

No. 886,067.

PATENTED APR. 28, 1908.

F. E. OTT.  
ROAD DRAG.  
APPLICATION FILED DEC. 31, 1907.

Fig. 1.

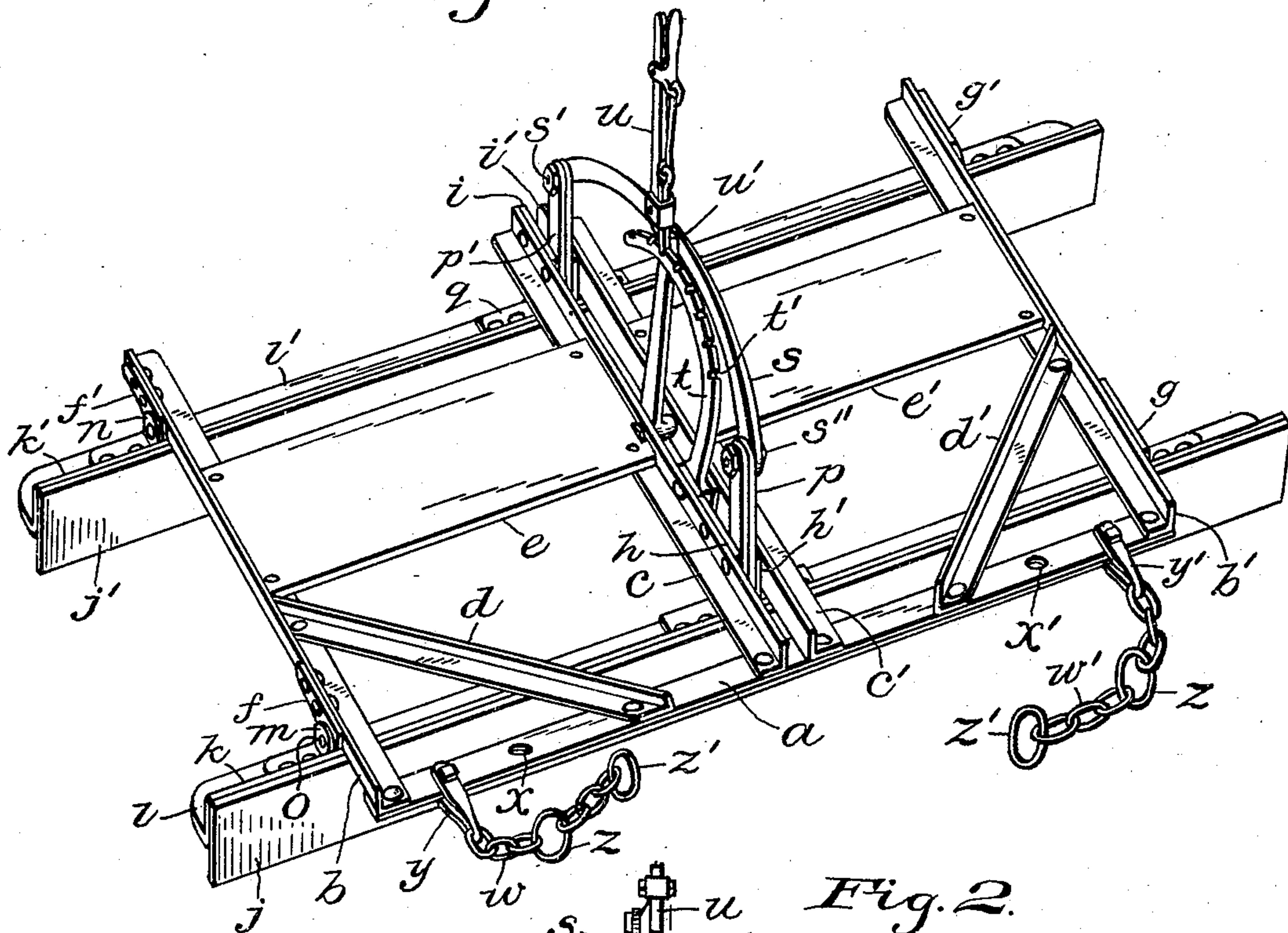


Fig. 2.

