

U. HOUZE.

LEER.

(Application filed Mar. 28, 1900.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

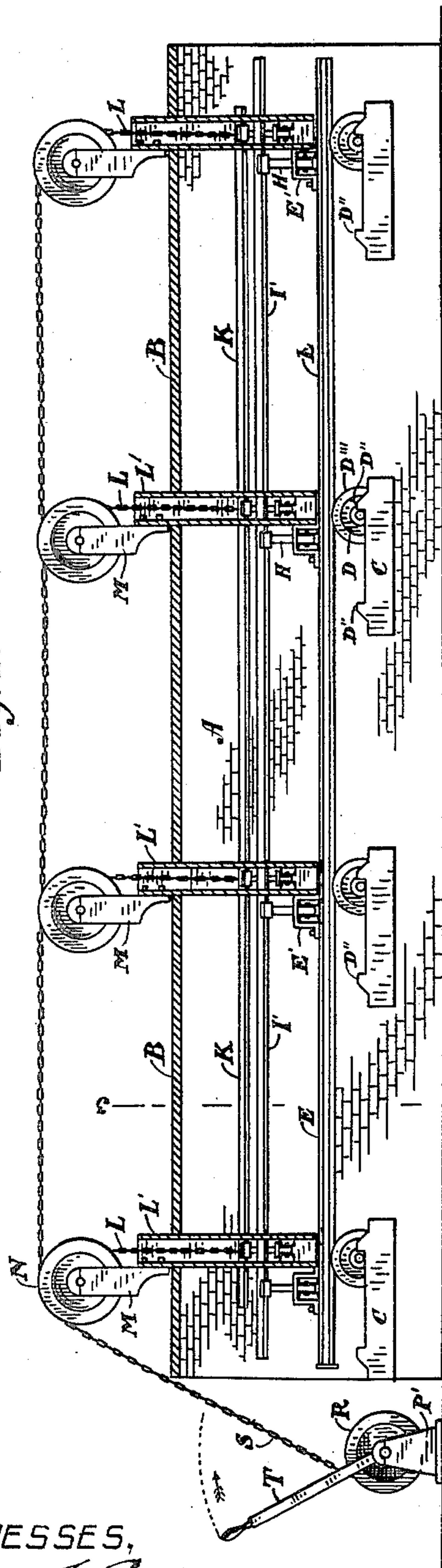
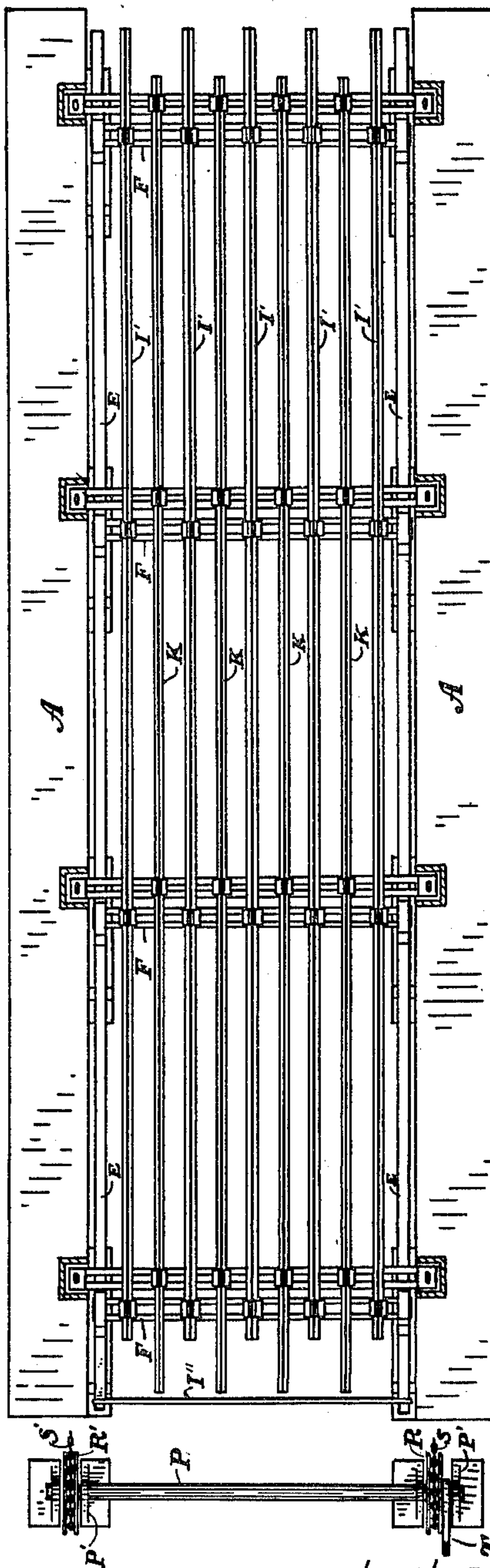


