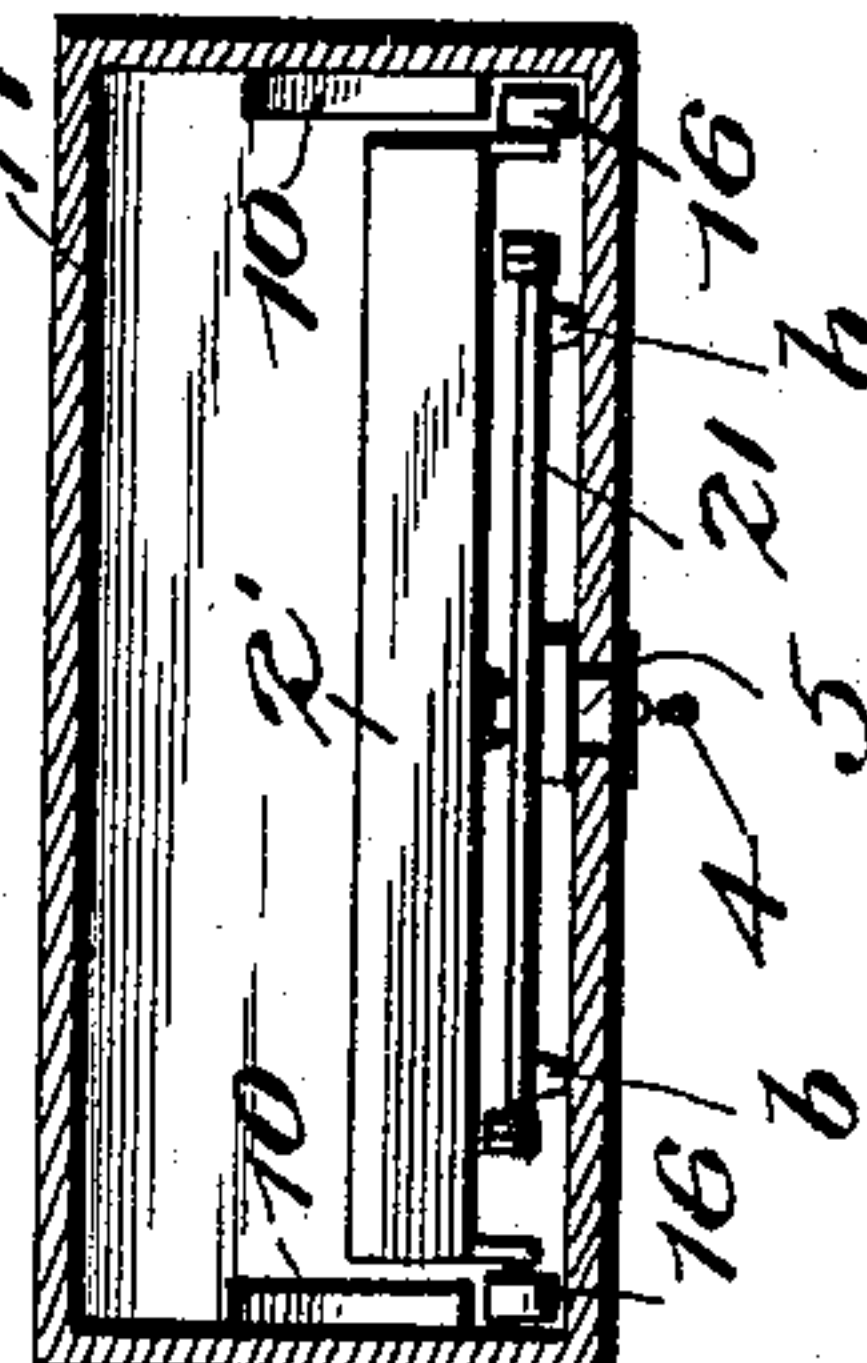


Fig. 9.

