

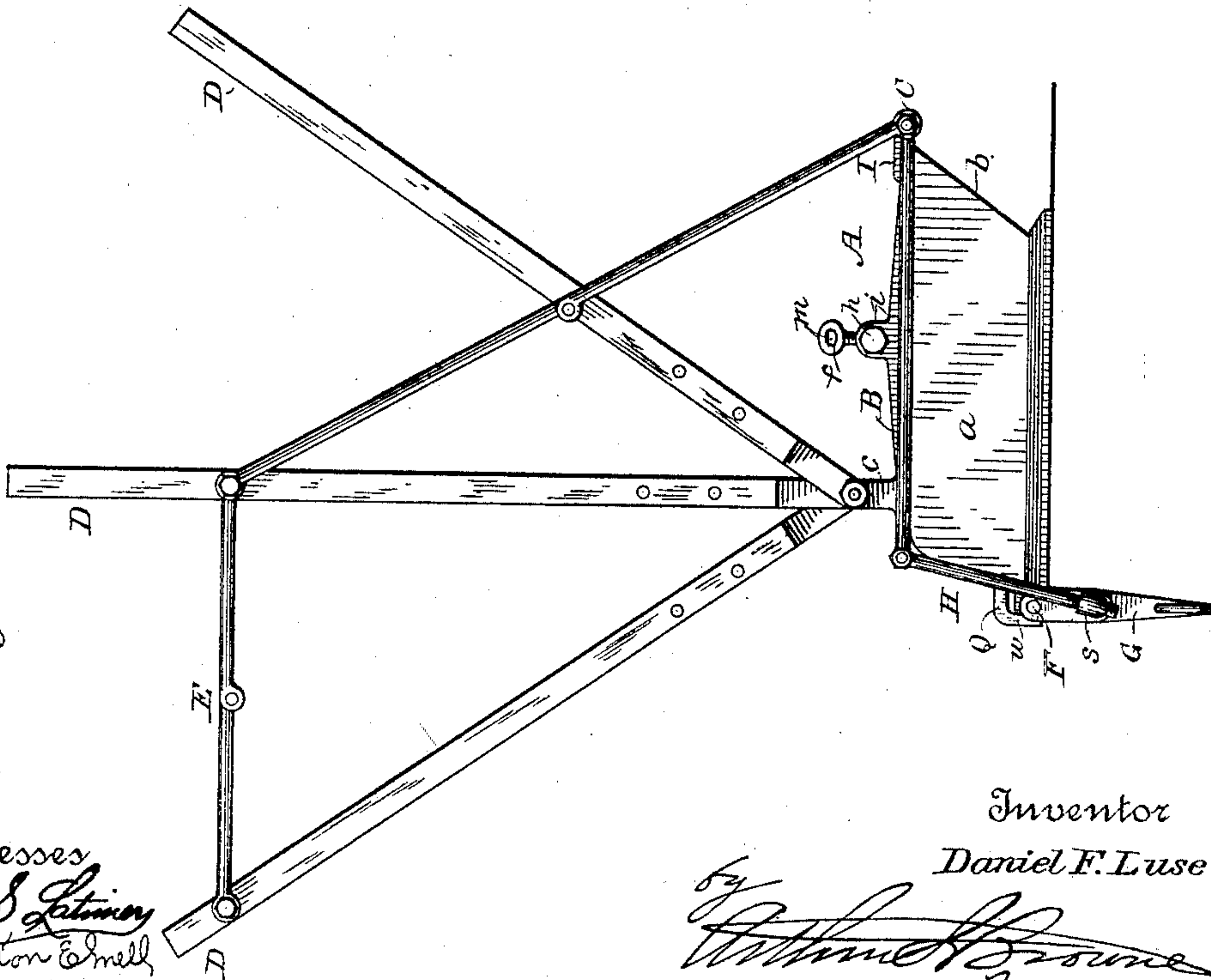