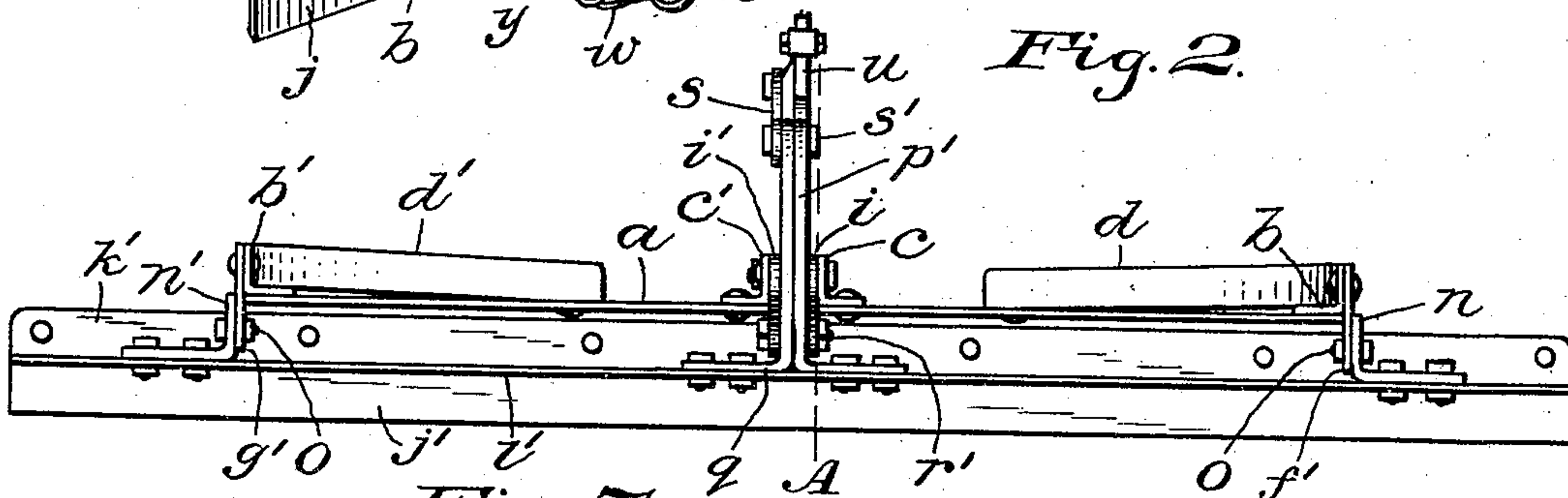
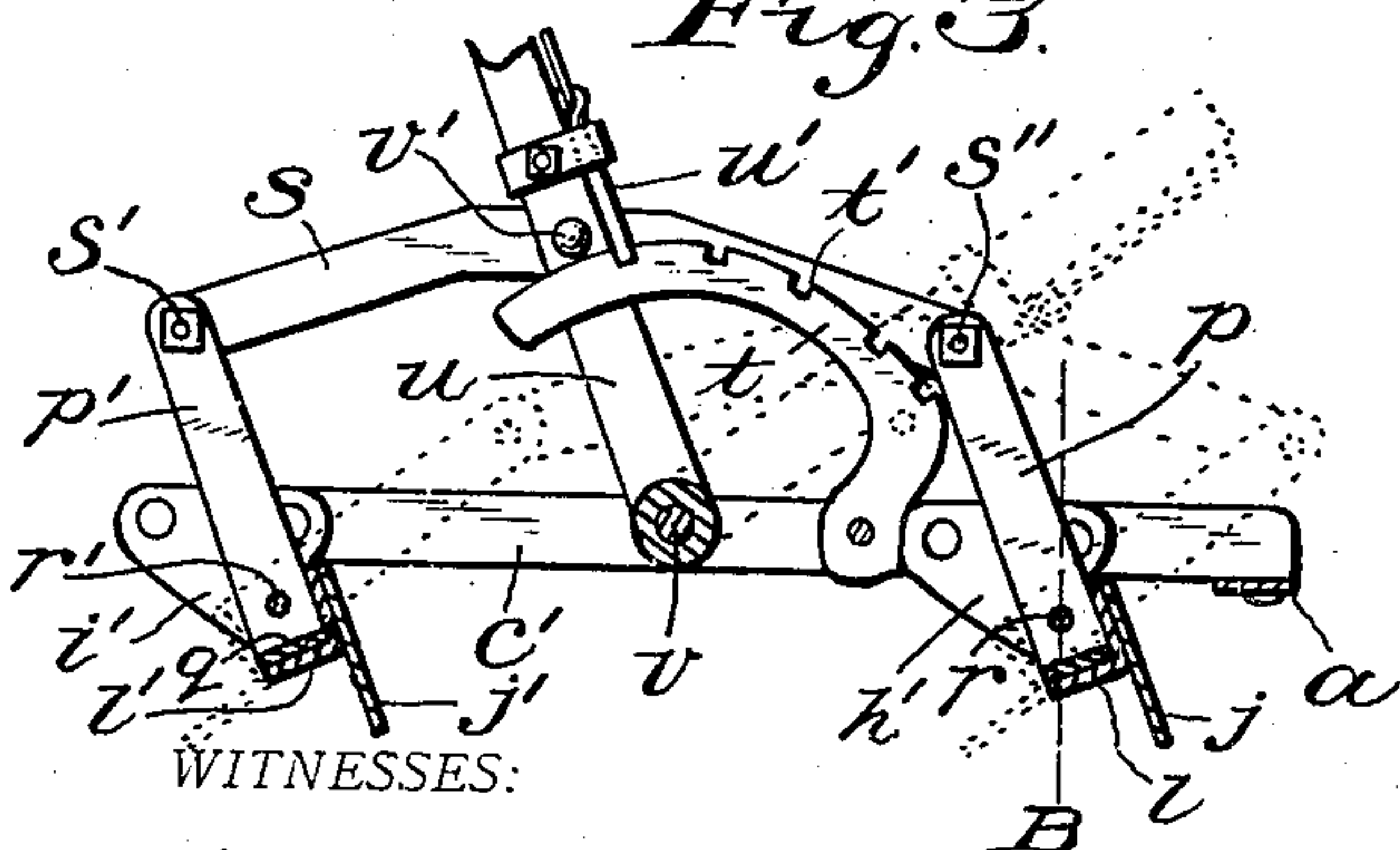


