C. E. COOMBS.

Car-Brakes.

No. 150,399. Patented May 5, 1874.

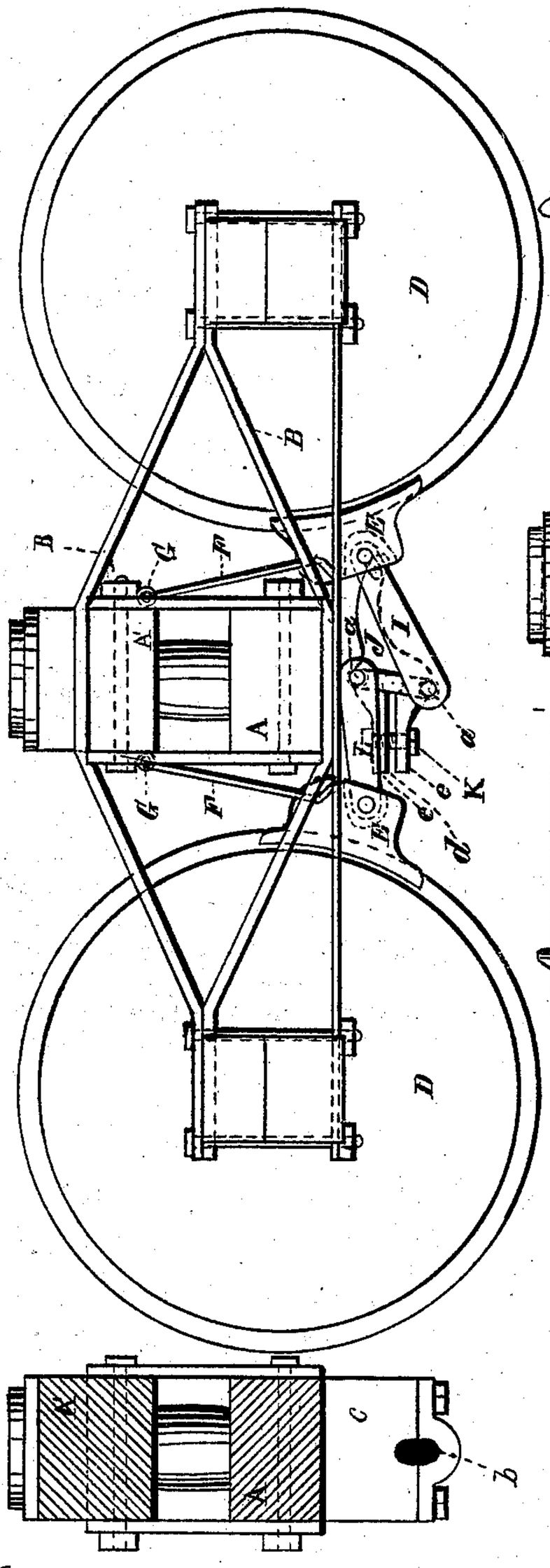

FIG. 1

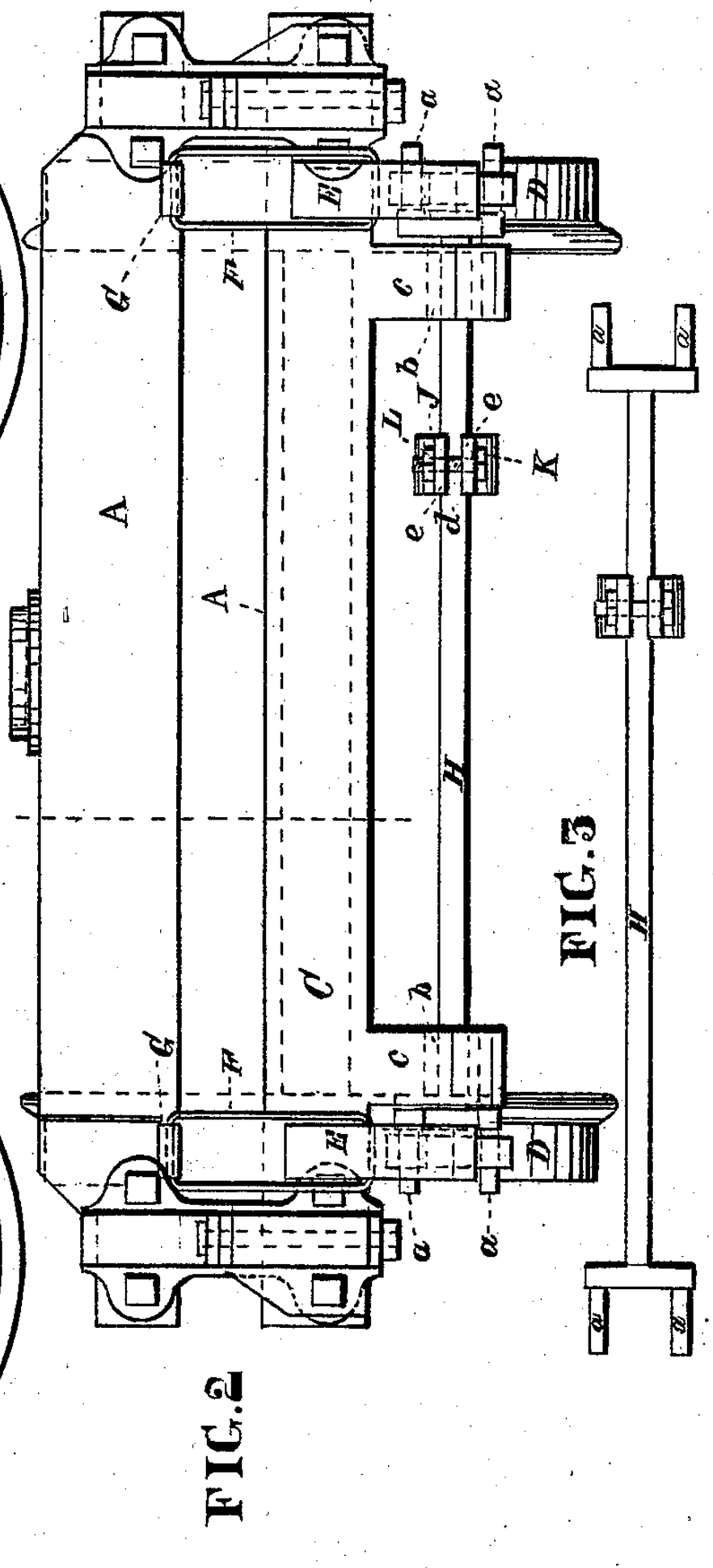

FIG. 2

FIG. 3

FIG. 4

Witnesses.

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CHARLES E. COOMBS, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN CAR-BRAKES.

Specification forming part of Letters Patent No. **150,399**, dated May 5, 1874; application filed April 10, 1873.

To all whom it may concern:

Be it known that I, CHARLES E. COOMBS, of the city and county of Philadelphia, and State of Pennsylvania, have invented an Improvement in Car-Brakes, of which the following is a specification:

The object of my invention is mainly such a construction of the brake that by the operation of a single lever all the brake-shoes of a truck are caused to operate with equal pressure upon the wheels, to give the greatest efficiency to the force applied. To this end I combine a lever-shaft having double cranks at each end to operate the brake-shoes, the journals of the cranks working in bearings which are oblong vertically in projections or arms of the spring-plank, so that as the plank springs up and down, the journals will not be disturbed thereby in their normal altitudinal position. The invention further relates to the combination of a lever with the crank-shaft by means of a cross-slot between two jaws, which are tightened by means of a screw. The lever is thereby adjustable in any longitudinal position on the shaft, and is capable of being removed therefrom by the withdrawal of the screw, so as to place it at the opposite side of the shaft very expeditiously, to suit a reversal of the car in the line of motion of the train.

I am aware that double cranks have been used for operating brake-shoes; but I am not aware that they have been connected with the spring-plank in the manner described above.

Figure 1 is a side elevation of a four-wheeled truck with the improved brake connected therewith. Fig. 2 is an end elevation of the same, with the rear shaft and wheels left off for the purpose of showing more clearly the improved parts. Fig. 3 is a side view of the crank-shaft H, and adjustable lever J in connection therewith. Fig. 4 is a cross-section of the spring-plank A and bolster A′.