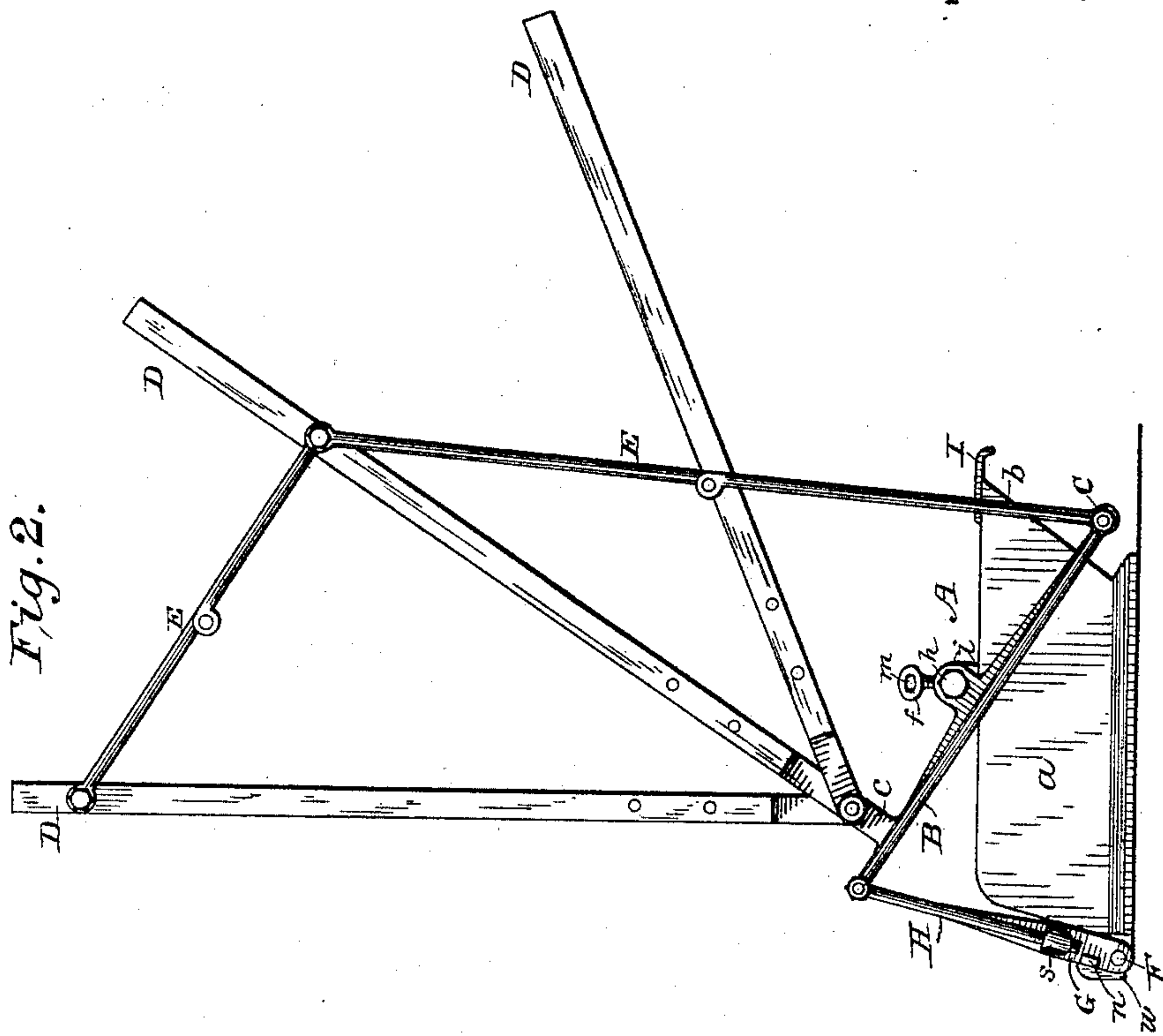
(No Model.)

