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No. 835,203.

PATENTED NOV. 6, 1906.

F. P. SHEPARD.
WEIGHING ATTACHMENT FOR WAGONS.

APPLICATION FILED DEC. 12, 1905.

2 SHEETS-SHEET 1.

Fig. 1.

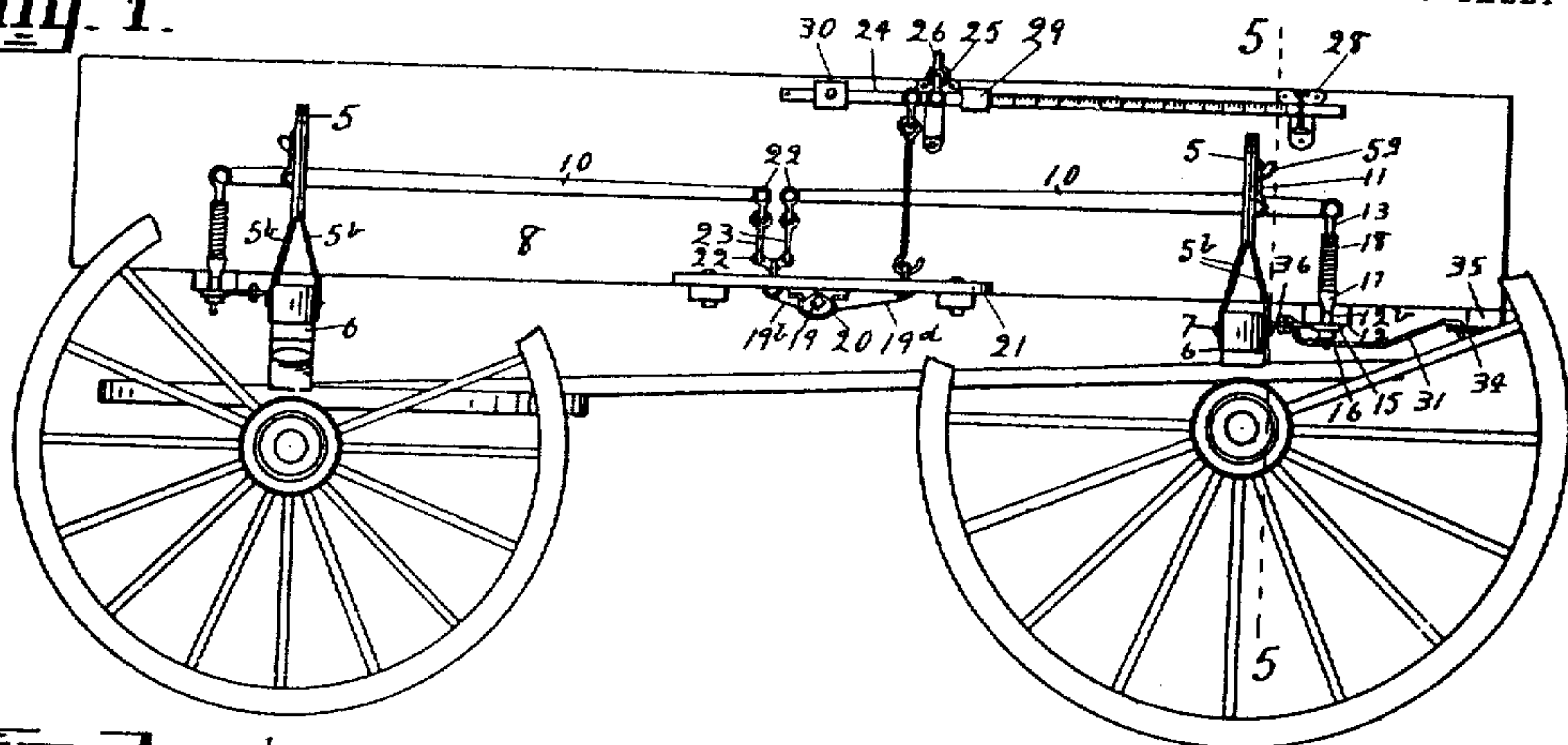


Fig. 2.

