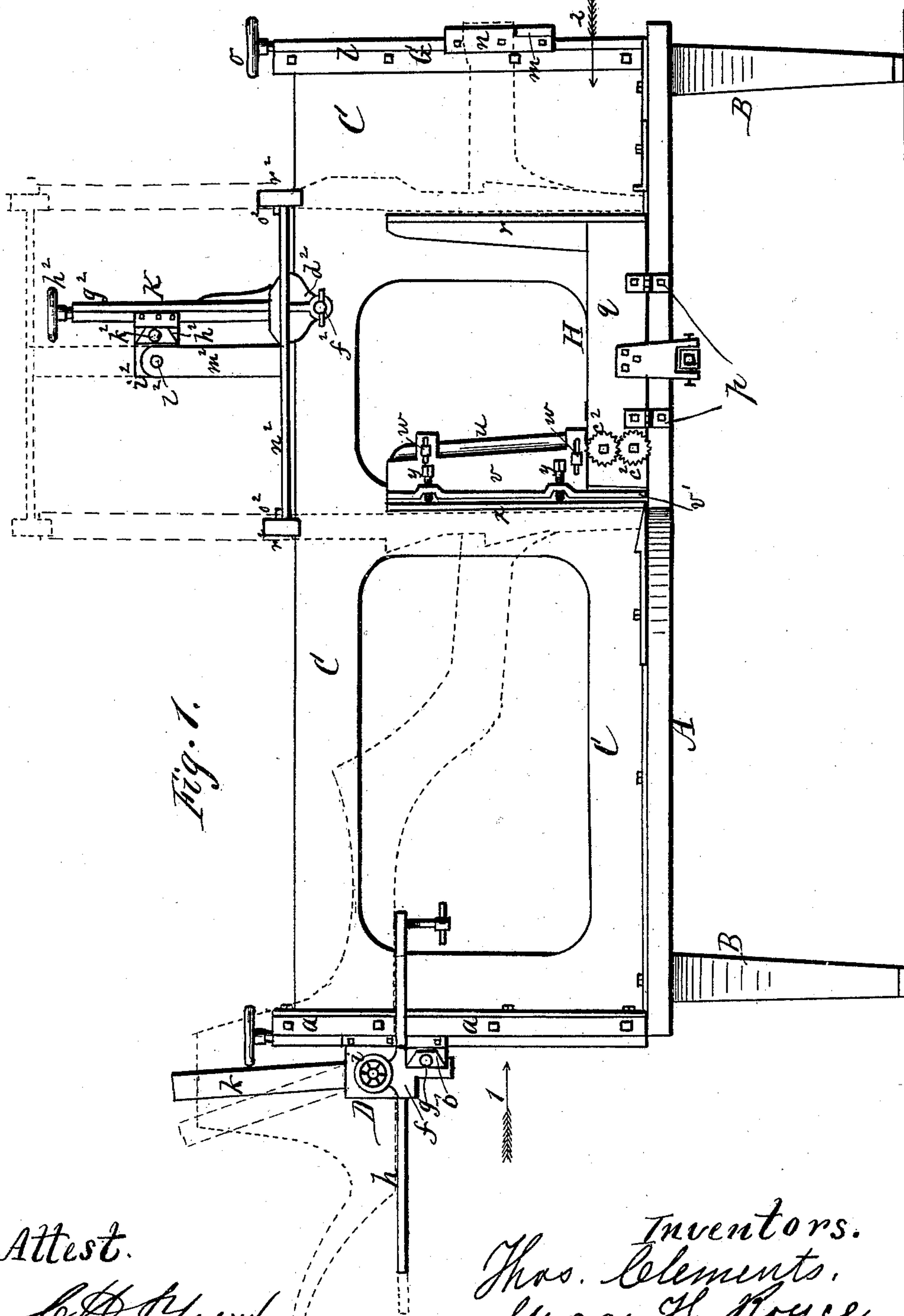


(No Model.)