2 Sheets—Sheet 1.

D. F. LUSE.
TOP FOR CARRIAGES.

No. 436,632.

Patented Sept. 16, 1890.



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Carleton E. Mott

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(No Model.)

2 Sheets—Sheet 2.

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Fig. 3.

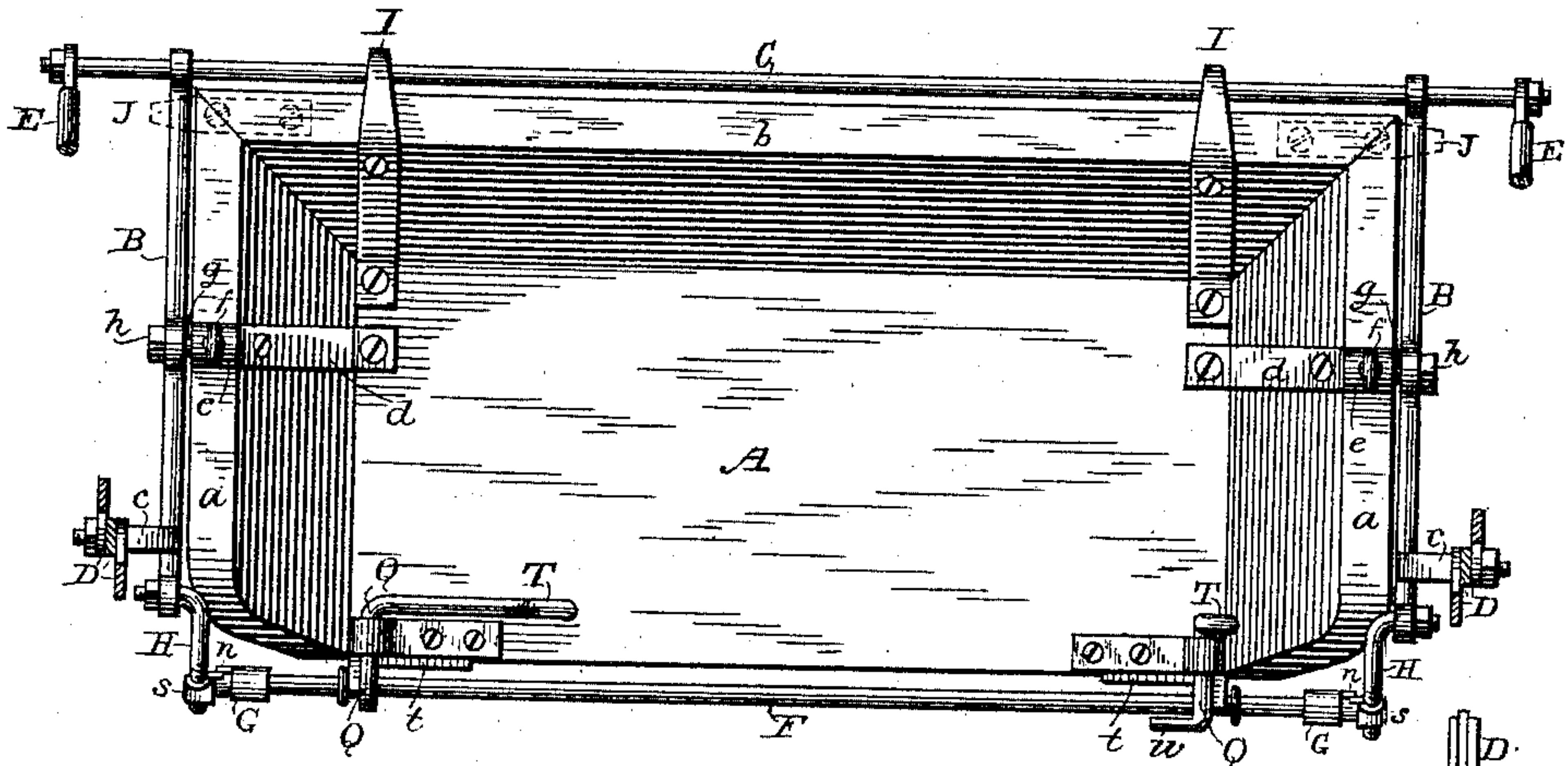


Fig. 4.