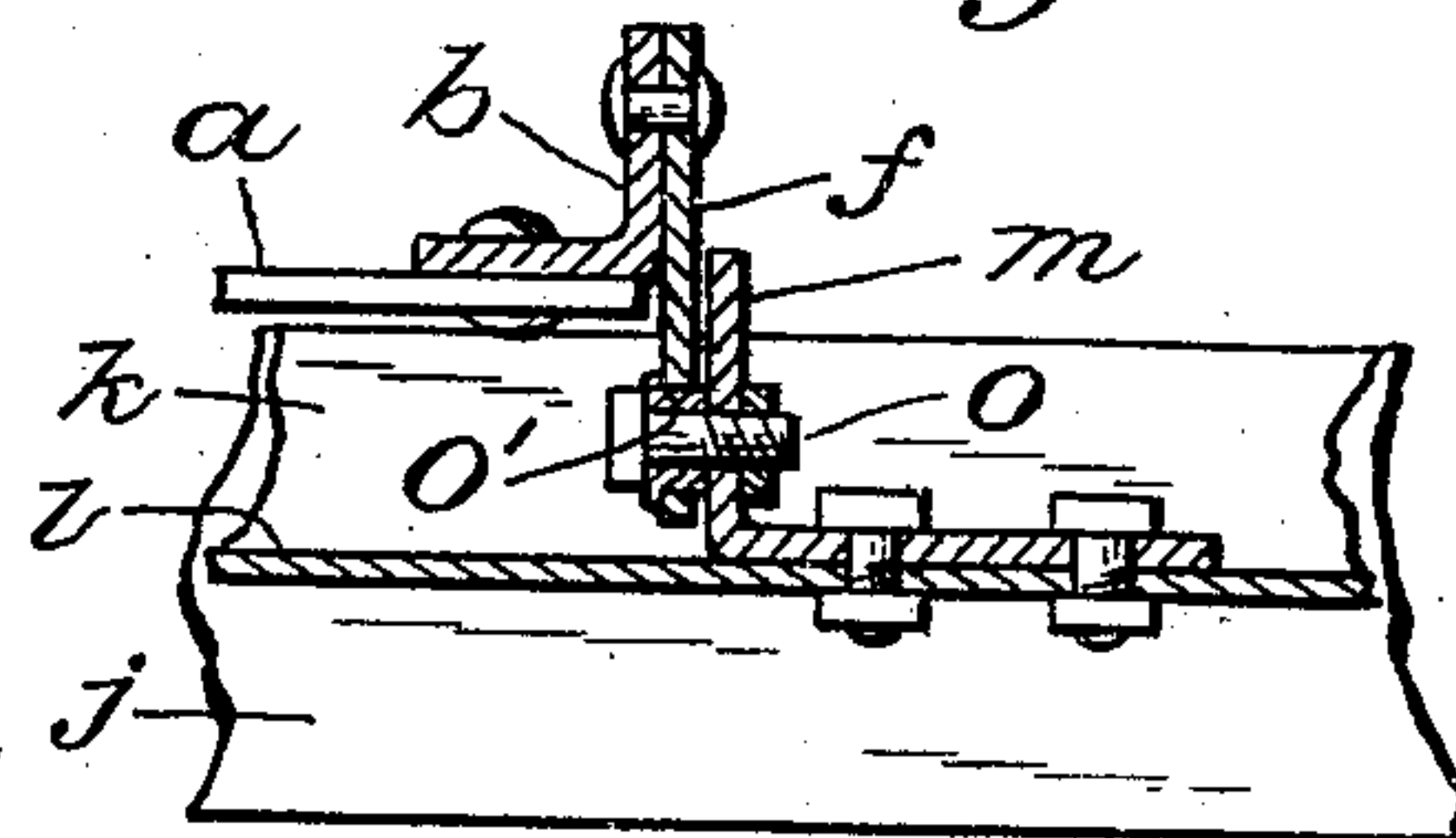
Fig. 3.



