

S. COPE.
Carriage Brake.

No. 4,900.

Patented Dec. 22, 1846.

FIG. 1.

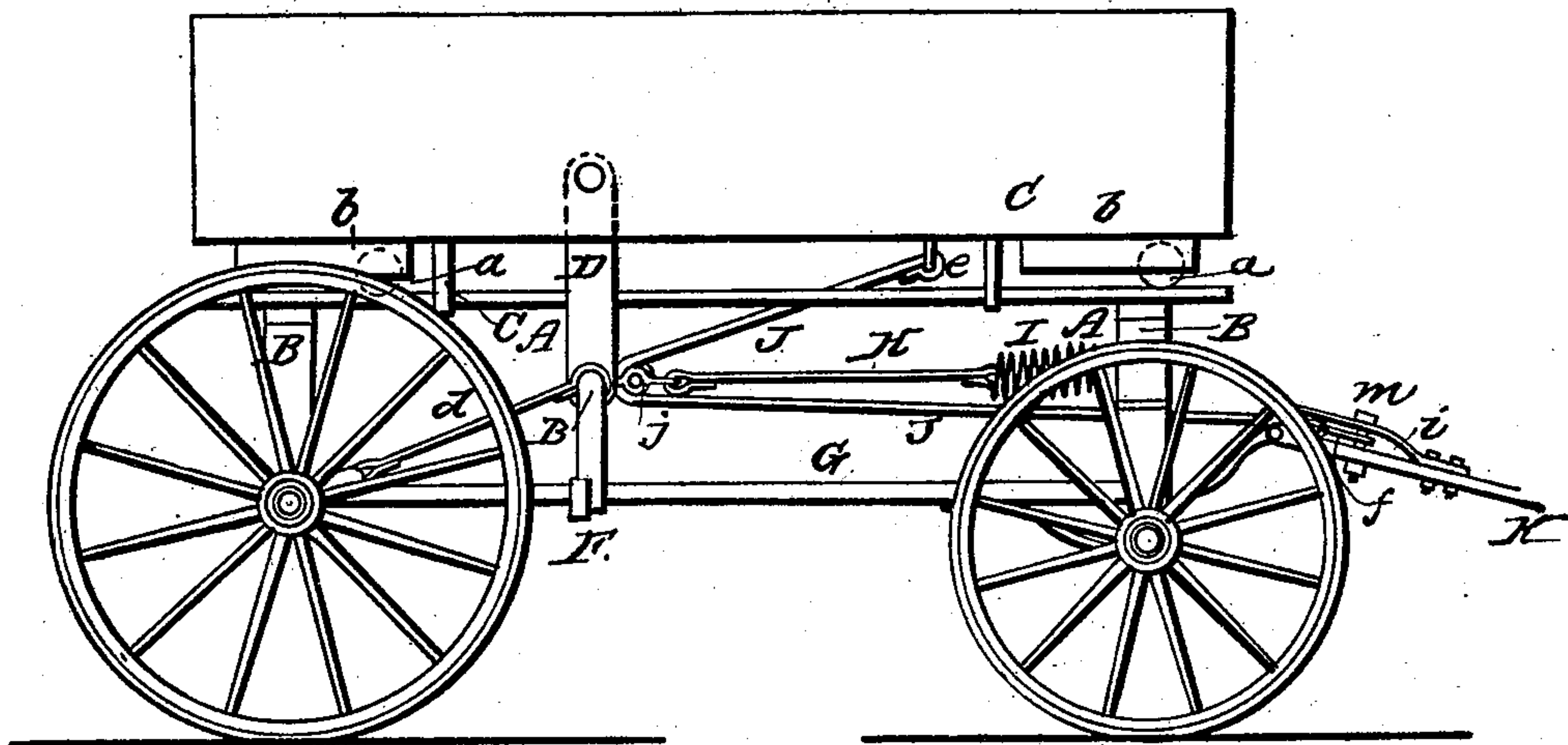


FIG. 2.

