(No Model.) 2 Sheets—Sheet 1.

Z. T. GRAGG.

WEIGHING ATTACHMENT FOR WAGONS

No. 418,317. Patented Dec. 31, 1889.

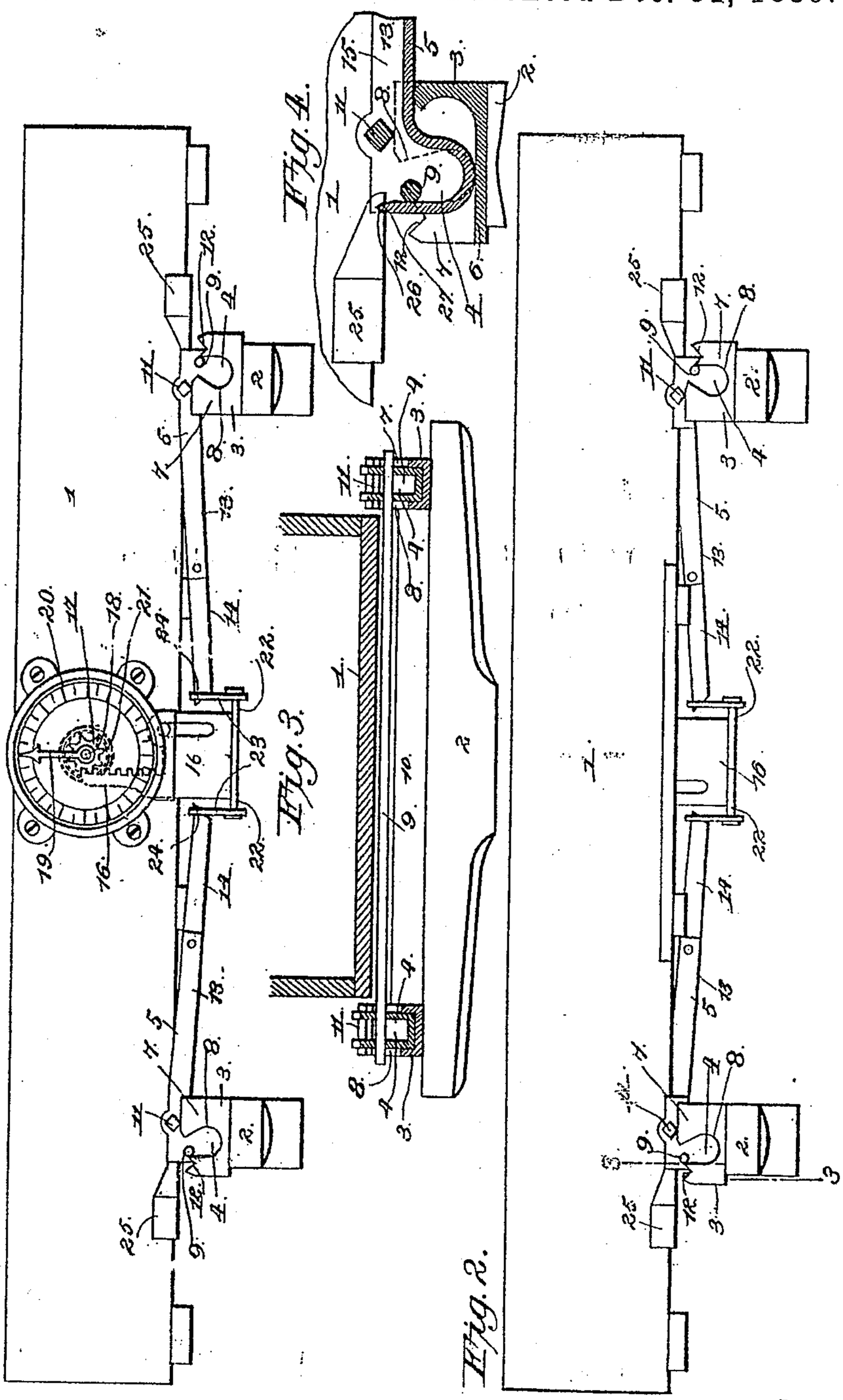

Fig. 1.

Fig. 3.

Fig. 2.

