

(No Model.)

4 Sheets—Sheet 1.

D. A. SPRAGUE & S. PERRY.

Wagon Lock.

No. 229,560.

Patented July 6, 1880.

FIG. 1.

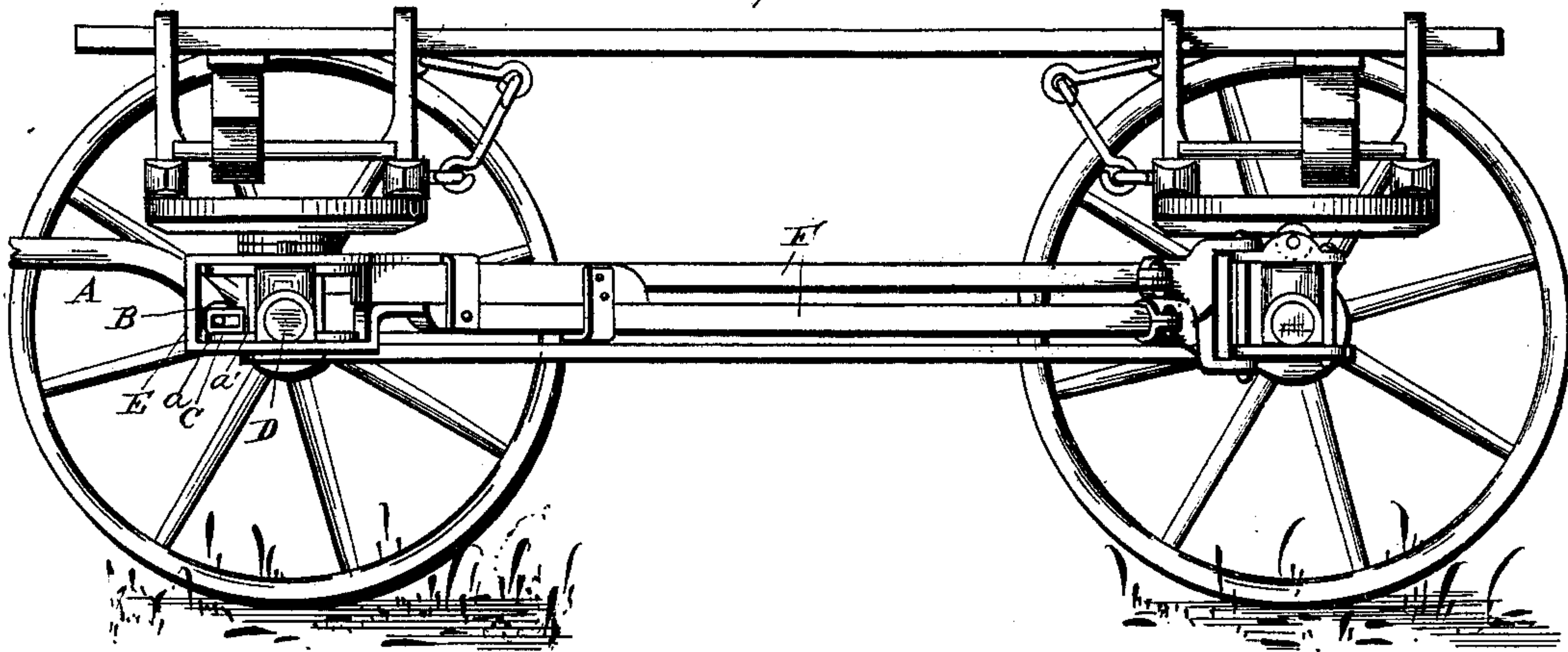
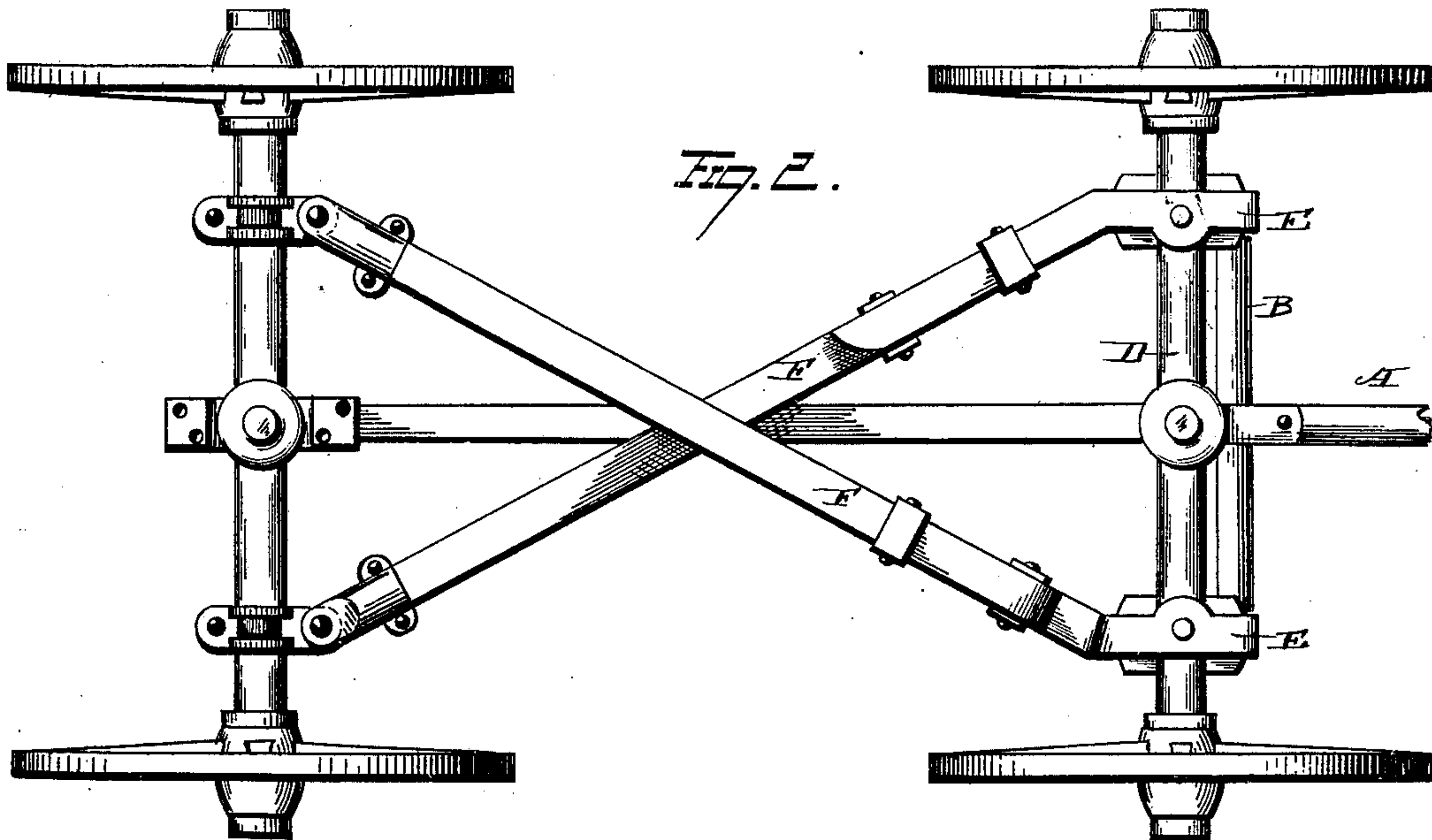