3 Sheets—Sheet 1.

T. CLEMENTS & G. H. ROYCE.
APPARATUS FOR FRAMING AND SETTING UP VEHICLE BODIES.
No. 395,485. Patented Jan. 1, 1889.



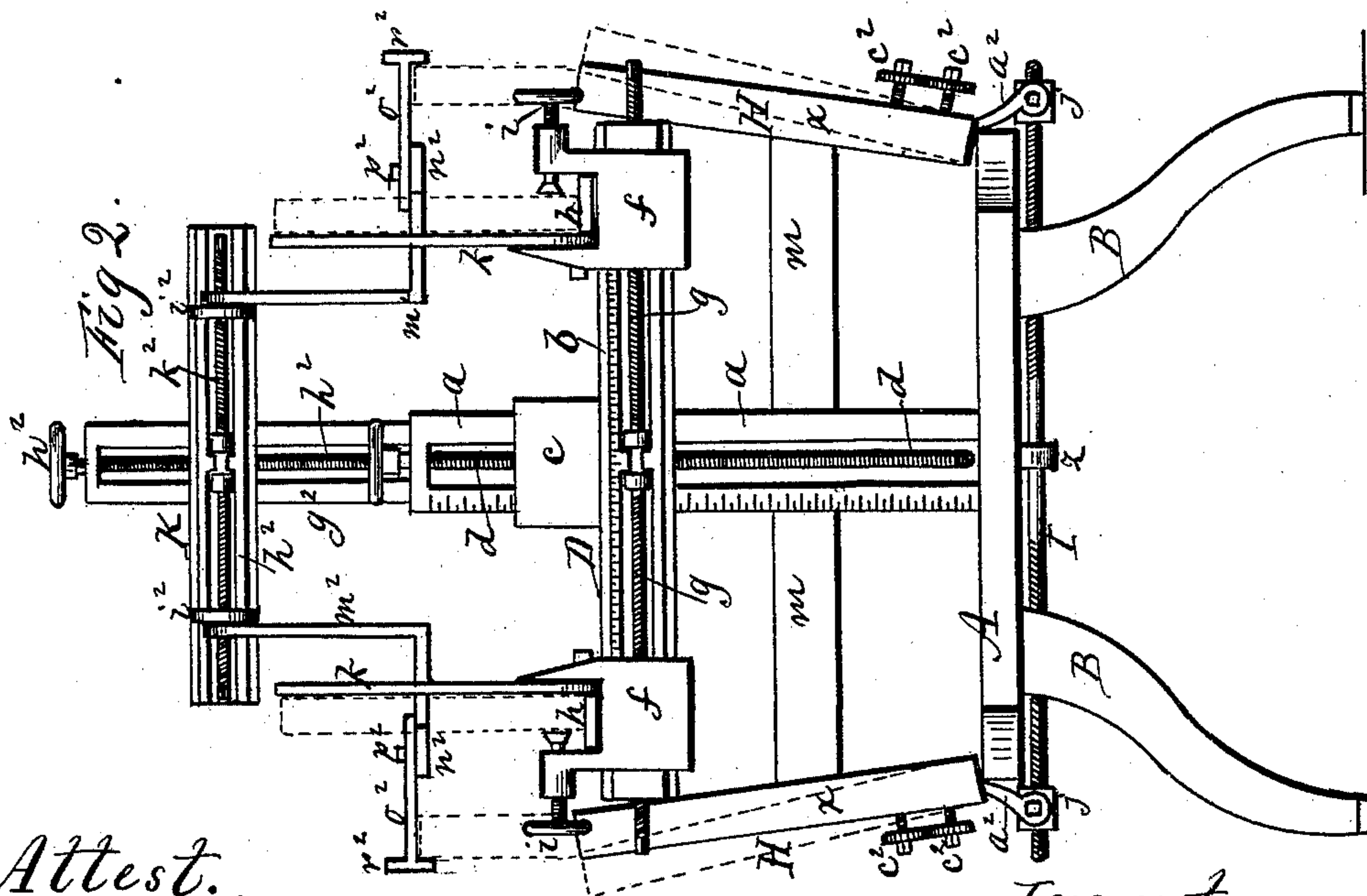
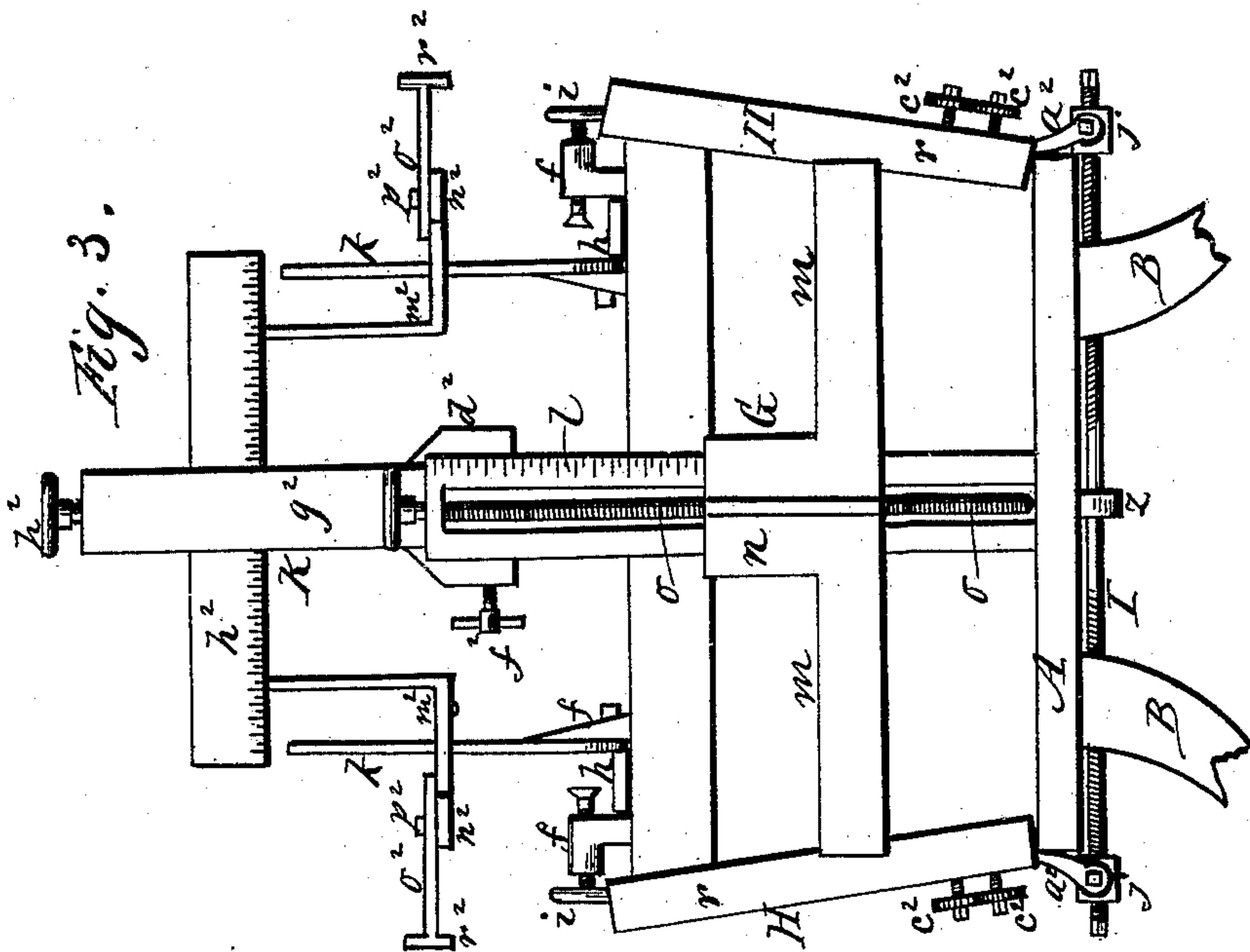
Attest.
John H. Hopkins.