Fig. 2.



WITNESSES,  
Thomas L. Ryan  
L. C. Howard

INVENTOR,  
Ulgue Houze  
By M. E. Valbourn  
ATTORNEY.

No. 661,315.

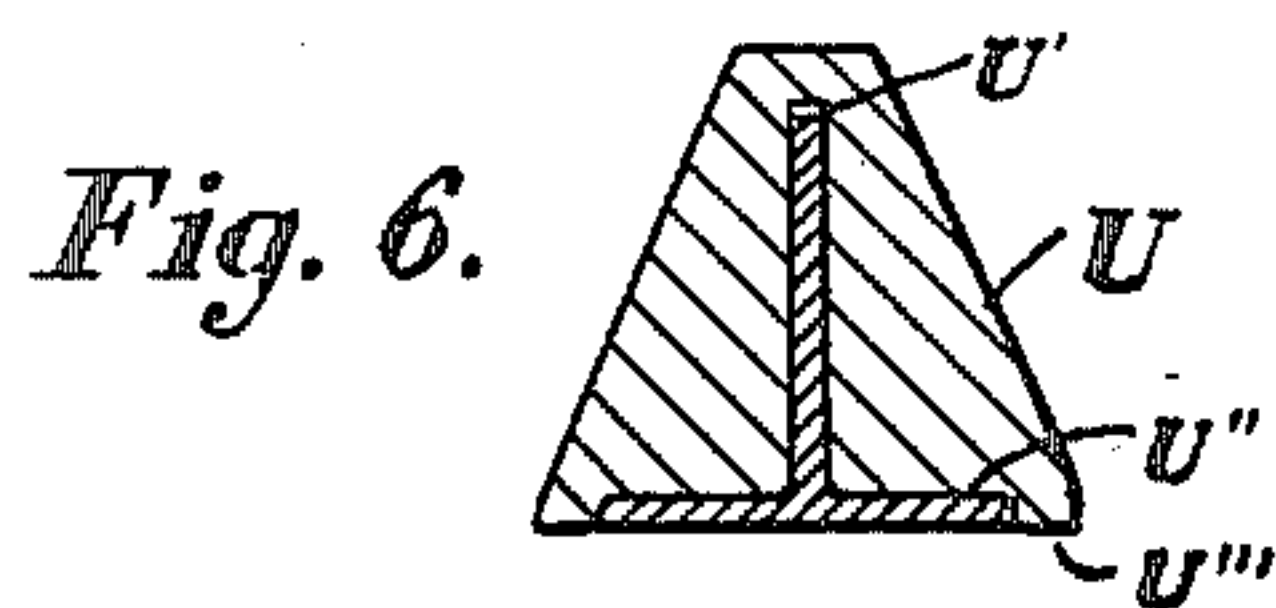
