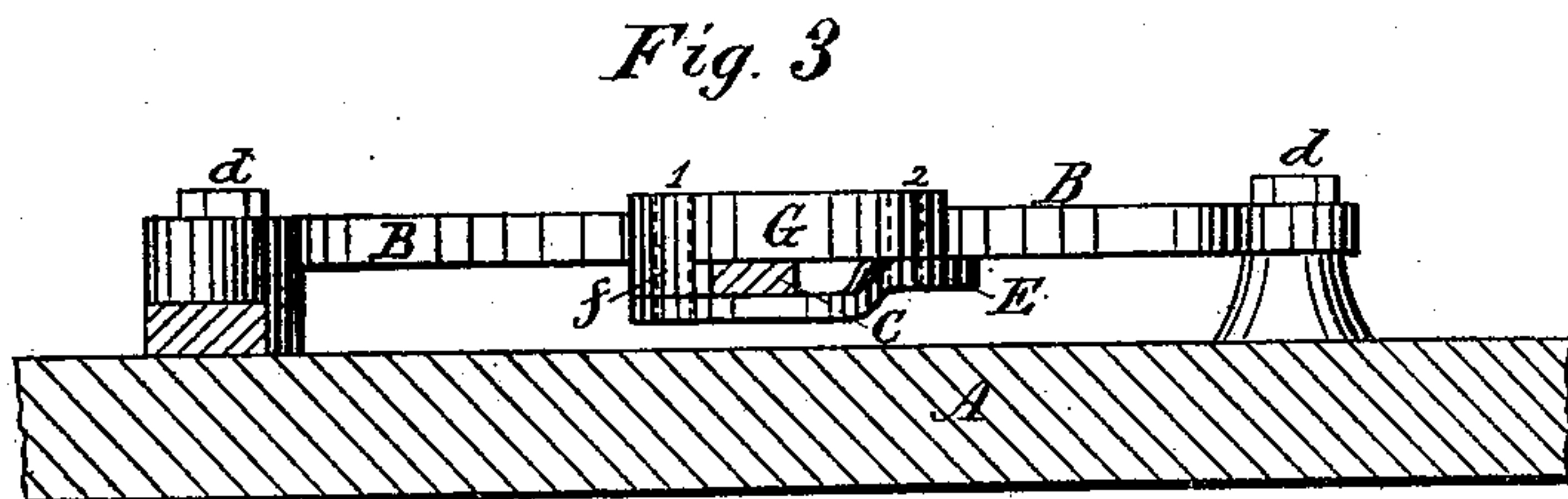
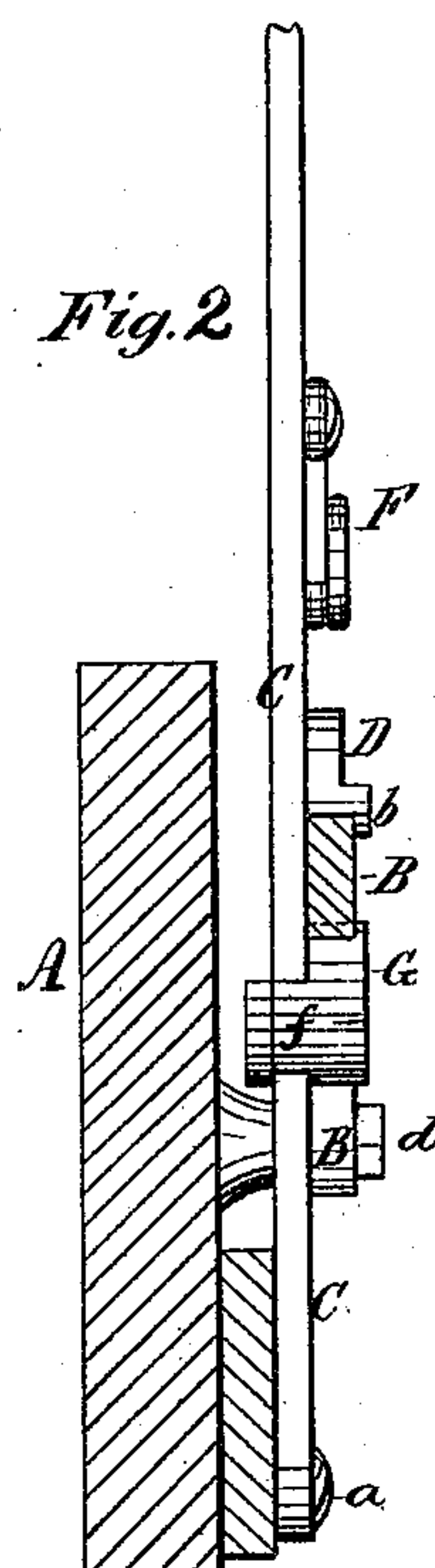
