

(No Model.)

3 Sheets—Sheet 1.

J. CAULFIELD.
EQUALIZER FOR VEHICLES.

No. 392,007.

Patented Oct. 30, 1888.

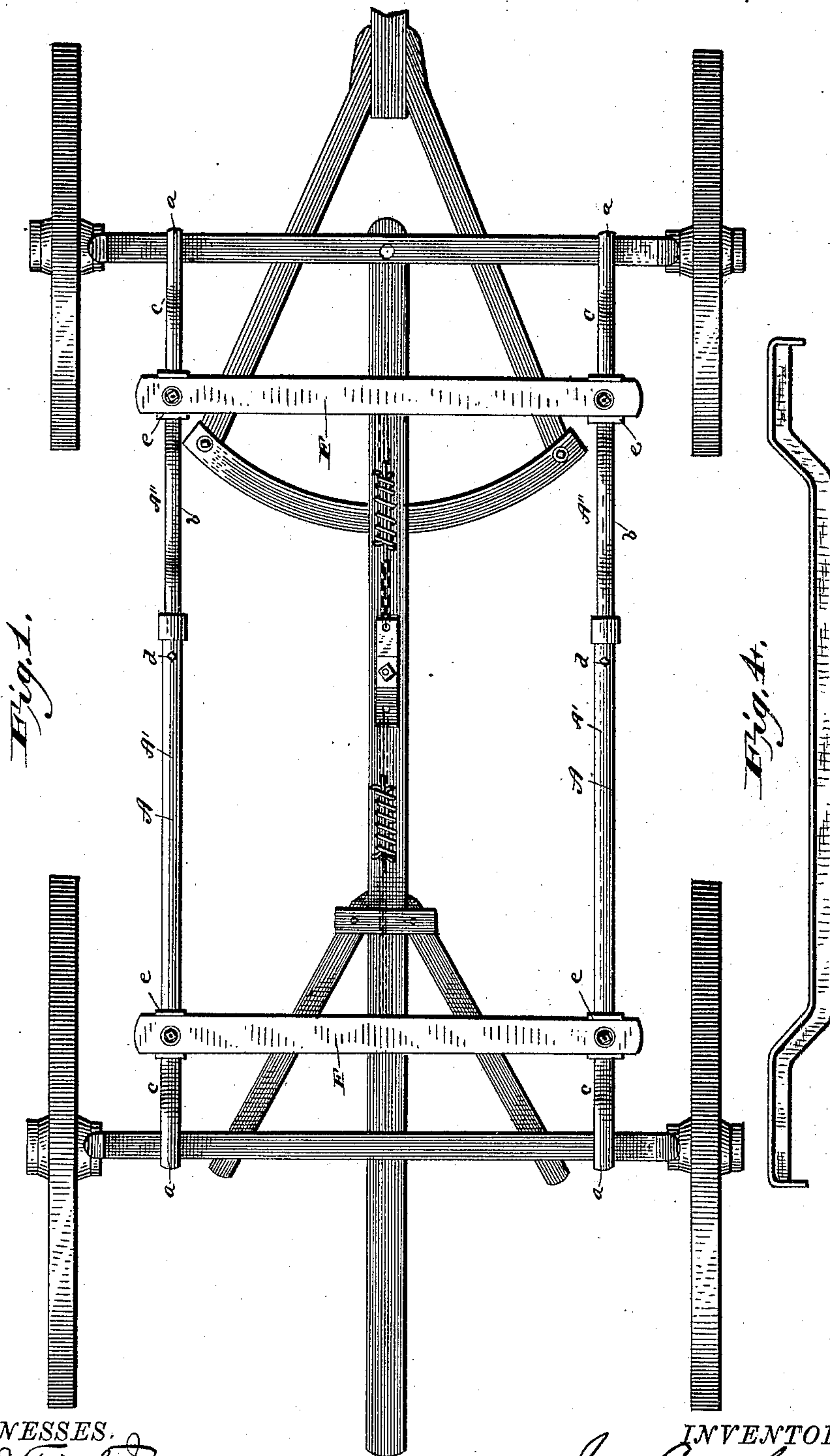


Fig. 1.

Fig. 2.

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Fig. 2.

