No. 894,646. PATENTED JULY 28, 1908.

J. F. HINCK.

WAGON SCALE.

APPLICATION FILED SEPT. 18, 1907.

2 SHEETS—SHEET 1.

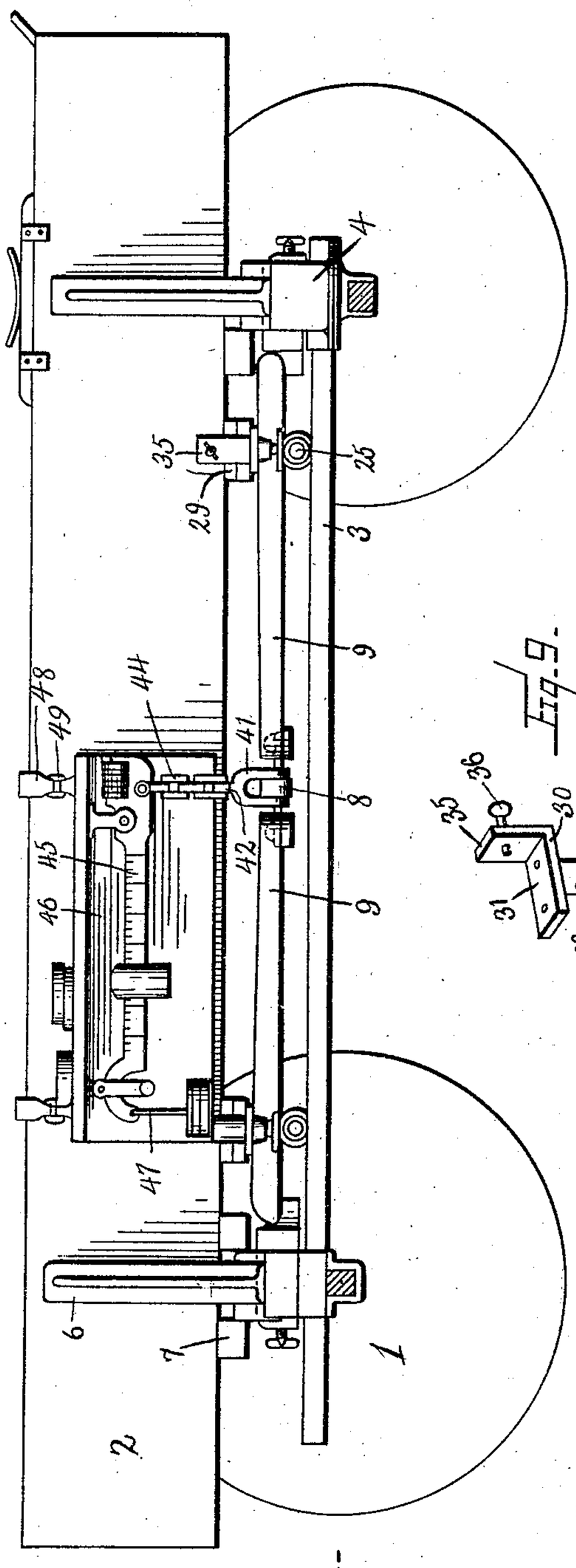

Fig. 1.