WITNESSES:

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Fig. 4.



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# UNITED STATES PATENT OFFICE

FRANK E. OTT OF INDIANAPOLIS, INDIANA.

## ROAD-DRAG.

No. 886,067.

Specification of Letters Patent.

Patented April 28, 1908.

Application filed December 31, 1907. Serial No. 408,793.

*To all whom it may concern:*

Be it known that I, FRANK E. OTT, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Road-Drags; and I do declare the following to be a full, clear, and exact description of the invention, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to drags or scrapers to be used on highways or streets for the purpose of leveling or evening the road surfaces.

The object of the invention is to provide a road drag of improved construction that will be capable of use under various conditions and on roads constructed of various materials, a further object being to provide a strong and durable road drag that will be adapted to be adjusted so as to operate equally well on either hard or relatively soft roads surfaced either with earth or with gravel.

With the above-mentioned and other objects in view that will become apparent hereinafter, the invention consists in an improved drag comprising a frame having downwardly extending pivot heads, blades of novel construction connected in novel manner to the pivot heads so as to be capable of adjustment to various degrees of angularity, and improved adjusting and controlling mechanism for the blades. And the invention consists further in the novel parts and in the combinations and arrangements of parts as hereinafter particularly described and defined in the appended claims.

Referring to the drawings, Figure 1 is a perspective view of the improved drag; Fig. 2, a rear elevation thereof with the operating lever broken away and the operator's platform omitted; Fig. 3, a fragmentary transverse sectional view approximately on the line A in Fig. 2; and, Fig. 4, a fragmentary longitudinal sectional view taken near one end of the forward blade on a plane corresponding approximately to the line B in Fig. 3.

Similar reference characters in the different figures of the drawings designate like elements or features of construction.

The improved drag is preferably constructed principally of standard sizes of iron or steel and comprises a draw-bar *a* of suit-

able length, to the ends of which are rigidly secured two frame beams *b* and *b'*, two other frame beams *c* and *c'* being secured rigidly to the middle portion of the draw-bar, the beams extending rearward approximately at right angles to the draw-bar, so that the beams are parallel one to another. The beams are preferably composed of L-section angle iron, and the beams *c* and *c'* are spaced only a short distance apart. A brace *d* is attached to the beam *b* and the draw-bar *a*, and a similar brace *d'* is attached to the draw-bar and to the beam *b'*, the braces being diagonally disposed with respect to the draw-bar and the beams. A platform *e* is mounted on the beams *b* and *c*, and a platform *e'* is mounted on the beams *b'* and *c'* for supporting the operator who may drive the team for dragging the implement.