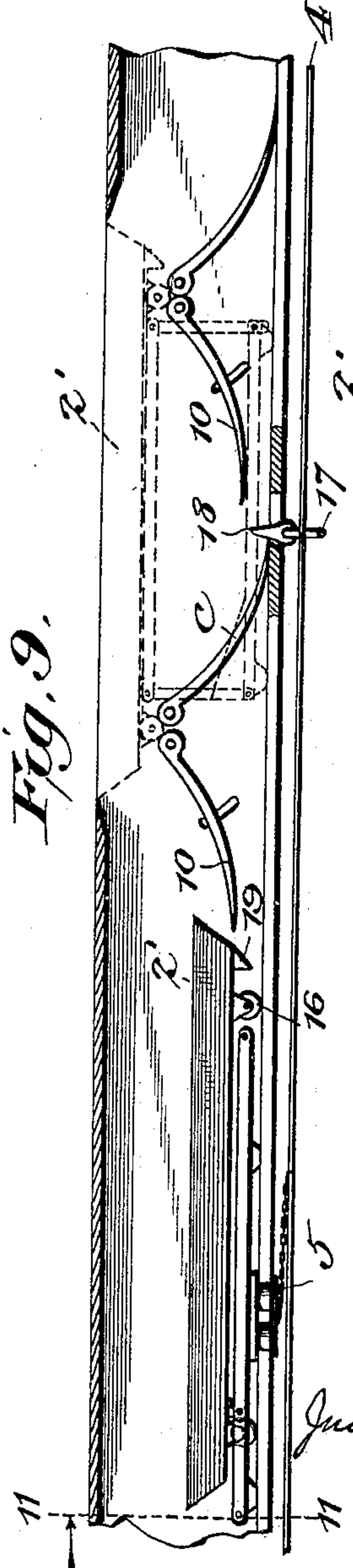


Fig. 10.



Witnesses
S. W. Locknell
Napoleon G. L. L.

Inventor
Judson B. Hurd.

No. 681,122.

Patented Aug. 20, 1901.

J. B. HURD.

DINING ROOM SERVICE APPARATUS.

(Application filed Dec. 29, 1900.)

(No Model.)

