

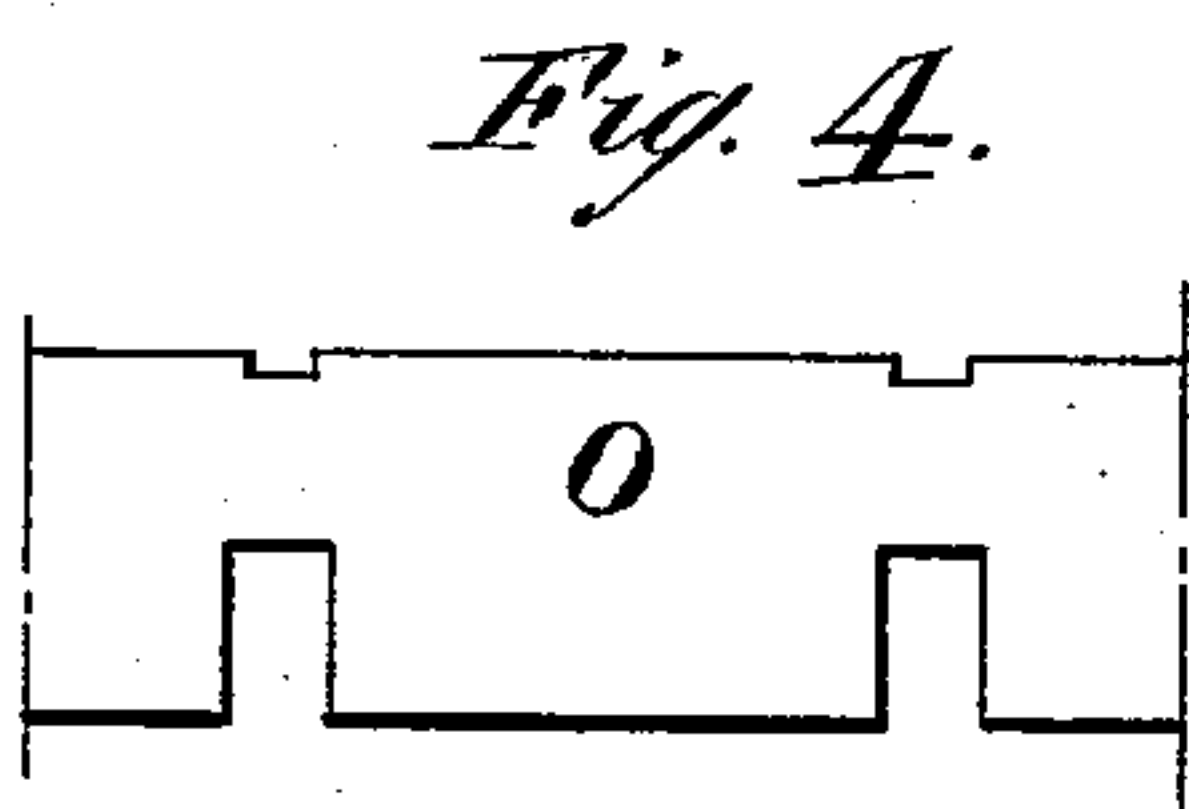
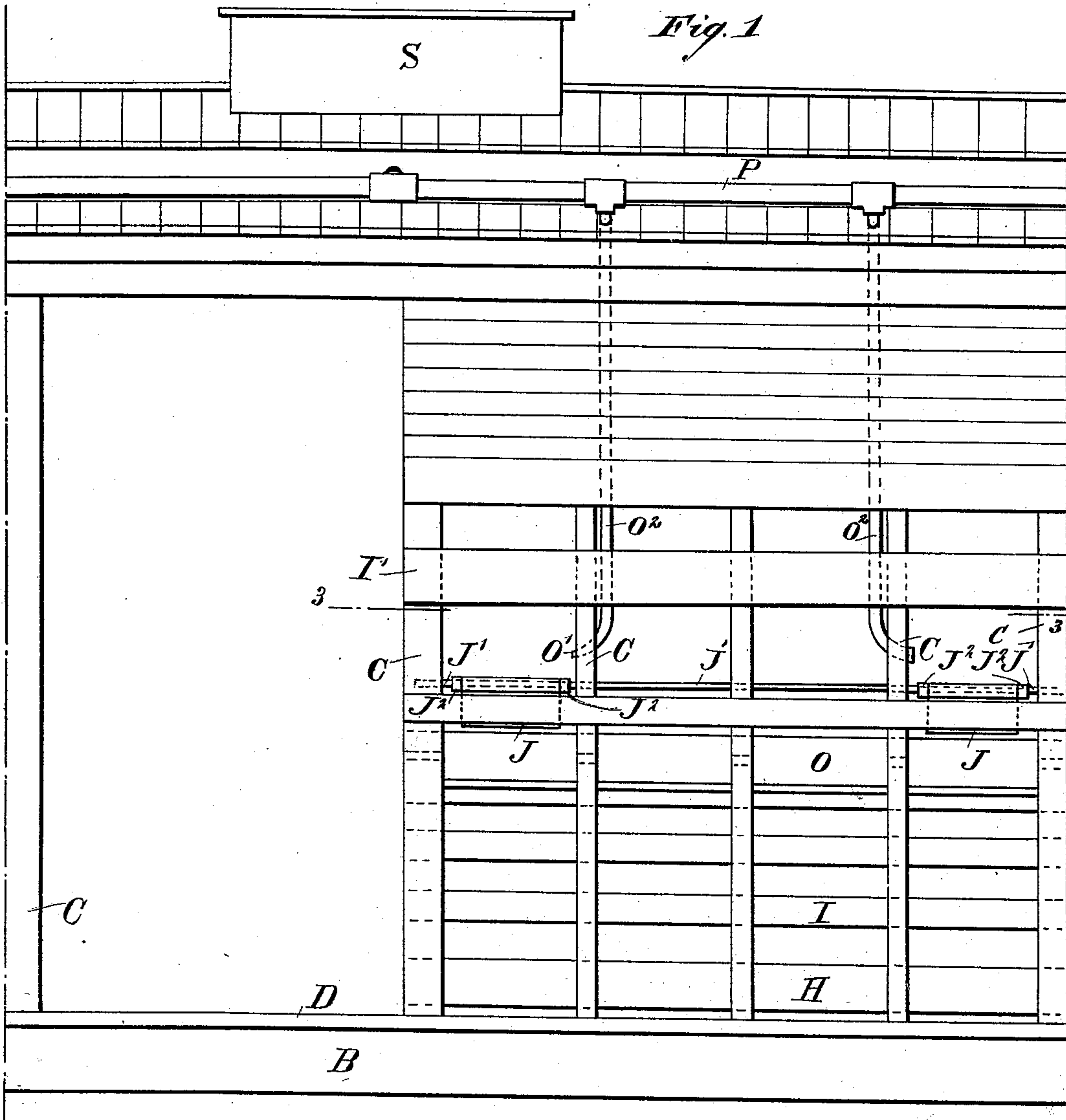
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