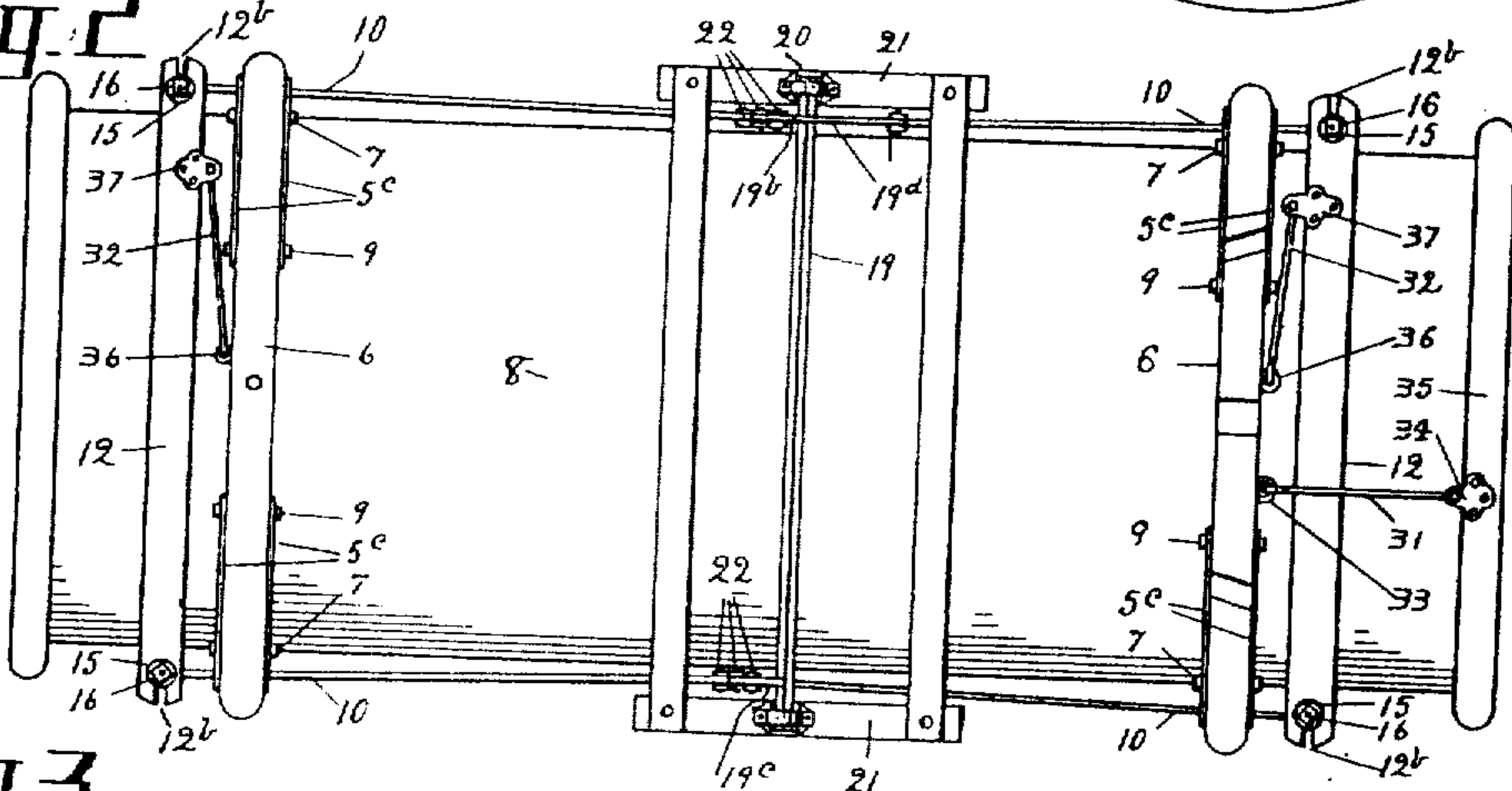
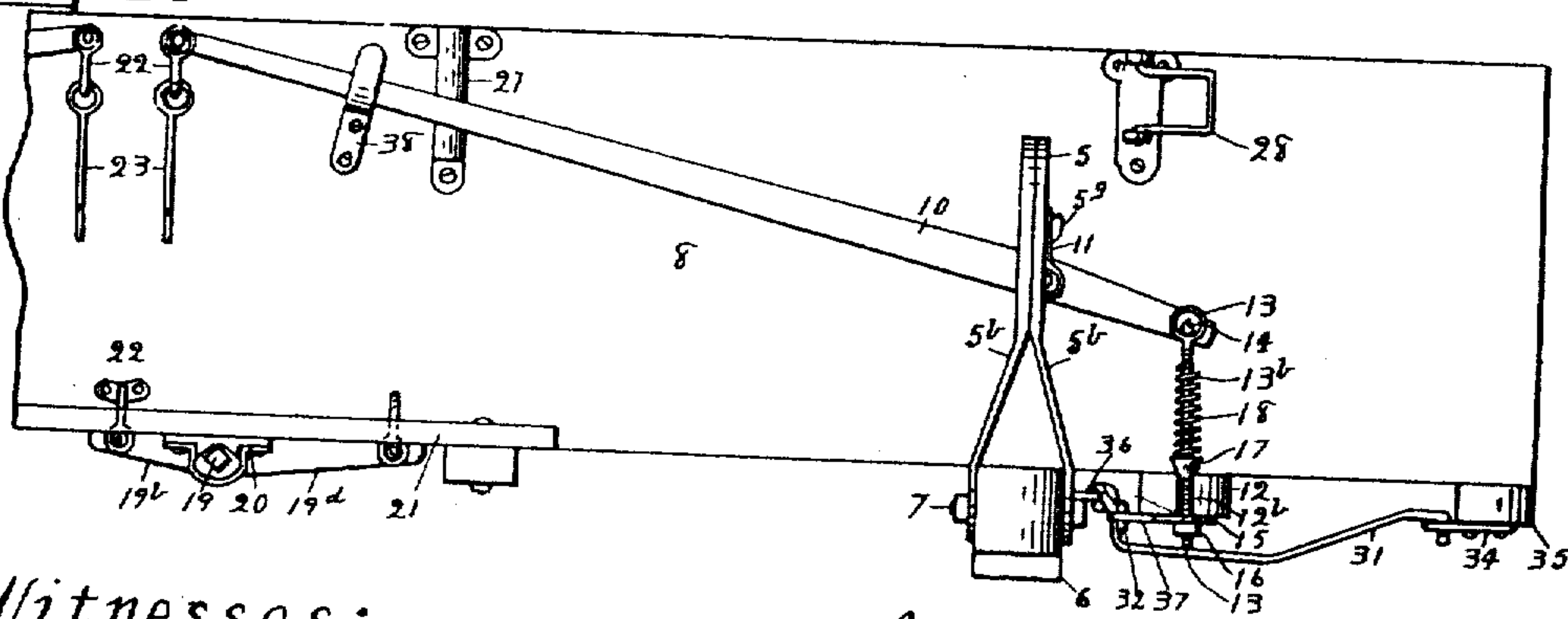