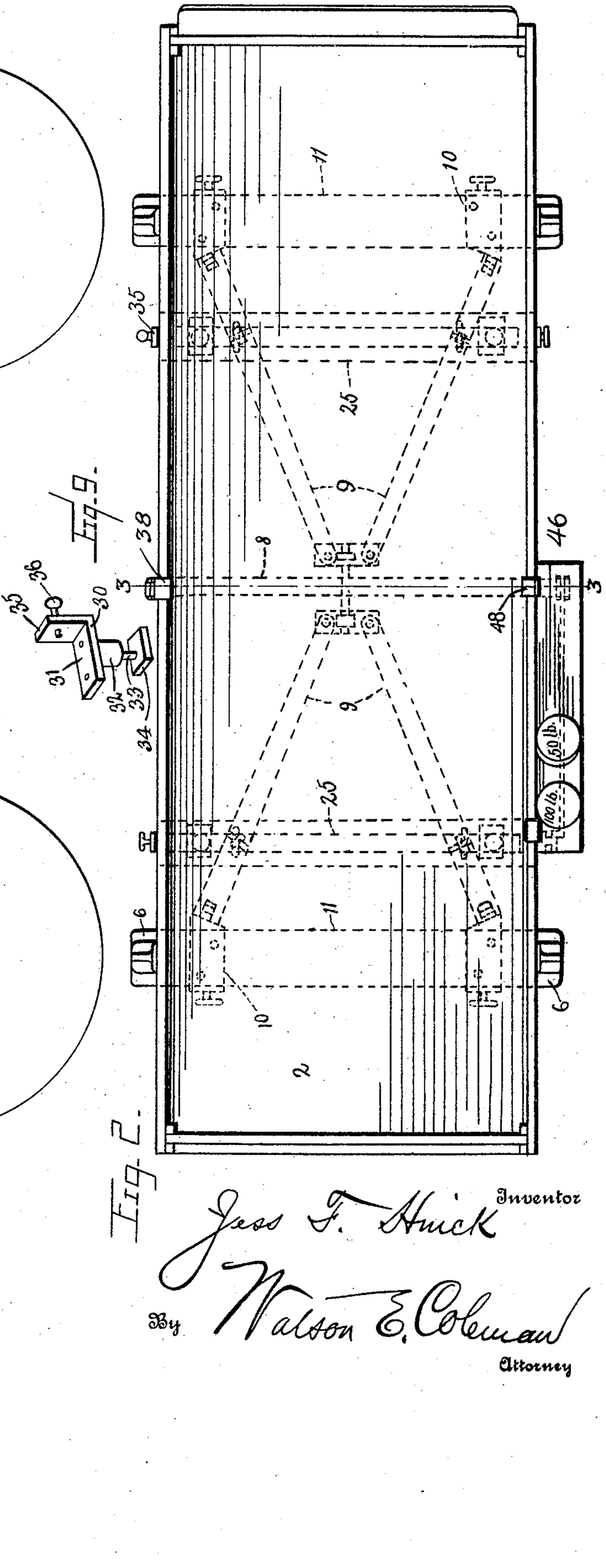

Fig. 2.

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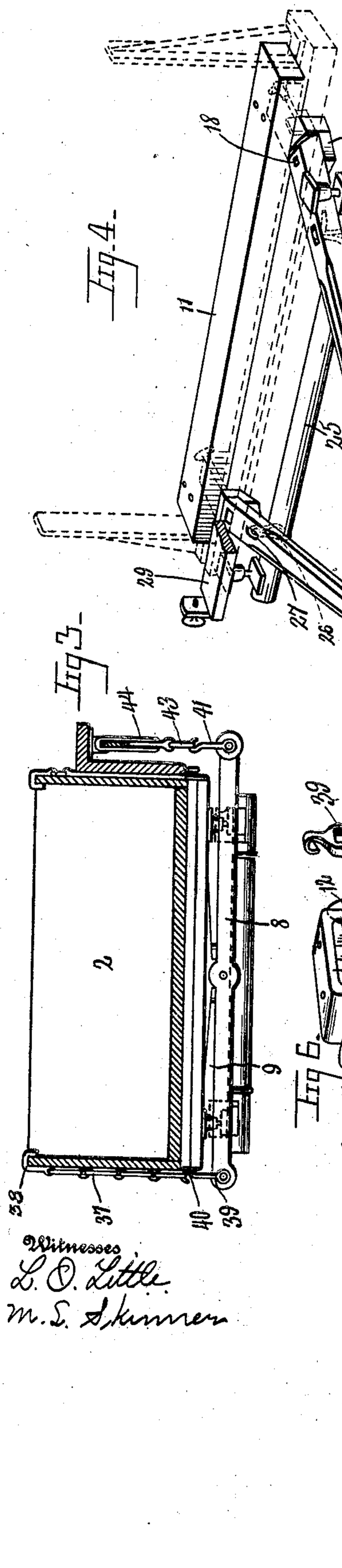

Fig. 4.