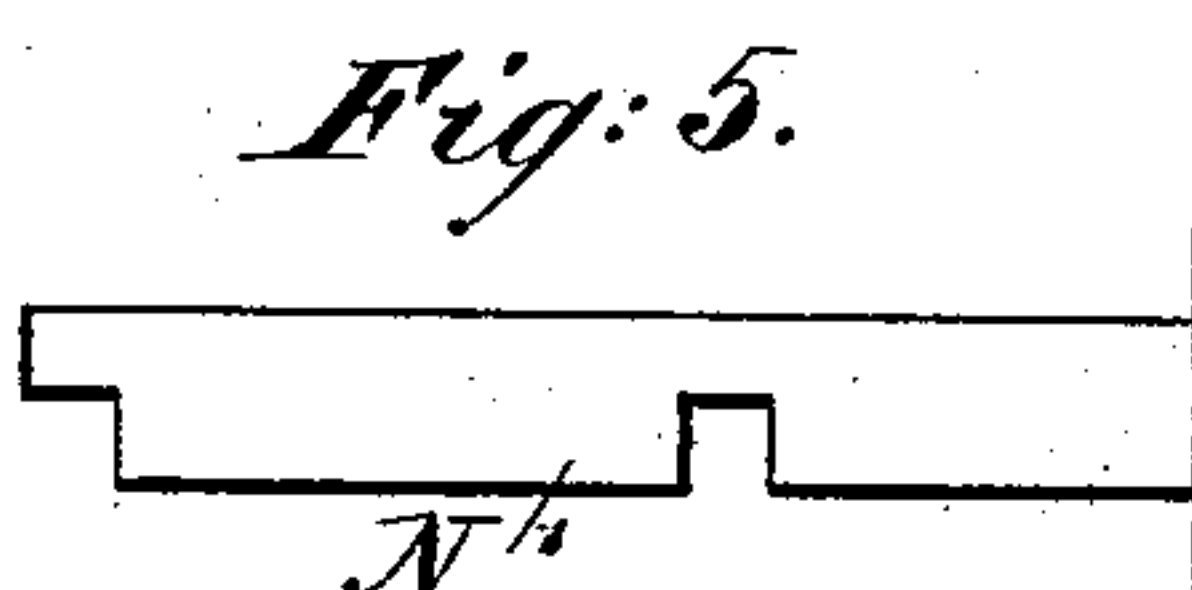
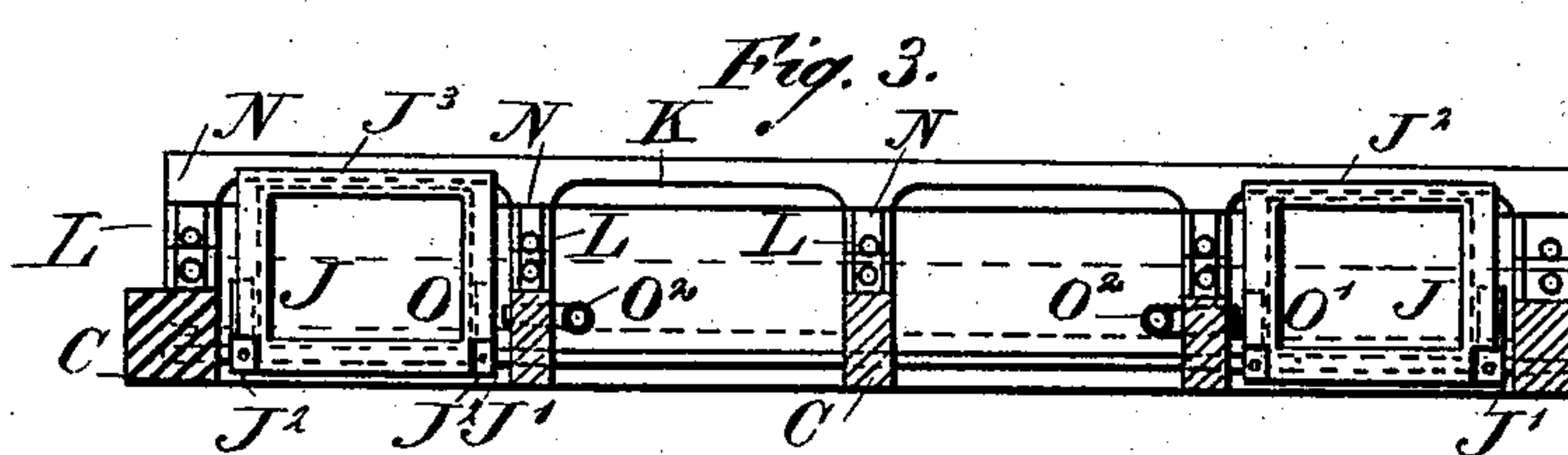
F. E. CANDA.  
CATTLE CAR.