Fig. 3.



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2 SHEETS—SHEET 2.

Fig. 4.

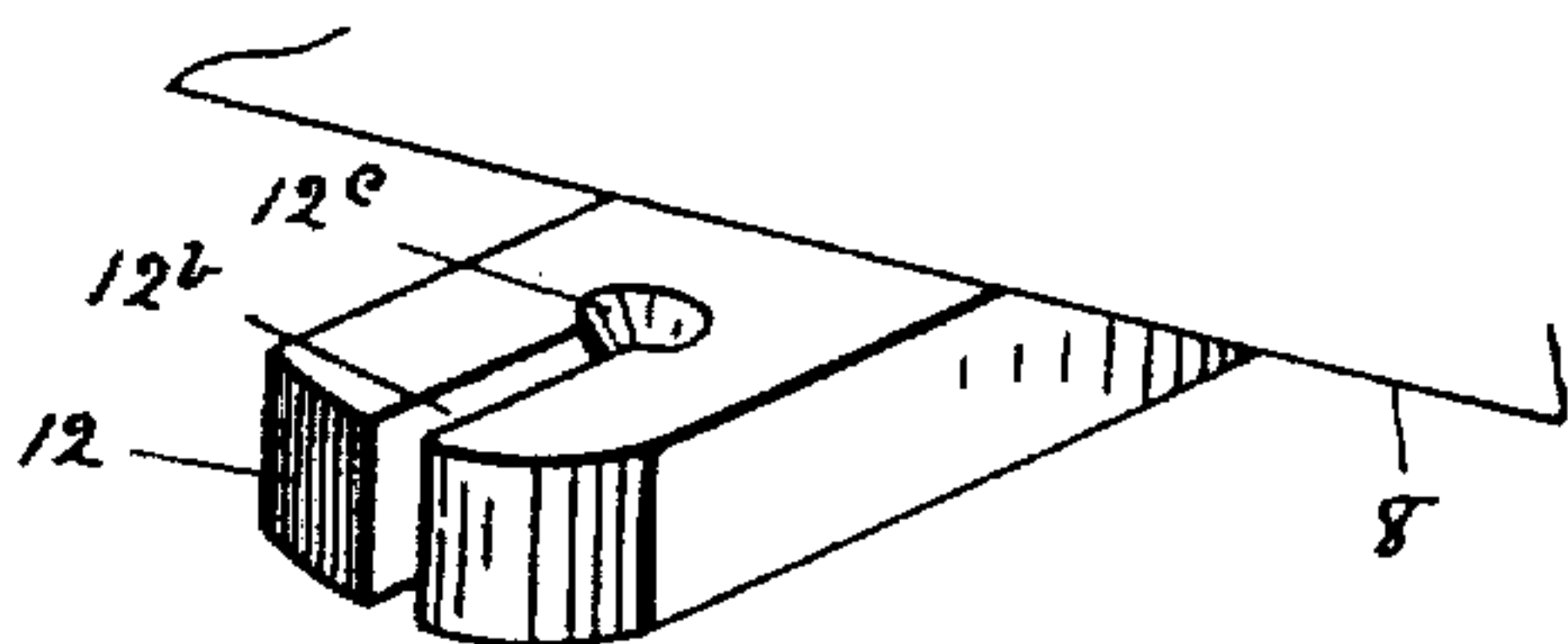


Fig. 5.