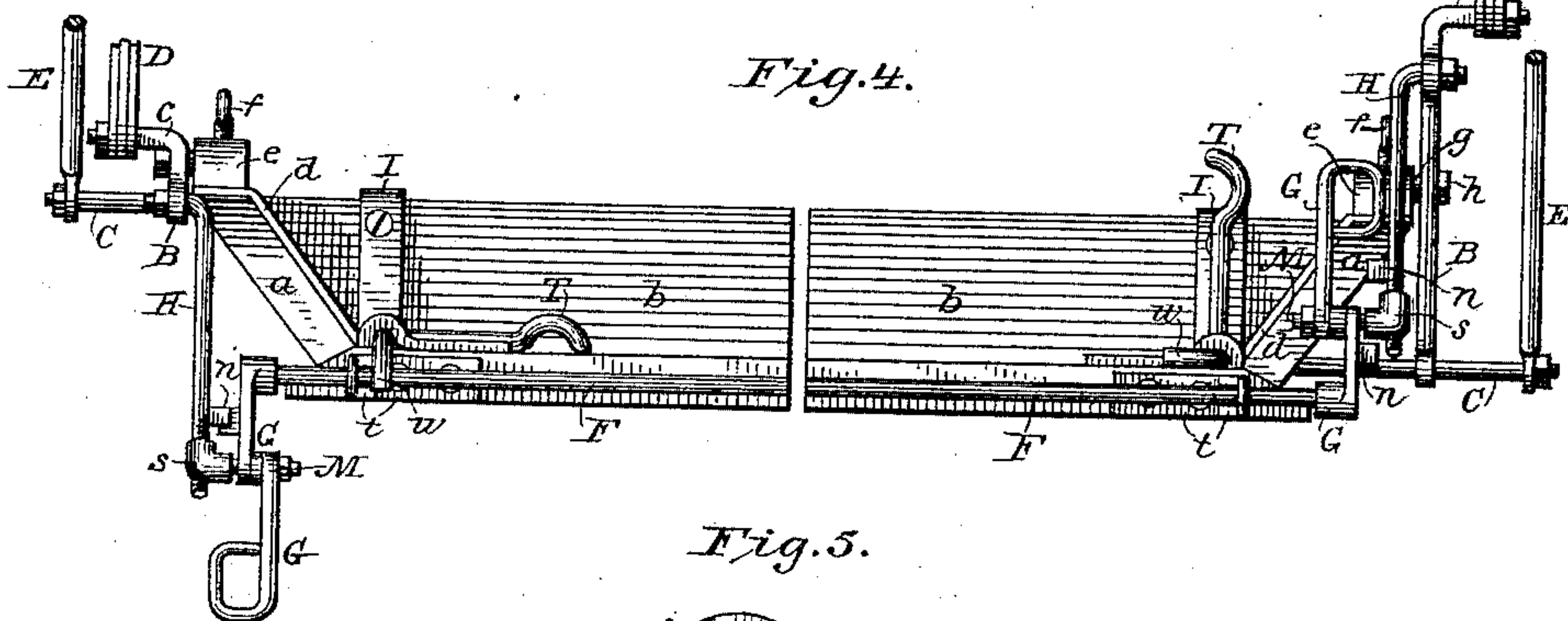


Fig. 5.