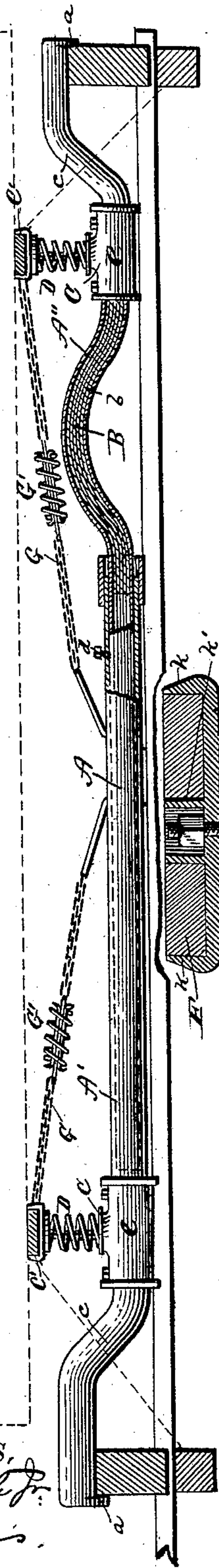
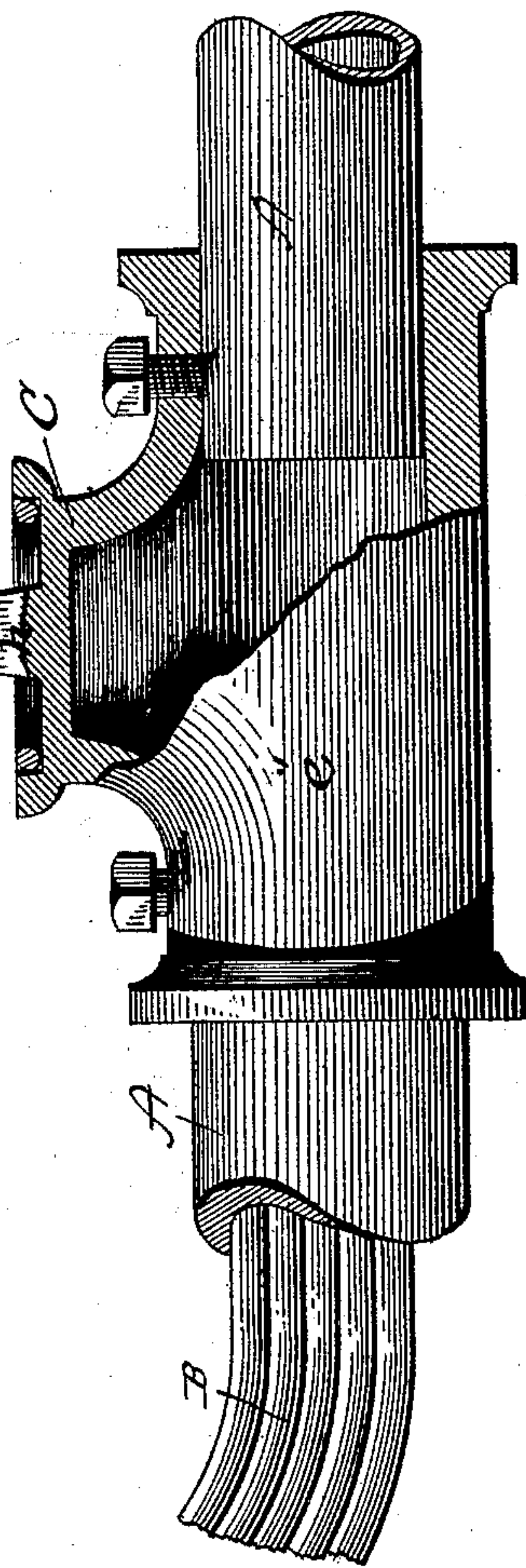


Fig. 3.