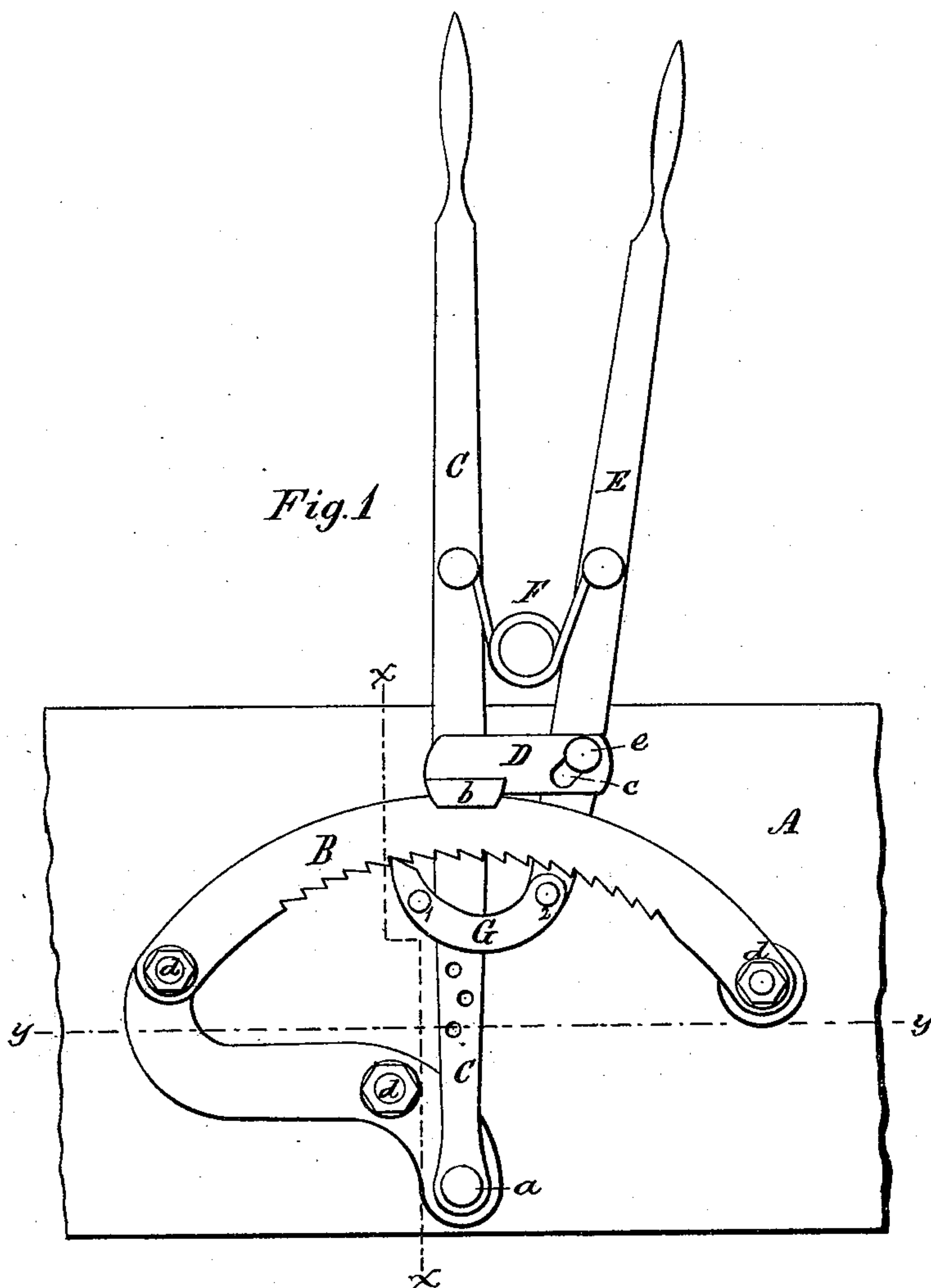