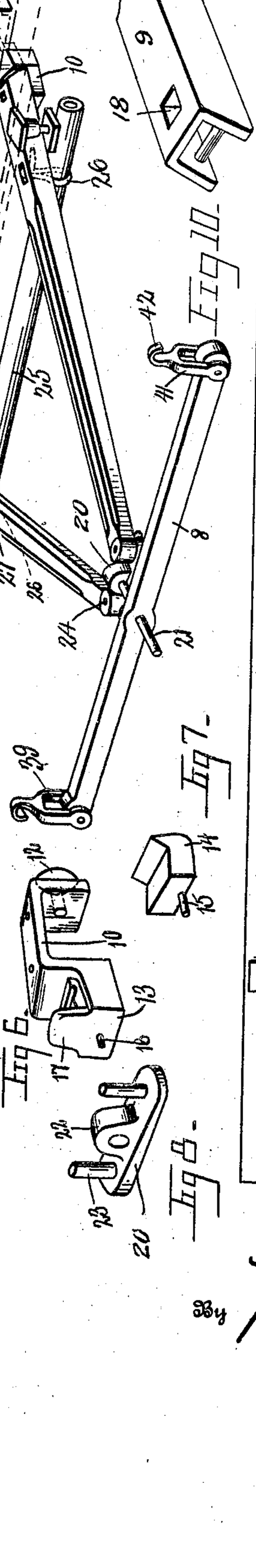

Fig. 10.

Fig. 3.

Fig. 7.

Fig. 6.

Fig. 8.

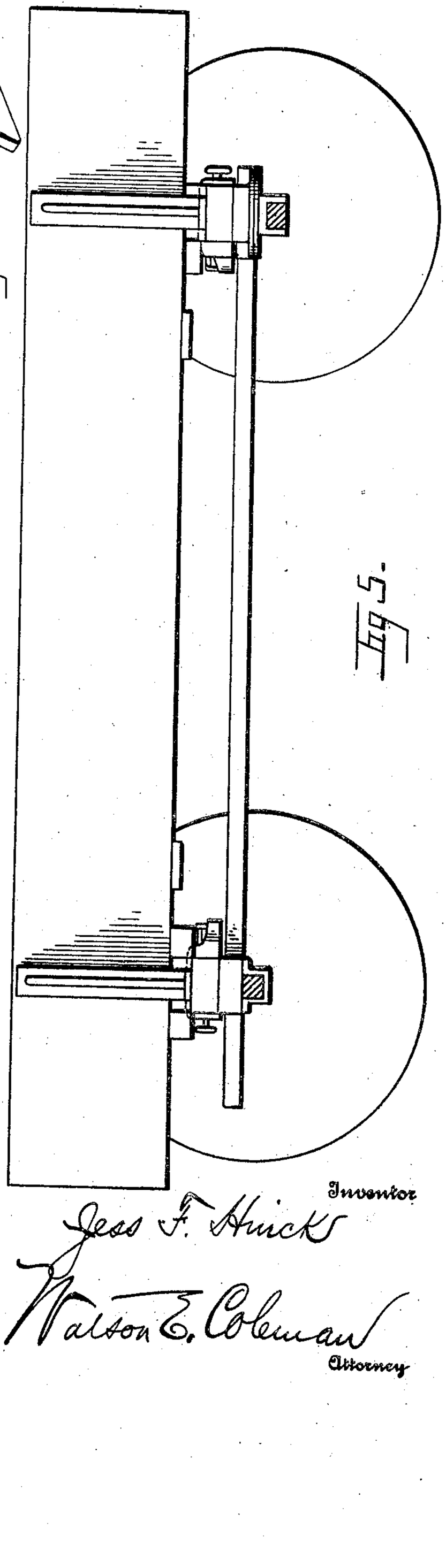

Fig. 5.

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UNITED STATES PATENT OFFICE.

JESS F. HINCK, OF CROOKSTON, MINNESOTA.

WAGON-SCALE.

No. 894,646. Specification of Letters Patent. Patented July 28, 1908.

Application filed September 18, 1907. Serial No. 393,544.

To all whom it may concern:

Be it known that I, JESS F. HINCK, a citizen of the United States, residing at Crookston, in the county of Polk and State of Minnesota, have invented certain new and useful Improvements in Wagon-Scales, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to improvements in wagon scales, the object of the invention being to improve the construction of a wagon scale of this character and thereby render the same stronger and more durable, less expensive, and more convenient in the application to and removal from the wagon.