The platforms may be composed either of wood or metal and also serve to stiffen the frame beams in their relative arrangement. The beam *b* has a pair of pivot heads *f* and *f'* rigidly attached thereto, a pair of similar pivot heads *g* and *g'* being attached to the beam *b'*. Another pair of pivot heads *h* and *h'* are attached to the beam *c*, and a similar pair of pivot heads *h'* and *i'* are attached to the beam *c'*, the pivot heads being arranged in pairs between the two beams. The pivot heads are all substantially alike and extend downward beyond the under sides of the beams, there being, as will be seen, four pivot heads arranged near the draw-bar *a* and four pivot heads arranged near the farther or rear ends of the beams, and two blades *j* and *j'* are provided which may be composed of steel plate metal, relatively thin metal being suitable and therefore relatively inexpensive by reason of the construction adopted, the forward blade *j* having a plate *k* secured to the rear side thereof and the blade *j'* having a plate *k'* secured to the rear side thereof, the lower edges of the plate having angle flanges *l* and *l'* respectively, extending therefrom rearwardly, the flanges being arranged approximately midway between the bottoms and the tops of the blades *j* and *j'*, so as to thoroughly stiffen the blades and also being suitable preferably are employed as means for connecting the blades to the frame beams of the implement, the arrangement being such that the blades are forward of the pivot heads and near the under sides of the frame beams. The flange *l* is provided with a suitable number of ears *m*, the flange *l'* having



ears  $n$  and  $n'$  rigidly attached thereto, the ears being adjacent to the pivot heads and connected thereto by suitable pivots  $o$ , each pivot preferably having a collar  $o'$  thereon and held against rotation against the ear to which the pivot is connected in any suitable manner, each pivot preferably comprising a bolt having a nut thereon, and the collar is designed to rotate in the pivot head in which the same is mounted, so that inexpensive machine work only is required in construction, the object being to prevent accidental tightening of the ears against the pivot heads by means of the pivot bolts, and it will be obvious that shouldered bolts may be employed as equivalents of common straight bolts with collars thereon.

A pair of arms  $p$  and  $p'$  are designed to fit movably between the pivot heads of the beams  $c$  and  $c'$  and are secured rigidly to the angle plates  $l$  and  $l'$  by means of angle members  $q$ , or may be otherwise attached to the blades, each blade having an arm, the forward arm  $p$  being connected to the pivot heads by a pivot  $r$ , and the rear arm  $p'$  being connected by a pivot  $r'$  to the rear pair of pivot heads. The pivots  $o$  and  $r$  for the forward blade are in alinement, and the pivots for the rear blade are all in alinement, as will be understood, the lower ends of the arms  $p$  and  $p'$  serving as supporting arms for pivotally connecting the middle portions of the blades as well as for adjusting the angularity of the blades, a connecting rod  $s$  being connected to the upper ends of the arms by pivots  $s'$  and  $s''$ . A quadrant  $t$  is mounted on the beams  $c$  and  $c'$  and has notches  $t'$  therein. A lever  $u$  is mounted also on the beams by means of a pivot  $v$  and is connected to the connecting rod  $s$  by a pivot  $v'$ , the lever  $u$  having a suitable latch  $u'$  for entering either one of the notches  $t'$  for latching the lever and preventing movement of the scraping blades on their pivots.

The draw-bar  $a$  is provided with a pair of draft chains  $w$  and  $w'$ , and a suitable number of apertures  $x$  and  $x'$  to which the chains may be connected, as may be desired, by clevises  $y$  and  $y'$  for connecting the chains to the draw-bar, each chain preferably having a ring  $z$  connected therein and a terminal ring  $z'$ , so that the draft animals, when two teams are employed, may be hitched to either ring of either chain. When one team only is employed for drawing the implement, it may be hitched to both terminal rings, or if desired to draw either end of the drag in advance of the opposite end, the team may be hitched to one terminal ring  $z'$  and another ring  $z$  of the other chain.