FIG. 2.



WITNESSES

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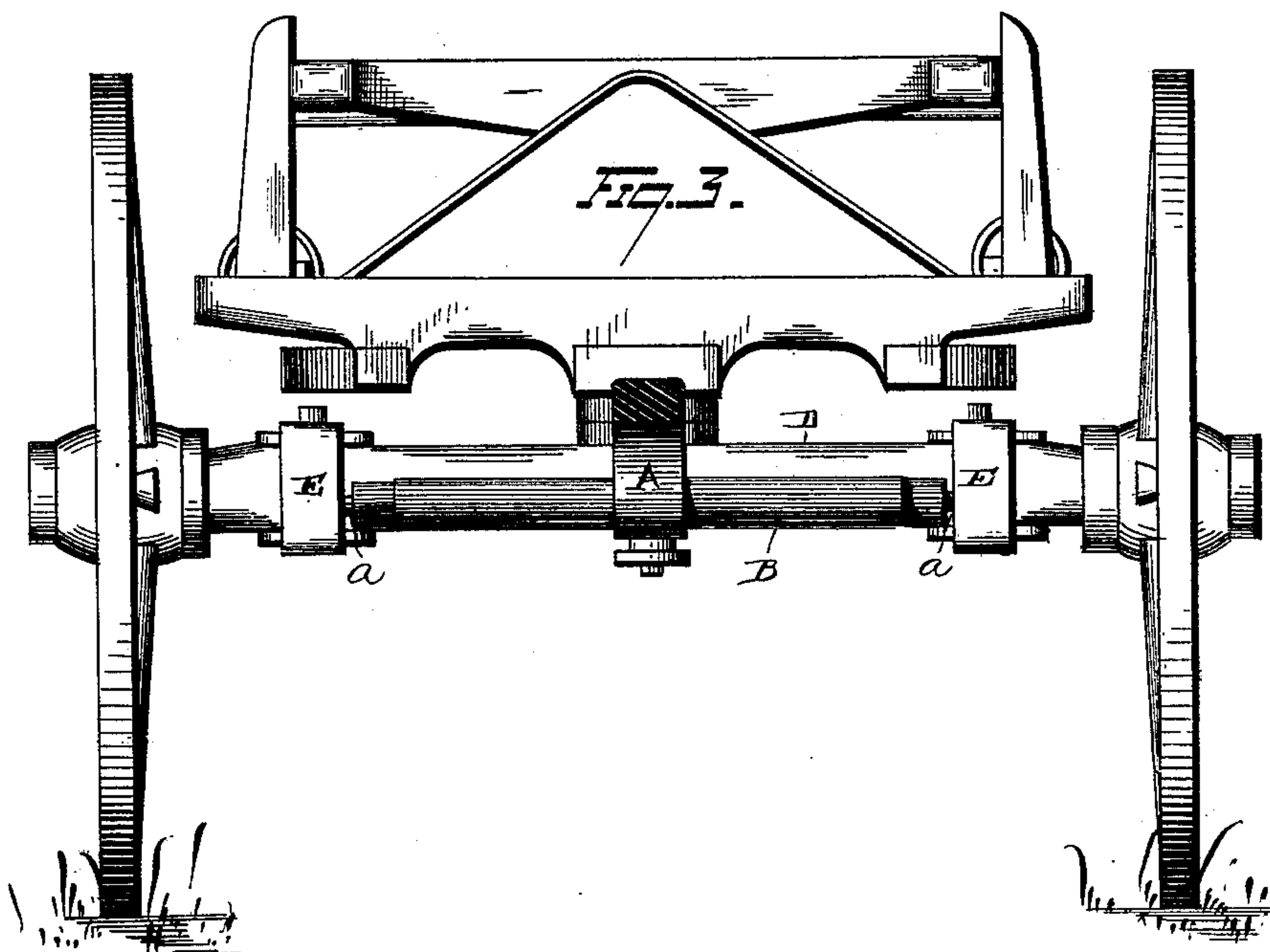