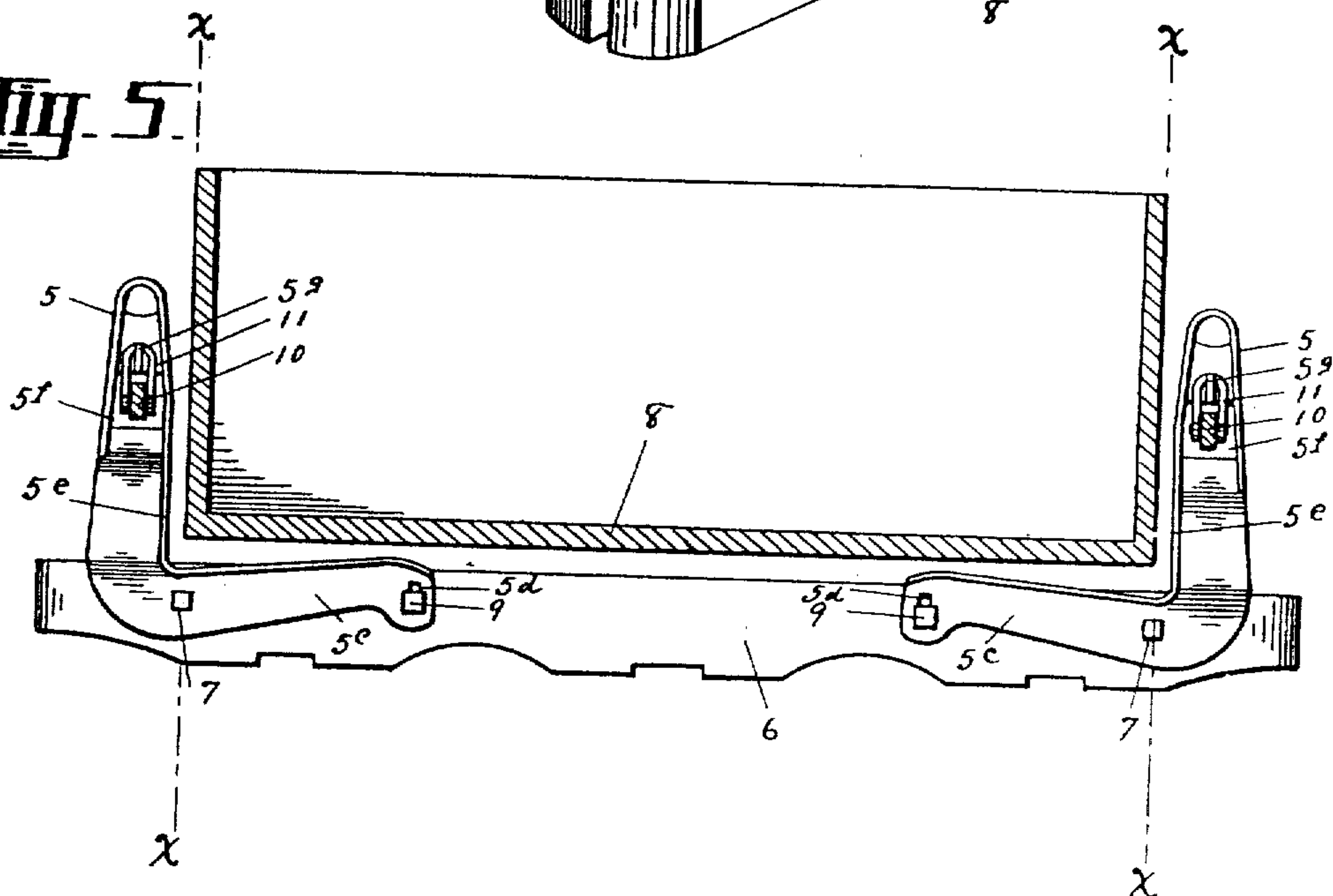