4 Sheets—Sheet 4.

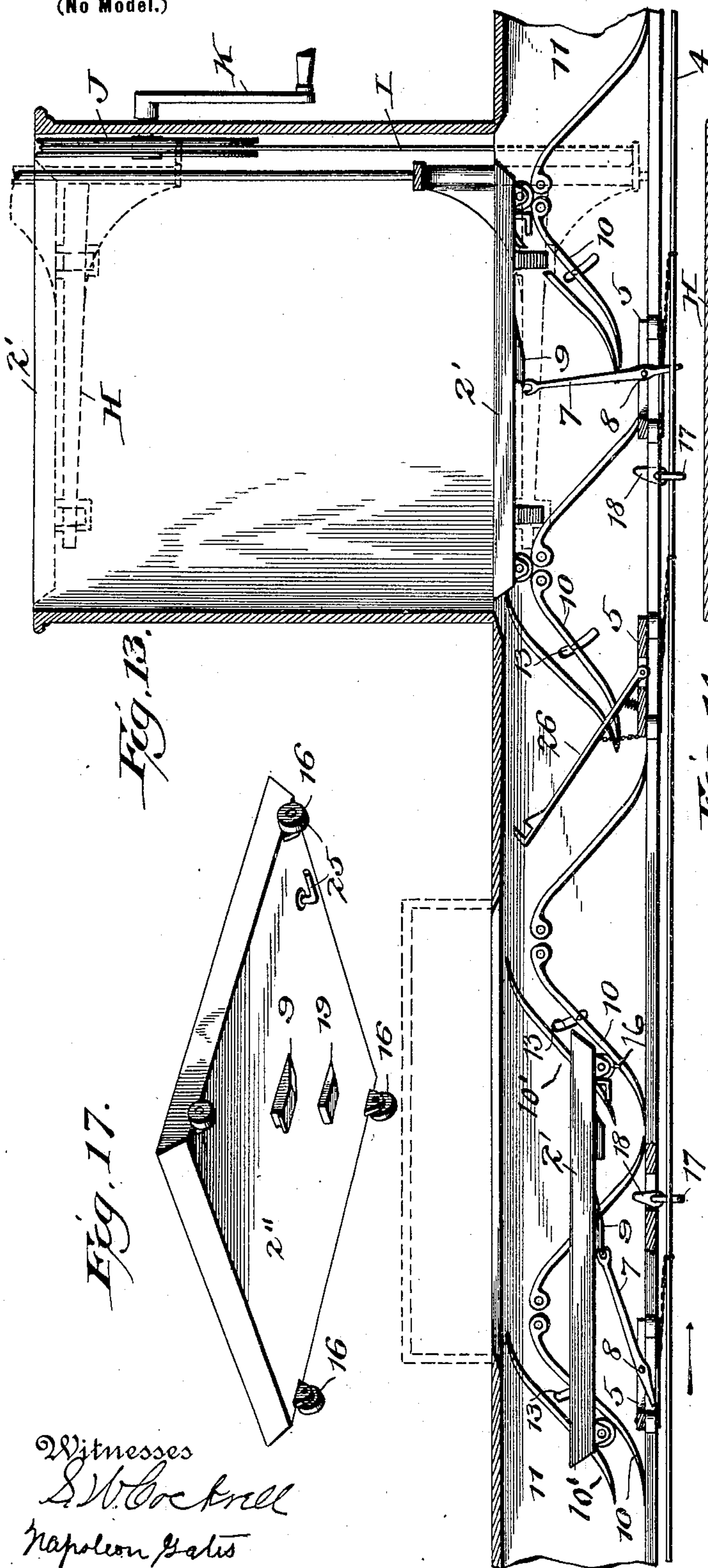
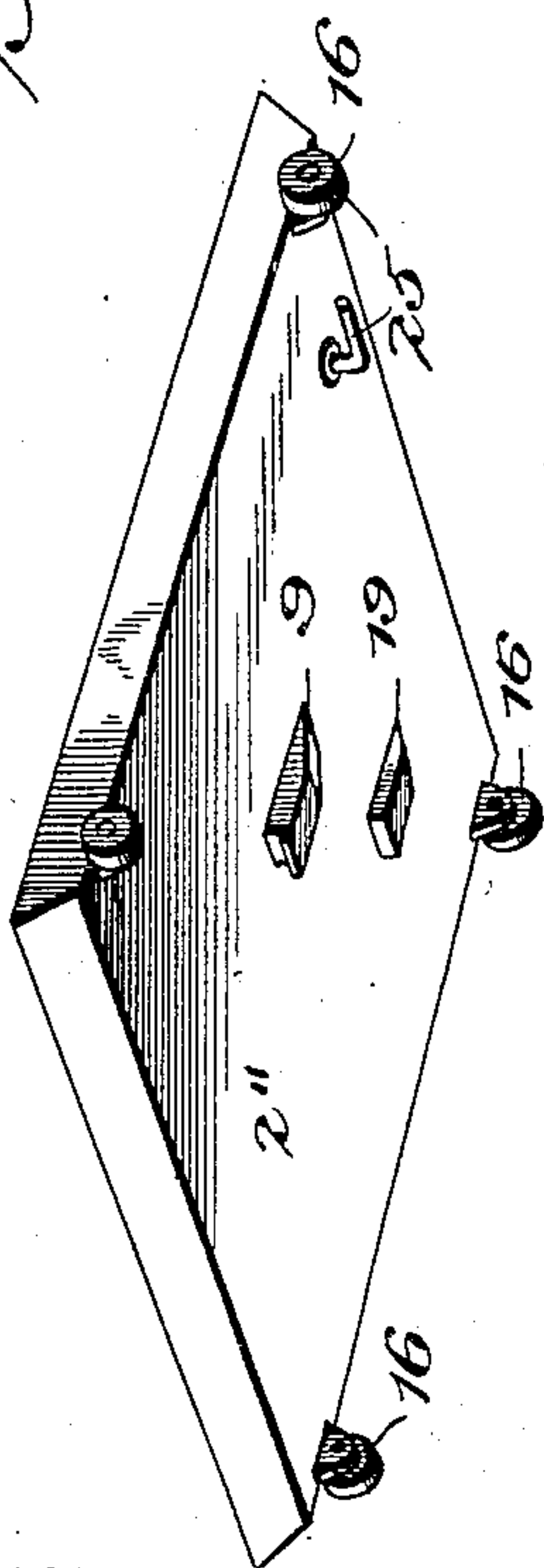


Fig. 13.

Fig. 17.