No. 509,192.

Patented Nov. 21, 1893.



WITNESSES:  
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*W. Sedgewick*



INVENTOR.  
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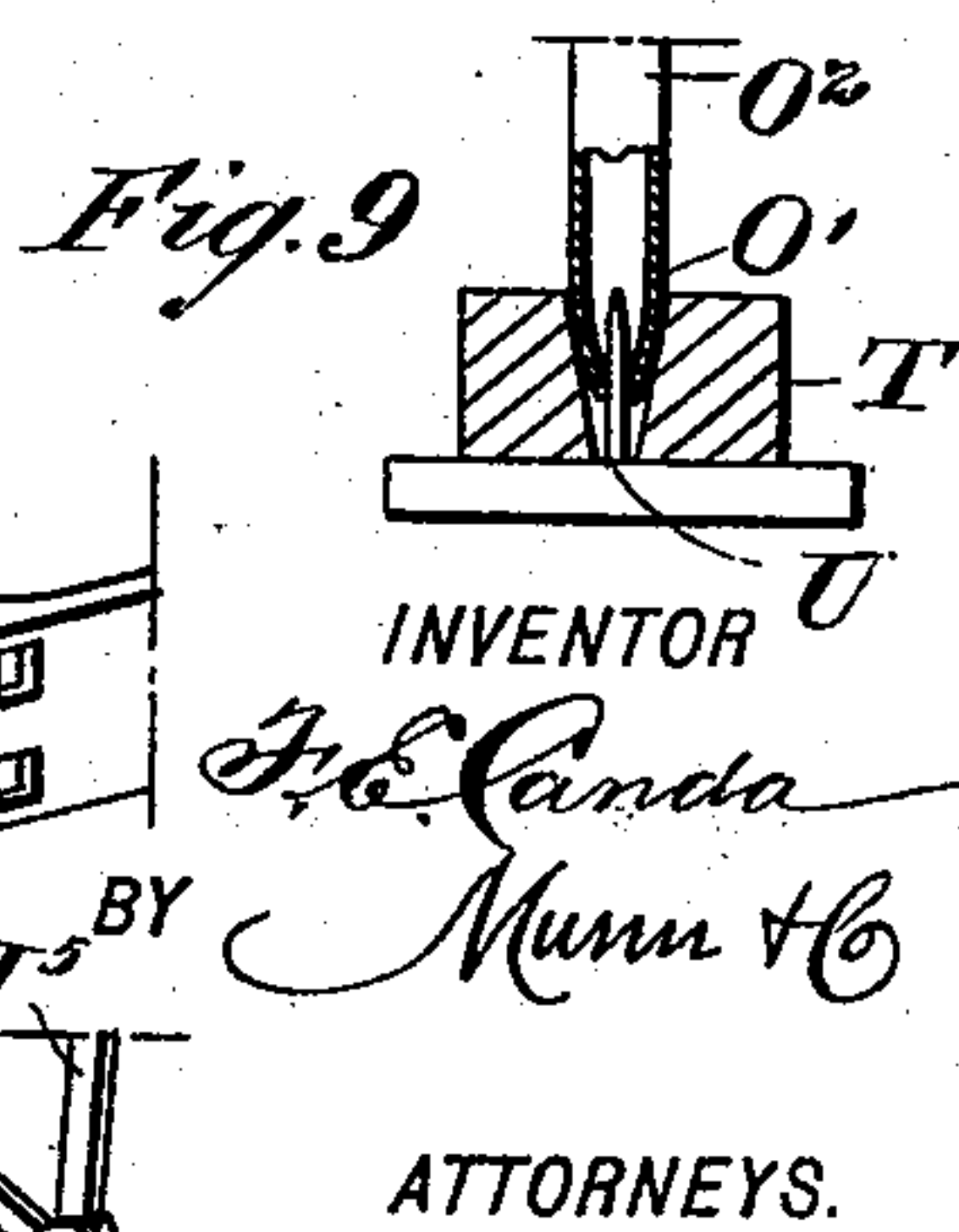
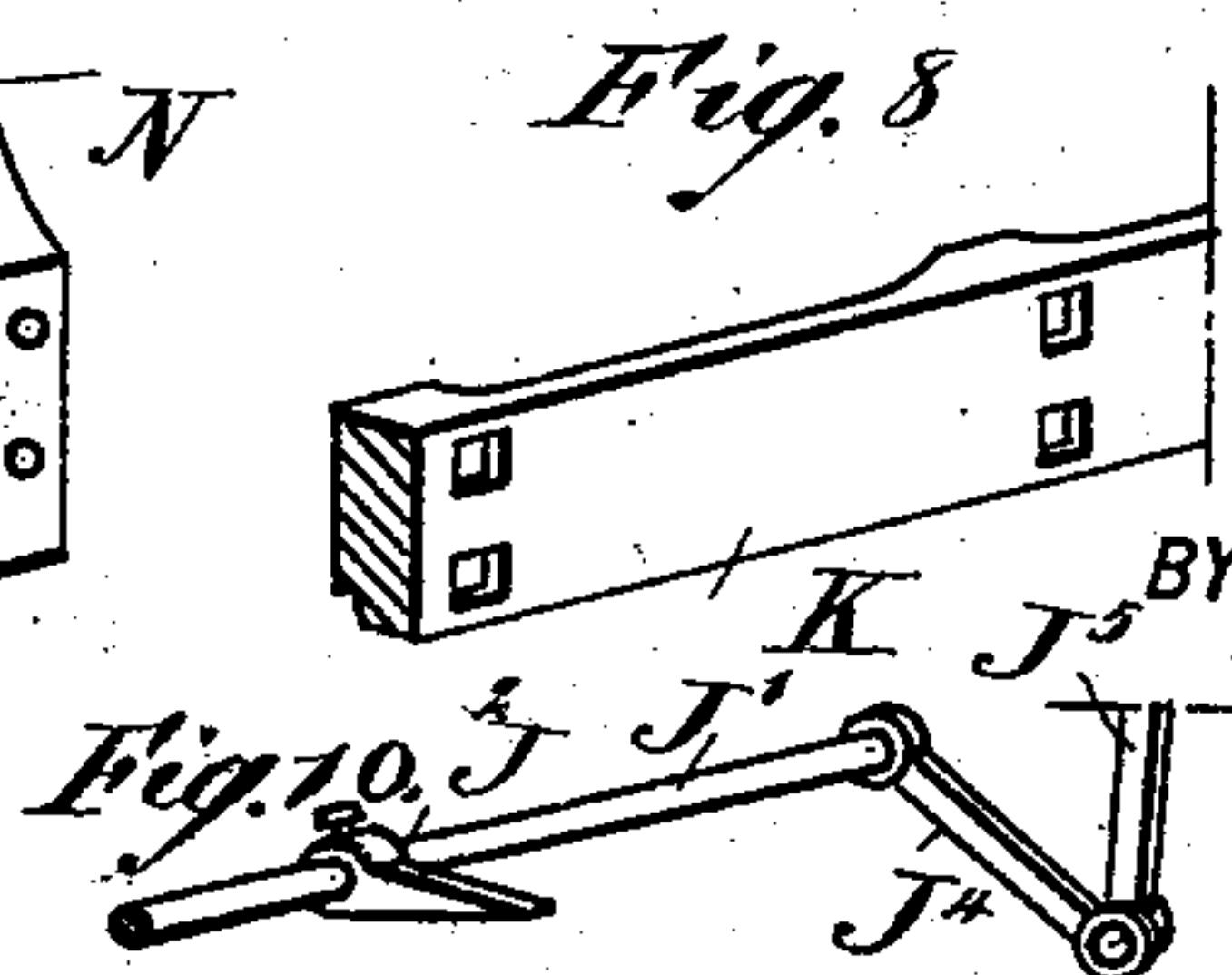
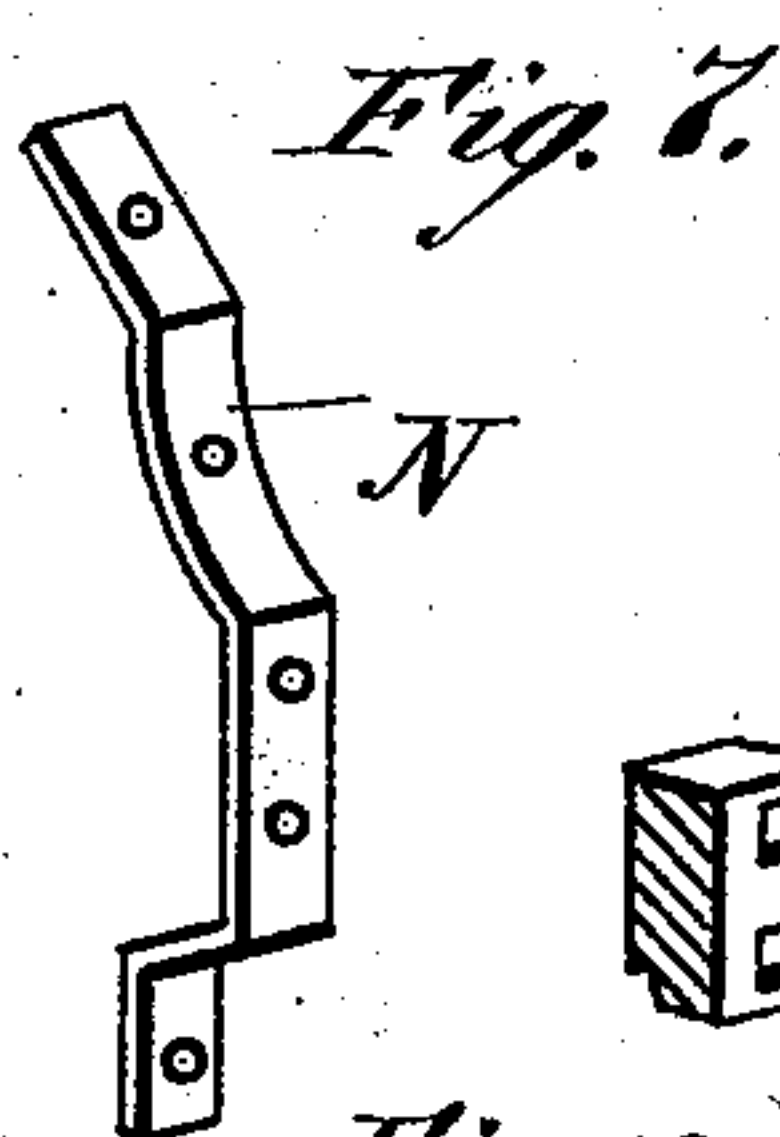
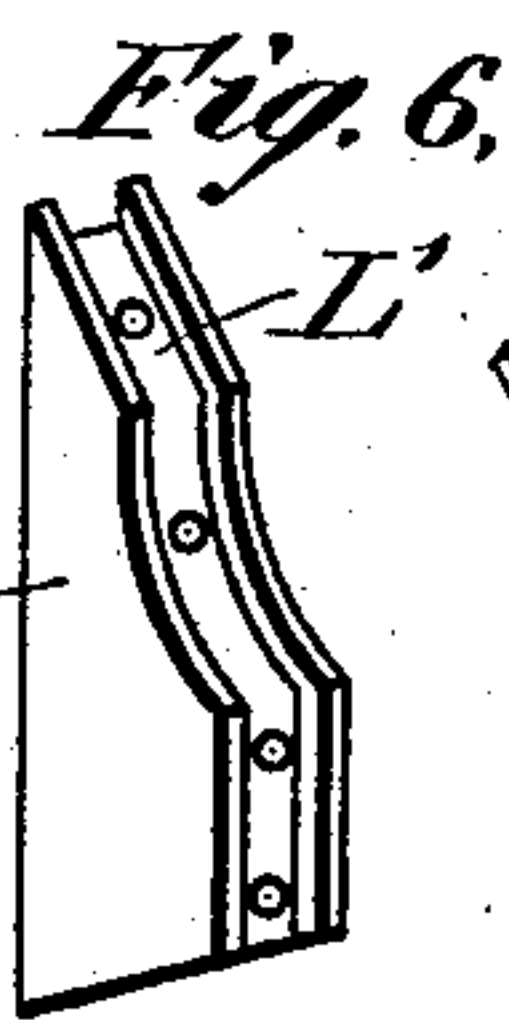