Like letters of reference in all the figures indicate the same parts.

A represents the spring-plank, and A′ the bolster, of an ordinary four-wheel truck. B B are the forms. C C are the axles, which are provided with wheels D. The shoes E are hung at their upper ends by means of the links F, as seen in Figs. 1 and 2, the links being connected at their upper ends by means of the eye-plates G. H is a crank-shaft, which has double cranks *a a* at each end. I I are connecting-rods, which connect the shoes E E with the cranks. The crank-shaft has bearings *b b* in the projections *c c* on the lower side of the spring-plank A. The bearings are oblong vertically in accommodation to the vertical vibrations of the spring-plank. There is a lever, J, connected with the crank-shaft H, to the free end of which is attached a chain, which is passed over suitable sheaves in the usual manner, and connected with the operating mechanism. The lever J has a slot, *d*, for connecting it expeditiously with the crank-shaft, so that it may be readily changed with its free end toward either end of the truck. The screw-bolt K passes through the jaws *e e*, which form the slot, for fastening the lever to the shaft after it is placed in position and secured by the set-screw L. When the lever is reversed on the shaft, the connecting-rods I I at each end of the latter have to be reversed in their connection with the crank-arms *a a*.

I claim as my invention—

1. The combination of the crank-shaft H, provided with a lever, J, and having double cranks *a a* at each end, with the spring-plank A, having vertically oblong bearings *b b*, connecting-rods I I, and brake-shoes E E, substantially as and for the purpose set forth.

2. The combination of the detachable lever J, having a slot, *d*, jaws *e e*, and screw-bolt K, with the crank-shaft H, substantially as and for the purpose specified.

CHARLES E. COOMBS.

Witnesses:

STEPHEN USTICK,

JAMES I. ALLISON.