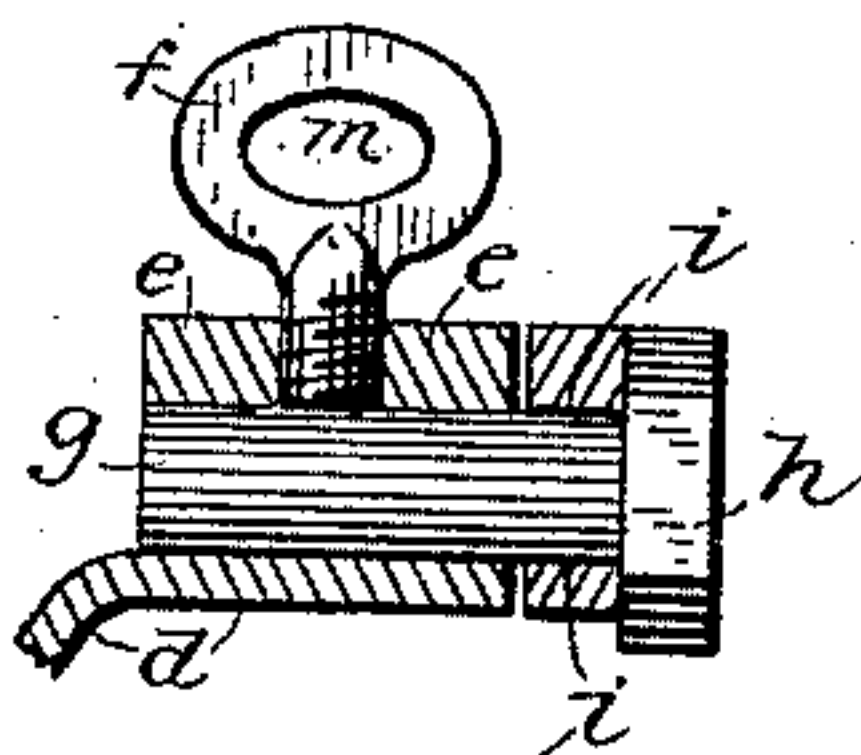
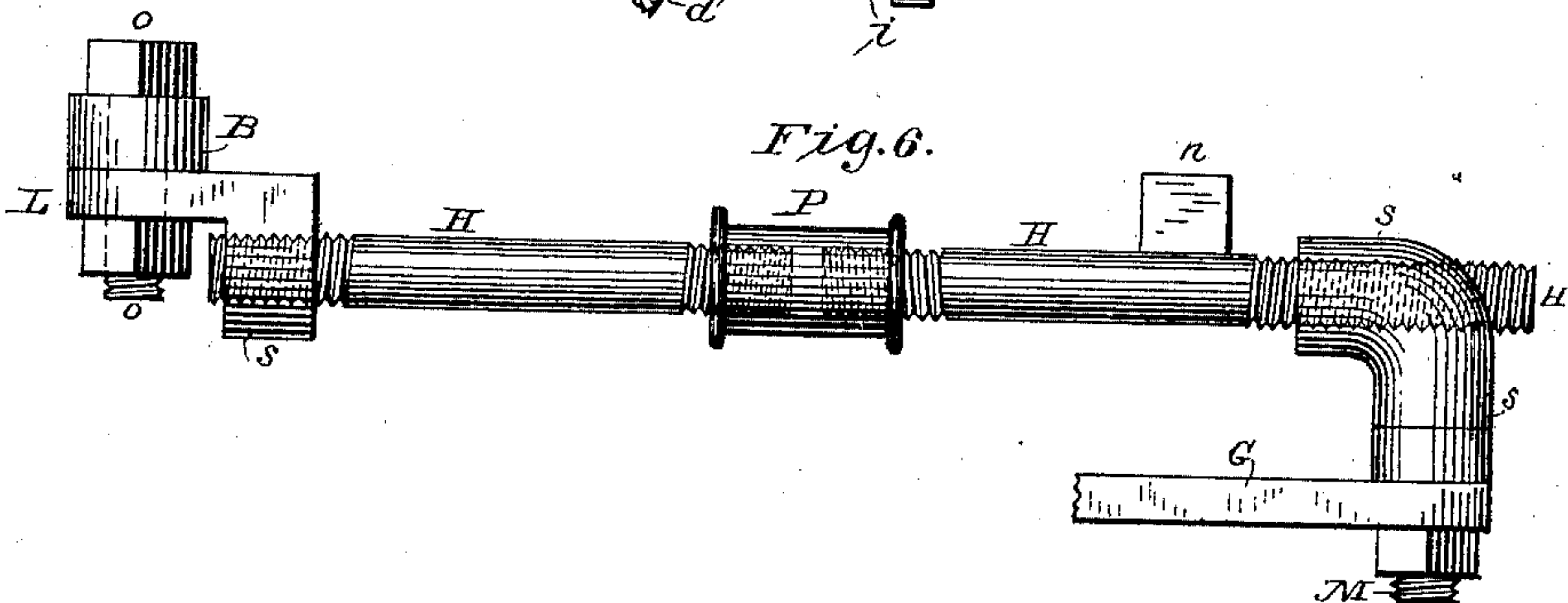


Fig. 6.



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UNITED STATES PATENT OFFICE.

DANIEL F. LUSE, OF CENTRE HALL, PENNSYLVANIA.

TOP FOR CARRIAGES.

SPECIFICATION forming part of Letters Patent No. 436,632, dated September 16, 1890.

Application filed May 6, 1890. Serial No. 350,816. (No model.)

To all whom it may concern:

Be it known that I, DANIEL F. LUSE, of Centre Hall, in the county of Centre and State of Pennsylvania, have invented certain new and useful Improvements in Tops for Carriages and other Vehicles, of which the following is a specification.

The present invention relates particularly to means for moving or adjusting the tops of carriages, buggies, or similar vehicles.

Hitherto the frames of carriage and buggy tops have been made with jointed side rods, which permit the top to be folded down when it is desired to have the same lowered. Such carriage or buggy tops are mounted on the carriage-seat, and the front bow thereof extends forward of the seat in an angular direction, so as to bring the front upper edge of the top out about as far as the dash-board of the carriage. When the carriage-top is up, it presents an obstacle to a person getting in and out of the carriage, owing to its projecting forward toward the dash-board, necessitating the bending of the body and the lowering of the head of the person. It is especially difficult and awkward for ladies to enter into and alight from such carriages and buggies. In order to avoid this difficulty, it becomes necessary to lower the carriage-top before entering the vehicle and then to raise it after entering. This in the usual construction of the tops necessitates breaking the top-joints on both sides of the buggy, which is at best an awkward proceeding, and which is oftentimes attended with difficulty when a refractory horse is employed. The lowering of the top before entering a carriage or buggy results in wetting the carriage-seat in case the weather is rainy, and then after entering the carriage the raising of the top and closing of the top-joints is necessary.