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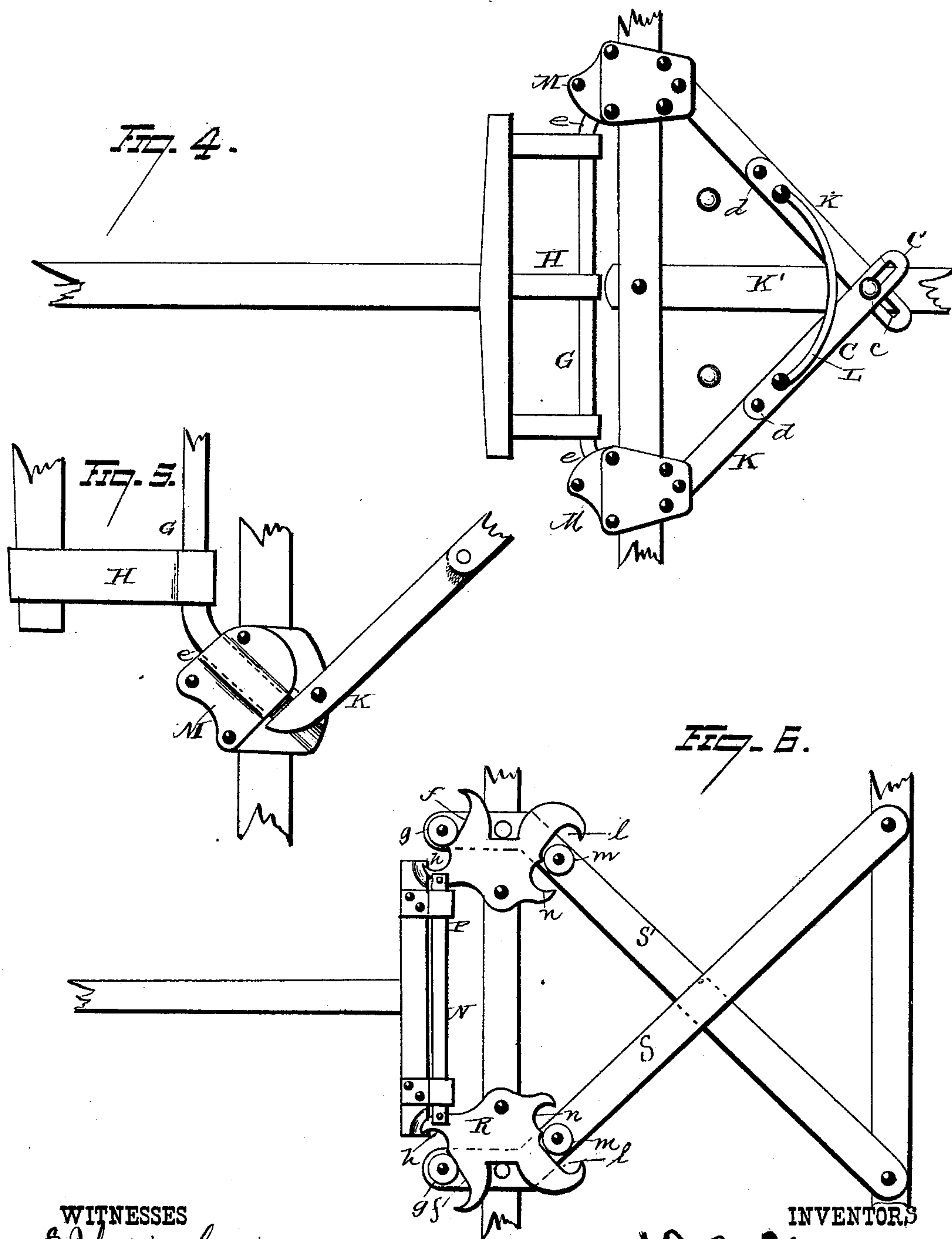
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4 Sheets—Sheet 4.