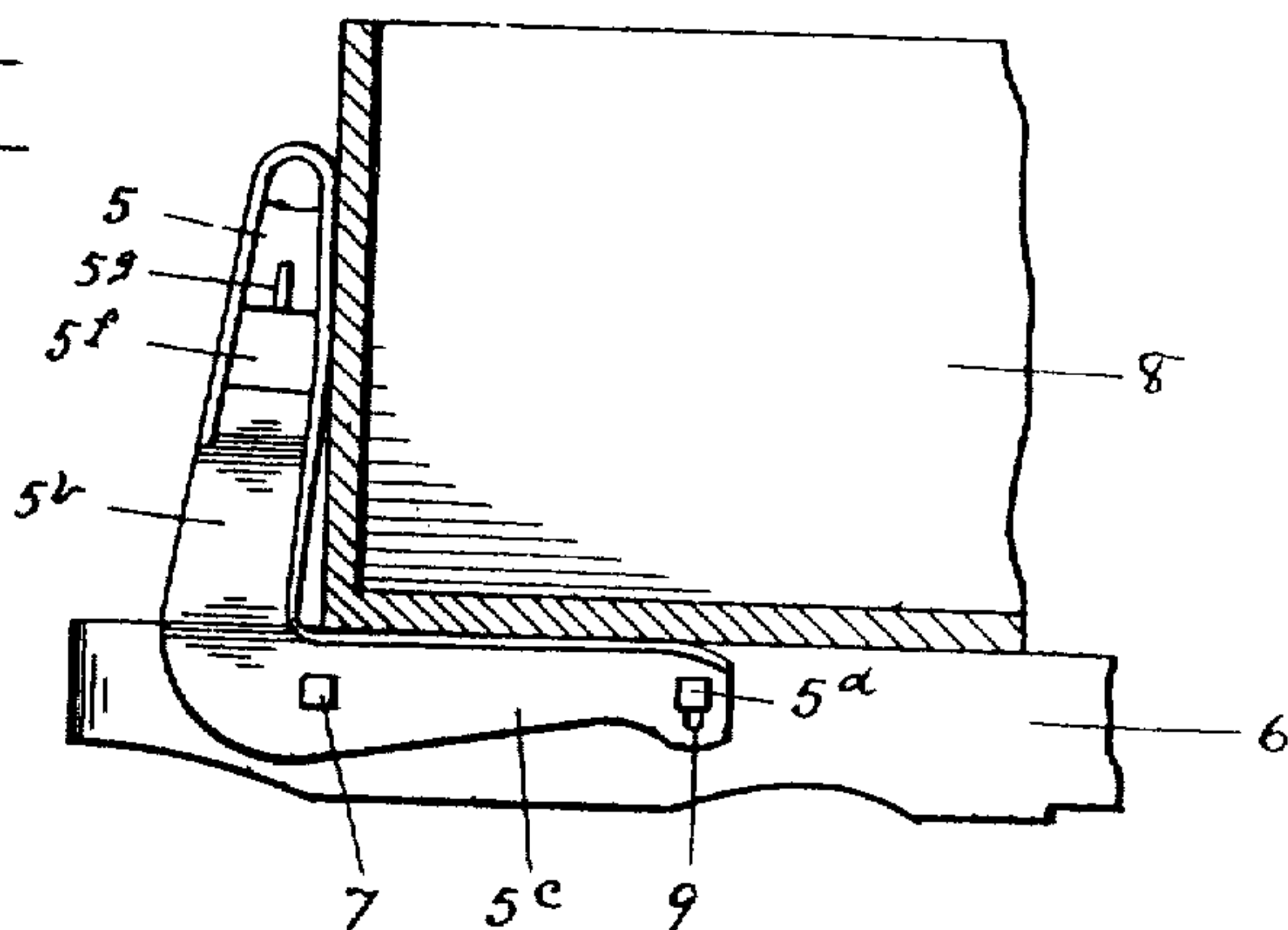


