

(No Model.)

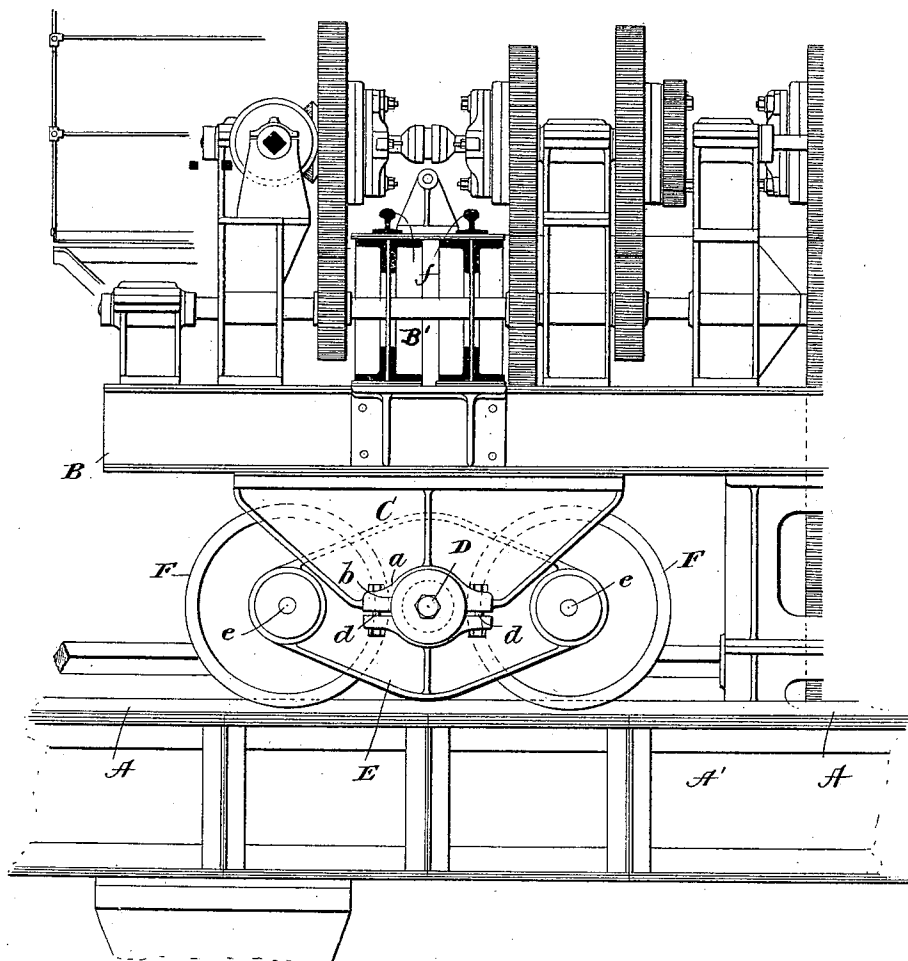
6 Sheets—Sheet 1.

J. R. MORGAN.
OVERHEAD TRAVELING CRANE.

No. 481,964.

Patented Sept. 6, 1892.

Fig. 1.



Witnesses:
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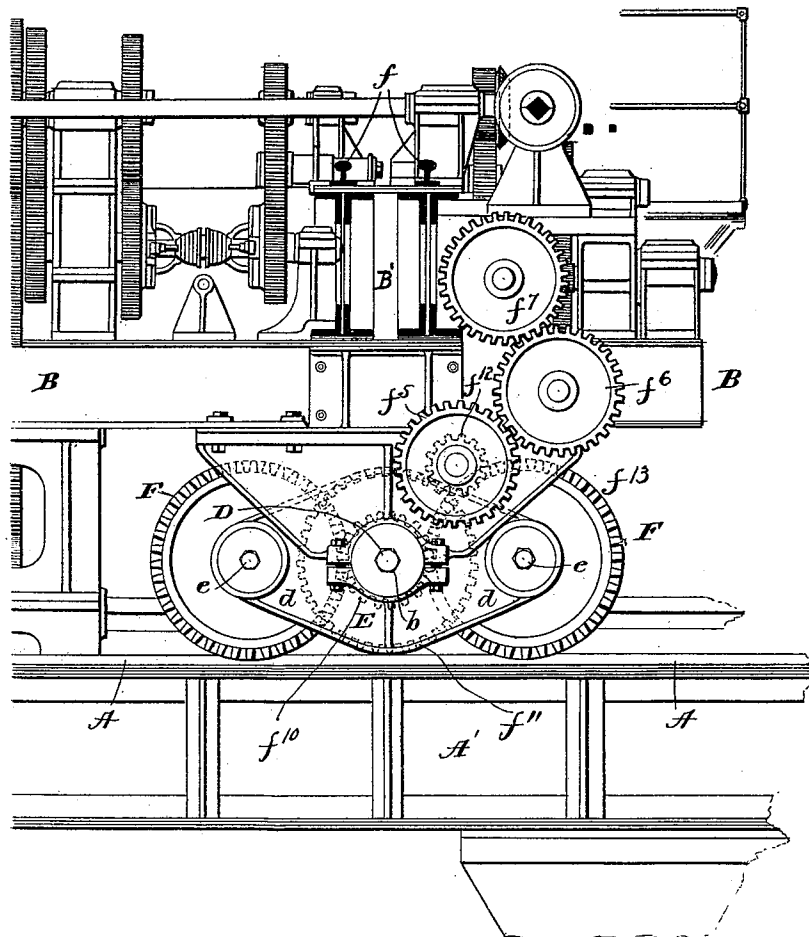
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J. R. MORGAN.
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Patented Sept. 6, 1892.