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Patented July 6, 1880.

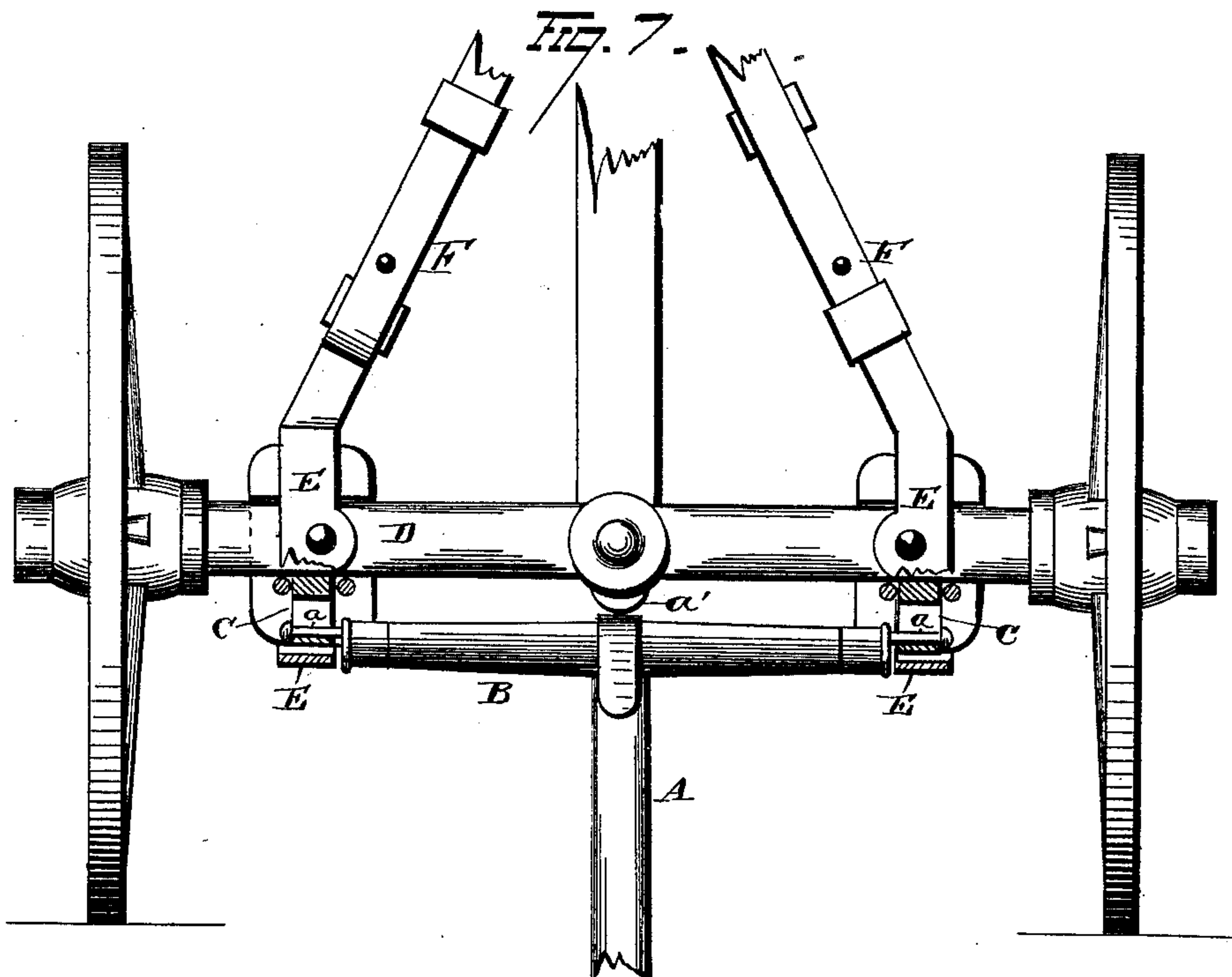


FIG. 8.