Witnesses
S. W. Cockrell
Napoleon Gates

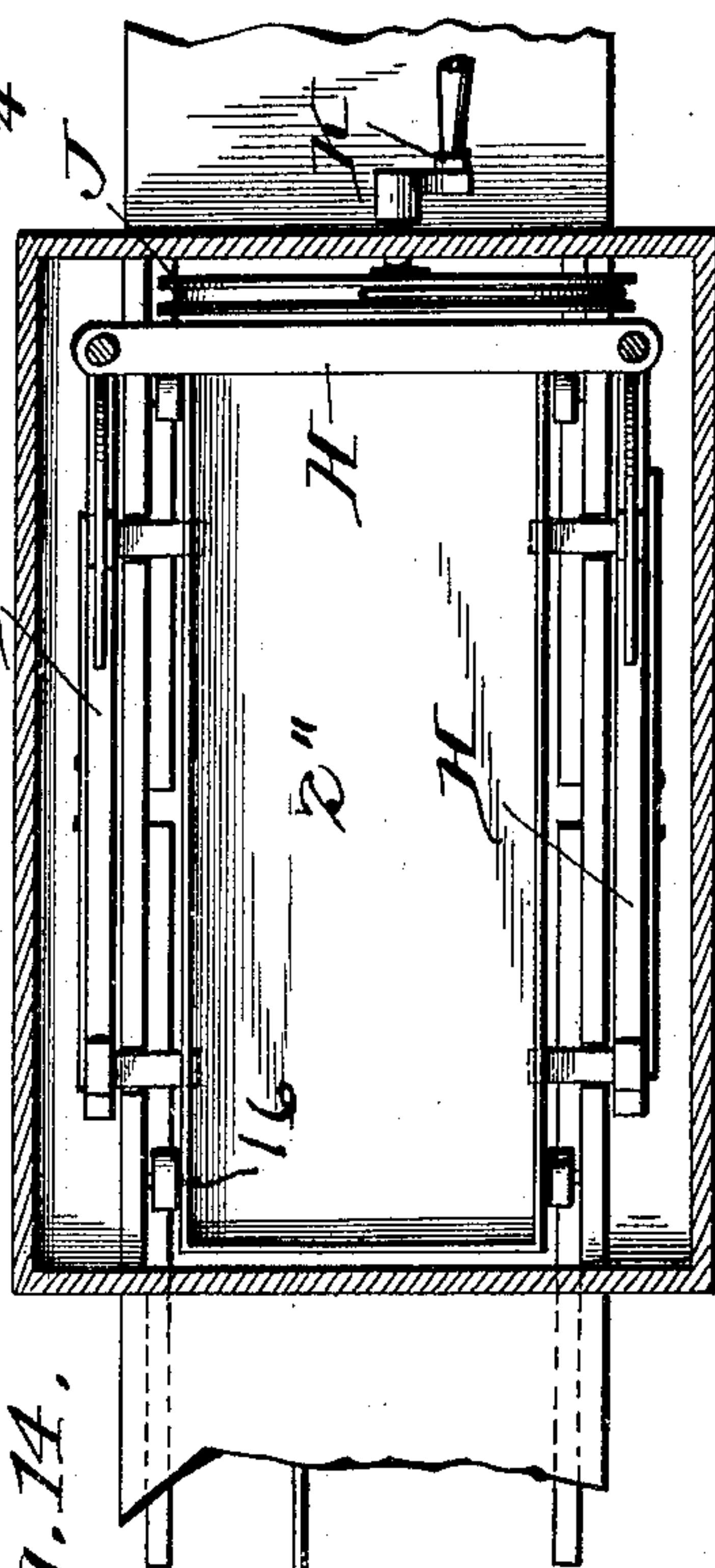


Fig. 14.