Witnesses

M. C. Fowler

Wm. Bagger

Inventor

Zachary T. Gragg

By His Attorneys

A. Snow & Co.

...NG ATTACHMENT FOR WAGONS

No. 418,317. Patented Dec. 31, 1889.

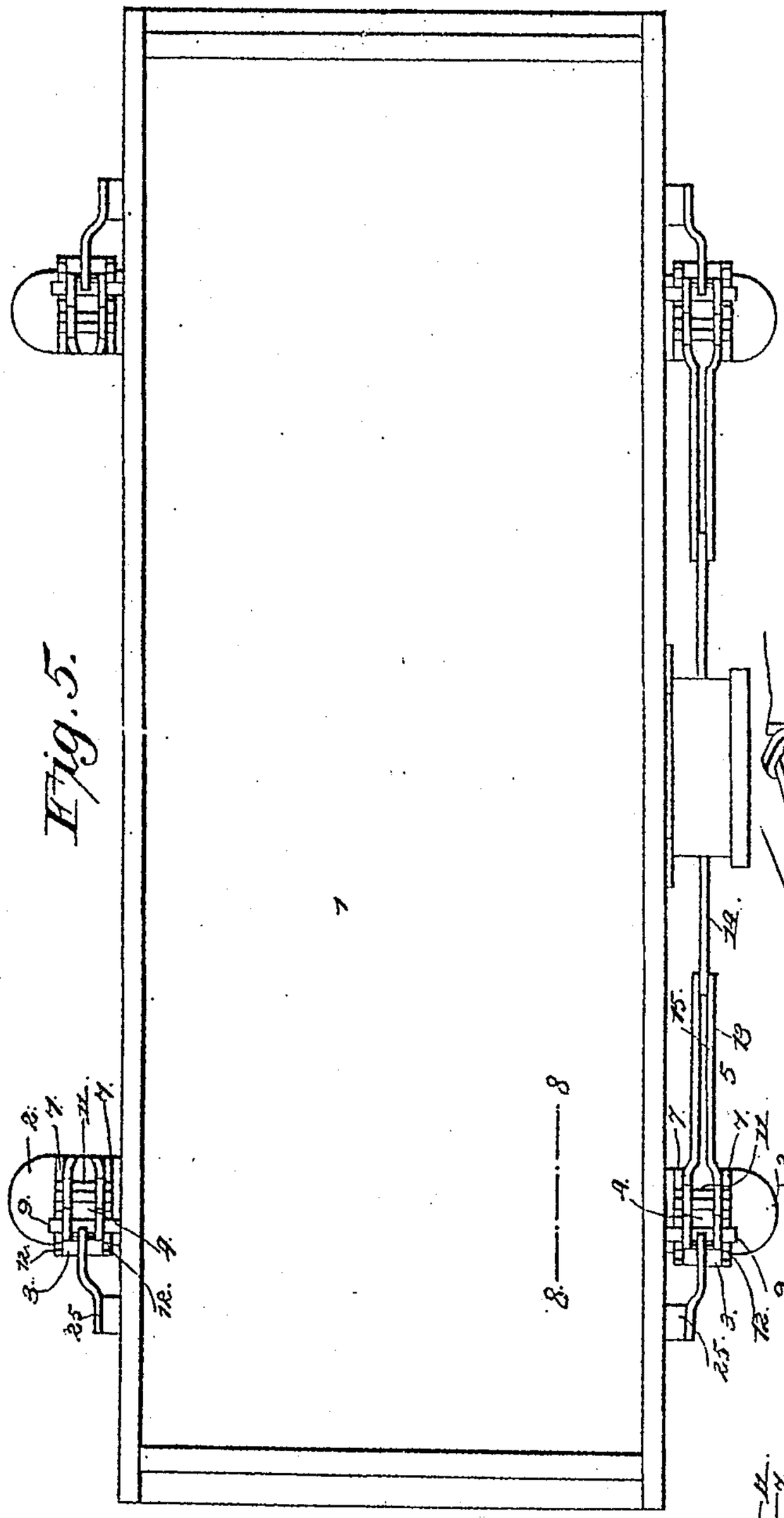

Fig. 5.