Fig. 6.



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UNITED STATES PATENT OFFICE.

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WEIGHING ATTACHMENT FOR WAGONS.

No. 835,203.

Specification of Letters Patent.

Patented Nov. 6, 1906.

Application filed December 12, 1905. Serial No. 291,392.

To all whom it may concern:

Be it known that I, FRANK P. SHEPARD, a citizen of the United States, residing at Edmond, in the county of Oklahoma and Territory of Oklahoma, have invented certain new and useful Improvements in Weighing Attachments for Wagons, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

The object of the invention is to produce an attachment for wagons for weighing the contents of the wagon-bed in which the bed may be freed from frictional contact with the bolsters and bolster-standards during the operation of weighing, in which there will be less tension or cramping between the bearings as the wagon-bed is raised from the bolster for weighing, which shall have fewer bearings other than the common pin-and-clevis bearings, which shall be simple and easy to construct, and which will more accurately indicate the weight of the contents of the wagon-bed than devices of this class heretofore produced.

Other objects and advantages of the invention will be set forth in the ensuing description.

Referring to the accompanying drawings, Figure 1 is a left-hand side elevation of a wagon with the improved attachment in place and in position for weighing. Fig. 2 is an inverted plan view showing the wagon-bed and bolsters with the improved attachment in place. Fig. 3 is a left-hand side elevation of a portion of a wagon-bed, on larger scale, showing an operative position of one of the levers employed. Fig. 4 is a perspective view of the end of a supporting cross-bar for the bed. Fig. 5 is a sectional view taken on the line 5-5, Fig. 1. Fig. 6 is a view similar to Fig. 5, showing the position of the bolster-standards as the wagon-bed is suspended for weighing.

Referring to the several figures, in all of which like characters of reference designate like parts, the bolster-standards 5 are mounted pivotally upon the bolsters 6 and adapted to swing outward clear of the wagon-bed as the latter is suspended for weighing. Each standard is composed of two mating L-shaped portions 5^b, which are riveted together at their upper ends and spread apart

at their lower ends to straddle the bolster 6. A pivot-bolt 7 passes through the lower or pivot ends of the portions 5^b and through the bolsters 6 at the angle or corner of the standards, and the lower or horizontal portions 5^c of said standards extend in along the bolsters under the bottom 8^b of the wagon-bed 8. The inner ends of the horizontal arms 5^c of each standard are provided with slots 5^d concentric to the pivot-bolt 7, and a bolt 9 passes through said slots and through the bolster to limit the upward swinging of said arms and the outward swinging of the standards 5. The slots 5^d are made of such length as to allow the standards 5 to swing away from the wagon-bed 8 the proper distance for a safe clearance—say five-eighths or three-fourths of an inch at their upper ends—and since the portion of said standards near the pivot-bolt 7 cannot move the distance required to properly clear the bed 8 that portion is shaped, as at 5^e, to clear said bed at all times. As the wagon-bed is raised up clear of the bolster by means later described, it allows the inner ends of the horizontal arms 5^c to raise up, and thus allows the standards to swing outward in obedience to means hereinafter described, and as said bed is again lowered onto the bolsters it forces said arms back down and draws the standards 5 in forcibly against said bed.