Now the present improvements consist, primarily, in means for shifting the carriage or buggy top from its normal closed position to such a position that its front bow shall occupy a substantially-vertical position, with its front upper edge in substantially the same vertical plane with the front edge of the seat, so that the vehicle can be conveniently entered into and alighted from, while at the same time the seat is protected from rain. The shifting of

the carriage or buggy top is effected without changing the usual construction of the top and without breaking the usual folding joints, and can be accomplished with equal facility from either side of the vehicle, both from within and without the vehicle, by a single simple movement.

In addition to the means for shifting the top the invention also includes features of improvement connected therewith to render the invention applicable to existing carriages and buggies and for enabling the top to be entirely removed when so desired.

The improvements are illustrated in the accompanying drawings, in which—

Figure 1 is a side view of a carriage-seat provided with a top mounted in accordance with the present invention and showing the top closed. Fig. 2 is a similar view showing the top shifted to a position enabling the vehicle to be entered. Fig. 3 is a plan of the carriage or buggy seat, showing the top-supporting frame mounted thereon. Fig. 4 is a front view of the seat, showing the top-supporting frame mounted thereon and showing at opposite ends the mechanism in two different positions; and Figs. 5 and 6 are views of parts in detail.

A is a carriage or buggy seat, of usual construction, constituting a part of the body of the vehicle, and having, as usual, sides *a* and back *b*. On the side of the seat the top-supporting frame is mounted. The base of the top-supporting frame is substantially the ordinary shifting-rail of a carriage-top. The base is composed of side rails or rods *B*, parallel with and immediately alongside the upper edges of the seat-arms, and a back rail or rod *C*, connecting the rear ends of the side rails or rods and extending parallel with and alongside the upper edge of the seat-back. Near their front ends the side rails or rods *C* carry brackets *c*, to which are pivoted the lower ends of the usual bows *D*, over which is stretched and secured the top covering. The bows are connected together and with the rear rail or rod *C* by the usual jointed rods *E*, which enable the top to be folded down. This construction of the top possesses in itself no novelty and is of the usual construction, such usual

construction being selected for the purpose of illustrating the present improvements, since by this means it is shown how easily and readily the present improvements may be applied to carriages and buggies now in use.

It has been the practice in the past to attach the top-frame to the seat, so that it may be fixed in position thereon when the carriage is in use. In accordance with the present invention, however, the top-frame is pivoted to the seat, so that it may swing as a whole. This is conveniently and preferably accomplished by the means shown in the drawings. The side rails B B of the base of the top-supporting frame are pivotally connected at or about their centers to (at or about) the centers of the seat sides *a a*. Each seat side has attached to it a bracket *d*, having a horizontal sleeve *e*, in which is secured, by means of a set-screw *f*, a headed spindle *g*, the head *h* of which is located a short distance from the outer end of the sleeve *e*. Each side rail B of the top frame is formed with a journal-eye *i*, through which one of the spindles *g* is passed before being secured in its sleeve *e* by its set-screw *f*. The side rail thus extends between the outer end of the sleeve *e* and the head *h* of the spindle and is free to turn or swing in a vertical plane on the spindle. The two horizontal spindles on opposite sides of the seat are in the same axial line, and their sleeves are located just above the upper surfaces of the seat sides. The connection of the spindles to the sleeves by set-screws enables the entire top frame to be readily and quickly attached to and detached from the seat when so desired. Each set-screw has an aperture *m* in its head to facilitate its manipulation.

The pivotal connection between the body of the vehicle and the top-supporting frame enables the latter to be swung or shifted, as desired. When the side rails B occupy their normal horizontal position, the top is in the usual closed position of buggy-tops. When, however, by the shifting or tilting of the top-frame the front ends of the side rails B are elevated, the entire top is swung back (without any breaking of the joints in the jointed rods E) until the front bow of the top occupies a substantially-vertical position, as shown in Fig. 2. In this manner the difficulties attending the entering into and alighting from vehicles having forwardly-projecting tops are avoided. A special advantage of thus shifting the top-frame without folding the top is noticeable when the top covering is incrustated with ice. To fold the top covering when thus incrustated is very damaging to the covering.