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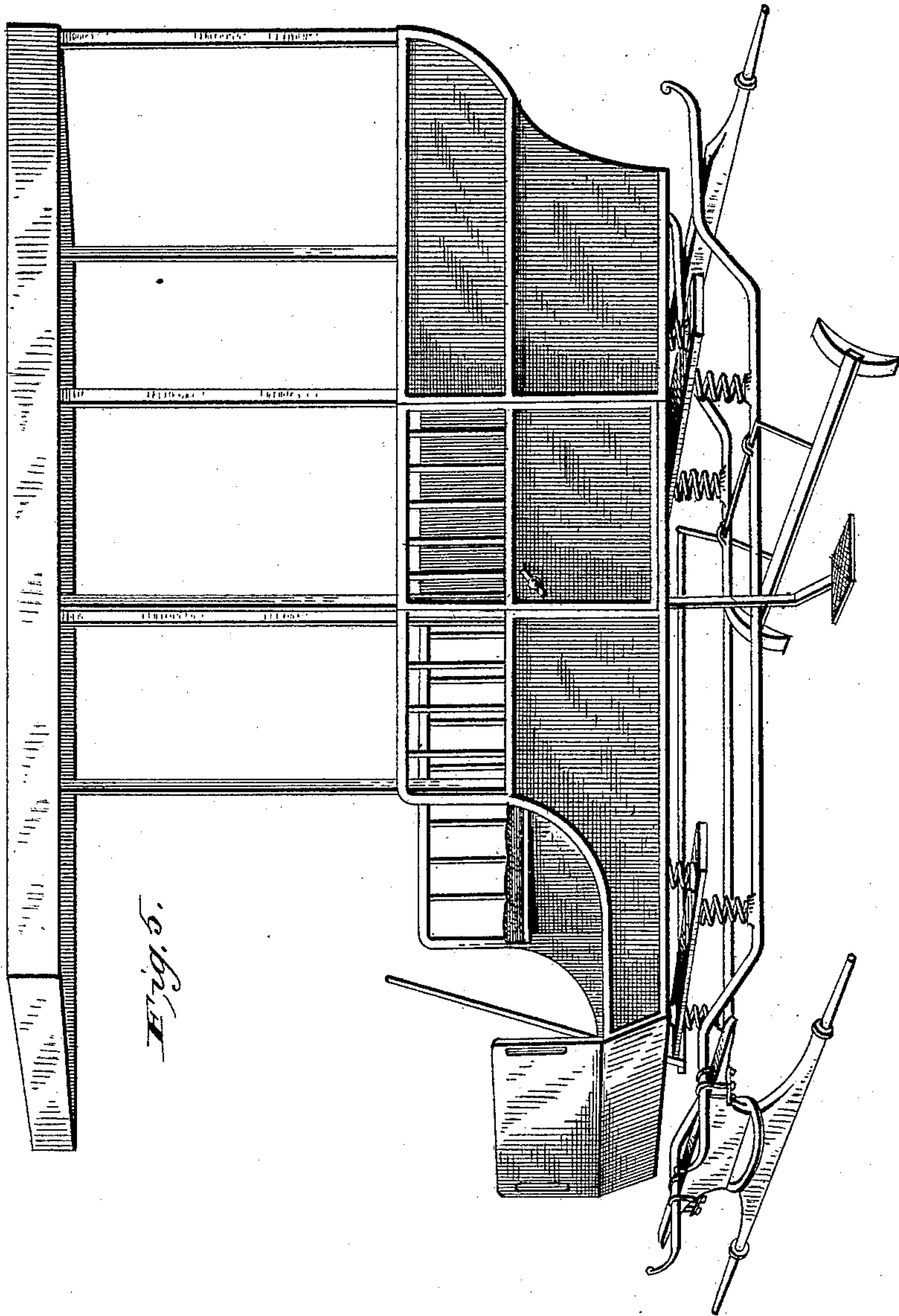
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UNITED STATES PATENT OFFICE.

JOHN CAULFIELD, OF SOUTH BEND, INDIANA.

EQUALIZER FOR VEHICLES.

SPECIFICATION forming part of Letters Patent No. 392,007, dated October 30, 1888.

Application filed July 14, 1888. Serial No. 279,979. (No model.)

To all whom it may concern:

Be it known that I, JOHN CAULFIELD, a citizen of the United States, residing at South Bend, in the county of St. Joseph and State of Indiana, have invented certain new and useful Improvements in Equalizers for Vehicles; of which the following is a specification, reference being had therein to the accompanying drawings.

My invention has relation to a certain new and useful attachment to four-wheeled vehicles of all descriptions, which I denominate an "equalizer," and the object of the invention is essentially to provide a vehicle with certain means whereby the weight of the load will be equally distributed, whereby the strain upon the spindles of the axles will be relieved when the wheels pass over obstacles or fall into ruts or depressions in the road-bed, thereby greatly diminishing the liability of breaking the spindles off, and whereby the pole or tongue of the vehicle will be prevented from striking against and injuring the horses while the vehicle is passing over rough roads, as will be more fully hereinafter described.

The invention will be fully understood from the following description, when taken in connection with the annexed drawings, in which—

Figure 1 represents a plan view of an ordinary lumber-wagon with my invention applied thereto; Fig. 2, a longitudinal sectional view of the same, the wheels and tongue being removed; Fig. 3, a detail view, partly in section and partly inside elevation, of one of the equalizing-springs and its pockets; Fig. 4, a detail view of one of the supporting-bars; and Fig. 5, a perspective view of a carriage minus its wheels, showing a slight modification of improved equalizer.