With the above and other objects in view which will appear as the invention is better understood, the same consists in the novel features of construction, and the combination and arrangement of parts hereinafter described and claimed, and illustrated in the accompanying drawings, in which,

Figure 1 is a side elevation of the wagon showing the application of the invention thereto, the wheels upon the near side of the wagon being removed. Fig. 2 is a top plan view, Fig. 3 is a transverse section taken on the plane indicated by the line 3—3 in Fig. 2, Fig. 4 is a detail perspective view of several of the levers of the device. Fig. 5 is a view similar to Fig. 1 showing the removable parts of the device or attachment removed from the wagon, Fig. 6 is a perspective of one of the fulcrum carrying castings, Fig. 7 is a similar view of one of the fulcrum blocks, Fig. 8 is a perspective view of one of the castings which connect the members of the body supporting levers, Fig. 9 is a perspective view of one of the jacks for supporting the body, and Fig. 10 is a detail perspective view of one end of one of the longitudinal levers.

In the drawings 1 denotes the running gear of a farm wagon, or other suitable support, and 2 denotes the body of a farm wagon, or any other suitable weighing receptacle. As shown, the running gear comprises a reach 3 connecting the bolsters 4, 5, on the front and rear axles. On the bolsters are arranged the usual stakes 6 which receive the wagon body 2 between them and prevent the lateral movement of the same. The body is prevented from shifting endwise or longitudinally by the usual cleats 7 arranged upon its bottom. The improved scales comprise a transverse lever 8 and four longitudinal levers 9 which are arranged in pairs on opposite sides of the transverse lever and are adapted to receive and support the body 2 when the scales are being used. The levers 9 of each pair are arranged in converging relation and their diverging ends are detachably fulcrumed upon supports 10. These supports are adapted to be permanently mounted upon the bolsters 4, 5, and are the only parts of the device which remain upon the wagon when the scales are not in use. The supports or members 10 are preferably in the form of castings bolted or otherwise secured to cross bars or beams 11 which are arranged above the bolsters and between the stakes 6.

As clearly shown in Fig. 6, each of the fulcrum supports 10 is of substantial U-shape and has in one of its depending ends a set screw 12 to clamp it to the bolster and, upon its other depending end a recessed enlargement 13 to receive a fulcrum block 14. The block 14, as shown in Fig. 7, has a channeled upper surface to receive the fulcrum pin, and its bottom portion is of such shape that it may be readily inserted in and removed from the cavity in the enlargement 13.

In order to more effectively retain the block in its seat it is provided with a pin 15 adapted to project into and through an aperture or socket 16 in the enlargement, as will be readily understood upon reference to Figs. 6 and 7. On the outer end of the enlargement 13 is an upwardly projecting lug 17 arranged in front of the fulcrum block and projecting above the same. The diverging ends of the levers 9 are bifurcated and recessed upon their under sides and also have apertures 18 which communicate with the recesses and are adapted to loosely receive the lugs 17. Arranged transversely in these recessed ends of the levers are fulcrum pins which are adapted to rest in the grooves or seats in the top of the fulcrum blocks. From the foregoing it will be seen that this construction permits the levers to be readily engaged with and disengaged from the fulcrum supports, and that the latter are so constructed that they may be readily mounted on a wagon of almost any size and construction.

The converging inner ends of the body supporting levers 9 may be permanently connected, if desired, but they are preferably detachably connected by a coupling

member 20 which is also adapted to removably engage a transverse pivot 21 on the lever 8. The coupling and pivot member 20 is preferably in the form of a casting, as shown in Fig. 8, and it comprises a plate or body formed at its center with a lug 22 apertured to receive the pivot 21 and adjacent to its ends with upwardly projecting pins or studs 23 to enter the apertures 24 formed in the converging ends of the levers 9. One of the coupling members 20 is provided upon each side of the lever 8 for each pair of levers 9 and they enable said levers to be quickly and easily connected up for use and as readily disconnected so that the parts of the device may be compactly folded.

The levers 9 support the body 2 through the instrumentality of a transverse supporting bar or rod 25 arranged beneath said levers and adapted to be slipped into and out of openings in hangers or links 26 which have their reduced ends projecting into openings 27 formed in the levers 9 and permanently pivoted in said openings by transverse pivot pins, as more clearly shown in Fig. 4. In order to support the body 2 from the rod 25 an adjustable connecting device is preferably provided, and which is here shown in the form of a pair of screw jacks mounted upon a cross bar 29 which is adapted to be detachably connected to the body 2. Each of said jacks consists of a right-angular body 30 having a horizontal arm 31 adapted to be secured to the cross bar 29 and formed upon its bottom with a boss 32 containing a screw threaded socket to receive a screw 33 projecting from the plate or head 34 which is adapted to rest upon or engage one of the rods 25. The body 30 of the jack is also formed with a vertical arm 35 containing a set screw by means of which the cross bar is removably secured to the body 2.