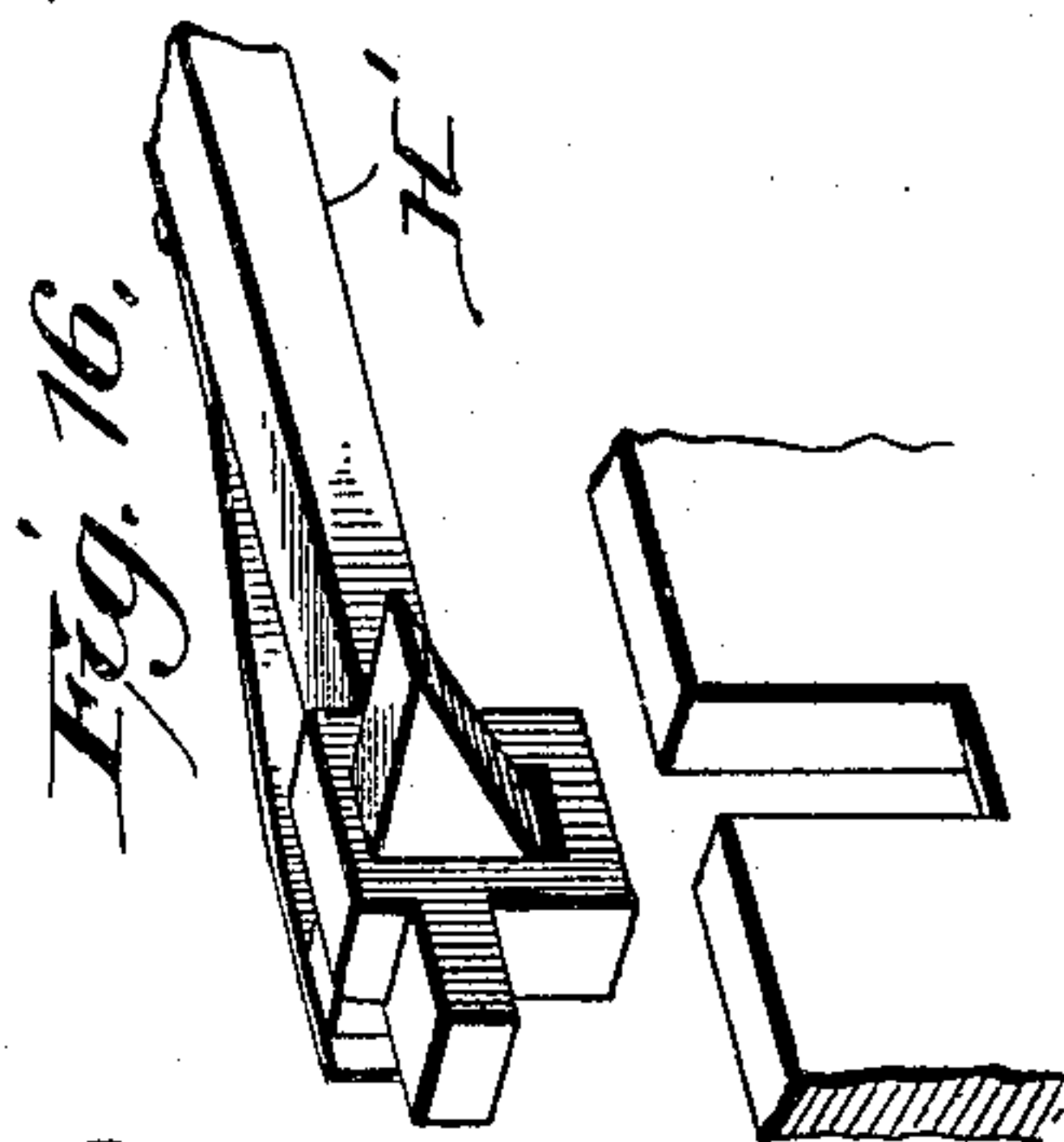


Fig. 16.

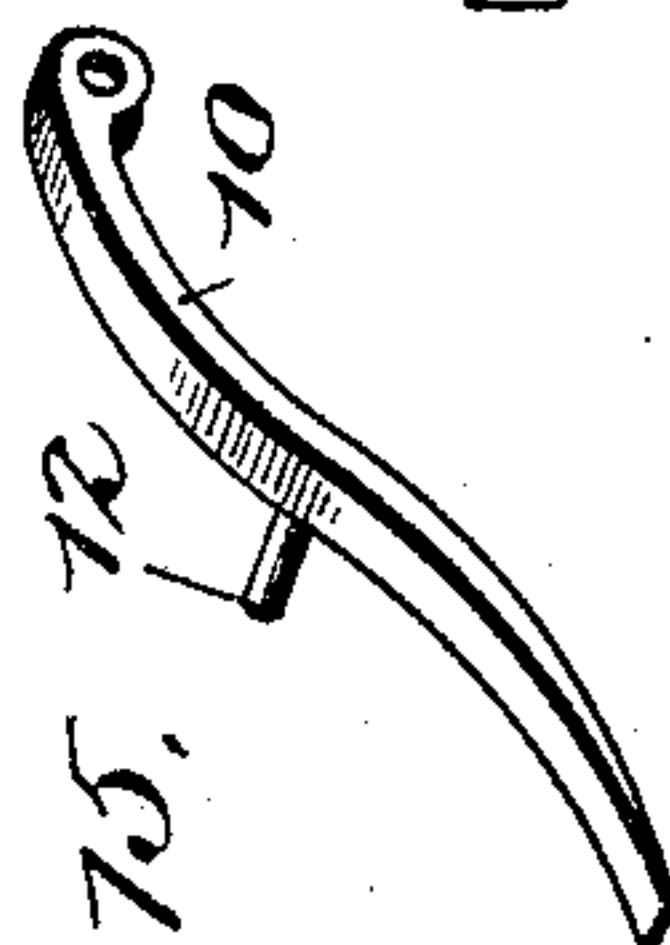


Fig. 15.