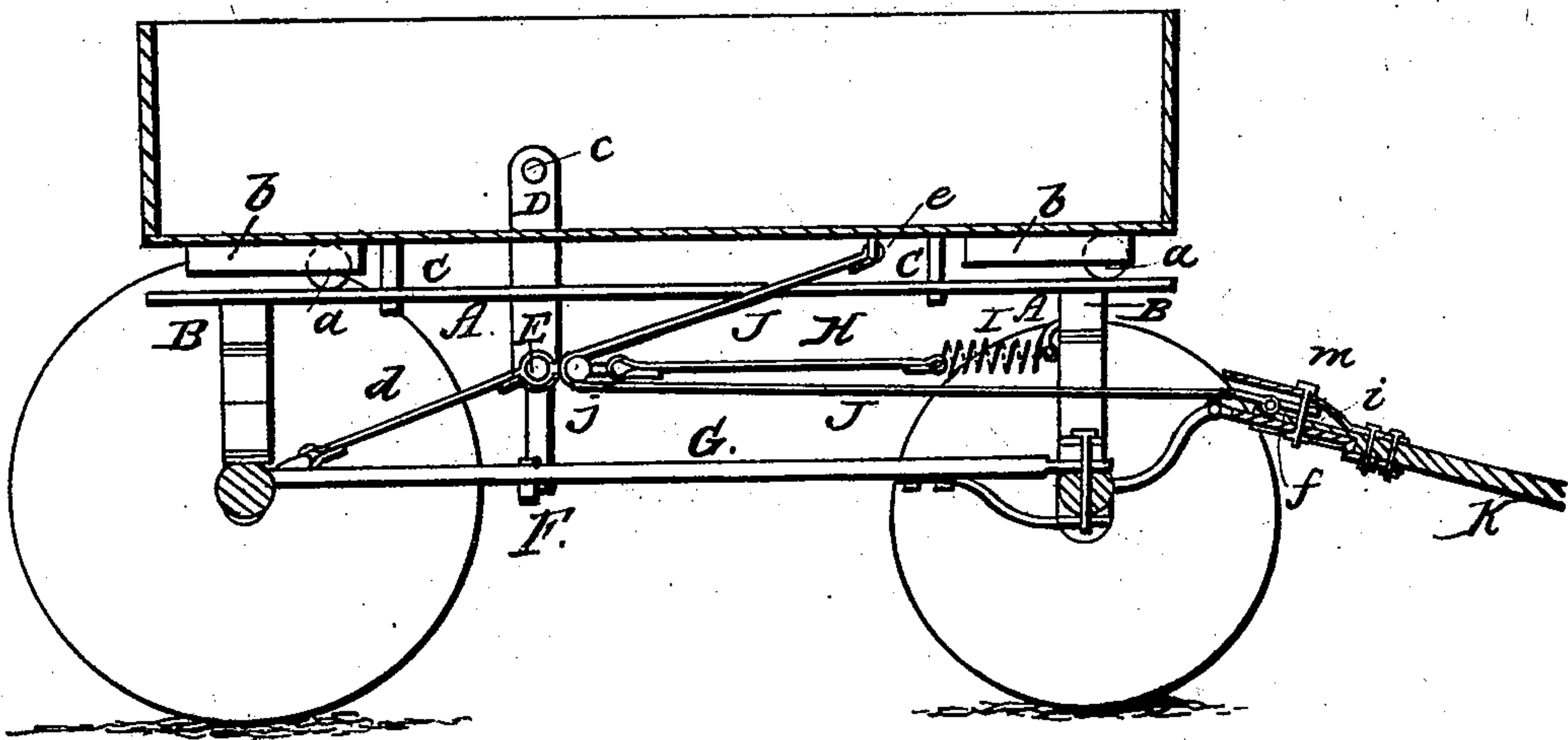


FIG. 3.