Inventors.
Thos. Clements,
George H. Royce,
per R. F. Cogard,
Atty.

3 Sheets—Sheet 2.

APPARATUS FOR FRAMING AND SETTING UP VEHICLE BODIES.

Patented Jan. 1, 1889.



Attest.

John H. Hopkins

Inventors.
 Jas. Clements,
 George H. Royce,
 per R. F. Cogood,
 atty.

(No Model.)

3 Sheets—Sheet 3.

T. CLEMENTS & G. H. ROYCE.
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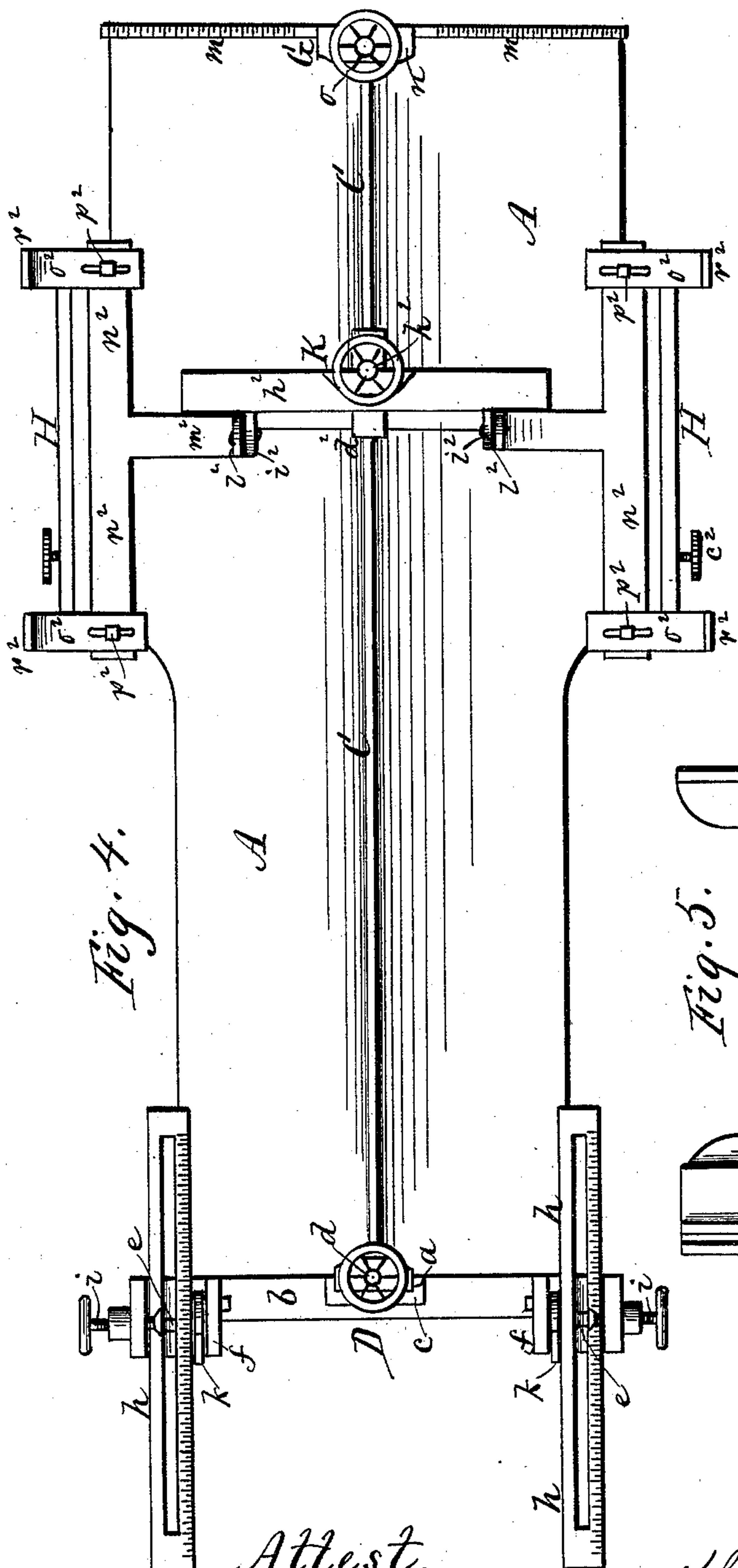


Fig. 4.