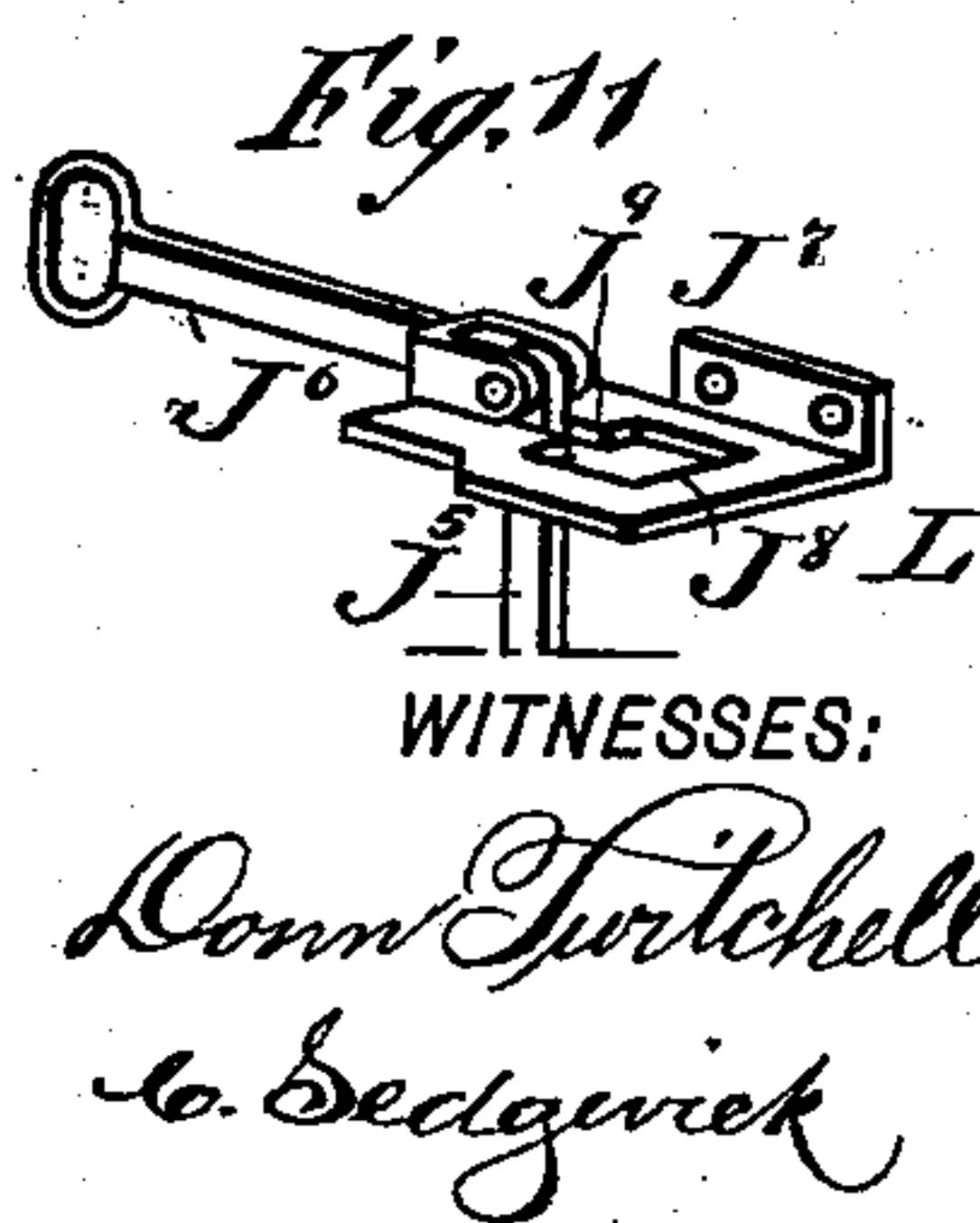
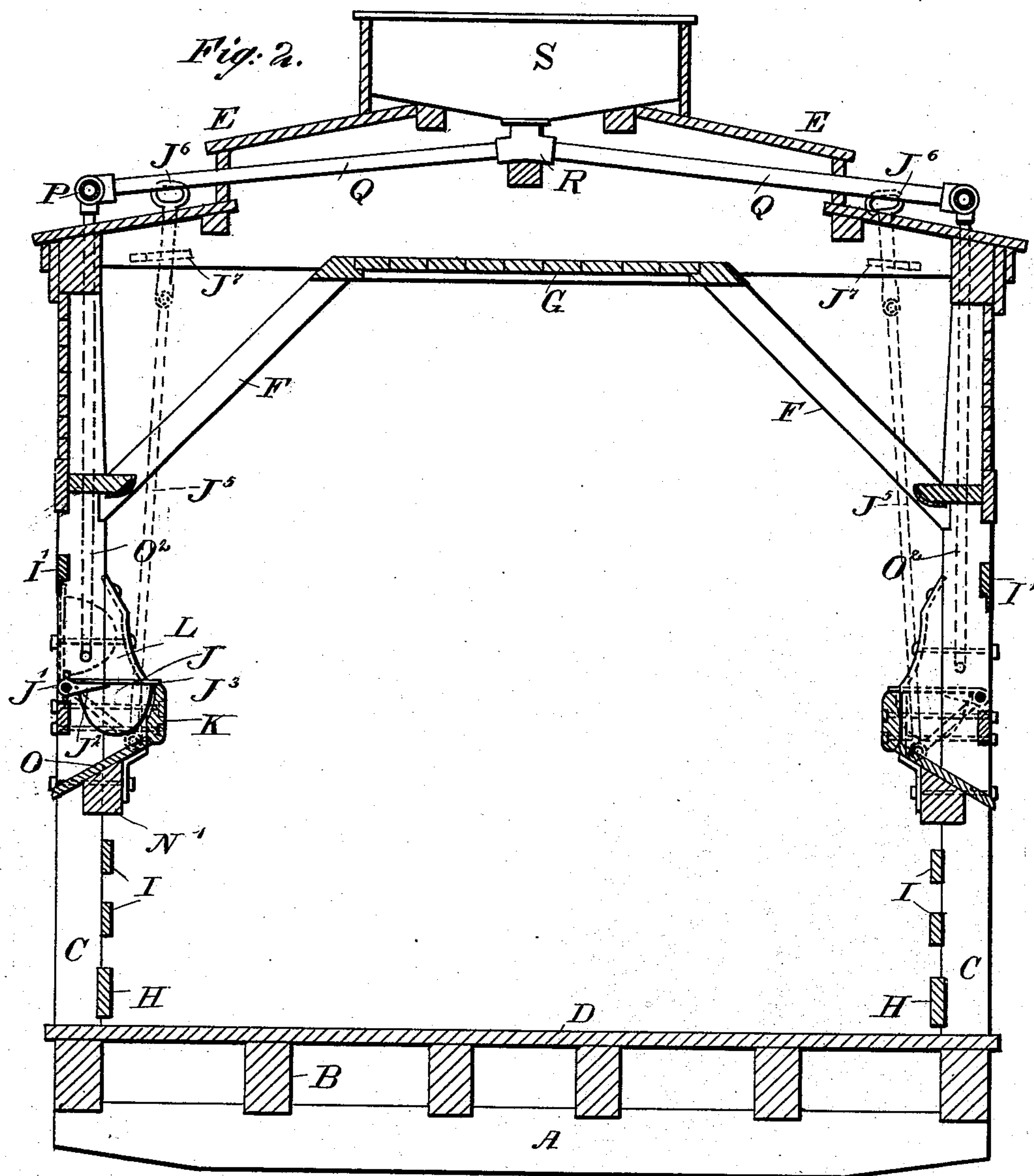
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2 Sheets—Sheet 2.