Each standard 5 supports a lever 10, which extends through an opening 5^f therein, and said lever is fulcrumed in a clevis 11, suspended from a hook 5^g on said standard. Two supporting cross-bars 12 extend across under the wagon-bed 8, one in front of the front bolster 6 and the other behind the rear bolster, the ends of the front bar being suspended from the shorter arms of the front pair of levers 10 and the ends of the rear bar from the shorter arms of the rear pair of levers. The connection between each lever 10 and its bar 12 is formed by the common clevis 13, pivoted to said lever by the common knife-edge pivot-pin 14, and a rod 13^b, which is welded integrally to said clevis, said rod extending down through an open-ended slot 12^b in the bar 12 and having a washer 15 and screw-nut 16 for adjustment of its length. Each rod 13^b is retained removably within its slot 12^b by an inverted-cone-shaped mem-

ber 17, mounted slidably on said rod and adapted to rest in a correspondingly-shaped depression 12^c, formed in the upper portion of said slot, as shown in Fig. 4, and said member 17 is held yieldably into engagement with said depression by a helical spring 18, mounted on said rod and having bearing against the clevis 13 at its upper end. When the wagon-bed 8 rests upon the bolsters 6, the levers 10 assume the position shown in Fig. 3, the bed being raised clear of the bolsters for weighing by drawing said levers down to horizontal position, and since the levers are suspended from the standards 5 at points outwardly of a vertical line xx passing through the pivot-bolt 7 the weight or action of said levers throws said standards away from the bed 8 into the position shown in Fig. 6, as previously described. When the levers 10 are drawn down into horizontal position for suspending the bed 8 and weighing, the longer arm of each is connected with and adapted to impart revolving motion to a rock-shaft 19, mounted transversely under the central portion of said bed. This rock-shaft 19 is mounted in antifriction-bearings 20, secured to the under faces of the foot-steps 21 of the bed, said shaft being provided at one end with an arm 19^b, to which the levers 10 at its side of the wagon are operatively connected, and at the other end with a like arm 19^c, to which the levers at that side are connected. The operative connection between the levers 10 and arms 19^b and 19^c just described comprises the common clevises 22, pivoted to said levers and arms by the usual knife-edge pin, and the rods 23, which hook permanently into the lever-clevises and removably into the arm-clevises. A third arm 19^d, radially opposing the arms 19^b and 19^c, extends from the rock-shaft 19, and said arm is operatively connected with a common weigh-beam 24, mounted above on the side of the bed 8, the connection between said arm and beam being made in the same manner as that between the arms 19^b and 19^c and the levers 10. This beam 24 is fulcrumed in the usual clevis 25, which is suspended permanently from an overhanging support 26, said support being removably inserted in a supporting-socket 26, riveted to the side of the bed 8. A loop 28 for limiting the balancing movements of the beam 24 is riveted to the side of the bed 8, and said beam is provided with the usual weighing-poise 29 and balancing-poise 30. The arms of the levers 10 and the arms of the rock-shaft 19 are made of such proportionate length and the beam 24 so graduated as to accurately indicate the weight of anything placed into the bed 8.

In order that the wagon-bed 8 may move freely up and down and not swing excessively when suspended by the levers 10, a stay-rod 31 is employed to limit the movements of

said bed in a fore-and-aft direction, and two like rods 32 are used to limit its movements in a lateral direction. The rod 31 has one of its ends secured pivotally to an eye 33, which is screwed into the rear face of the rear bolster 6, and the opposite end of said rod is secured pivotally to a lug 34, bolted to the under face of the rear cross-sill 35 of the bed. One of the rods 32 has one of its ends pivoted to an eye 36, screwed into the rear face of the rear bolster 6 and its opposite end pivoted to a lug 37, bolted to the cross-bar 12, while the other rod forms a like connection between the front bolster 6 and the front cross-bar 12. Each of these rods 31 and 32 should be approximately horizontal when the wagon-bed is suspended for weighing, and when thus arranged they will prevent the bed from moving excessively or swinging into contact with the standards 5 without exerting any force vertically on said bed.

In order to lower the bed 8 onto the bolsters 6 and relieve the strain upon the levers, standards, and bearings while the wagon is used, the connecting-rods 23 are unhooked from the arms 19^b and 19^c of the rock-shaft 19, and said levers are allowed to swing up into the position shown in Fig. 3. When in this inoperative position, each lever 10 rests in a supporting-hook 38, riveted to the side of the wagon-bed 8, and said levers are retained in said hooks by the action of the springs 18 on the rods 13^b, said springs holding said levers up against the upper edges of the openings 5^f of the standards and relieving the wearing strain upon the bearings. The weigh-beam 24 may be left suspended from its supporting-arm 26 or it may be removed therefrom and placed into the wagon-bed.