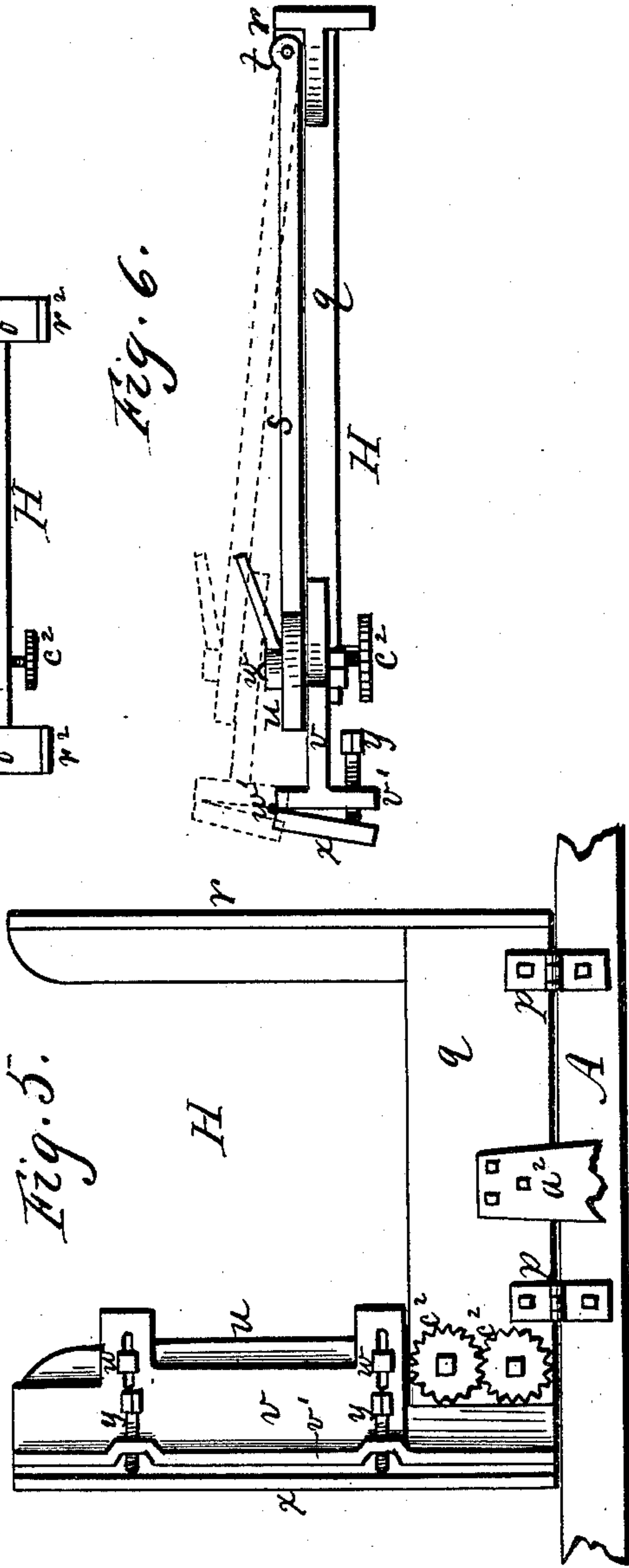


Fig. 5.