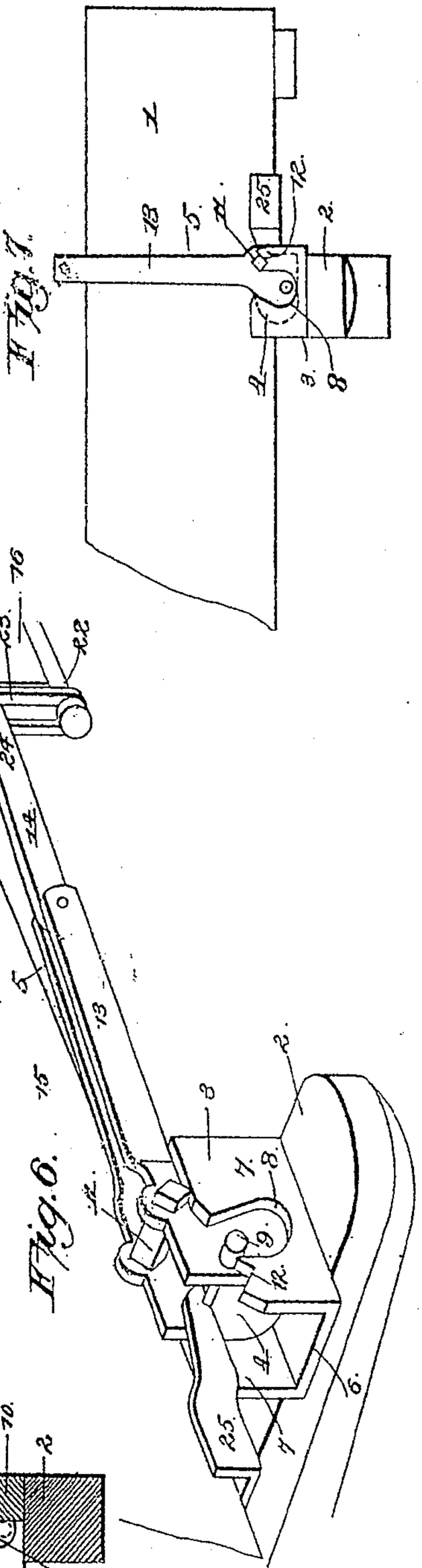

Fig. 6.

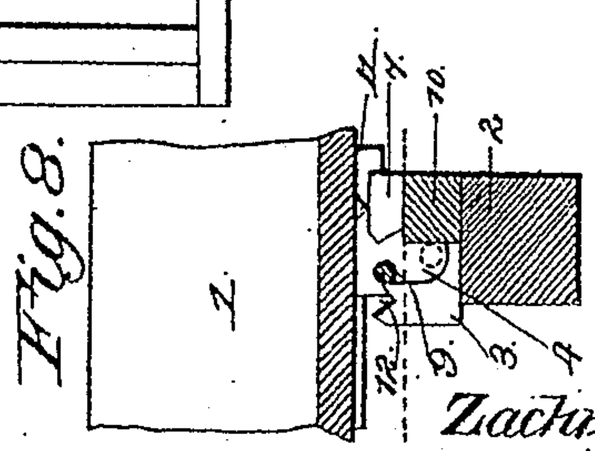

Fig. 8.

Witnesses

M. Fowler

Wm. Bagger

By his Attorneys,

Inventor

Zachary T. Cragg

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

ZACHRY TAYLOR GRAGG, OF CLEBURNE, TEXAS, ASSIGNOR OF ONE-HALF TO B. J. HEAD, OF SAME PLACE.

WEIGHING ATTACHMENT FOR WAGONS.

SPECIFICATION forming part of Letters Patent No. 418,317, dated December 31, 1889.

Application filed August 19, 1889. Serial No. 321,290. (No model.)

To all whom it may concern:

Be it known that I, ZACHRY TAYLOR GRAGG, a citizen of the United States, residing at Cleburne, in the county of Johnson and State of Texas, have invented a new and useful Weighing Attachment for Wagons, of which the following is a specification.

This invention relates to an improved weighing attachment for wagons by means of which the wagon-body with its contents may be weighed without removing it from the bolsters; and it has for its object to provide a device which shall be simple in construction, accurate, and easily operated.