Referring to the drawings by letters, A A designate two parallel bars which extend from bolster to bolster of the vehicle, and are preferably provided with projections or flanges *a* at their ends to hold them in place on the bolsters. These bars are preferably placed a few inches inside of the standards of the bolsters, and may be held against lateral displacement by any suitable means. Each bar is preferably bent up at *b* to permit the front wheel of the vehicle to pass under it in turning, and also near its ends at *c* to rest on

the top of the bolsters. As thus constructed the bars will be somewhat lower than the top of the bolsters when applied to the vehicle, as shown in Fig. 2. When the improvement is designed for attachment to non-extensible vehicles, these bars may be made of a single piece of rigid T-iron, as shown in Fig. 4; but when they are designed for application to that class of vehicles which are extensible they are made of two telescoping sections of gas or other pipe, A' A'', and held in their adjusted positions by means of set-screws *d*, or other devices, as shown most clearly in Fig. 2. When the bars are constructed of tubes, the bent portions *b* and *c* may be greatly strengthened by inserting round iron bars B in the tubes before they are bent into shape, the mere act of bending the tubes serving to secure the bars in place. Secured on these bars by means of set-screws or shrunk on are short sleeves or tubes *e*, provided on their upper sides with flanged spring-pockets C for the reception and retention of the lower ends of the strong coil-springs D. It is evident that when the bars A are not constructed of gas-pipe other means than the sleeves *e* may be employed to attach the pockets C to the bars. Fitted over the upper end of the spring D is another spring-pocket, C', provided with flanges or projections *g g* on its under side to retain and confine the spring. To attach the two pockets together and confine the spring between them, I connect them together by a chain, E, or other device, which passes up through the center of the spring, so as not to interfere with it when it is compressed. The lower end of the chain E is attached to an ear, *h*, formed in center of the pocket C, and its upper end is connected to an eyebolt, *h'*, passing up through center of upper pocket, C', the tension of the spring D being regulated by the nut on the eyebolt.

Connecting each pair of springs is a transverse bar or plank, F, which rests upon and is secured to the upper pocket, C', each of these pockets being provided with end flanges, *k k*, to embrace the said bar, and a central flange, *k'*, which passes up through the bar and serves as a socket for the eyebolt-nut and prevents endwise displacement of the said bar.

To prevent any forward or backward pitch-

ing of the load while it rests upon the transverse bars F, I connect the same to the center pole or reach of the vehicle by means of chains G, spring-tugs G' being inserted in the chains to permit them to yield slightly. In vehicles not provided with center-poles, and in extensible vehicles, these yielding connections G may be connected to the respective axles, as shown by dotted lines in Fig. 2. In vehicles having a box or body these yielding connections may be done away with entirely, as the standards of the bolsters will serve the same purpose as they are designed for.

It is evident that I may use more than one of the springs D or use a different form of spring, as the exigencies of the case may require, without departing in the least from my invention.

It will be observed that when one of the wheels of a vehicle to which my equalizer is applied passes over an obstacle or drops into a rut in the road the weight of the load will be thrown upon the other three wheels, thus diminishing the liability of breaking an axle or spindle and preventing the tongue from striking the sides of the animals hitched to the vehicle. The equalizer will also serve to keep the body of a vehicle level, whereby when the vehicle is filled with loose grain or water its contents will not be spilled when one of the wheels drops into a rut or meets with an obstacle in the road.

In Fig. 6 I show another set of springs and boards interposed between the transverse boards F F and the body of the vehicle, which I may use without departing from my invention. In this figure I also show the brake blocks or shoes to the bars of the equalizer.

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

1. The combination of the parallel bars bent up at *c c* to rest on the bolsters of a vehicle, the flanged pockets secured to the upper surface of the bars, the upper flanged pockets, a connecting device between these pockets, interposed springs, and the cross-bars F, substantially as described.

2. The combination, with a vehicle, of two

supporting-bars, A, these bars being bent up at *b b* and adapted to rest upon the top of the bolsters of the said vehicle, springs D, resting upon and secured to these bars, the transverse bars F, secured to and supported by the said springs, substantially as described.

3. The combination of the tubular bars A A, the flanged spring-pocket C, secured thereto by means of the tubes *e*, the upper flanged pocket, C', the springs interposed between the said flanged pockets, and the transverse bars supported by and secured to the said upper pockets, substantially as described.

4. The combination, with a vehicle, of extensible bars A A, adapted to rest upon the bolsters, springs D, and transverse bars, substantially as herein described.

5. The combination of the tubular bars A A, bent at *b*, the bars B, inclosed in the said bars A A at their bent portions, and the springs, substantially as described.

6. The combination, with the tubular bars A A, each being composed of the telescoping sections A' A'', means for adjusting these sections, and the springs, substantially as described.

7. The combination, with a vehicle, of the bars, the upper and lower flanged pockets, the interposed springs, the cross-bars F, and the yielding connections G G', connecting the said cross-bars to a portion of the vehicle, substantially as described.

8. A removable equalizer for vehicles, consisting of a frame composed of two longitudinal bars, flanged spring pockets secured to the upper surface of these bars, transverse bars, flanged spring-pockets secured to the under side of the transverse bars, the springs interposed between the said flanged pockets, and a chain connecting the longitudinal bars with the transverse bars, these chains passing down through the springs, substantially as described.

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

JOHN CAULFIELD.

Witnesses:

JONA. P. CREED,
T. E. HOWARD.