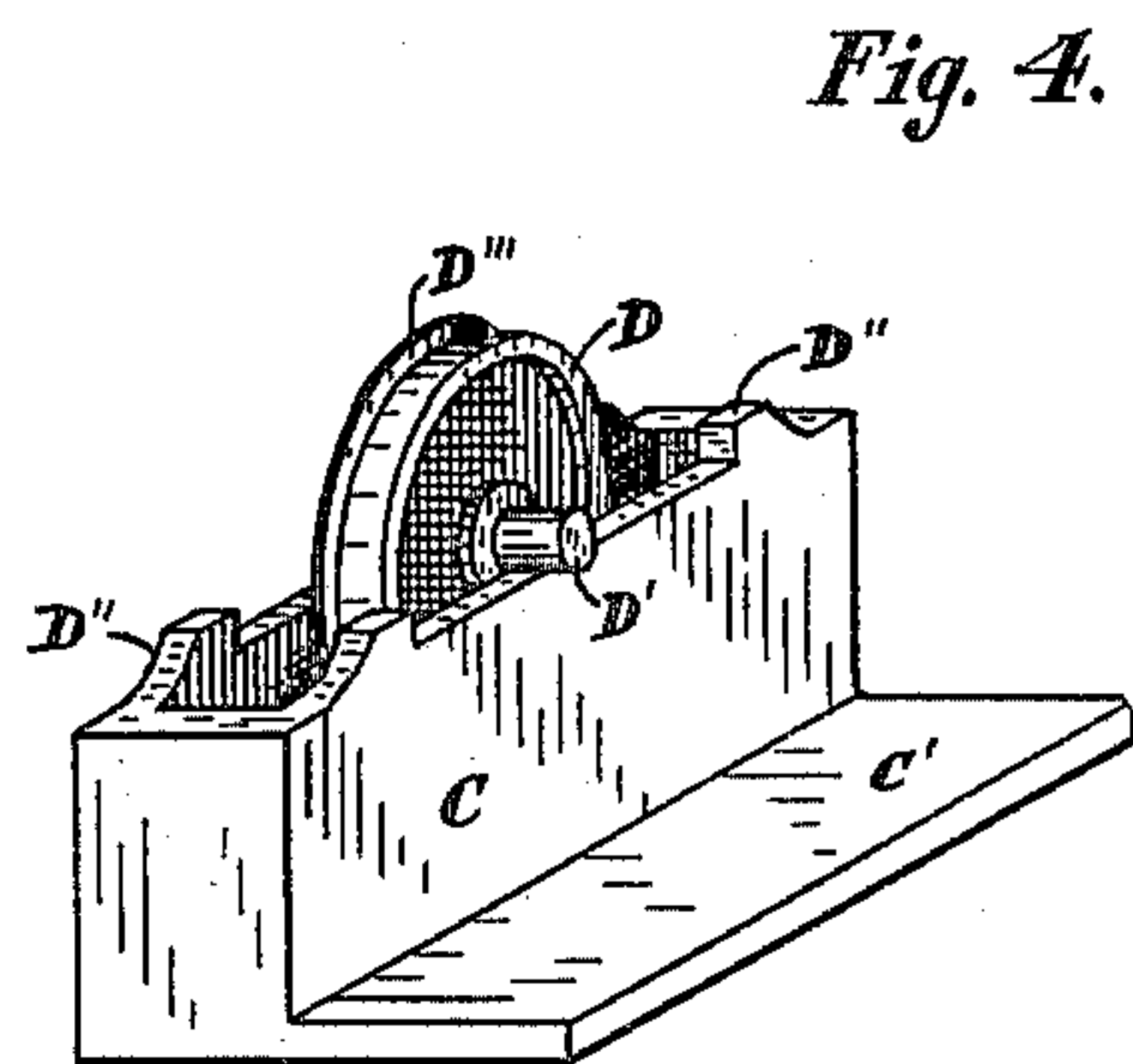
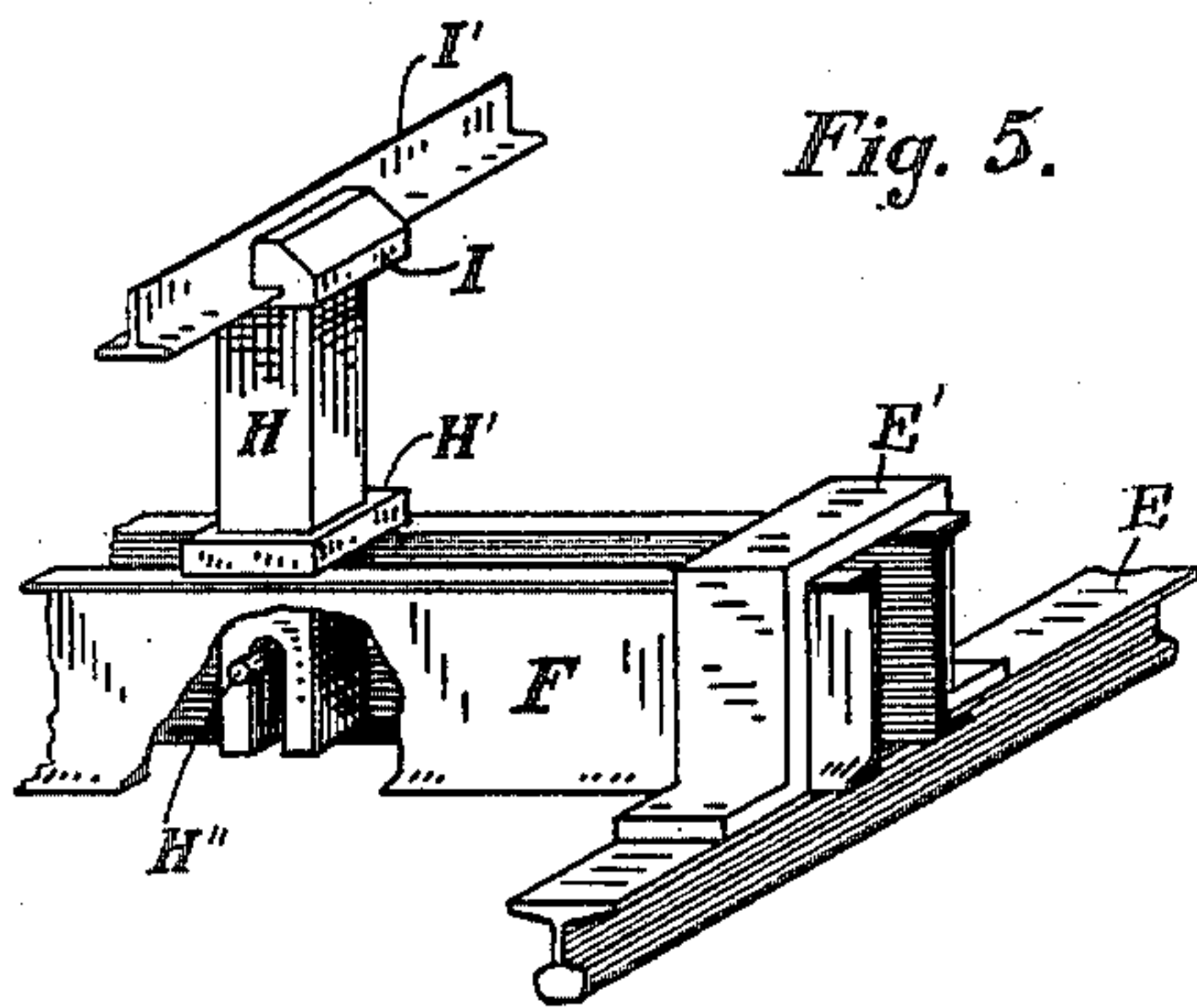