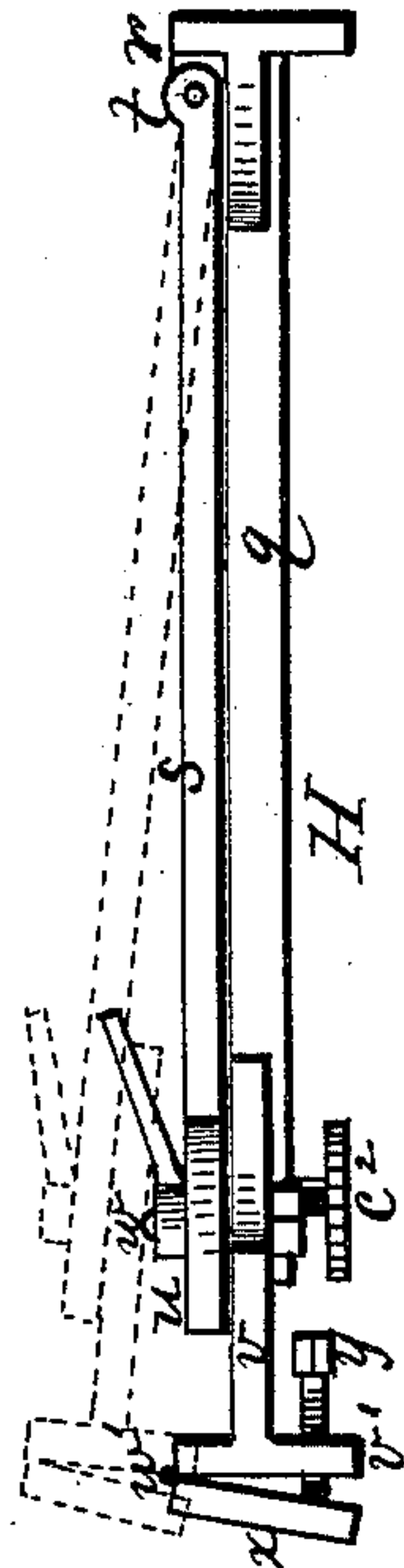


Fig. 6.

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Atty.

UNITED STATES PATENT OFFICE.

THOMAS CLEMENTS AND GEORGE H. ROYCE, OF ROCHESTER, NEW YORK,
ASSIGNOR TO THE JAMES CUNNINGHAM SON & COMPANY, OF SAME
PLACE.

APPARATUS FOR FRAMING AND SETTING UP VEHICLE-BODIES.

SPECIFICATION forming part of Letters Patent No. 395,485, dated January 1, 1889.

Application filed August 17, 1888. Serial No. 283,050. (No model.)

To all whom it may concern:

Be it known that we, THOMAS CLEMENTS and GEORGE H. ROYCE, both of Rochester, in the county of Monroe and State of New York, have invented a certain new and useful Improvement in Apparatus for Framing and Setting up Vehicle-Bodies; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the drawings accompanying this application.

Our improvement relates to apparatus for framing and setting up the sides of coaches, hacks, and similar heavy vehicles. This work has usually been done by hand on a bench or other support, involving much labor and difficulty in so fitting the parts that both sides shall be equidistant from the center and exactly alike.

Our improvement consists of an apparatus for the purpose constructed, arranged, and operating as hereinafter more fully described.

In the drawings, Figure 1 is a side elevation of the apparatus. Figs. 2 and 3 are end elevations looking, respectively, in the directions indicated by the arrows 1 and 2 in Fig. 1. Fig. 4 is a plan view of the machine. Fig. 5 is an enlarged side elevation of one of the side gages. Fig. 6 is a plan of same.

A is the bed-plate supported by suitable legs, B B.

C is a longitudinal vertical plate or web set centrally upon the bed-plate and rising to considerable height. This plate serves as the center gage to measure from on each side and also as the attachment for the top gage.

