

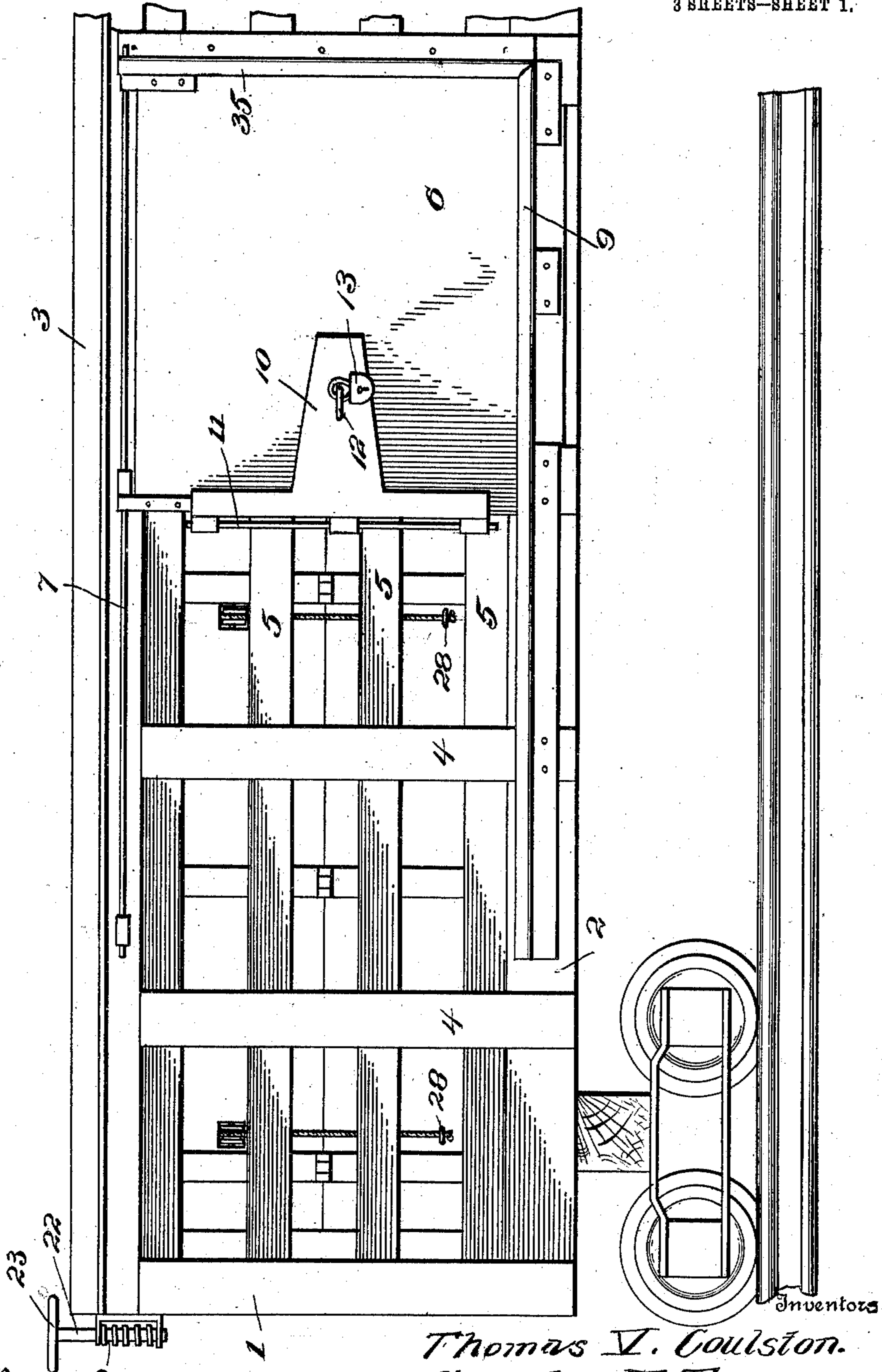
T. V. COULSTON & C. E. TEETER.  
COMBINATION BOX CAR.  
APPLICATION FILED APR. 2, 1909.