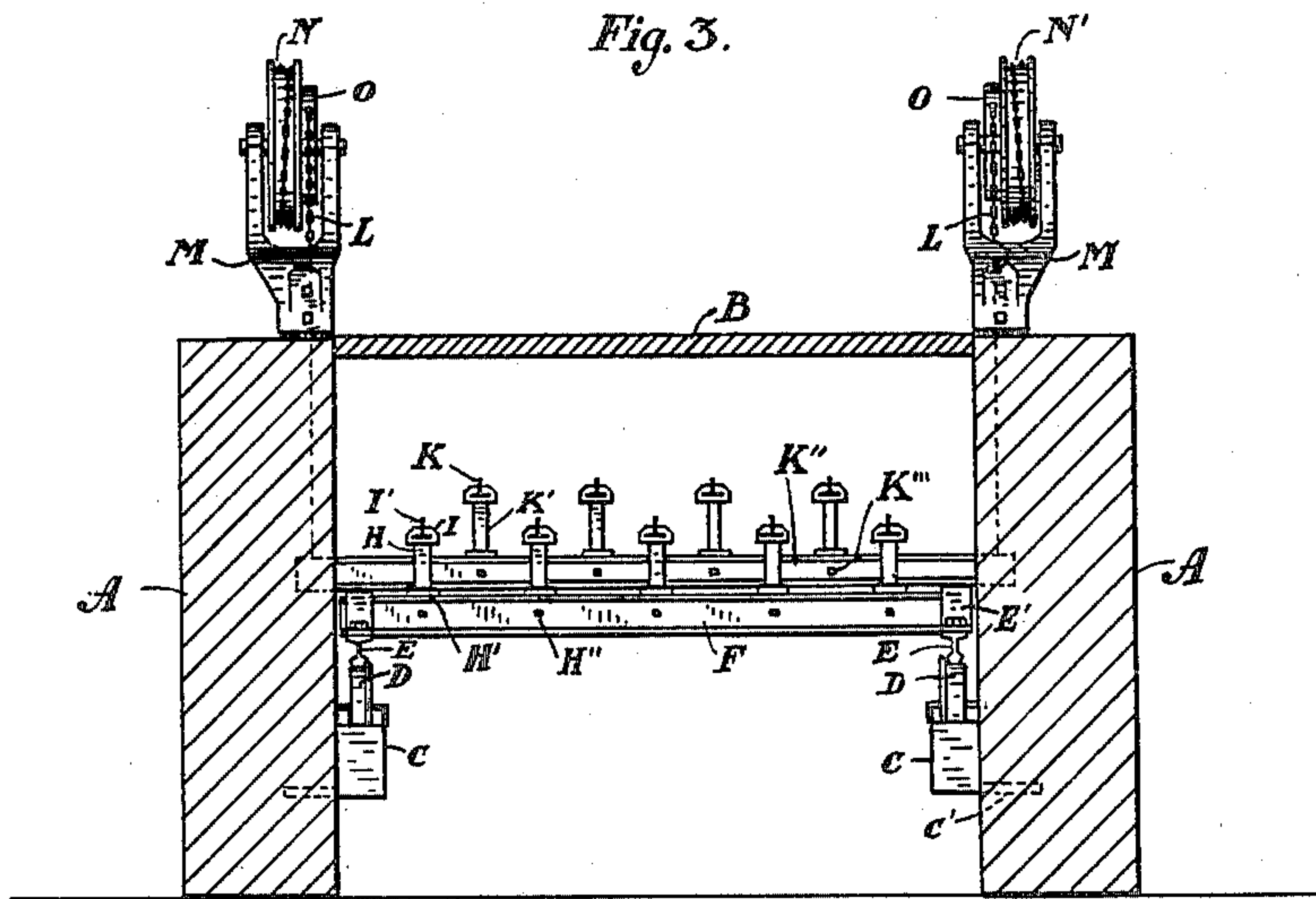
Patented Nov. 6, 1900.