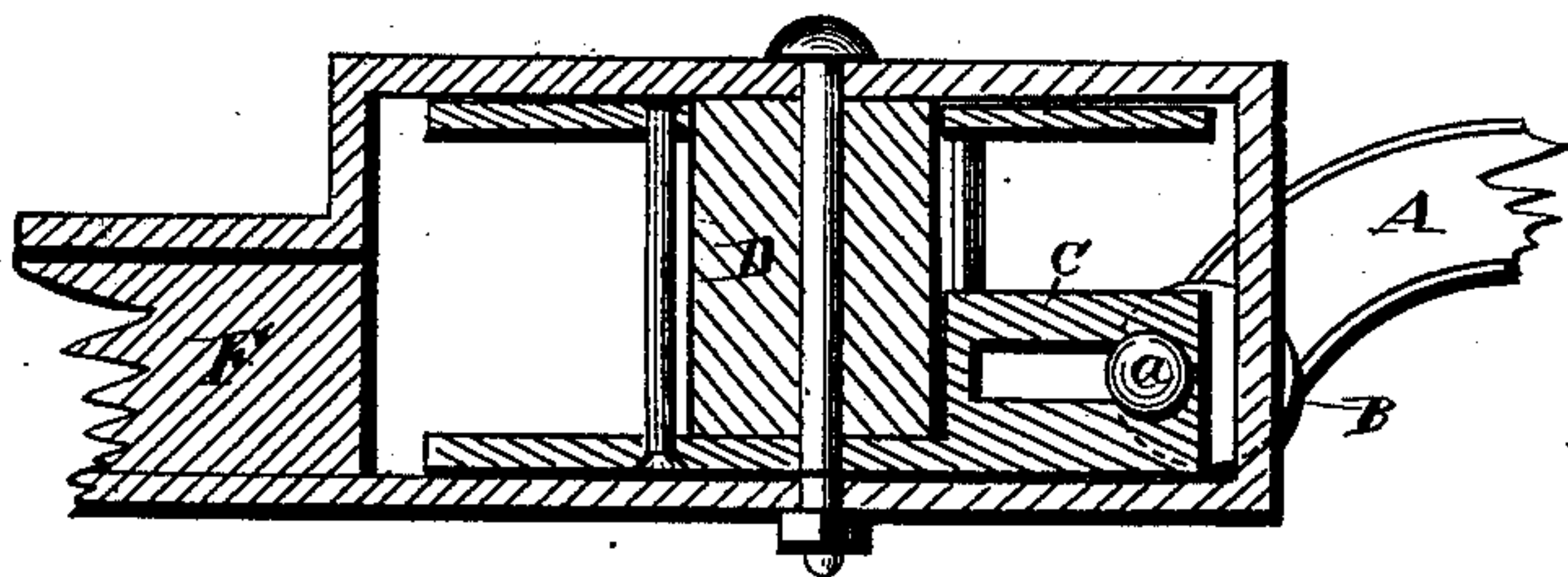
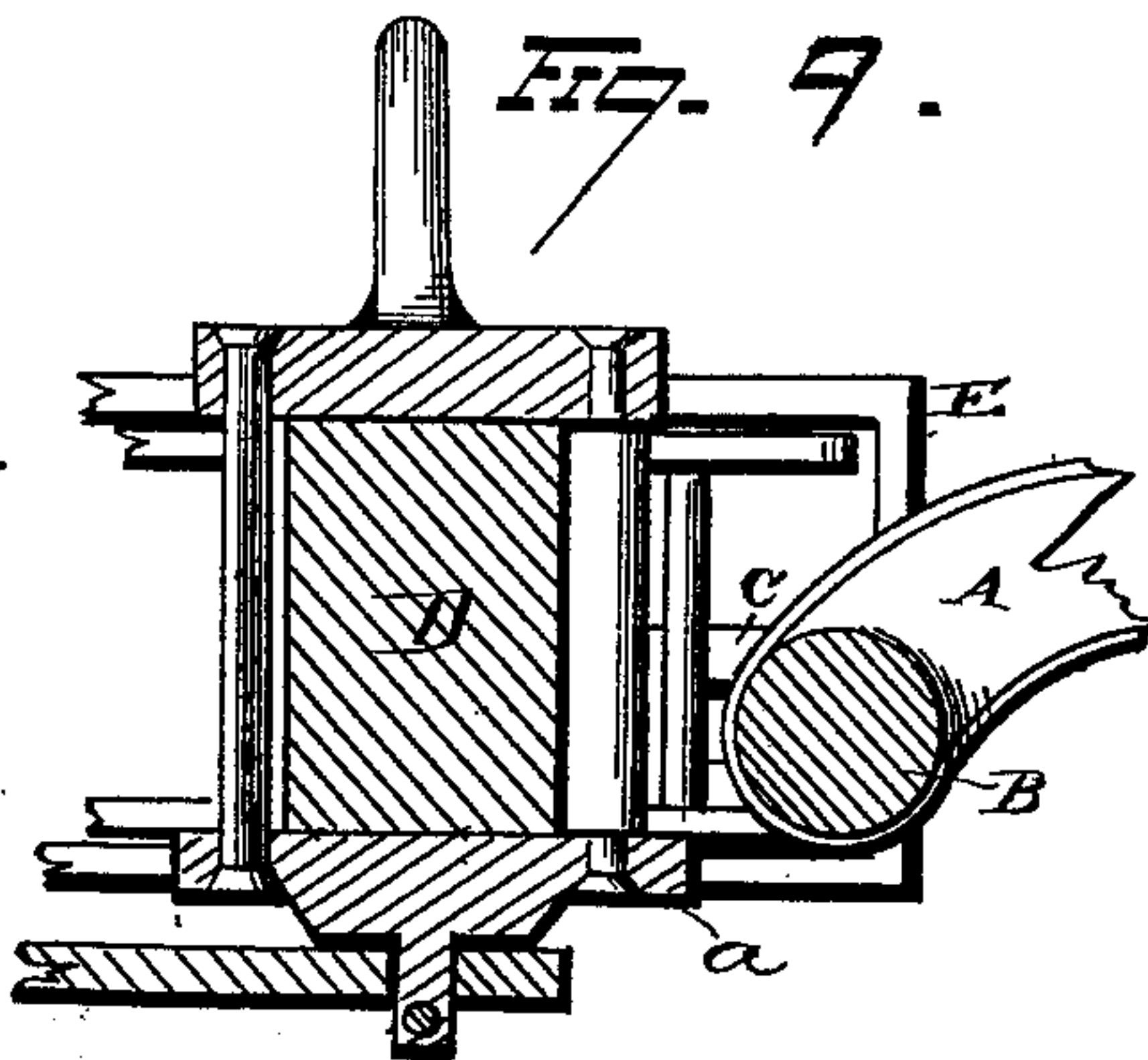


FIG. 9.