D is the front gage. It consists of the fixed vertical standard *a*, forming a guideway, a horizontal cross-head, *b*, provided with a slide, *c*, that slides up and down on the standard *a*; a vertical screw, *d*, which passes through the slide and moves the cross-head up and down as it is turned; two bearing-blocks, *f f*, that slide laterally in and out on the cross-head *b*, and a right and left horizontal screw, *g*, that passes through the bearing-blocks and moves them simultaneously in or out as the screw is turned.

h h are longitudinal bars forming rests located in sockets of the bearing-blocks *f f*, said bars being slotted, as shown in Fig. 4, and

held at any adjustment forward or back by means of set-screws.

i i are clamping-screws passing through the sides of the bearing-blocks *f f* and holding the wood in place when inserted.

k k are vertically-swinging arms, forming stays pivoted in the bearing-blocks *f f* by the side of the rests *h h* and serving to hold against the carriage-rocker.

G is the rear gage, the same consisting of the vertical standard *l*, forming a guideway, a horizontal cross-head, *m*, provided with a slide, *n*, moving up and down on the standard *l*, and a vertical screw, *o*, passing through the slide, by turning which the cross-head will be adjusted up or down.

H H are two side gages hinged at *p p*, Figs. 1 and 5, to the sides of the bed-plate A and arranged to be turned vertically in and out, so as to stand at a greater or less incline to the sides of the machine. Each of these side gages consists of the horizontal stationary frame *q*, Figs. 1 and 6, having a fixed vertical standard, *r*, being the parts hinged to the bed-plate to turn vertically, and a horizontal frame, *s*, Fig. 6, pivoted at *t*, so as to swing horizontally. Said frame *s* is provided with a vertical standard, *u*, and to this standard is attached a sliding plate, *v*, by means of screw-bolts *w w*, which pass through slots of the plate, thereby enabling the plate to be adjusted forward and back. The plate *v* is flanged at its outer edge, as shown at *v'*, and to this flange is pivoted at *w'* an auxiliary flange, *x*, set at an angle and gaged by means of adjusting-screws *y y*.

When the frame *s* is swung off, as indicated by dotted lines in Fig. 6, the plate *v* and the flange *x*, which form fixtures to same, will be swung off with it. The frame *s* is adjusted by means of set-screws *c² c²*, passing through frame *q*.

I is a right and left screw turning in a fixed bearing, *z*, under the bed-plate A, so as to receive no end-motion, its ends resting in boxes *j j*, pivoted to the lower ends of stiff bearings *a² a²*, bolted to the bottom of the side gages, H H. By turning the right and left screw the said side gages will be swung out or in at the top, thereby changing the angle of same relatively to the machine.

K is a top gage consisting of a bearing, d^2 , that slides forward and back on the center plate, C, and is held by a set-screw, f^2 , a vertical standard, g^2 , rising therefrom and forming a guideway, a horizontal cross-head, h^2 , movable up and down on the standard g^2 , a vertical screw, h^2 , for moving the cross-head; two bearings, $i^2 i^2$, sliding forward and back on the cross-head, and a right and left horizontal screw, k^2 , resting in the cross-head h^2 and passing through the bearings, for moving said bearings in and out. To the bearings $i^2 i^2$ are pivoted, at $l^2 l^2$, two elbow-shaped arms, $m^2 m^2$, capable of turning a half-circle, so as to stand in an upright or depressed position. At the outer ends of the elbows are T-shaped arms $n^2 n^2$, and to these are attached slides $o^2 o^2$, secured by set-screws $p^2 p^2$, so as to be adjusted out and in. At the outer ends of the slides are T-shaped flanges $r^2 r^2$, which stand up and down.