U. HOUZE.  
LEER.

(Application filed Mar. 28, 1900.)

(No Model.)

2 Sheets—Sheet 2.



WITNESSES,  
*Thomas L. Ryan*  
*L. C. Howard*

INVENTOR,  
*Ulgie Houze*  
*By M. V. Brown*  
ATTORNEY.



# UNITED STATES PATENT OFFICE.

ULGIS HOUZE, OF MUNCIE, INDIANA.

LEER.

SPECIFICATION forming part of Letters Patent No. 661,315, dated November 6, 1900.

Application filed March 28, 1900. Serial No. 10,432. (No model.)

*To all whom it may concern:*

Be it known that I, ULGIS HOUZE, a citizen of the United States, residing at Muncie, in the county of Delaware and State of Indiana, have invented a new and useful Improvement in Leers, of which the following is a specification.

One aim and purpose of this invention is to construct a leer to be used in making window-glass wherein the leer can be easily operated and not get out of order.

A further object is to provide a leer with a carrying and a lifting frame, each separate and operated separately.

A further object is to provide each frame with bars for supporting the glass, the bars of each frame being connected together and moved simultaneously.

A still further object is to mount the carrying-frame so that it can be easily moved and not bind.

These and other objects not hereinbefore mentioned are accomplished by the construction illustrated in the accompanying drawings, wherein like letters of reference indicate corresponding parts in the several views, and in which—

Figure 1 is a side elevation of a leer with the side wall removed, showing the sleeves in section. Fig. 2 is a top plan view of a leer with the cover removed. Fig. 3 is a vertical cross-section on the line 3 3, Fig. 1. Fig. 4 is a detail perspective view of the sliding mechanism for supporting the carrying-frame. Fig. 5 is a detail perspective view of a portion of the carrying-frame, showing one side rail, cross-bar, and carrying-bar in position; and Fig. 6 is a detail sectional view of one of the carrying or lifting bars covered with a heat-non-conducting material.

In the drawings, A designates the side walls of the leer, and B the cover, both of the ordinary construction.

C designates a series of boxes arranged at suitable intervals on opposite sides of the leer. These boxes are provided with a flange C', projecting from their lower inner edge, which extend into the brickwork in the side wall to support the boxes in place.

D designates wheels, one in each box. These wheels are supported on the edges of the box by means of their axles D', which

are of sufficient length to rest on said edges. By this construction it will readily be seen that the wheels can roll in the box and be supported by the edges thereof. The movement of the wheels is limited by the shoulders D'', near the opposite ends of the box. The wheels are provided with a flange D''' on the inner edge of their periphery. These wheels are adapted to support the carrying-frame.

Resting on the series of wheels on each side of the leer is a bar E, forming the side rails of the carrying-frame. As plainly shown in Figs. 3 and 5, this bar is in the form of an inverted rail and for the sake of clearness will hereinafter be designated as such. At suitable intervals on the top of these rails are bolted clamps E', and in these clamps are secured the cross-bars F. As shown in Fig. 5, these cross-bars are composed of two channel-bars, which are spaced apart by means of the uprights H. These uprights are provided with a shoulder H', which rests on top of the cross-bars. The lower ends of these uprights extend down between the two pieces of the cross-bar and have their extreme lower ends bifurcated. They are secured to the cross-bars by means of the pins H'', which pass through the bars and the bifurcations. The upper ends of these uprights are provided with a seat I, in which is positioned the carrying-bar I'. These bars consist of a horizontal base and an upright portion and the seat is made to correspond to this shape, so that the bars can be slid therein and securely held in place. These bars extend the whole length of the leer. As shown in Fig. 2, the rear ends of the rails E are connected by cross-rods I'', which form handles for moving the same and the carrying-bars. It will be noticed that the carrying-bars form one set of the two sets of bars used in the leer. It will also be noticed that these bars are mounted on a rigid carrying-frame, which in turn is supported by the wheels D. By mounting this frame on the wheels the frame can be reciprocated with but little friction, thereby preventing the frame from binding and dispensing with the necessity of oiling the bearings, which would be inexpedient owing to the intense heat in the leer during the process of annealing. The reciprocating