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# UNITED STATES PATENT OFFICE.

DANIEL A. SPRAGUE, OF POLAND, AND STUART PERRY, OF NEWPORT,  
NEW YORK.

## WAGON-LOCK.

SPECIFICATION forming part of Letters Patent No. 229,560, dated July 6, 1880.

Application filed April 2, 1880. (No model.)

*To all whom it may concern:*

Be it known that we, DANIEL ARNOLD SPRAGUE, of Poland, in the county of Herkimer and State of New York, and STUART PERRY, of Newport, in the county of Herkimer and State of New York, have invented certain new and useful Improvements in Wagon-Locks; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

Heretofore the front axle has been locked against irregular pivotal movement as follows: A fifth-wheel is rigidly secured to a reach, which latter is likewise rigidly secured to a non-pivotal rear axle. The tongue is connected to the front axle by rods, which latter are connected to frictional clamps adapted to embrace the fifth-wheel when the axle is turned independently of the tongue. This form of wagon-lock requires a fifth-wheel, requires a non-pivotal rear axle, and requires rigid connections between the rear axle and the fifth-wheel. Our invention provides mechanism for locking the front axle against irregular pivotal movement without calling into requisition any one or all of said several parts necessary in the wagon-lock referred to.

The invention consists of the parts and combinations of parts hereinafter described and claimed.

In the drawings, Figure 1 is a front and side perspective view of a wagon embodying the improvements. Fig. 2 is a plan view of the running-gear alone. Fig. 3 is a detail end view of the front axle provided with the new attachment. Fig. 4 is a plan view of parts sufficient to represent one modification of the invention. Fig. 5 is a detail view, showing one end of the axle of said modification in reverse view from the preceding figure. Fig. 6 is a plan view of parts sufficient to represent a second modification of the invention. Fig. 7 is a detail view of the construction represented in the first two figures of the drawings, said detail view showing the parts above the

ends of the cross-bar as broken away. Fig. 8 is a detail vertical section through the parts connecting with one of the ends of said cross-bar. Fig. 9 is a detail vertical section through the center of the cross-bar.

The tongue A is provided with a rear cross-bar, B, whose journals *a* are loosely fitted in longitudinally-slotted bearings C, secured to the front axle, D.

Lock-fastenings E, pivoted to the axle, have forward and rear projecting portions. The forward portions are adapted to engage with the ends of the cross-bar when the tongue is drawn out in line with the wagon-body, and the rear portions are rigidly secured to the diagonal reaches F.

The slotted bearings of the cross-bar permit the journals of the latter to have free sliding movement therein forward and back, the extent of said movement being sufficient to permit the cross-bar to be turned so as to free its ends from engagement with the pivotal lock-fastenings when the tongue is laterally moved to the right or left.

When the team is traveling with the tongue practically in line with the body of the wagon both ends of the cross-bar are forward of the lock-fastenings, so that the latter bear against the ends of the cross-bar whenever there is a tendency on the part of the axle to turn on its pivotal axis. This engagement of the forward portion of the lock-fastenings with the ends of the cross-bar prevents the axle from having pivotal movement, and hence all serpentine travel of the wheels and switching of the tongue are obviated. When the team turns to the right or left for any purpose the corresponding end of the cross-bar is moved by the tongue so that it is in rear of the forward portion of the lock-fastening; hence the axle is free to turn on its pivotal axis. When the team resumes travel in line with the body of the wagon the cross-bar is again brought parallel with the axle, and the latter is locked against pivotal movement.

The central portion of the forward side of the front axle is provided with a projecting stud, *a'*, for the lower part or cross-bar of the tongue to strike against. This stud is to pre-



vent the tongue from going back far enough to unlock the axle when a team is holding back in descending a hill so long as the tongue is practically in line with the body of the wagon, the ends of the cross-bar going back farther for unlocking as the cross-bar rocks over this stud.

The form of construction shown in the first figures of the drawings represents the foregoing improvement as attached to a wagon having a pivotal rear axle and diagonal reaches connecting the latter with the front axle. This is, however, merely one way of applying the invention, and the latter may equally well be applied to any other form of wagon, whether the same has its rear axle rigid or pivoted, and whether it is provided with one or more diagonal reaches, or has not any diagonal reach.