The means for shifting the top-supporting frame and for maintaining it in its normal open position consist in a horizontal through rocking shaft F, journaled to the vehicle-body and preferably along the front of the vehicle-seat, combined shifting and locking levers G G at both ends of said shaft, and connecting-rods H H, each pivotally connected at one

end to one of the shifting and locking levers and at the other end to the forward end of one of the side rails B of the top-supporting frame. Each lever G is in effect a crank-arm fixed to one end of the rock-shaft F at the side of the seat. Each connecting-rod H is pivotally connected to the outer side of one of the shifting-levers G, and the pivotal point between the rod and lever is located between the shaft end and the operating or handle end of the lever. When the handle end of either lever is turned down, (which movement is permitted, owing to the shaft F rocking in its bearings,) the forward ends of the side rails B of the top-supporting frame are swung down until the top occupies its normal raised position, as shown in Fig. 1. When either lever is turned up, the top-supporting frame is tilted or shifted back to the position for mounting or dismounting, as shown in Fig. 2.

When the shifting and locking levers are turned down, as in Fig. 1, it is essential that they should be locked in this position, so that the top shall be maintained securely in its raised position, and so that the top-supporting frame shall be incapable of being tilted forward of its normal position. To this end, stops I I are fixed to the back *b* of the seat, projecting behind the rear edge of the same, against which the rear rail C of the top-frame seats when the front ends of the side rails B are swung down. Instead of these rear stops being used, side stops J J may be used, (either alone or in conjunction with the rear stops I,) projecting outward beyond the sides *a* of the vehicle-seat, against which the rear ends of the side rails B of the top-frame would seat when the levers G are swung down. When, then, the levers G are swung down with the rear part of the top-frame seating against the stops I or J, the free handle ends of the levers G are swung backward past their centers, as shown in Fig. 1, thus locking the top-frame and preventing its swinging on its pivots except by the manipulation of the levers G. The elasticity of the metal of which the side rails B B are made permits the free ends of the levers G to be thus swung back of their centers.

To prevent the levers G from being swung too far back, they and the connecting-rods H are provided with coacting limiting stop-lugs *n n*.

To properly shift the top-supporting frame, it is only necessary to move one of the levers G. Two are provided, however, in order to enable the top-frame to be shifted from either side of the vehicle. If it were not for the practical importance and advantage of operating the shifting-frame from both sides, a single lever G could be employed, pivoted to any convenient part of the vehicle-body. The levers are located low down in order that they may be conveniently reached by a person standing on the ground, and so that they may be out of the way. They are also within

easy reach of a person sitting on the seat. When the levers G occupy their lowered position, they are substantially vertical, and hence out of the way. When they are raised, they are swung through a half-circle, so that they then also occupy a substantially-vertical position parallel with and within the connecting-rods H, so that they are then also out of the way. The levers are located within the connecting-rods, so that they may be more conveniently reached by a person occupying the seat, and also because they do not then project beyond the side of the seat. The free handle end of each lever is widened outwardly, so that its outer edge fits snugly against the adjacent connecting-rod, as shown in Fig. 4, when the lever is raised to prevent the garments of an occupant from catching between the lever and connecting-rod.

In order that the wear may be taken up on the several operative parts, and in order that the locking-levers may always be made capable of securely locking the top-supporting frame, the connecting-rods are made longitudinally adjustable. Three places for the longitudinal adjustment of the connecting-rods are shown, which may be used either separately, all together, or any two for each rod. A coupling L may be employed between the front end of the side rail B and the connecting-rod, which swings on a bolt o, carried by the rail B, and has a screw-threaded sleeve s, into which the upper threaded end of the connecting-rod H screws; or the journal-pin M, which turns in the lever G, may be provided with a screw-threaded sleeve s, into which the lower threaded end of the connecting-rod H screws; or the connecting-rod may be split at a point intermediate between its pivotal connections, and the two adjacent split ends may be cut with right and left screw-threads, which co-operate with a similarly-threaded ferrule P.