movement of the sliding frame is limited by the shoulders D'' and is held on the wheels by the flanges D''' thereon. The lifting-frame consists of lifting-bars K and the other parts hereinafter immediately described forming the other set of bars in the leer. These bars are of the same form as the carrying-bars I' and are supported by the same kind of uprights K' as the uprights for the carrying-bars and are secured to cross bars K'' in a similar manner by means of bolts K''' as the other set of uprights.

It will be noticed that by forming the carrying and lifting bars with a horizontal base and a vertical portion and a complementary seat on the upright the bars can be slid into the seats and securely held in place without the use of bolts. This construction is important for the reason that the bars are apt to warp and bend owing to the intense heat of the glass. In this construction the bars can either expand or contract, and not being bolted to the seats can slide therein, and thereby prevent this warping and bending. They can also readily be removed.

The lifting-frame is raised and lowered as follows: Secured to the opposite ends of the cross-bars K'' is a chain L. These chains L extend upwardly through the side walls of the leer and are surrounded by the iron sleeves L'. Bolted to the upper ends of these sleeves is a standard M, which have their upper ends bifurcated, forming bearing for the pulley-wheels N N' on the opposite sides of the leer, respectively. On the inner sides of these wheels is a smaller wheel O, to which the upper ends of the chains L are secured. It will be seen from this construction that if the wheels N N' are rotated that the cross-bars K'' and the lifting-frame will be raised and lowered by means of the lifting-chains L, connecting the ends of the bars with the small wheels O on the side of the wheels N N', respectively.

At the rear end of the leer, as shown in Fig. 2, is positioned a shaft P, which extends across the rear end of the leer and is mounted in the standards P'. On the opposite ends of this shaft are rigidly secured pulley-wheels R R', respectively. Secured to each pulley-wheel R R', respectively, is a chain S S', respectively, which extend upwardly around the pulley-wheels N N', respectively, and have their other ends secured to the last wheel on the front end of the leer. The shaft P is rotated by means of the hand-lever T. From this construction it will be seen that the lifting-bars are raised or lowered by simply moving the lever to the right or left. In Fig. 1 the lifting-frame is up, and by moving the lever to the right, as shown in dotted lines, the frame will be lowered below the carrying-frame. By having a flexible connection between the wheels it obviates all danger of the wheels being disconnected owing to expansion and contraction formed by the heat if a rigid rod were used.

In Fig. 6 I show a modification wherein the carrying and lifting bars are covered with asbestos U or other non-conducting heat material. In this construction I preferably use a piece of asbestos pressed into shape so as to snugly fit over the rails and leave a small space U' between the upper edge of the rail and asbestos and bring the asbestos down, forming shoulders U'', which rest on the flat portion of the rail, and also provide the flanges U''', which grasp the sides of this flat portion. By this construction the asbestos is not only firmly held on the carrying-bar, but the weight of the glass will be carried by the flat portions of the bars, so that the upright portions of the bars cannot split the asbestos. These pieces of asbestos must be divided into longitudinal sections, so as not to interfere with the seats I on the uprights.

The operation of my device is as follows: In Fig. 1, after the lifting-frame carrying the lifting-bars has been lowered below the carrying-frame supporting the carrying-bars the carrying-bars will be in position to receive a sheet of glass from the flattening-oven. (Not shown.) After the sheet is on the carrying-bars the carrying-frame is moved to the left the whole space allowed between the shoulders D'' on the box D. When this is done, the lifting-bars are raised, lifting the glass from the carrying-bars, so that the carrying-frame can be moved to the right and the operation repeated. When the carrying-frame is moved to the left, there will be a sheet of annealed glass to be taken therefrom at the left end of the machine in the usual manner.