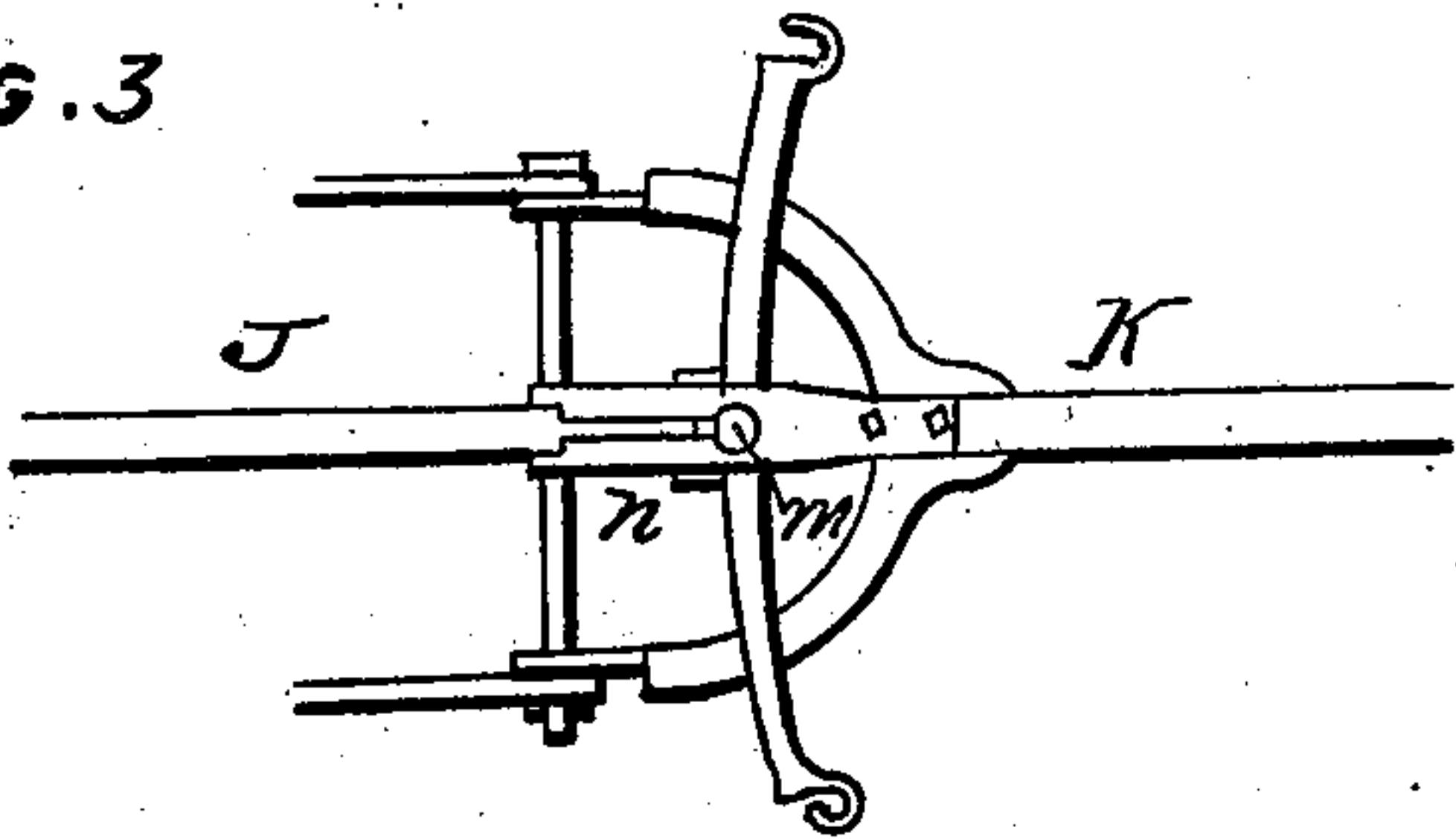