With these ends in view the invention consists in the construction, arrangement, and combination of parts, which will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings hereto annexed, Figure 1 is a side elevation of a wagon-body and bolsters to which my invention has been applied. Fig. 2 is a side view of the opposite side of the same. Fig. 3 is a transverse sectional view taken on the line 3 3 in Fig. 2. Fig. 4 is a longitudinal sectional view. Fig. 5 is a top view. Fig. 6 is a perspective view showing the weighing apparatus detached. Fig. 7 is a side view showing the weighing apparatus folded and out of operation. Fig. 8 is a detail sectional view on line 8 8 of Fig. 5.

Like numerals of reference indicate like parts in all the figures.

1 designates a wagon-body, and 2 2 the bolsters, which are of ordinary construction. Upon the ends of the bolsters are mounted the boxes 3 3, which form sockets to receive the eccentric or cam-shaped heads 4 of the scale-beams 5. The boxes or sockets 3 3, which are four in number, are placed at each end of each of the bolsters, and the said sockets are composed of the bottom plates 6, having vertical walls or side pieces 7 7. The sides or walls 7 are provided with slots 8, the object of which will be presently more fully described.

Of the eccentric or cam-shaped heads 4 four are in practice employed, said heads being mounted in the sockets 3 3, as shown in the drawings. The said heads are connected in pairs by means of the transverse rods or shafts 9, which extend across the bolsters. The latter are provided with raised ribs 10, which serve to support the wagon-body, and which afford room for the transverse shaft 9, the position of which is parallel to the said ribs.

The cam-shaped heads 4 are provided with knife-edged pivots 11, the bearings for which are formed by the upper edges of the walls 7 of the boxes or sockets 3. The outer ends of the said walls have notches 12, in which the said pivots may rest when the weighing apparatus is not in use.

The scale-beams 5 are attached to or formed integrally with the cam-shaped heads 4 on one side of the wagon-body to which the invention is applied. The said scale-beams are each composed of two sections 13 and 14, which are hinged together, the inner ends or sections 13 being provided with longitudinal grooves or recesses 15, to receive the outer sections 14 when the latter are folded. By this construction of the scale-beams they will occupy but little room, and will be less exposed to injury than if rigid scale-beams of greater length were employed.

To one side of the wagon-body 1 is secured a spring-scale of suitable construction, comprising a vertically-sliding rack-bar 16, engaging a pinion 17, mounted upon a shaft 18, one end of which carries a pointer 19, adapted to indicate upon a dial 20 the power required to rotate the shaft 18 against the tension of a spring 21, the whole of the operating mechanism being arranged within a suitable casing. The lower end of the rack-bar 16 is provided with laterally-extending lugs or studs 22, upon which are mounted links 23, adapted to connect the said rack-bar with the outer ends 14 of the scale-beams 5, which are provided with notches or recesses 24, forming seats for the said links. Secured to the sides of the wagon-body are brackets 25, the under sides of which are provided with notches 26, (see Fig. 4,) forming bearings for the knife-edged pivots 27, which are formed upon the upper rear sides of the eccentric or cam-shaped head 4.

When my improved weighing apparatus is

not in use, the eccentric or cam-shaped heads rest in their respective sockets, the transverse shafts 9 rest upon the bolsters alongside the ribs 10, which support the wagon-body, the pivots 11 rest in the notches or recesses 12, and the levers or scale-beams 5, the section, of which are folded together, extend in an upward direction, so as to be out of the way. When it is desired to weigh the wagon-body and its contents, the levers or scale-beams are brought down to a horizontal position, thus causing the eccentric or cam-shaped heads 4 to bear against the bottoms of their respective sockets, and thus raising or elevating the wagon-body upon the transverse shafts 9. By continuing the downward movement of the levers or scale-beams the pivots 11 are made to engage the inner ends of the walls 7 of the sockets, and the knife-edges 27 at the rear ends of the cam-heads will engage the recesses or notches 26 in the brackets 25, thus supporting the entire wagon-body upon the short ends of the scale-beams, which latter are pivoted at 11 upon the walls 7 of the sockets. The scale-beams or levers are now unfolded, and their outer ends are connected by the links 23 with the vertically-sliding rack-bar of the spring-scale, the dial of which latter may readily be scaled off, so as to indicate the exact weight of the wagon-body and its contents. The weight of the wagon-body being known, the weight of the load may be easily computed.