I am aware that many minor changes can be made in the construction and arrangement of parts without in the least departing from the nature and principles of my invention.

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

1. In a leer, the combination with a lifting-frame carrying the lifting-bars and means for raising and lowering the lifting-frame, of a carrying-frame supporting the carrying-bars, boxes supported on opposite sides of the leer, a flanged wheel in each box having an axle resting on the upper edge of the box, the periphery of the wheel adapted to support the carrying-frame, and means for limiting the movement of the wheel in the box.

2. In a leer, the combination with a lifting-frame carrying the lifting-bars and means for raising and lowering the lifting-frame, of a carrying-frame supporting the carrying-bars, boxes supported on opposite sides of the leer, a flanged wheel in each box having an axle resting on the upper edge of the box, the periphery of the wheel adapted to support the carrying-frame, and shoulders on the opposite ends of the edges of the box to limit the movement of the wheel therein.

3. In a leer, the combination with a lifting-



frame carrying the lifting-bars, of a carrying-frame supporting the carrying-bars, boxes on opposite sides of the leer, a flange on the boxes extending into the side walls to support the same, and a wheel rollingly mounted in each box for supporting the carrying-frame.

4. In a leer, the combination with a lifting-frame carrying the lifting-bars, of a carrying-frame consisting of inverted side rails, cross-bars connecting the side rails, uprights carried by the cross-bars, carrying-bars supported on the uprights, boxes on opposite sides of the leer, and a wheel rollingly mounted in each box on which the side rails of the carrying-frame rest.

5. In a leer, the combination of a lifting-frame and a carrying-frame, cross-bars for each frame, uprights extending from the cross-bars, lifting and carrying bars formed with a horizontal base and vertical portions, and a complementary seat on the uprights in which the bars are adapted to be slid and held in position.

6. In a leer, the combination in a carrying-frame, of inverted side rails, cross-bars connecting the side rails, each bar consisting of two portions spaced apart, clips for securing the cross-bars to the side rails, uprights secured between the two portions of the cross-bars, and carrying-bars supported by the uprights.

7. In a leer, the combination of a lifting-frame and a carrying-frame, cross-bars for each frame consisting of two portions spaced apart, uprights having their lower ends bifurcated and extending down between the two portions of the cross-bars, a bolt passing through the bifurcations of the uprights and the two portions of the cross-bars for securing the cross-bars and uprights together, and lifting and carrying bars carried by the uprights of each frame respectively.

8. In a leer, the combination of a lifting-

frame and a carrying-frame, cross-bars for each frame, each bar consisting of two channel-bars spaced apart, uprights having their lower ends bifurcated and extending down between the two portions of the cross-bars, a shoulder on the uprights resting on the top of the cross-bars, a bolt passing through the bifurcations of the uprights and the two portions of the cross-bars for securing the cross-bars and uprights together, and lifting and carrying bars carried by the uprights of each frame respectively.

9. In a leer, the combination with a lifting-frame, of wheels journaled above the leer and on opposite sides thereof, chains connecting the wheels to the opposite sides of the lifting-frame, flexible connections between the wheels, and means located at the rear end of the leer connected with the flexible connections for simultaneously rotating the wheels.

10. In a leer, the combination with a lifting-frame, of wheels journaled above the frame and on opposite sides thereof, flexible connections between the wheels and opposite sides of the lifting-frame, a shaft positioned across the rear end of the leer, a pulley on each end of the shaft, flexible connections between these pulleys and the wheels on the top of the leer, and a lever for rotating the shaft.

11. A leer-bar formed with a horizontal and vertical portion, a heat-non-conducting material fitted over the bar but leaving a space between it and the upper edge of the vertical portion of the bar and provided with shoulders which rest upon the horizontal portion of the bar.

In testimony whereof I have hereunto set my hand in the presence of two witnesses.

ULGIS HOUZE.

Witnesses:

J. E. WADE,

WM. DUVAL BROWN.