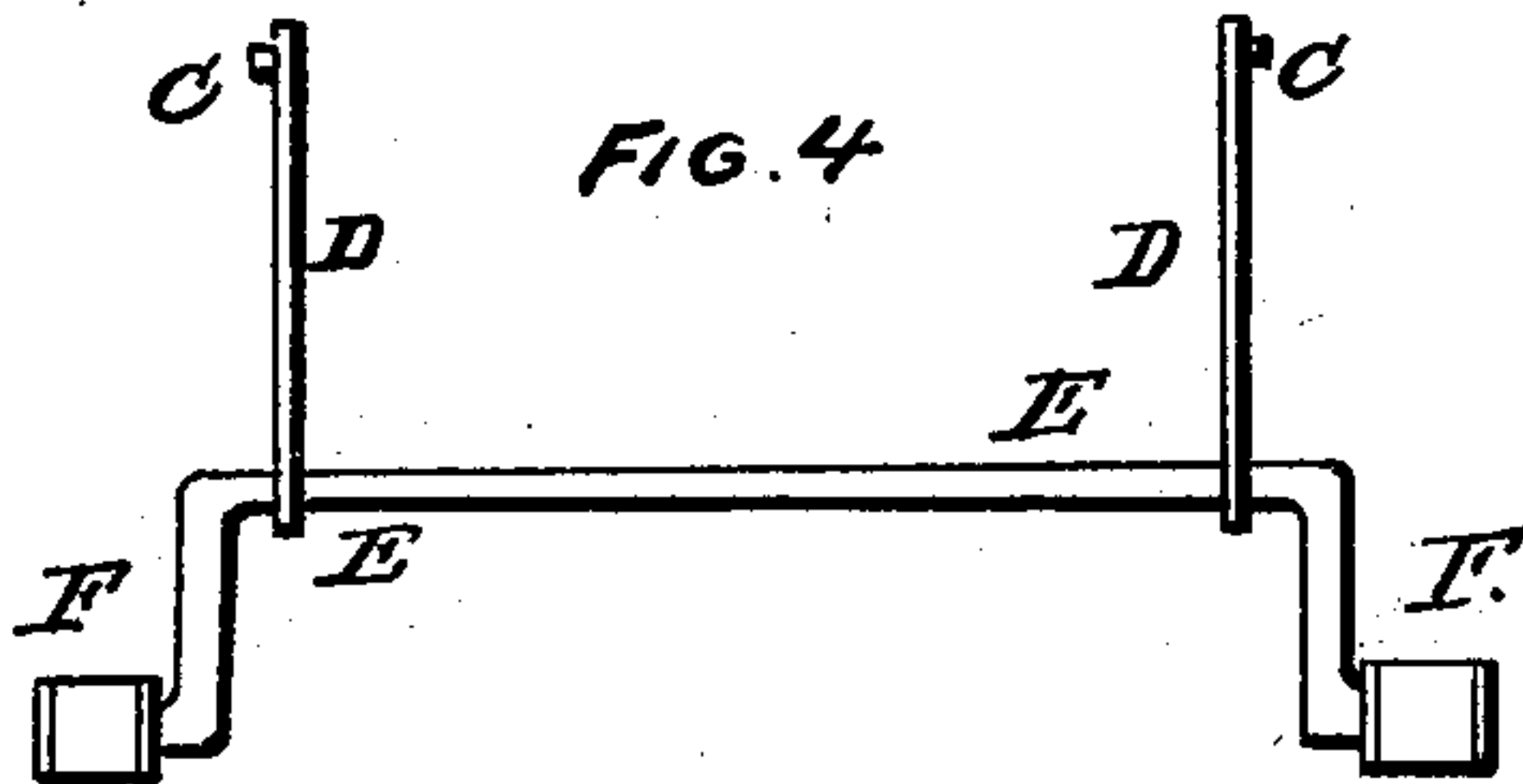