In wagons having pivotal rear axles it is evident that the same causes previously described as producing serpentine travel of the front wheels would produce serpentine travel in case of the hind wheels, unless the rear axle were secured against pivotal movement at all times, when the tongue was practically in line with the body of the wagon. The diagonal reaches connect the rear axle to the lock-fastenings on the front axle, so as to lock the rear axle against pivotal movement, under the same conditions that the front axle is locked.

In Figs. 4 and 5 of the drawings is shown one modification of the invention as applied to a common wagon having a rigid rear axle. The tongue is connected with an unlocking-bar, G, by strips H, pivotally secured to the latter.

Diagonal bars K on each side of the central reach, K', are provided with slots C, through which pin c connects them to a suitable support, which may be adjustably attached to the reach. Each diagonal bar of its respective set is jointed at d to have movement in a horizontal plane. A spring, L, has its extremities respectively connected to each set of said bars, for restoring and holding them to their axle-locking position whenever the bar G is not pressing against one set or the other, and is parallel, or nearly so, with said axle.

The ends e of the unlocking-bar curve rearwardly and have sliding movement in grooved bearings M, secured to the axle. The forward part of each set of the diagonal bars are pivoted near their ends, respectively, to said bearings or to the axle, so that in their locking position they are at right angles, or nearly so, to the grooves in which the curved ends of the unlocking-bar fit.

When the tongue is at right angles to the axle each set of the diagonal bars has its joints in line and acts as a brace on its side of the reach K', to prevent the axle from turning either way on its pivotal axis; but when the team moves the tongue to the right or left beyond its independent movement, so that the

curved end of the unlocking-bar on the side toward which the movement is made has passed through the vacant space in the grooved bearing of said side, and has pressed against the extremity of one of the diagonal bars at a point forward of its pivot, the middle joint of this set of the bars is forced inwardly, and the axle, now unlocked, is turned on its pivotal axis by the tongue toward said side, the opposite set of diagonal bars not preventing, on account, obviously, of the slot at one of its ends.

It is evident that the slotted ends of what are here called the "diagonal bars" can be pivoted to the body of the wagon or to a bolster, or to the rigid rear axle, and also that by pivoting these bars separately through their slotted ends they may occupy a position at right angles to the axle when locked, as well as the diagonal one shown.

This modification represents one form of the new devices as applied to the central reach of a common wagon; and it is evident that said devices can be connected to other parts of a wagon built with a central reach, as well as to the reach.

In Fig. 6 of the drawings is shown another modification of the invention, wherein the cross-bar of the tongue is connected to rod N by strips P, pivotally secured to the latter. Said rod has its extremities pivoted to fastenings R, which latter are pivoted to the axle. Each fastening R has its front and rear sides provided with a long and a short curved recess. The long curved recess f of the front side receives a roller, g, journaled on the front end of the corresponding diagonal reach S when the latter is in its extreme forward position. The short curved recess h of the front side of the fastening receives said roller g when the corresponding reach S' is in its extreme rearward position. The long curved recess l of the rear side of the fastenings receives a roller, m, journaled on the corresponding reach when the latter is in its extreme rearward position. The short curved recess n of the rear side of the fastenings receives said roller m when the corresponding reach is in its extreme forward position. Rollers g and m, engaging with the partitions between these curved recesses, serve to lock the axle against pivotal movement while the tongue is in line with the body of the wagon. When the tongue is laterally moved the pivotal fastenings R are moved, so as to free the rollers g and m from engagement with the partitions between the short and long recesses, and the axle has free movement on its pivoted axis.

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

The combination, with diagonal reaches or bars the forward ends of which are pivoted to the opposite ends of the forward axle, of a tongue provided with a cross-bar the opposite ends of which engage either directly or indi-



rectly with the forward ends of said diagonal reaches or bars, and serve to impart movement to the latter when the tongue is turned, and to lock the wheels against lateral movement  
5 should either front wheel meet with any obstruction, substantially as set forth.

In testimony that we claim the foregoing we

have hereunto set our hands this 18th day of March, 1880.

DANIEL ARNOLD SPRAGUE.  
STUART PERRY.

Witnesses:

JOS. T. WOOSTER,  
GEO. H. THOMAS.