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# UNITED STATES PATENT OFFICE.

FERDINAND E. CANDA, OF NEW YORK, N. Y.

## CATTLE-CAR.

SPECIFICATION forming part of Letters Patent No. 509,192, dated November 21, 1893.

Application filed January 18, 1893. Serial No. 458,808. (No model.)

*To all whom it may concern:*

Be it known that I, FERDINAND E. CANDA, of the city, county, and State of New York, have invented certain new and useful Improvements in Cattle-Cars, of which the following is a full, clear, and exact description.

The object of the invention is to provide certain new and useful improvements in cattle cars, whereby the feed and water troughs are protected against injury when the car is loaded with freight on the return trip.

The invention consists of certain parts and details and combinations of the same, as will be hereinafter described and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of a portion of the car provided with the improvements. Fig. 2 is a transverse section of the same. Fig. 3 is a sectional plan view of part of the improvement on the line 3—3 of Fig. 1. Fig. 4 is a perspective view of part of the water drain board. Fig. 5 is a side elevation of part of the belt rail. Fig. 6 is a perspective view of one of the trough protecting blocks forming a facial enlargement for the car posts. Fig. 7 is a like view of one of the brackets for the said protecting blocks. Fig. 8 is a sectional perspective view of part of one of the guard rails. Fig. 9 is an enlarged detail view illustrating the die and mandrel employed in sizing the discharge orifices of the pipes; and Figs. 10 and 11 are perspective views illustrating the means for turning the feed troughs.