FIG. 4.



UNITED STATES PATENT OFFICE.

SAMUEL COPE, OF SALEM, OHIO.

SELF-ACTING CARRIAGE-BRAKE.

Specification of Letters Patent No. 4,900, dated December 22, 1846.

To all whom it may concern:

Be it known that I, SAMUEL COPE, of Salem, in the county of Columbiana, in the State of Ohio, have made a new and useful

5 Improvement in the Manner of Constructing Self-Acting Brakes to Operate on the Wheels of Carriages, said improvement being made upon the apparatus for which Letters Patent were granted to David D. Gibson and Walker Cobbs under date of February 12, 1845, and denominated an "improvement in the carriage-brake for locking and unlocking carriage-wheels," the right to which patented improvement has been vested in me; and I do hereby declare that the following is a full and exact description of my improvement thereon.

A principal object of my improvement is to adapt the self acting brake to carriages upon springs, which, although before attempted, has not been effected so as to operate satisfactorily.

In the accompanying drawings Figure 1, is a side elevation of a spring carriage with the brake attached thereto. Fig. 2, is a vertical section through the carriage from front to back, giving a side view of the perch, and of the flexible straps, and other apparatus by which the body of the carriage, the brake shaft, and the swingle tree are connected together. Fig. 3, is a top view of the swingle tree, of the strap to which it is connected, and of the rear end of the tongue, and fore end of the carriage. In each of these figures where like parts are shown they are designated by the same letters of reference.

A, A, are rods of iron, or of iron and wood combined, which rest on the cross bars B, B, that are sustained on the elliptic, or other springs of the carriage, there being similar bars A, A, on each side of the carriage. The carriage body slides back and forth on these bars, and is kept from rising out of place by clips *c, c*, that are fastened to the bottom of the body, and embrace the bars A, loosely, so as to slide readily along them; *a, a*, are friction rollers turning on pivots, in boxes *b, b*, made fast to the bottom of the carriage, these bear on the rods A, A, and enable the body to slide freely; D, is an arm that is made fast at its lower end to the crank or brake shaft E, which crosses from side to side of the carriage; a side view of this shaft is given in Fig. 4.

The arm D, of which there is one on each

side of the carriage, passes through a slot, or mortise, in the carriage bottom, and works on a joint pin *c*, against the sides of the body. Straps of leather, or of other flexible material *d, d*, embrace the ends of the crank shaft, and are attached at their opposite ends to the hind axle, and thereby preserve the distance between the straight part of the shaft and the axle; these straps, as the carriage body slides forward, cause the rubber, or bearing piece F, of the brake, to come into contact with, and press against, the rims of the hind wheels, and that with a degree of force proportioned to the steepness of the road down which the carriage is passing. It is not absolutely necessary that the pieces *d, d*, should be of a flexible material, but it is advisable so to make them as they prevent noise, and are otherwise to be preferred. These straps allow the carriage body to move up and down freely in accordance with the play of the springs.

G, is the perch of the carriage, which is formed and attached in the usual way.

H, is a strap of leather which is made fast at its rear end to the middle of the brake shaft, and at its fore end to a spiral or other spring I, that is attached to the fore cross bar B, or to the carriage spring. The spring I, serves to draw the brake shaft forward, and to relieve the wheels from the pressure of the rubbers, when the body is no longer forced forward by the descent.

J, J, is a strap that is made fast to the bottom of the carriage as at *e*, and to the swingle tree at its opposite end, as at *f*. This strap passes around a friction roller, connected to, and in front of, the brake shaft, as shown at *g*. The swingle tree is received within an opening *i*, between two jaws, or plates, in the rear end of the tongue K, and the bolt *m*, on which it vibrates, passes through a slot *n*, Fig. 4, made along the upper and lower plates, that form the opening *i*.

Under this arrangement when the horses are drawing on level ground, or on an ascending grade, the swingle-tree will occupy the forward part of the slot *n*, the carriage body will be back in its ordinary place, and the rubber will be free from the wheels; but on descending ground the carriage body will move forward, and draw the swingle-tree back by the passing of the strap J, J, around the roller *g*, and the brake will operate on the wheels.

Having thus fully described the nature of my improvement in the self acting brake for spring carriages, what I claim therein as new and desire to secure by Letters Patent, is—

5 The manner in which I have combined the brake with the spring carriage by means of the arms D, D, of the straps, or rods *d*, *d*, connecting the brake shaft with the hind
10 axle; of the strap H, connecting the brake shaft with the fore cross bar B, through the intermedium of the spring I; and the strap J, J, made fast to the carriage body, and to the swingle-tree, so as to operate in

the manner set forth. I do not claim either 15 of the above named parts individually; but I limit my claim to their combined arrangement and operation, as herein fully made known, and this I claim whether the respective parts be formed precisely in the manner 20 described and represented, or in any other that is substantially the same, producing a like result by equivalent means.

SAMUEL COPE.

Witnesses:

THOS. P. JONES,
EDWIN L. BRUNDAGE.