In order that the entire top-supporting frame may be removed, it is necessary, in addition to separating the top-frame from the seat, as already described, to detach the top-frame at the front of the seat. This is preferably accomplished, as shown in the drawings, by constructing the journal-bearings of the rock-shaft F so that they may be opened and the shaft removed. Each journal-bearing is composed of two parts *t w*, one part *t* being permanently secured to the front part of the seat, while the other movable part *w* is formed by a crank on a horizontal rock-shaft Q, which extends at right angles to the shaft F along the bottom of the seat and turns in a bearing R, secured to the seat. To the inner end of this rock-shaft Q is secured an operating-lever T, which, in the normal closed position of the bearing *t w*, lies horizontally on the seat-bottom. When the bearing *t w* is to be separated for the detachment of the top-supporting frame, the lever T is swung to a vertical position, thus swinging the movable part *w* of

the bearing upward and leaving the rock-shaft F free to be removed, as desired.

The levers T and all other parts on the seat are covered and concealed when the seat is to be used by the usual seat-cushions.

I claim as my invention—

1. A shifting top-supporting frame of a carriage or other vehicle, pivotally connected to the vehicle-body, said frame being capable of being tilted backward from its normal position, so as to bring the front bow of the vehicle-top into a substantially-vertical position, in combination with an operating-lever pivotally connected to the carriage-body and a connecting-rod connecting said lever and said top-frame, substantially as set forth.

2. A shifting top-supporting frame of a carriage or other vehicle, pivotally connected to the vehicle-body, said frame being capable of being tilted backward from its normal position, so as to bring the front bow of the vehicle-top into a substantially-vertical position, in combination with an operating-lever pivotally connected to the vehicle-body and a connecting-rod connected at one end to said top-frame and at the other end to said lever at a point intermediate between the fulcrum of said lever and its free end, substantially as set forth.

3. A shifting top-supporting frame of a carriage or other vehicle, pivotally connected to the carriage-body, in combination with a through rock-shaft extending from one side of the carriage to the other, operating-levers one at each end of said shaft, and connecting-rods between said levers and said top-frame, substantially as set forth.

4. A shifting top-supporting frame of a carriage or other vehicle, pivotally connected with the carriage-body, and means for limiting the movement of said frame in one direction, in combination with a shifting and locking lever pivotally connected with the carriage-body and a connecting-rod pivotally connected at opposite ends to said lever and top-frame, respectively, said lever swinging down past its center to lock the top-frame in place, substantially as set forth.

5. A shifting top-supporting frame of a carriage or other vehicle, pivotally connected with the carriage-body, and means for limiting the movement of said frame in one direction, in combination with a shifting and locking lever pivotally connected with the carriage-body, a connecting-rod pivotally connected at opposite ends to said lever and top-frame, respectively, and reciprocally-engaging lugs on said lever and connecting-rod, which limit the movement of said lever, substantially as set forth.

6. A shifting top-supporting frame of a carriage or other vehicle, pivotally connected with the carriage-body, in combination with an operating-lever and a longitudinally-adjustable connecting-rod connecting said lever and said top-frame, substantially as set forth.

7. The seat of a carriage or other vehicle having rearwardly-projecting stops and a shifting top-supporting frame having side rails pivotally connected at or near their centers to (at
5 or near) the centers of the sides of said seat, whereby said top frame swings in a vertical plane, said frame having also a rear rail which engages said stops when the front of said frame is swung down, in combination
10 with a through rock-shaft extending horizontally along the front of said seat, shifting and locking levers at opposite ends of said shaft, and connecting-rods pivotally connected at opposite ends to said shifting and locking
15 levers and to the front ends of the side rails of said top-frame, said shifting and locking levers swinging down and back of their centers to lock the top-frame in position, substantially as set forth.

20 8. The combination of the side rail B of the top-frame, the connecting-rod H, pivotally connected therewith, and the lever G, pivotally connected with said connecting-rod, said

lever swinging up alongside said rod, and said lever having its free or handled end 25 widened, so as to fit against said rod, substantially as set forth.

9. The fixed sleeve *e*, the spindles *g*, entering therein, and the set-screws *f*, for holding said spindles in place, in combination with 30 the shifting top-supporting frame swinging on said spindles, substantially as set forth.

10. The shaft Q and operating-lever T, in combination with the bearing *tw*, one part of which is fixed and the other part of which 35 is carried by said shaft Q, and the shaft F, journaled in said bearing, substantially as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing 40 witnesses.

DANIEL F. LUSE.

Witnesses:

A. H. HARTER,
A. Z. MEYER.