By employing the rock-shaft 19 and mounting it transversely under the bed 8 to form the operative connection between parts on opposite sides of said bed said connection may at all times be left in its place without being in the way, noticeable, or liable to injury, and as the action of all parts operatively connected with said shaft is upward thereon it will drop away from its bearing-surfaces when said parts are disengaged and avoid wear from the movements of the wagon. By suspending the wagon-bed from the levers 10 instead of supporting it upon bearings placed between it and the bolsters 6 the action of the levers and bearings will be less liable to be interfered with by tension or cramping influences when the distance between the bolsters 6 is not and cannot be accurately spaced and controlled.

It will be seen that the device is simple and easy to construct, that the arrangement of the parts allows the use of more of the common pin-and-clevis bearings, and that the objects of the invention are fully attained.

The foregoing being a full, clear, and exact

description of the invention, what I claim, and desire to secure by Letters Patent, is—

1. In a weighing attachment for wagons, a wagon running-gear, a standard on the gear, a bed, a weight-indicator, a suspending connection between said indicator and bed, said connection including a lever fulcrumed on the standard and a rock-shaft mounted across the bed.
2. In a weighing attachment for wagons, a running-gear, standards on the gear, a bed, a weight-indicator on the bed, an operative connection between said indicator and bed comprising levers fulcrumed on the standards and a rock-shaft mounted on said bed.
3. In a weighing attachment for wagons, supporting-bolsters, a bed on the bolsters, standards on the bolsters at the sides of the bed, levers fulcrumed on the standards, a rock-shaft mounted across the bed, one end of the levers being operatively connected to said rock-shaft and the other end adapted to support the bed, a weight-indicating device adapted to be acted upon by said rock-shaft.
4. In a weighing attachment for wagons, supporting-bolsters, a bed on the bolsters, standards secured pivotally to the bolsters and adapted to be held into engagement with the bed by the weight of said bed, weight-indicating devices on the standards outside a vertical line passing through the pivot-points of the said standards, means for limiting the outward swinging of said standards.
5. In a weighing attachment for wagons, supporting-bolsters, standards mounted pivotally upon the bolsters and having arms extending along said bolsters, levers fulcrumed on the standards outside the pivotal point thereof, a bed, a weigh-beam, one arm of each lever having suspending connection with said bed, the opposite arm of each lever having operative connection with said weigh-beam, means for limiting the outward swinging of the standards.
6. In a weighing attachment for wagons, supporting-bolsters, a bed, standards mounted pivotally upon said bolsters and having projecting arms adapted to be rested upon by the bed to force said standards into supporting engagement with the sides of said bed, levers fulcrumed on the standards at points outside the pivot-points of said standards, the bed being suspended from one arm of

each lever in such manner as to be raised clear of the bolsters as the levers are drawn into operative position, a rock-shaft mounted across the bed, the opposite arms of the levers being detachably connected to said rock-shaft, a weigh-beam mounted on the bed, the rock-shaft being operatively connected with said weigh-beam, and means for limiting the outward swinging of the standards.

7. In a weighing attachment for wagons, supporting-bolsters, a bed on the bolsters, L-shaped standards having pivotal connection at their angles with said bolsters, the lower or horizontal portions of the standards extending along the bolsters in such manner as to be acted upon by the weight of the bed to force the upper parts of said standards into contact with said bed, levers fulcrumed on the standards outside the pivotal points thereof, the bed being connected to one end of each lever whereby when said levers are drawn into operative position said bed will be raised clear of the bolsters and the standards will be swung away from said bed, stops on the bolsters for limiting the outward swinging of the standards, a rock-shaft mounted across the lower side of the bed and having radial arms, the opposite end of each lever being connected to an arm of said shaft, a weigh-beam mounted on the bed, an arm of the rock-shaft being connected to said beam.

8. In a weighing attachment for wagons, supporting-bolsters, a bed, standards secured pivotally to said bolsters and adapted to swing laterally of the wagon, each standard having an arm extending along the bolster whereby the weight of the bed on said arm will cause its standard to engage the bed, a stop on the bolsters to limit the upward movement of said arms, a lever fulcrumed on each standard outside the pivotal connection thereof, a weigh-beam, one end of each lever having operative connection with said beam, the opposite end of each lever having suspending connection with said bed.

Witness my hand this 29th day of November, 1905.

FRANK P. SHEPARD.

Witnesses:

C. R. DAY,
J. H. HUBBLE.