967,615.

Patented Aug. 16, 1910.

3 SHEETS—SHEET 1.

Fig. 1.



Witnesses

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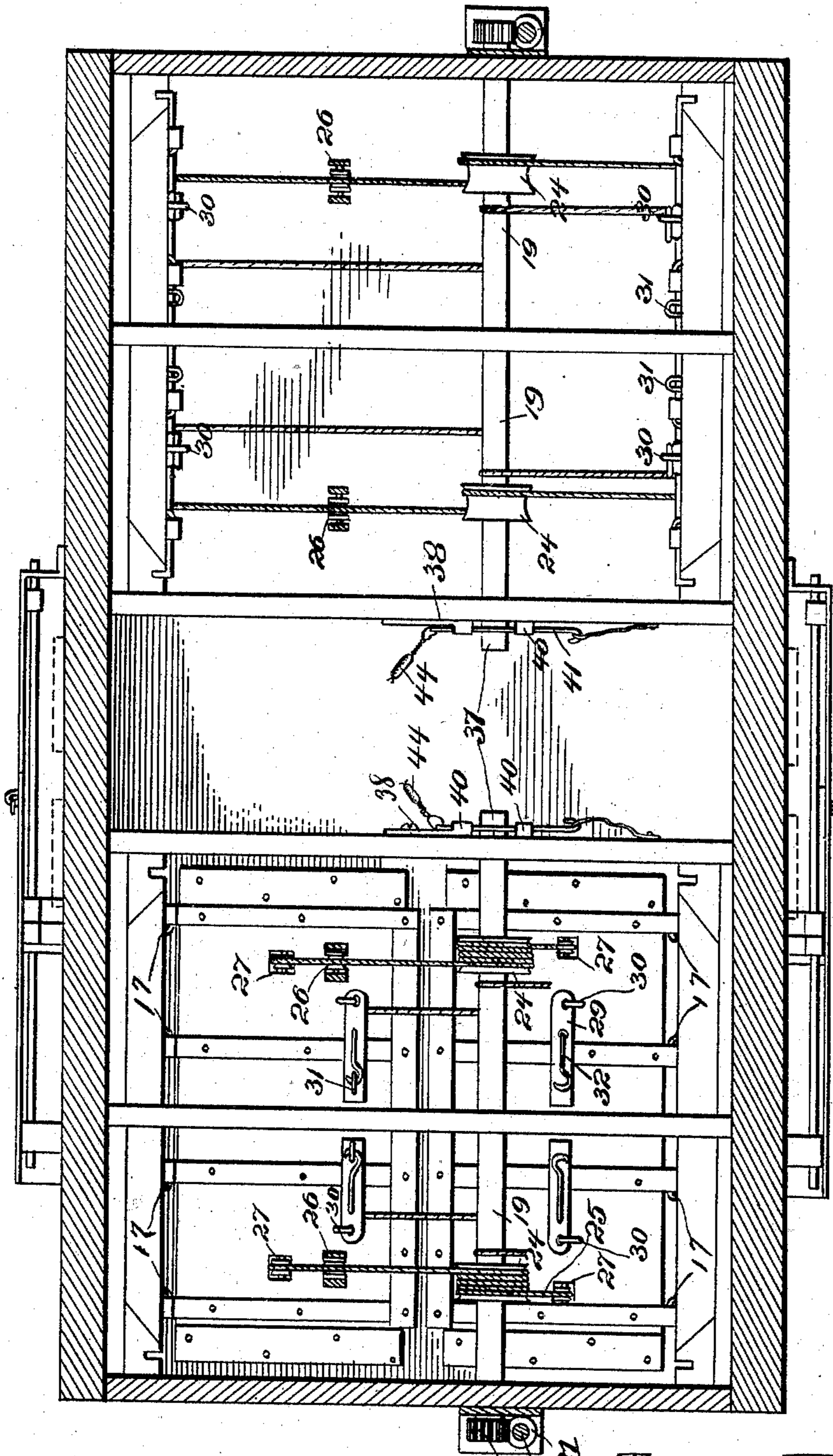


Fig. 2.