It is well known that cars for the transportation of cattle are used generally for that purpose in conveying the animals in one direction only, usually from the interior to the seaport, the cars being loaded on the return trip for carrying ordinary heavy freight of various kinds. When used for carrying livestock, the cars must be provided with efficient means for watering the stock, as otherwise the animals soon become diseased and perish, and the watering devices must be protected against injury from the heavy freight carried on the return trips, otherwise the cars will be ren-

dered unfit for the further transportation of animals.

In order to preserve the watering troughs from injury, when the cars are to be filled with heavy freight, it has heretofore been found necessary to make the posts of the car very wide throughout their entire length, so that when the watering troughs are folded up between them, the faces of the posts will project beyond the troughs and thereby guard and preserve the troughs from injury when the car is filled with freight, on the return trip. By the use of my improvements presently to be described, I am enabled to greatly reduce the width of the posts and at the same time effectively protect the watering troughs from injury by the freight.

The car, in its principal arrangement is of any approved construction and provided with the usual bottom car sills A carrying the longitudinal bottom beams B, supporting the side posts C and the car floor D. The side posts support in the usual manner the roof E of the car and from the side posts extend inclined struts F supporting an auxiliary floor G in the roof of the car to carry the hay or other feed thereon, the said struts F serving as hay racks to feed the cattle with the necessary hay. The side of the car opposite the struts F is sealed up, as plainly shown in the drawings, to prevent the hay from falling out of the racks.

The lower sides of the car are provided with the usual base board H and the rails I, fastened to the posts C on the inside thereof, as plainly illustrated in Figs. 1 and 2. Between the several posts C of the car, I arrange series of water troughs J, each series extending from one end to the car door in the respective car side at the middle thereof.

The several troughs J of each series are mounted loosely on a shaft J' extending longitudinally and journaled in the several posts C, as will be readily understood by reference to Fig. 3. Each trough is adapted to be swung upward into a vertical position as shown in dotted lines in Fig. 2, by a pair of arms J<sup>2</sup> fastened by set screws or other means to the shaft J' and engaging the under side of the top flange J<sup>3</sup> formed on the trough J. When the



shaft J' is turned by means presently to be described, the arms J<sup>2</sup> swing upward and cause the troughs on that particular shaft to swing in a like direction until the front part  
5 of the flange J<sup>3</sup> rests on the inside of a gained rail I' attached to the posts C at their outer faces. Thus when the troughs are not in use they can be conveniently turned up and held out of the way against the inner sides of the  
10 car between the posts C.

On the end of each shaft J' at or near the car end is secured an arm J<sup>4</sup> (see Fig. 10) pivotally connected by an upwardly-extending link J<sup>5</sup> with a handle J<sup>6</sup> (see Figs. 2 and 11)  
15 passing through an apertured plate J<sup>7</sup> attached to the end of the car. (See Fig. 2.) The plate J<sup>7</sup> is slightly inclined downwardly and outwardly and is formed with a large opening J<sup>8</sup> and a slot J<sup>9</sup> extending therefrom and  
20 wide enough to permit the passage of the flat link J<sup>5</sup> but not the pivot end of the handle J<sup>6</sup> as will be readily understood by reference to Fig. 11.

When the trough is in its normal horizontal position the arm J<sup>4</sup> extends downwardly and inwardly at an angle of about forty-five degrees (see dotted lines Fig. 2) while the arms J<sup>2</sup> extend horizontally and abut on the flanges J<sup>3</sup> of the troughs J. The handle J<sup>6</sup>  
30 then stands vertically with the pivot end below the apertured plate J<sup>7</sup>, as illustrated in Fig. 2. Now, when the operator desires to swing the several troughs on each shaft J' out of the way, as previously mentioned, then he  
35 pulls on the handle J<sup>6</sup> to impart a turning motion to the respective shaft J' to cause all the troughs on this shaft to swing simultaneously upward until their flanges J<sup>3</sup> rest on the rail I' gained at the inside as before  
40 described. The operator in pulling on the handle J<sup>6</sup> draws the pivot end of the same through the large plate opening J<sup>8</sup> and then moves the handle with the upper end of the link J<sup>5</sup> outward to engage the latter with the  
45 slot J<sup>9</sup>. The operator then swings the handle J<sup>6</sup> outwardly and downwardly, to the position shown in Fig. 11, whereby the handle rests with its pivot end on the plate J<sup>7</sup> and forms an acute angle with the link J<sup>5</sup> so that  
50 the latter, the handle, the shaft J' with its arms J<sup>2</sup> and the troughs are all locked in place.

The front edge of each trough flange J<sup>3</sup> is adapted to rest on a longitudinally-extending guard rail K, bolted to protecting blocks  
55 L secured to the inner faces of the post C between which the respective trough J, is hung. Each protecting block L forms a facial enlargement for the corresponding post to which it is attached, the said enlargement extending  
60 upward and outward from the post far enough to form a protecting guard for the water trough when the same is folded up against the side of the car, as shown in dotted lines to the left in Fig. 2, and above referred to. By this arrangement, I am enabled  
65 to use posts of small dimensions so that

the size of the car is not diminished, and at the same time a great economy in the cost of constructing the car is secured.