Inventor
Judson B. Hurd.

UNITED STATES PATENT OFFICE.

JUDSON B. HURD, OF WASHINGTON, DISTRICT OF COLUMBIA.

DINING-ROOM SERVICE APPARATUS.

SPECIFICATION forming part of Letters Patent No. 681,122, dated August 20, 1901.

Application filed December 29, 1900. Serial No. 41,546. (No model.)

To all whom it may concern:

Be it known that I, JUDSON B. HURD, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Dining-Room Service 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.

The object of my invention is to provide a dining-room machine wherein the main way on which the carrier travels from the cook-room to the dining-room may pass below the plane of the table-top.

In machines where the meals on their way across the dining-room pass overhead or on a level with the table-top the track obstructs the light and offends the eye or interferes with the passing of persons from one part of the room to the other, and on this account are not generally acceptable. Where the main way is near the floor or beneath it, there must be means for elevating the carrier from the main way to eating-places at the dining-tables or to stations at convenient places in the dining-room, from which stations the meals may be carried to the guests at the different tables, and this main way, with its elevating tracks and mechanism, must be constructed so it can be inclosed by a dust-proof housing. The means for moving a carrier along a side track and landing it at a station on the same level with the main track is not adapted to the purpose of depositing a carrier at a station above the main track without the addition of other devices, which it has required ingenuity and invention to provide.

Figure 1 is a longitudinal section showing the third form of my depositing device in position after it has deposited a carrier at its resting-place at a station. Fig. 2 is a horizontal section showing the same device at rest beneath the path of the carrier along the main way. Fig. 3 is a transverse section on line 3 3. Fig. 4 is a detail perspective view of said depositing device in another position. Fig. 5 is a detail perspective view of the carrier. Fig. 6 is a similar view of the disengaging mechanism. Fig. 7 is a side elevation giving outside view of casing covering the

main way and three elevator-shafts. The pulleys and cable and, in fact, all but the upright shafts D may be beneath the dining-room floor. These shafts may be about three feet high, and where the machine is not intended to bring the meals directly to the guests the shafts may be several feet apart and be used as stations to which the meals are brought by the machine and from which they are taken by the dining-room hands and served to the guests. The conduit M, as shown here, is supposed to extend into the cook-room to the left. The part in the cook-room has the top removed, so that the carrier may be placed in the conduit to be taken up by the cable. Fig. 8 is a perspective view showing the second form or modification of my depositing device in its conduit with top removed. Fig. 9 is a longitudinal section of the same. Fig. 10 is a similar view showing the parts in different position. Fig. 11 is a transverse section of view in Fig. 9 on line 11 11. Fig. 12 is a detail perspective view of the carrier 2'. Fig. 13 is a longitudinal section of machine where depositing device 7 and the elevating-frame H are used; Fig. 14, a horizontal sectional view of a portion of the same; Fig. 15, a detail perspective view of one of the elevating-tracks; Fig. 16, a similar view of a part of the elevating-frame, and Fig. 17 a view of one of the carriers 2''.

In the present machine the meals are taken from the cook-room to the dining-room on carriers 2' 2' 2'', which pass along a main way or conduit. In the center of the way is a slot or groove 3 and beneath is a cable 4, which has attached to it at intervals the propelling-blocks 5 or 6, which are adapted to move in the slot 3. This endless cable, with the blocks, constitutes the propelling medium of the machine. At intervals along the main way after it enters the dining-room are stopping-places at which the carriers are deposited. These stopping-places are above the main way, and there are four elevating-tracks at each station leading up from the main way to the stopping-place in order that the four corners of the carrier may be supported and the carrier be kept level as it passes up.

Besides the main way, the elevating-tracks, and the propelling medium there is another element in the machine which I will call the

"depositing device." This device forms a connection between the propelling medium and the carrier and is adapted to control and gradually retard the speed of the carrier as it passes up the elevating-tracks, so as to cause the carrier to be deposited at the stopping-place with that gentleness which is necessary in handling fluids in an open vessel without spilling them. As this depositing device is an important part of my invention, I have shown three different forms or modifications of the same and I am aware that it is susceptible of many more.