My improved weighing attachment is, as will be seen, exceedingly simple in construction, and it may be applied to ordinary farm-wagons and similar vehicles at a moderate expense. By making such changes and modifications in the construction as will readily suggest themselves to any skilled mechanic the invention may also be applied to railroad-cars and to other useful purposes.

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

1. In a weighing attachment for vehicles, the combination of sockets mounted upon the ends of the bolsters and having vertical side walls, eccentric or cam-shaped heads arranged in the said sockets, the rods or shafts connecting said cam-shaped heads in pairs, pivots extending laterally from the cam-shaped heads and adapted to bear upon the upper edges of the walls of the sockets, and scale-beams or levers connected with and extending from the said eccentric or cam-shaped heads, substantially as set forth.

2. The combination of the sockets having vertical side walls, the eccentric or cam-shaped heads arranged in the said sockets, rods or shafts connecting said cam-shaped heads in pairs, the pivots extending laterally from said cam-shaped heads, the recesses in the upper edges of the side walls of the sockets at the outer ends of the latter to receive the said pivots when the device is not in operation, and the scale-beams or levers connected with and extending from the eccentric or cam-shaped heads, substantially as set forth.

3. In a weighing attachment for vehicles, the combination of the sockets mounted upon the ends of the bolsters, the eccentric heads arranged in said sockets, rods or shafts connecting said cam-shaped heads in pairs, and having laterally-extending pivots and knife-edged bearings at their upper rear corners, the brackets secured to the wagon-body and having notches or recesses to receive said knife-edge bearings, and the scale-beams connected with and extending from the eccentric heads on one side of the wagon-body, substantially as set forth.

4. In a weighing attachment for vehicles, the combination of the sockets mounted upon the ends of the bolsters, the eccentric heads arranged in said sockets, shafts extending transversely under the wagon-body and connecting the said cam-shaped heads in pairs, the supporting ribs or flanges upon the upper sides of the bolsters, the pivots extending laterally from the eccentric heads and adapted to bear upon the upper edges of the side walls of the sockets, and scale-beams or levers connected with and extending from said eccentric heads on one side of the wagon-body, substantially as set forth.

5. The combination of the sockets mounted upon the ends of the bolsters, the scale-beams and eccentric heads adapted to be mounted pivotally upon the upper edges of the side walls of said sockets, and brackets attached to the wagon-body and adapted to be supported pivotally upon the short ends of the scale-beams and eccentric heads, substantially as set forth.

6. The combination of the sockets mounted upon the ends of the bolsters, the scale-beams and eccentric heads adapted to be mounted pivotally upon the upper edges of the side walls of said sockets, the shafts arranged parallel to the bolsters and connecting the eccentric heads in pairs, the wagon-body having brackets adapted to be supported pivotally upon the short ends of the scale-beams and eccentric heads, and a spring-scale attached to one side of the wagon-body and adapted to be connected with the long ends or arms of the scale-beams, substantially as set forth.

7. The combination of the sockets, the eccentric heads, and the scale-beams connected with and extending from the latter and composed each of two sections hinged together, substantially as set forth.

8. The combination of the sockets, the eccentric heads, and the scale-beams connected with and extending from the latter and composed each of an inner section having a longitudinal groove or recess, and an outer section hinged to the said inner section and adapted to be folded into the said groove or recess, substantially as set forth.

9. The combination of the sockets mounted

upon the bolsters, the eccentric heads, the shafts arranged parallel to the bolsters and connecting said eccentric heads in pairs, the wagon-body having brackets provided with notches or recesses adapted to engage knife-edged bearings at the corners of said eccentric heads, the scale-beams connected with and extending from the latter on one side of the wagon-body, a spring-scale secured to one side of the wagon-body and having a vertically-sliding rack-bar, and links adapted to connect the said rack-bar detachably with the scale-beams, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

ZACHRY TAYLOR GRAGG.

Witnesses:

JNO. D. MITCHELL,

S. D. MOBLEY.