Witnesses

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3 SHEETS--SHEET 3.

*Fig. 3.*

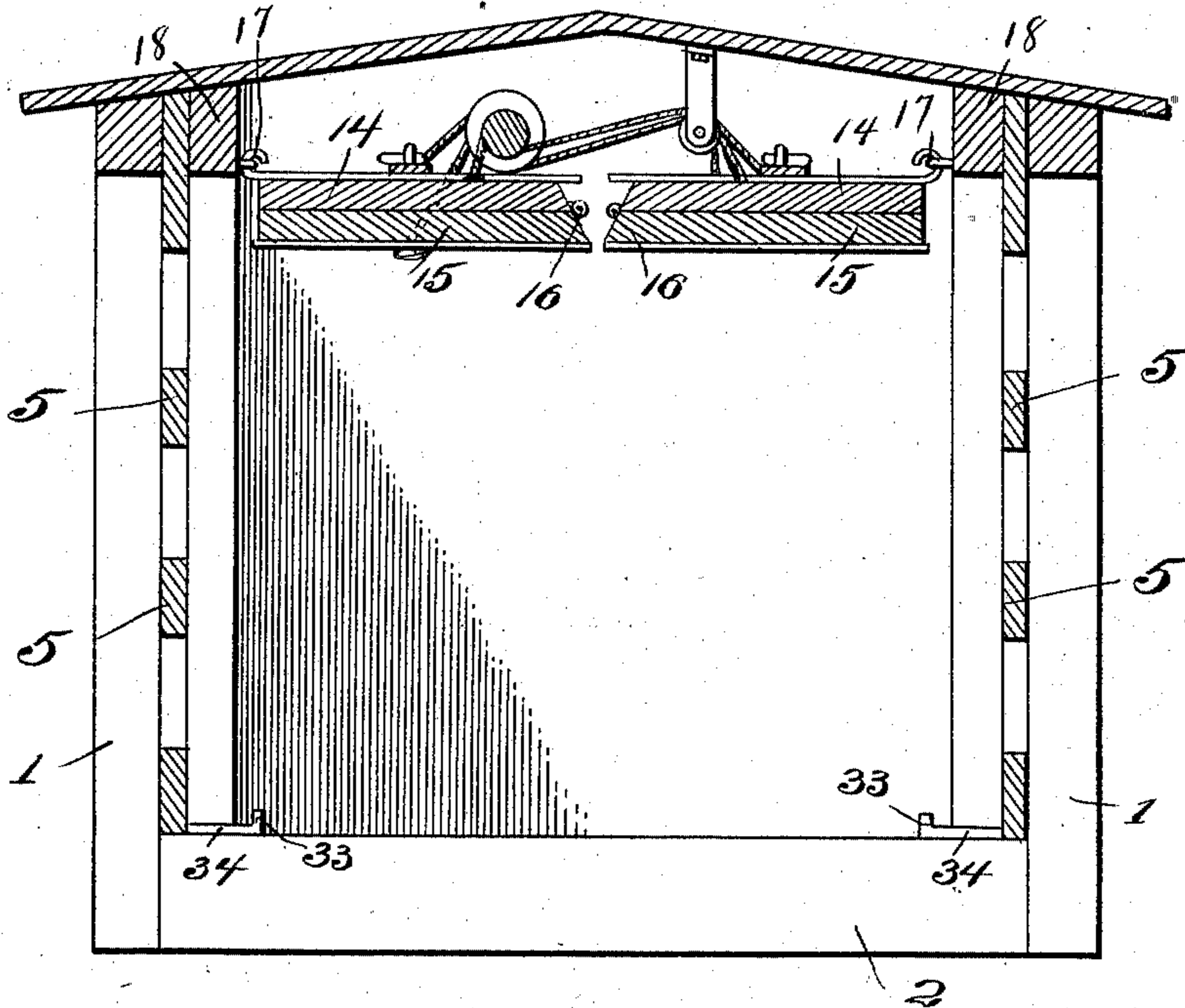
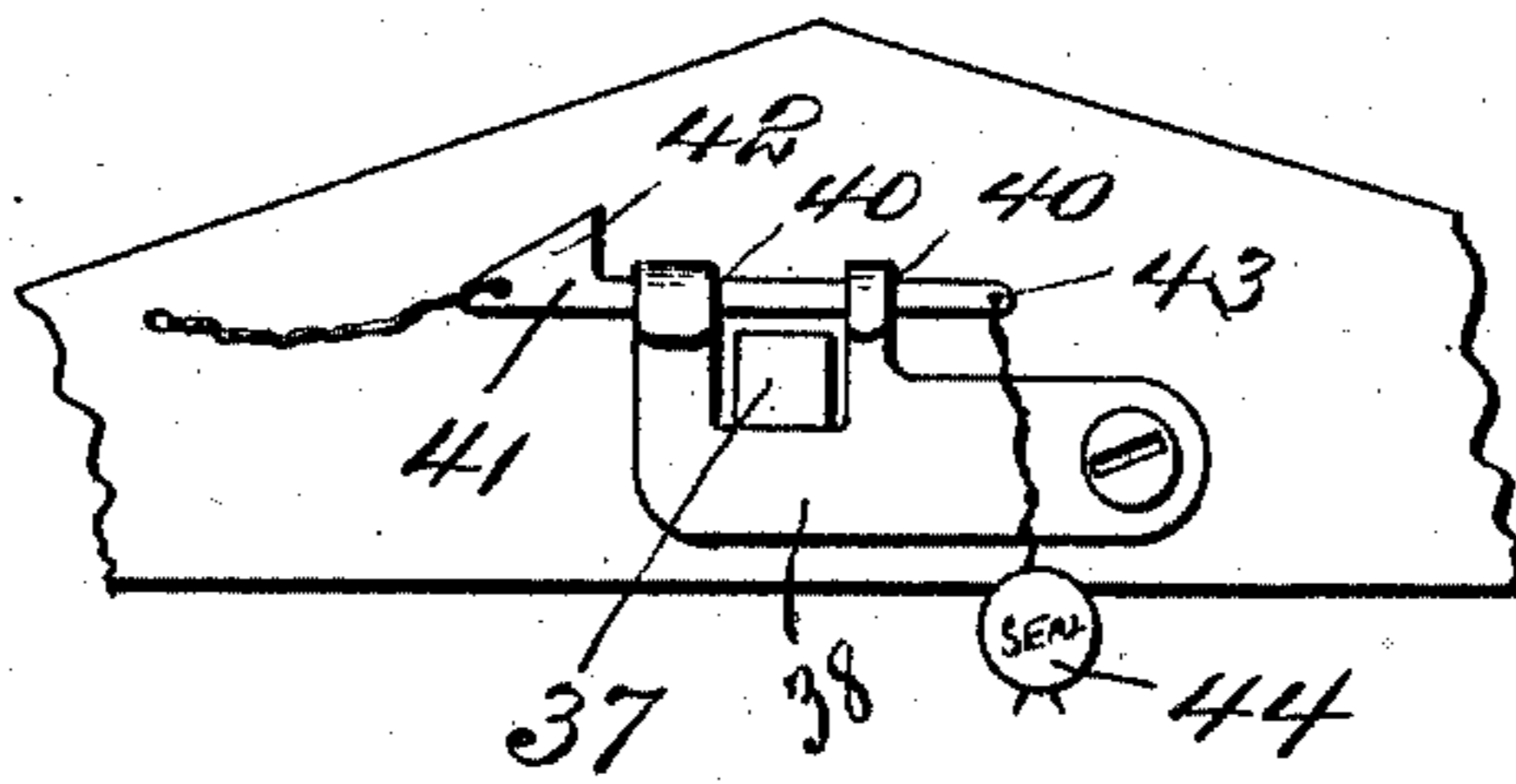


Fig. 4.