One form of depositing device is shown in Fig. 13 and is simply the bar 7, connected by pivot 8 to the propelling-block 5, this bar operating in connection with elevating-tracks 10 and the guiding-flanges 10' or equivalent. The bar 7 is normally in a horizontal position and moves with its free end forward. When a carrier is placed on the track in the cook-room, this free end of bar 7 engages with the lug 9 on the bottom of the carrier and moves the carrier along the track to the dining-room. Each of the four elevating-tracks 10 is pivoted at its upper end to the casing 11, and each track is provided with a laterally-projecting arm 12, (see Fig. 15,) which reaches through the opening 13. Each pair of tracks is joined by a bar 14, to which the arms 12 are pivotally attached. This bar is suspended by a spiral spring 15, which holds the tracks above the path of the carrier-wheels 16 as the carrier passes along the main way. The two bars 14 are connected by a rod 17, which rests in bearings beneath the carrier-way. On this rod is an upwardly-projecting arm 18. This arm is fixed in such position on the rod as to engage with a tappet 19 on the bottom of the carrier that belongs to that particular station. When a carrier placed on the floor of the main way in the cook-room is taken up by the bar 7 and moves along the main way through the dining-room, it passes under the elevating-tracks 10 at the different stations until it reaches the station to which it belongs. There the tappet 19 comes in contact with the arm 18 and turns the rod 17 on its bearings. This pulls down the bars 14 and brings the ends of the four elevating-tracks in position to receive the carrier-wheels 16. As the carrier moves up the elevating-tracks the lower end of bar 7 continues to move with the cable, while the other end forces the carrier upward at a gradually-retarded speed. The guiding-flanges 10', arranged above the tracks 10, serve to keep one end of the carrier from being lifted above the other end in case the other end is more heavily loaded. When the bar 7 passes the perpendicular and falls back enough to disengage itself, it leaves the carrier at its resting-place, as seen in Fig. 13, landing it there as gently as can be done by hand.

Another form of my depositing device is a double frame consisting of two portions 20 and 21, one above the other and joined together by four pivoted arms *a*. The lower portion

21 is attached to a propelling-block 5' on the cable or chain. The portion 20 is larger than the other and is adapted to close down over it, so that the double frame may occupy as little room as possible when closed. When this form of depositing device or the form heretofore described is used, the propelling cable or chain may move in a horizontal plane and continually in one direction, there being an endless cable for the propeller and a double or endless way for the carrier to travel in. The carrier is wider than the frame 20, and the four wheels 16 raise it above the floor to allow the double frame to pass under it until the lug 22 on the frame 20 engages with a companion piece 23 on the bottom of the carrier. Then the carrier is moved forward with the frame. When the carrier reaches its station and moves up the elevating-tracks, the upper frame 20 follows it, and the four arms, moving in harmony with each other, keep the carrier in a perfectly horizontal position. As the arms *a* pass the perpendicular and drop back the block 22 is disengaged from the carrier and passes on with the cable to the cook-room. The short chain *c* keeps the portion 20 from falling farther back than is necessary to disengage itself from the carrier. The double frame is provided with four short runners *b* to raise it a little above the floor of the conduit. One of the arms *a* has an extended portion *g*, which reaches nearly to the floor when the arm stands upright. This extended portion *g* is adapted to come in contact with a lug on the floor of the track or conduit as the frame enters the cook-room, and by this means the portion 20 is thrown over forward and put in position to receive a carrier again if one is placed in its path. The bar 7 has a similar extended portion that reaches below the hinge 8 and comes in contact with a lug to throw the bar 7 in position to receive a carrier.

