J. F. CROFT & H. B. PITNER.

CARRIAGE-TOP BRACE.

No. 188,235. Patented March 13, 1877.

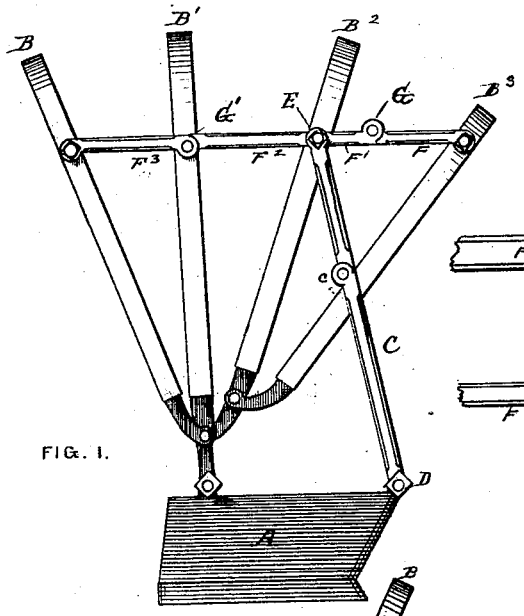

FIG. 1.

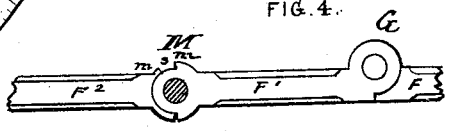

FIG. 4.

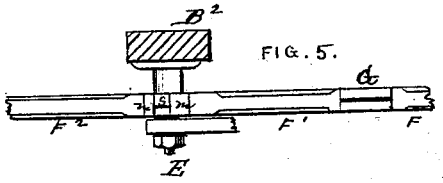

FIG. 5.

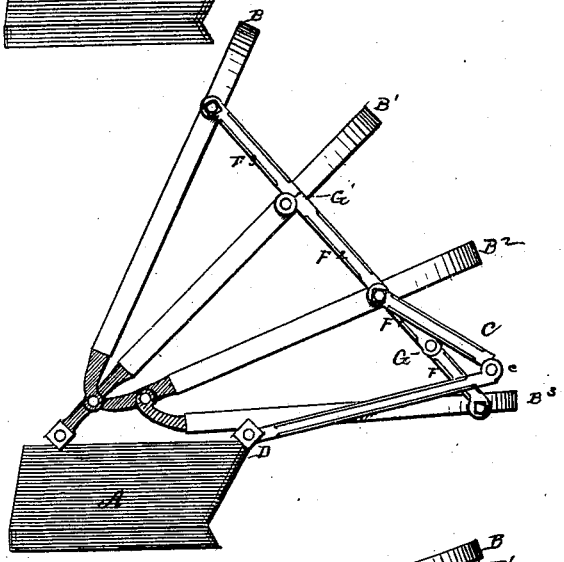

FIG. 2.

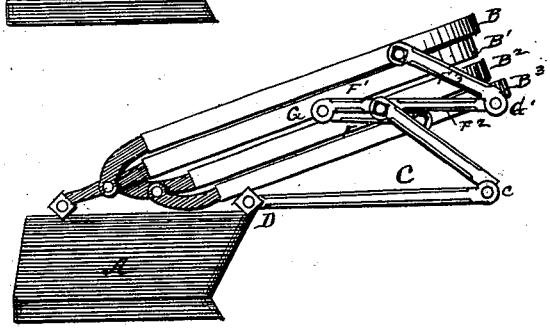

FIG. 3.

WITNESSES:

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UNITED STATES PATENT OFFICE.

JOHN F. CROFT AND HENRY B. PITNER, OF LA PORTE, INDIANA.

IMPROVEMENT IN CARRIAGE-TOP BRACES.

Specification forming part of Letters Patent No. **188,235**, dated March 13, 1877; application filed August 9, 1876.

To all whom it may concern:

Be it known that we, JOHN F. CROFT and HENRY B. PITNER, of La Porte, in the county of La Porte and State of Indiana, have invented certain Improvements in Top Braces for Carriages, of which the following is a specification:

In the accompanying drawing, which forms a part of this specification, Figure 1 represents a side view of the improved brace, the top being fully elevated. Fig. 2 is a similar view with the top partly lowered. Fig. 3 is a similar view, with the top entirely lowered. Fig. 4 is a detached fragmentary view of a portion of the horizontal brace system upon a somewhat larger scale. Fig. 5 is a top view of the parts shown in Fig. 4.

Similar letters of reference indicate like parts wherever used in the drawing.

In the said drawing, A is the buggy-seat, upon which the top hamper is carried in the usual manner. B B^1 B^2 B^3 are the bows which support and form the frame-work of the top. C is the upright brace, pivoted at its lower end at the point D to an arm or wrist extended for this purpose from the seat-back. This brace C is furnished, about midway of its length, with a joint, *c*, and is pivoted at the upper end to a wrist, E, upon the third bow B^2. The horizontal brace, for the purpose of keeping the bows spread apart, is formed as follows: To the rear bow B^3 is pivoted a short arm, F, jointed to the short arm F^1. The latter is jointed, with a peculiar joint, M, to the arm F^2, the joint M being at the same wrist E which carries the upper end of the upright stay. The front end of the arm F^2 is jointed to an arm, F^3, pivoted to the front bow B. So long as the joints are unbent this horizontal stay system forms a rigid brace from the first bow to the last, keeping them firmly separated to the required extent, so that the top may be let down into the position shown at Fig. 2, and will remain in that position without danger of collapse, each bow being braced.

The top may be farther lowered or collapsed to the position shown at Fig. 3, by bending the joints G G′ of the horizontal brace; and it will be seen that the action of the joint G in front is made to control the joint G′ by the peculiar construction of the central pivotal joint M, so that both joints may be folded by the same movement. The formation of the said joint M is especially shown at Figs. 4 and 5. It will be there seen that the pivot of the joint consists of the wrist E, rigidly attached to the third bow B^2, and that the joint consists of a lap or member, *m*, upon each of the arms F^1 F^2, each lap being recessed or halved to receive the circular knuckle of the other. Stops *n n* are provided, so that this joint M has only a limited motion, equal to the space *s*, between the opposing stops.

Now, it will be readily understood that the front braces or arms F^2 F^3 may be bent upon the joint G′ a little way without affecting the rear joint G; but when raised or bent far enough to cause the stops to encounter in the joint M, any further motion will cause the rear braces or arms F F^1 to fold upon the joint G.

The first limited motion of the front braces serves to overcome the dead-center of the front joint G′, and the farther motion that of the rear joint G, thus making the work easy and uniform throughout, and controlled fully by the front joint.

The bracing is such that when the top is thrown into the position indicated at Fig. 2 the leather of the top cannot wrinkle between the back bows, as will be readily seen from said figure.

Having thus fully described the construction and operation of our invention, that which we claim as new, and desire to secure by Letters Patent, is—

The horizontal or bow-spreading brace-system consisting of the four arms F F^1 F^2 F^3, extending from the front to the rear bow, jointed at G and G′, and having the joint M, between G and G′, made with stops, so that, after a limited motion, the further motion of the front joint G′ will fold the rear arms upon the joint G, substantially as specified, whereby the rear joint is controlled by the front one, and the movement rendered easy and uniform throughout.

JOHN F. CROFT.
HENRY B. PITNER.

Witnesses:
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A. D. KIMBERLY.