In practical use, the lever  $u$  may be moved to the position shown in Fig. 3 in order to set the blades so that the lower edges will be drawn in advance of the upper edges of the blades, the blades so adjusted being disposed

to slightly cut into the surface of the road and shave off the higher portions, but when the surface is too soft for operating in this manner, the lever  $u$  may be adjusted at other angles, the extreme of its movement being shown in dotted lines in Fig. 3 in which position the blades would slide over the surface of the road and drag the gravel or earth, so that the higher parts would be dragged into the lower places in the surface, and thus the surface may be made quite even and to the best advantage in operation.

Having thus described the invention, what is claimed as new is—

1. A road drag including a frame comprising a plurality of frame beams, two of the beams being spaced nearly together and central between two other of the beams; a plurality of blades each adjustably connected with the frame beams, a lever pivoted between the two central beams, a connecting rod pivoted to the lever, and means connected to the rod and the blades for adjusting the blades.

2. A road drag including a frame comprising a plurality of frame beams, two of the beams being spaced nearly together and central between two other of the beams; a plurality of blades each adjustably connected with a plurality of the beams, each blade having an arm secured thereto and mounted between the two central beams, a connecting rod pivoted to the arms, and a lever connected to the rod.

3. A road drag including a plurality of frame beams, a plurality of blades arranged close to the beams and having each a flange plate on the rear side thereof, each blade being provided with a plurality of rigid pivoting ears that are connected pivotally with the beams, a plurality of arms, either arm secured to either blade, a connecting rod connected to the plurality of arms, and a lever connected to the rod.

4. A road drag including a plurality of frame beams having each a plurality of pivot heads attached thereto and extending beyond the under side thereof, a pair of blades each pivoted to a plurality of the pivot heads, a pair of arms each attached to either one of the blades and pivoted to a plurality of the pivot heads, a connecting rod pivoted at its ends to the arms, a lever pivoted to a plurality of the beams between the arms and also pivoted to the connecting rod between the ends thereof, and a latch for the lever.

5. A road drag including a plurality of frame beams having each a plurality of pivot heads attached thereto, a pair of blades having each a flange plate extending rearward from the middle portion between the bottom and top thereof, the plates each having a plurality of ears attached thereto, pivots secured to the ears and each rotatively mounted in either one of the plurality of pivot



heads of the beams, a draw-bar attached to the forward ends of the beams and having a plurality of draft devices connected adjustably thereto, a pair of braces attached to the draw-bar and also each to a separate frame beam, an arm attached to the flange plate of one of the blades and pivoted to a plurality of the pivot heads, another arm attached to the flange plate of the other one of the blades and pivoted to another plurality of the pivot heads of the beams, two platforms mounted on the beams, and a lever mounted on beams between the two arms and operatively connected therewith.

6. In a road drag, the combination with a frame comprising parallel beams, of a plurality of blades arranged close to the beams and having each a plate secured thereto that has an angle flange thereon, each blade being provided with a plurality of rigid pivoting ears that extend in vertical planes at sides of the planes of the beams and are pivotally connected therewith, and arms secured on the blades by means of the plates.

7. In a road drag, the combination of a plurality of frame beams having each a plurality of pivot heads attached thereto and extending beyond the under side thereof, a plurality of blades having each a flange plate

on the rear side thereof, the plates having each a plurality of ears thereon, pivots connecting the ears to the pivot heads, an arm attached to the flange plate of one of the blades and pivoted to a plurality of the pivot heads, another arm attached to the flange plate of another one of the blades and pivoted to another plurality of the pivot heads, and a lever mounted on a beam and connected operatively with the arms.

8. In a road drag, the combination of a frame comprising a plurality of beams, two of the beams being spaced nearly together and central between other two of the beams, a draw-bar attached to the forward ends of the beams and having a plurality of draft devices connected thereto, a pair of braces attached to the draw-bar and also each to a separate beam, and a platform mounted on two of the beams, with blades connected adjustably to the beams, and arms attached to the blades and pivotally mounted on the two central beams.

In testimony whereof, I affix my signature in presence of two witnesses.

FRANK E. OTT.

Witnesses:

WM. H. PAYNE,  
E. T. SILVIUS.