## Witnesses

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# UNITED STATES PATENT OFFICE.

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SIGNORS OF ONE-THIRD TO LOUIS N. BASSETT, OF SPRINGFIELD, MISSOURI.

## COMBINATION BOX-CAR.

967,615.

Specification of Letters Patent.

Patented Aug. 16, 1910.

Application filed April 2, 1909. Serial No. 487,598.

*To all whom it may concern:*

Be it known that we, THOMAS V. COULSTON and CHARLES E. TEETER, citizens of the United States, residing at Springfield, in the county of Greene and State of Missouri, have invented new and useful Improvements in Combination Box-Cars, of which the following is a specification.

This invention relates to combination box cars the object of the invention being to provide a simple and practical construction of box cars whereby the car body may be quickly converted from an ordinary open work or slatted car to a closed car adapted for the purpose of carrying grain and various other products.

To the above end, the invention consists in the novel construction, combination and arrangement of parts herein fully described, illustrated and claimed.

In the accompanying drawings: Figure 1 is a side elevation of a combination car embodying the present invention, showing one-half of the car open. Fig. 2 is a horizontal section thereof, the same taken just beneath the roof of the car. Fig. 3 is a vertical cross section through the car, taken through the panels, showing the same in their closed positions. Fig. 4 is an end view of the car with a portion of the adjacent end wall omitted.

The car body, in the main, is constructed in the ordinary manner, embodying the opposite ends 1, the bottom frame 2 forming the support for the car floor, the top or roof 3, and the sides formed by the uprights or stanchions 4, and the horizontal stringers, bars or slats 5. The car body is also shown as equipped with a sliding door 6 slidably supported at its upper end on a horizontal guide rail 7 while the lower edge thereof is adapted to move lengthwise of the car in a guideway 9, the door being shown as capable of being locked in its closed position by means of a hasp 10 pivotally connected to the body of the car by a hinge rod 11, the hasp engaging over a staple 12 on the door to which the hasp is secured by means of a lock 13. The parts hereinabove referred to may be constructed and combined in any usual or preferred manner.

The present invention resides in the panel arrangement for opening and closing the sides of the car body, Figs. 2 and 3 illustrating the open and closed positions of said

panels. Each panel comprises an upper section 14 and a lower section 15, said sections being hinged together as shown at 16 to adapt them to fold from the vertical position shown at the right in Fig. 2 upward to the horizontal position shown in Fig. 3, in which movement, the lower section 15 is caused to fold under the upper section 14 until both sections are arranged in parallelism and flatwise against each other as shown in Fig. 3.

In order to accomplish the folding and unfolding of the panel sections 14 and 15, the upper section 14 of each panel is hinged along its upper edge as shown at 17 to one of the top longitudinal beams 18 of the car body.

19 designates an overhead rotary shaft which is mounted in bearings beneath the car roof and provided at one end with a worm wheel 20 which meshes with and is operated by a worm 21 on an operating shaft 22 which is shown as extending upward above the roof of the car where it is provided with a hand wheel 23. Thus by turning the hand wheel 23 rotary motion is imparted to the overhead shaft 19. The shaft 19 as shown in Fig. 2 is provided with drums 24 upon which are wound flexible connections 25 one of which leads over a pulley 26 on a shaft supported from the carlins of the roof. Both connections 25 pass around pulleys 27 journaled in openings in the upper panel sections 14, the ends of said connections being attached to the outer sides of the lower panel sections 15 as shown at 28. It will now be understood that by turning the shaft 19, the connections 25 are wound upon the drums or pulleys 24 and operate to move the lower panel sections 15 upward. This causes the panel sections 14 and 15 to fold upon each other in the manner illustrated in Fig. 3 and at the same time the panel sections are carried upward to the overhead position illustrated in Fig. 3. To lower the panel sections to their closed positions, the operation just described is reversed.