The third modification of my depositing device is shown in Figs. 1, 2, 3, and 4 and is better adapted for use where it is desired to elevate the carriers a greater distance above the main way—say three or four feet—where the stations are several feet apart. In this case the pusher-block 6 may be propelled by a double cable, which may move in vertical plane. It may make one revolution in one direction to take carriers that are ready to go to the dining-room and then be reversed to bring back such carriers as are ready to be returned. This depositing device is similar to the one last described, except that the pivoted arms *A*, joining the portions 20' and 21', are longer and the whole device is designed to remain near the station instead of traveling continually with the cable. The cables move on a plane below the upper portion 20' and above the connecting part *h* of the lower portion 21'. *B B* are tracks on which the carriers move, the carriers being propelled by the block 6 engaging with the lug *D* beneath the carrier. Extending downward from the

bottom of each carrier is a loop E, and on each portion 20' is a hook F. These loops and hooks are so placed and graduated that each carrier will engage with the hook at the station where such carrier belongs and with no other. The portion 21' is provided with two spring-bolts L. Their outer ends turn up and press against the edge of the tracks B. (See Fig. 6.) When the double-frame device is at rest in position, as shown in Fig. 2, the spring-bolts L are forced apart by the tracks B being a little wider at that place; but as soon as a carrier engages the hook F and moves the device a little forward and the bolts leave the widened part of the track the bolts spring in and come within the path of the blocks 6. These blocks 6 are placed at suitable intervals of space on the cable, so that while one is moving the carrier as it engages with the hook F another is just behind these spring-bolts L. The portion 20' is provided with four wheels 16', adapted to move on the elevating-tracks 24, which are secured to the sides of the housing or elevator-shaft D. When the portion 20' and the carrier have moved up the elevating-tracks sufficiently to relieve the carrier from the block 6, the next block in the rear engages with the spring-bolts L and keeps the carrier moving up the elevating-tracks until the arms A' are brought to a perpendicular position. The tracks B are made wider in place to force the spring-bolts out of engagement with the block 6 just as the carrier reaches its resting-place, and the double-frame device is left in position, as shown in dotted lines in Fig. 1, while the cable moves on. When it is desired to send the carrier back to the cook-room, the handle d is raised. This moves the levers e and f and forces the portion 21' a little back, allowing the spring-bolts to come in position to be engaged by a propeller-block 6 when the cable is reversed.

When the first or second form of depositing device is used, the carrier is provided with the angular piece 25, which extends through the bottom of carrier and is adapted to be turned half-way around on its vertical axis. When the carrier is at its resting-place, as shown in Fig. 8, and it is desired to send it to the cook-room, this angle-piece 25 is turned so that its horizontal portion will be in the path of the bar 26 when the cable is reversed.

In some machines the top of the elevator-shaft is above the resting-place where the carrier is left by the depositing device. In this case the carrier is elevated to the top of the shaft by the use of the frame H, which is operated by cable I, pulley J, and crank K.

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

1. In a carrier apparatus, a main way with a branch way leading up therefrom to a station above, a carrier adapted to be propelled along said main way and branch way, and a

propelling medium along the main way; in combination with a depositing device connecting the propelling medium with the carrier and adapted to control and graduate the speed of the carrier as it moves up the branch way, whereby the carrier is caused to approach its resting-place at the station at a gradually-retarded speed.

2. In a carrier apparatus the combination of a main way with a branch way leading up therefrom to a station above, a carrier adapted to be propelled along the main way and to be deflected therefrom and be propelled along the branch way, a propelling medium along the main way, a depositing device connecting the propelling medium with the carrier as it passes up the branch way and adapted to control and graduate the speed of the carrier at a gradually-retarded speed; with means whereby the lines of the carrier that are parallel with the main way as the carrier passes along the main way are maintained in parallelism as the carrier moves up the branch way.

3. In a carrier apparatus of the character described, a dust-proof shaft or housing for the horizontal way and elevator, in combination with means for elevating the carrier from the horizontal way to a station above; and means whereby the speed of the carrier is gradually retarded as it approaches the station above.

4. In a carrier apparatus of the character described, the combination of a main horizontal way, a branch way leading up from it to a station above, a carrier adapted to be propelled along the horizontal way and up and down the branch way, and a propelling medium, with means for maintaining the carrier in an upright position while on the horizontal way and in moving up and down and in changing from one direction to another, and means by which the carrier is caused to approach the station at a gradually-reduced speed.

5. In a carrier apparatus of the character described, the combination of a main horizontal way, a branch way leading up from it to a station above, a carrier adapted to be propelled along the horizontal way and up and down the branch way, and a propelling medium, with means for maintaining the carrier in an upright position while on the horizontal way and in moving up and down and in changing from one direction to another, and means connecting the carrier with the propelling medium by which the carrier is caused to approach the station at a gradually-reduced speed and to leave it at a gradually-accelerated speed.

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

JUDSON B. HURD.

Witnesses:

S. W. COCKRELL,
GUY E. PADGETT.