It will be understood that the cross bar 29 is attached to the bottom of the body immediately above one of the rods 25, and the screws 33 are then adjusted so that when the scales are used the body will be elevated. It will be further noted that the provision of the jacks or their equivalent adjustable connections, enables the device to accommodate itself to wagons having bolsters and bodies of different sizes.

The transverse lever 9 is fulcrumed at one of its ends upon a support 37 which is adapted to be readily engaged with and removed from the wagon. This fulcrum support 37 preferably comprises a chain having at its upper end a hook 38 to take over the upper edge of one side of the body 2 and at its lower end a yoke 39 containing the fulcrum pin for the lever 8. This yoke 39 is preferably formed at its top with a hook 40 to engage one of the links of the chain 37 so that the latter may be detachably and also adjustably connected to the yoke 39. A similar yoke 41 is pivoted to the other end of the lever 8 and has at its top a hook 42 to receive a link, chain, or other flexible connection 43, which has its upper end attached to a yoke 44. The latter is pivoted to a graduated scale beam 45 which is fulcrumed upon a hanger or support 46 and has at one of its ends a hanger 47 for the usual removable weights. The hanger 46 is preferably of right-angular form, as shown, so that its horizontal upper portion forms a support or shelf on which the weights may be supported. This support 46 is adapted to be readily applied to and removed from the wagon body and it is preferably provided with hooks 48 which are adapted to take over the upper edge of one side of the body and which are flexibly connected as at 49 to said support or hanger.

When my invention is applied to a wagon its body is removed and the cross bar 11 carrying the fulcrum supports or members 10 are arranged upon the bolsters and secured to them by set screws 12. The body is then replaced upon the running gear so that it rests upon the cross bars 11 between the stakes 6, as shown in Fig. 5, it being noted that the engagement of the cleats 7 with the cross bars 11 prevents endwise movement of the body.

When it is desired to weigh the contents of the body, the levers 9 are engaged with the fulcrum supports 10, and then engaged with the coupling members 20 after the latter have been arranged upon the pivots 21. The hook 30 of the fulcrum support of the lever 8 is then engaged with one side of the body 2 and the hooks 48 then engaged with the other side of the body to support the hanger 46 and the scale beam. The rods 25 are then engaged in their hangers 26 and the cross bars 29 are attached to the body 2 above said rods. The screw jacks are then adjusted so that the body 2 will be elevated when the weights are manipulated upon the scale beam in the act of weighing.

From the foregoing it will be seen that by constructing the several parts of the invention as above described they will be strong and durable and may be produced at a comparatively small cost. The peculiar construction of the several parts also enables them to be rapidly removed and disassembled so that the weighing of the contents of the wagon may be quickly and easily accomplished. By permitting of the removal of all parts of the device except the fulcrum supports, the liability of breakage is reduced to a minimum and there will be nothing to interfere with the use of the wagon in the usual manner.

While I have shown and described in detail the preferred embodiment of my invention I wish it understood that I do not limit myself to the precise construction set forth, and that various changes in the form, pro-

portion, and minor details may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

Having thus described my invention what is claimed is,

1. The combination with the running gear and the body of a wagon or the like, of fulcrum supports fixed upon the running gear, pairs of body supporting levers having their outer ends adapted for ready engagement with and disengagement from said fulcrum supports, cross bars arranged between the levers of each pair, supporting devices detachably connected to the body and adapted to be engaged by the cross bars of said levers, an intermediate lever detachably connected to the body and adapted to co-act with said body supporting levers, and a weighing mechanism connected to said intermediate lever and detachably connected to the body, substantially as set forth.

2. The combination with the running gear and the body of a wagon or the like, of fulcrum supports arranged upon the running gear, longitudinal levers arranged in pairs and detachably fulcrumed upon said supports, coupling members detachably connecting said levers, a transverse lever having a detachable pivotal connection with said coupling members, a fulcrum support for the transverse lever detachably connected to the body, weighing mechanism connected to the transverse lever and detachably connected to the body, and means for supporting the body from said longitudinal levers.