J. M. STUDEBAKER & H. L. HINDS.

WAGON-BRAKE LEVER.

No. 179,639.

Patented July 4, 1876.



Witnesses:

Geo. J. Bonner
John Tyler

John M. Studebaker
Hugh L. Hinds, Inventors.
by Attorney
Am. C. & S. Co.

UNITED STATES PATENT OFFICE.

JOHN M. STUDEBAKER AND HUGH L. HINDS, OF SOUTH BEND, INDIANA.

IMPROVEMENT IN WAGON-BRAKE LEVERS.

Specification forming part of Letters Patent No. **179,639**, dated July 4, 1876; application filed June 5, 1876.

To all whom it may concern:

Be it known that we, J. M. STUDEBAKER and HUGH L. HINDS, both of South Bend, in the county of St. Joseph and State of Indiana, have invented certain new and useful Improvements in Wagon-Brakes; and we do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making a part of this specification.

Our invention relates to a novel arrangement of devices for operating wagon-brakes; and consists in the combination and arrangement of the levers, ratchet, guide, and spring, as will be hereinafter more fully set forth.

To enable those skilled to more fully understand the construction and operation of our improvement, we will proceed to describe the same, referring by letters to the accompanying drawing, in which—

Figure 1 is a side elevation of our improvement attached to the side of a wagon-body. Fig. 2 is a vertical section, taken at the line *x x* of Fig. 1; and Fig. 3 a section at *y y*, Fig. 1.

Similar letters represent like parts in the several figures of the drawing.

A represents the side of a wagon-body, to which is secured in the usual manner, by bolts *d d*, a segmental ratchet, B, allowing sufficient space between the ratchet and body A for the vibration of the brake-operating lever C, which is pivoted at *a* to the lower arm of the ratchet-segment. D is a projecting arm, rigidly connected to the lever B, and having a lip, *b*, overhanging the segmental ratchet B, and forming a guide for the lever C. The opposite or free end of the arm D is provided with an oblique slot, *c*, through which projects a wrist-pin or finger on a secondary or pawl lever, for the purpose presently explained. E is a secondary or pawl lever, the lower end of which is curved or turned so that the extreme end lies below the serrated under side of the segmental ratchet B. This lower end of lever E, where it passes under the lever C, is bent out of the plane of the outer side, so that, like the lever C, it may lie flush against the inside of the segmental ratchet, as shown. At a suitable distance from the end of said lever there is a bolt or pin, *e*, which projects through

the diagonal or oblique slot *c* in the guide-arm D, and thus establishes a normal relation and connection between the two levers C and E. A suitable distance above the point of connection, just explained, is arranged a spring, F, the legs of which are secured, respectively, to the said levers C and E, the tendency of which spring is to cause the lever E to ride on its pin *e*, up in the oblique slot *c*, and thus raise the curved lower end of the said lever toward the under ratchet side of the segment B. The movement of the handle end of the lever E toward the lever C compresses the spring, and forces down the lower end of the lever E away from the segment B. G is a fixed pawl, secured to the curved end of the lever E, and adapted to take into the serrations on the under side of the segment B. This pawl is secured by screws, bolts, or otherwise, at 1 2, to the curved end of the lever, and extending downwardly at its outer end, to form a shoulder or stop, *f*, against which one edge of the lever C comes in contact, the parts being otherwise so constructed and arranged, as clearly shown in Fig. 3 of the drawing, as to permit the necessary movement of the lever E, and yet prevent any disengagement between the several parts, except the ratchet and pawl, which takes place when the handle end of the lever E is forced toward the lever C, as before explained, which, forcing the lower end of the lever E and its pawl G away from ratchet B, thus permits of the vibration of the lever C, for the purpose of releasing or tightening the brakes of the wagon.

It will be observed that the projection *f* of the pawl G, against which the edge of the lever C lies, serves as a stop to any return movement of said lever, and tends to force the pointed end of the pawl more securely into the notches of the ratchet, and thus effectually retains the lever until the pawl is released. Of course we do not wish to limit ourselves to the exact features of construction, as they may be varied in the manufacture without departing from the spirit of our invention.

What we claim as new, and desire to secure by Letters Patent, is—

1. In combination with the ratchet B and lever C, the curved lever E, adapted to ride

vertically upon the lever C, substantially as and for the purposes set forth.

2. In combination with the curved lever E, provided with a distending-spring, and a guide-pin, *e*, the arm D, provided with an oblique slot, *c*, whereby the vibration of the lever E causes it to also move vertically, substantially as and for the purposes hereinbefore set forth.

3. The combination of the ratchet B, lever C, and curved lever E, with its pawl end and

guide-pin *e*, the guide-arm D with its oblique slot *c*, and the spring F, all arranged to operate substantially in the manner described.

4. The rigid arm D, provided with a lip, *b*, to form a guide, substantially as set forth.

JOHN M. STUDEBAKER.
HUGH L. HINDS.

Witnesses:

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