When the panel sections are closed as shown at the right hand end of Fig. 2 and in Fig. 3 they are held from breaking inwardly along their jointed edges by means of a plurality of fastenings 29, each consisting of a bar pivotally connected to the upper panel section 14 as shown at 30 and pro-

vided at its free end with a slot or opening adapting the same to fit over a staple 31 on the inner side of the lower panel section, the fastener 29 being provided with a pivoted hook 32, the point of which is adapted to be inserted through the staple 31. The fastener 29 extends across the joint between the upper and lower panel sections 14 and 15 when closed. Furthermore, the bottom edges of the lower sections 15 are received behind the flanges 33 of angle irons 34 secured to the car floor as indicated in Fig. 3 thus preventing the bottom edges of the panels from being pushed inward by externally applied force. It is also intended to form rabbets in the door posts 35 and in the corner posts 36 to receive the opposite side edges of the panels when in a closed position, thus serving to exclude the weather.

In the preferred embodiment of the invention two shafts 19 arranged end to end are employed as shown in Fig. 2, and the inner ends of said shafts are squared as shown at 37 enabling the same to be engaged by pivoted locks or hasps 38. Each of said locking devices or hasps is pivotally mounted on one of the carlins as shown and is provided with a squared notch 39 designed to receive the squared end 37 of the shaft 19 to prevent said shaft from being turned. The fastening device 38 is also provided with eyes 40 to receive a key 41 provided with a stop shoulder 42 and with a terminal hole 43 in which a seal 44 is adapted to be inserted. It will now be apparent that when the shaft is locked by the device described, said shaft may not be turned without breaking the seal 44.

We claim:

1. A car body comprising side closing panels each embodying a plurality of sections hinged together at their jointing edges, combined with means for elevating and lowering the foldable sections of the panels.

2. A car body comprising side closing panels, each embodying a plurality of horizontally extending panel sections hinged together on their meeting edges, the upper panel section being hinged to the car body, and overhead mechanism for folding the panel sections upon each other and elevating the same to an overhead position.

3. A car body comprising side closing panels, each embodying upper and lower sections hinged together on their meeting edges, the upper sections being hinged at their upper edges to the car body, an overhead shaft, means for rotating said shaft,

and flexible connections leading from said shaft to the panel sections and connected with the latter in such manner that upon turning the shaft, the panel sections are folded upon each other and elevated to an overhead position.

4. A car body, comprising side closing panels, each composed of upper and lower sections, the upper section of each panel being hinged to the car body, and the lower section being hinged at its top edge to the bottom edge of the upper section, pulleys mounted in openings in the upper section, an overhead operating shaft, means for revolving said shaft, and flexible connections adapted to be wound upon said shaft and leading therefrom over the pulleys on the upper panel sections and connected at their extremities to the lower panel sections.

5. A car body comprising side closing panels each embodying an upper section and a lower section hinged together along their meeting edges, the upper section being hinged to the car body, overhead means for folding the panel sections upon each other and elevating the same to an overhead position, and angle irons behind the flanges of which the bottom edges of the lower sections are adapted to be received as the panel sections are lowered.

6. A car body, comprising side closing panels each embodying upper and lower sections hinged together along their meeting edges, the upper section being hinged to the car body, overhead means including a rotary shaft for elevating and lowering the panel sections, and a locking device movable into and out of engagement with said overhead shaft to prevent rotation thereto, said locking device being adapted for the application thereto of a seal.

7. A car body comprising side closing panels each embodying upper and lower sections hinged together along their meeting edges, the upper section being hinged to the car body, and bars adapted to be projected across the jointed edges of said sections, each of said bars being pivotally connected at one end to one section and having means for securing the opposite end thereof to the adjoining section.

In testimony whereof we affix our signatures in presence of two witnesses.

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CHARLES E. TEETER.

Witnesses:

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