3. The combination with the running gear and the body of a wagon or the like, of fulcrum supports arranged upon the running gear, longitudinal levers arranged in pairs and detachably fulcrumed upon said supports, coupling members detachably connecting said levers, a transverse lever having a detachable pivotal connection with said coupling members, a fulcrum support for the transverse lever detachably connected to the body, weighing mechanism connected to the transverse lever and detachably connected to the body, and an adjustable supporting device between the longitudinal levers and the body.

4. The combination with running gear and the body of a wagon or the like, of fulcrum supports arranged upon the running gear, longitudinal levers arranged in pairs and detachably fulcrumed upon said supports, coupling members detachably connecting said levers, a transverse lever having a detachable pivotal connection with said coupling members, a fulcrum support for the transverse lever detachably connected to the body, weighing mechanism connected to the transverse lever and detachably connected to the body, hangers carried by the longitudinal levers, cross rods in said hangers, and screw jacks arranged between said cross rods and the body, substantially as described.

5. The combination with the running gear and the body of a wagon or the like, of levers fulcrumed upon the running gear, weighing mechanism actuated by said levers, and adjustable supporting connections between said levers and the body.

6. The combination with the running gear and the body of a wagon or the like, of levers fulcrumed upon the running gear, weighing mechanism actuated by said levers, and screw jacks arranged between said levers and the body.

7. The combination with the running gear and the body of a wagon or the like, of fulcrum supports attached to the bolsters of the running gear, pairs of converging longitudinal levers having their diverging ends detachably fulcrumed upon said supports, coupling members detachably connecting the diverging ends of said levers, a transverse lever having a detachable pivotal engagement with said coupling members, a fulcrum support for the transverse lever carrying a hook to take over the side of the body, a scale beam support having a hook to take over the side of the body, a scale beam upon the last mentioned support, a connection between the scale beam and the transverse lever, hangers depending from the longitudinal levers, cross rods removably engaged with said hangers, and screw jacks arranged between said rods and the body, substantially as described.

8. The combination with the running gear and the body of a wagon or the like, of supports permanently attached to the gear, fulcrum blocks removably mounted upon said supports, body supporting levers having at their outer ends fulcrum pins to removably engage said fulcrum blocks and weighing mechanism removably mounted on the body and actuated by said longitudinal levers.

9. The combination with the running gear and the body of a wagon or the like, of supports having U-shaped portions to engage the running gear and projecting portions formed with recesses and upwardly projecting lugs, means for retaining the U-shaped portions of the supports upon the running gear, fulcrum blocks removably arranged in the recesses in the projecting portions of the supports, body supporting levers having recessed ends to receive the lugs on said supports and fulcrum pins arranged in said recessed ends to removably engage said fulcrum blocks and weighing mechanism removably mounted upon the body and actuated by said longitudinal levers.

10. The combination with the running gear and the body of a wagon or the like, of fulcrum supports having U-shaped portions to take over the bolsters of the running gear and projecting recessed portions to receive fulcrum blocks, cross bars uniting said sup-

ports on each bolster whereby said supports are rigidly connected and spaced apart to permit of their simultaneous engagement with and removal from the bolsters, set screws arranged in said supports for retaining them upon the bolsters, fulcrum blocks removably arranged in the recessed projecting portions of the supports, body supporting levers having at their outer ends fulcrum pins to removably engage the fulcrum blocks, and weighing mechanism detachably mounted upon the body and adapted to be actuated by the longitudinal levers.

11. The combination with the running gear and the body of a wagon or the like, of longitudinal levers fulcrumed upon the running gear, weighing mechanism actuated by said levers, a cross bar removably connected to the body and adjustable supporting devices carried by the cross bar and adapted to co-act with said levers.

12. In a weighing mechanism for wagons or the like, the combination of body supporting levers fulcrumed on the running gear and provided with apertured inner ends, a transverse lever fulcrumed upon the body and connected to the weighing mechanism, pivot pins projecting from the opposite sides of the transverse lever and coupling members apertured to receive said pivot pins and provided with pins to engage the apertures in said body supporting levers.

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

JESS F. HINCK.

Witnesses:
L. L. CASE,
J. C. HAZLETT.