Each of the blocks L is formed at its face  
70 with a groove L' in which is fitted a bracket N fastened by the same bolts to the car posts C which also secure the blocks L in position, it being understood that the bolts pass through the said brackets, blocks and posts, and some  
75 of the bolts also pass in addition, through the rail K to fasten the latter in position. The lower ends of the brackets N are bolted to the belt rail N' which is notched, as plainly shown in Fig. 5 for the posts C, the said belt rail  
80 being beveled at its upper end to support the inclined water drain board O which abuts with its inner end against the outer face of the rail K, at the lower end thereof, as will be readily understood by reference to Fig. 2.  
85 This water drain board O is inclined outwardly to carry off any overflow of water from the respective trough J located directly above it, as illustrated in Fig. 2. The water drain board O is gained to fit the posts C, as the outer  
90 lower ends of the said boards extend approximately to the outer faces of the posts C, while the inner ends project beyond the inner faces of the posts C up to the guard rail K, as above described.  
95

Into each trough J discharges the contracted end O' of a vertically disposed pipe O<sup>2</sup> extending upwardly and passing through part of the roof E to connect by means of a T with  
100 a longitudinally disposed pipe P running the entire length of the car and connected at or near its middle by a T coupling with a transversely-extending branch pipe Q connected by a coupling R with the under side of a funnel-like reservoir S, supported on the top of  
105 the car, as plainly shown in Figs. 1 and 2. The branch pipes Q are inclined downwardly and outwardly, as plainly shown in Fig. 2, so that the water from the reservoir S rushes through the said pipe Q into the longitudi-  
110 nally-disposed distributing pipe P and from the latter through the several vertical pipes O<sup>2</sup> into the several troughs J arranged on the sides of the car.

As previously mentioned the discharge ends  
115 of the pipes O<sup>2</sup> are contracted and in order to size this contracted end when constructing the pipe, this end is heated and then inserted in a die T having a mandrel U adapted to engage the pipe bore. A slight tap upon the  
120 upper end of the pipe O<sup>2</sup> will force the lower end of the pipe into the die so as to contract the said opening onto the mandrel U, as plainly shown in Fig. 9. In this manner, I secure a graduated system of discharge pipes  
125 and at the same time provide for filling all the troughs in the same length of time, and at a minimum expense.

It is understood that the flow of the water from the pipes O<sup>2</sup> which are in close prox-  
130 imity to the middle part of the pipe P would be greater than the flow of water from the



pipes O<sup>2</sup> connected near the ends of the said pipes P, and hence unless some provision is made to regulate the flow, the troughs J near the center will fill long prior to the time when the troughs near the ends of the car will fill.

The mandrels U used for contracting the ends O' of the pipes O<sup>2</sup> vary in size, the smaller mandrels being used for the pipes O<sup>2</sup> that are to be located in close proximity to the centers of the pipes P, while the larger mandrels are employed for the discharge pipes O<sup>2</sup> connected near the ends of the pipes P.

By the arrangement described, I fully provide for the proper distribution of the water from the tank S to all the troughs J, and I also protect the latter from injury at the time the car is loaded with freight on the return trip.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. In a cattle car, the combination with a series of troughs formed with a top flange of a shaft forming the pivot for the said troughs and provided with pairs of arms adapted to engage the said trough flanges, an arm secured at or near the end of the said shaft, a link pivotally-connected with the said arm, a handle pivotally-connected with the said link, and a fixed apertured plate held in an inclined position on the car and adapted to be engaged by the said handle, substantially as shown and described.

2. In a cattle car, the combination with a car body, of a plate secured in an inclined position on the roof of the said car body, and formed with an opening and a slot leading therefrom, a link adapted to pass into the said opening to engage the said slot, a handle pivotally connected with the said link to manipulate the latter, the said handle being adapted to rest on the said plate to lock the link in the slot, a shaft provided with an arm connected with the said link, a series of troughs held on the said shaft, and lifting arms on the said shaft for engaging the said troughs, substantially as shown and described.

3. In a cattle car, the combination with car posts and troughs pivoted between the posts, of trough protecting blocks flanking the said

troughs, brackets for the said blocks, a guard rail, and bolts for securing the said blocks, brackets and rail to the said posts, substantially as shown and described.

4. In a cattle car, the combination, with the car posts and troughs pivoted between the posts and extending inwardly beyond the same, of trough protecting blocks flanking the said troughs, brackets for the said blocks, a guard rail secured to the said blocks in front of the posts, bolts for securing the said blocks, brackets and rail to the said posts, a belt rail secured to the posts beneath the said troughs, and a water drain board arranged under the troughs and supported on the said belt rail, the said water drain board being notched to partly fit between the posts and extending downwardly on an incline from the outer face of the guard rail to the outer face of the car, substantially as shown and described.

5. In a cattle car, the combination with troughs pivoted between adjacent car posts, of a water drain board arranged under the troughs and inclined downwardly and outwardly, a guard rail for supporting the flanged trough in a normal position, and a belt rail for supporting the water drain board the inner end of the said water drain board abutting the outer face of the guard rail near the lower end thereof, substantially as shown and described.

6. In a cattle car, a water distributing arrangement comprising a water reservoir located in the roof of the car at or near the middle thereof, transversely-extending inclined branch pipes leading from the bottom of the said reservoir, longitudinally-extending pipes connected with the lower outer ends of the said branch pipes, and vertically disposed distributing pipes leading from the said longitudinal pipes, down to near the troughs, and terminating in contracted graduated delivery orifices, substantially as shown and described.

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Witnesses:

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