The machine above described is intended to receive the separate parts of wood forming the "rockers" or side pieces of the vehicle and enable said parts to be attached together to form the complete frame. The outline of the rocker is indicated by the dotted lines, Fig. 1. The front end of the rocker is laid on the rest h and clamped fast in place by the clamping-screw i . The rear end of the rocker rests on and is supported by the rear cross-head, m . The "pillars" of the rocker—i. e., the jambs of the door—rest against the flanges r and x of the side gage H on opposite sides, said side gage occupying the space of the door. The slides $o^2 o^2$ rest on top of the pillars, and the flanges $r^2 r^2$ rest outside the top of the pillars and gage their outward throw. When the slides $o^2 o^2$ are turned down in their lowest position, as indicated in full lines, Fig. 1, they rest over the top of the short pillars used in some classes of vehicles. When turned up, as indicated in dotted lines, they fit over the high pillars used in other classes of heavy vehicles. The swinging arm k rests against the side of the riser for the seat and supports the same, and by being turned forward or back it is adapted to different forms of the riser.

By the means above described the two rockers of a carriage can be gaged exactly alike on opposite sides, which cannot well be done by hand in the old way. By turning the vertical screws that raise the cross-heads they can all be adjusted to the necessary vertical position, and by turning the horizontal right and left screws the front, top, and side gages can be spread or contracted, while the rear gage needs no such adjustment, the cross-head simply receiving the end of the rocker laid thereon. The rests h h , also all the cross-heads, are marked with an index or scale of distances, so that each rocker can be fitted to an exact scale, both being equidistant from the center and in the same position longitudinally. This lateral adjustability of the gages is necessary to adapt them to car-

riage-bodies of different widths and shapes. Some are wider and of greater swell at the sides than others. The lateral adjustment of the side gages, H H, enables them to fit different swells. In many instances it is necessary to adjust the swinging frame s of the side gage H in, as shown in dotted lines, Fig. 6, in order to produce more swell, which is readily done on both sides exactly alike. It is also necessary to provide for the bevel in the jamb of the door, to enable the door to shut therein and open readily. This is done by adjusting the pivoted flange x to the proper bevel. As the gage is swung in or out to produce more or less swell, the angle of this pivoted flange has to be correspondingly changed. The opposite flange, r , is square and always remains stationary, as the jamb where the door is hinged is always square.

Having described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination of the standard a , the cross-head b , the vertical screw d , the bearings f f , the right and left screw g , the adjustable rests h h , and the swinging arms k k , arranged to operate in the manner and for the purpose specified.

2. The combination, with the bearing f , of the arm k , pivoted to said bearing and capable of adjustment to different positions forward and back to fit the seat-riser of the rocker, as described.

3. In a machine for framing and setting up the sides of vehicles, the combination, with the bed-plate, of a side gage provided with upright arms for the fitting of the pillars of the rocker thereto, said side gage being hinged and capable of lateral adjustment by turning on its hinges, as and for the purpose set forth.

4. In a machine for framing and setting up the sides of vehicles, the combination, with the bed-plate, of a side gage hinged thereto to swing laterally, said gage consisting of two parts each provided with a vertical standard to gage the pillars of the rocker, one of said parts being hinged to the bed-plate, the other to the primary post, so as to swing inward horizontally, as and for the purpose specified.

5. The combination of the frame q , provided with the vertical standard r , the frame s , hinged to frame q , to swing inward horizontally, and a plate, v , attached to frame q , to be adjusted forward and back, as and for the purpose described.

6. The combination, with the side gage, H, of the flange x , pivoted to the edge of the gage and adjustable to different angles, as and for the purpose specified.

7. The combination, with the side gage, of a top gage provided with arms that extend outward and gage the height of the pillars of the rocker, as herein shown and described.

8. The combination, with the side gage, of a top gage provided with arms extending outward and having flanges at the outer ends for

gaging the lateral position of the pillars of the rocker, as herein shown and described.

9. The combination, with the slide h^2 , of the bearings l^2 , the arms m^2 , jointed thereto, so as to be reversed in position, the cross-heads n^2 , and slides o^2 , provided with the flanges r^2 , as and for the purpose specified.

In witness whereof we have hereunto signed

our names in the presence of two subscribing witnesses.

THOS. CLEMENTS.
GEORGE H. ROYCE.

Witnesses:

R. F. OSGOOD,
J. C. SMITH.