Fig. 2.



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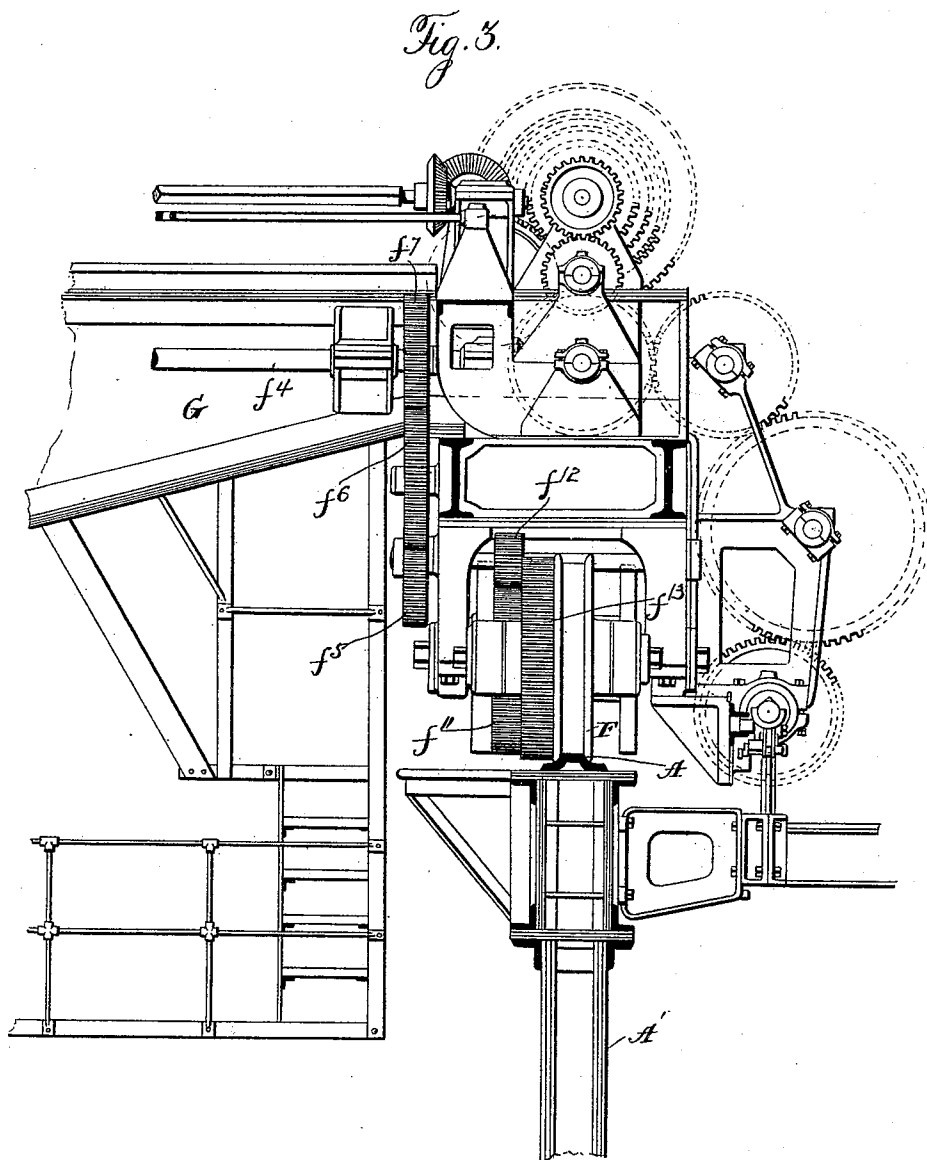
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J. R. MORGAN.
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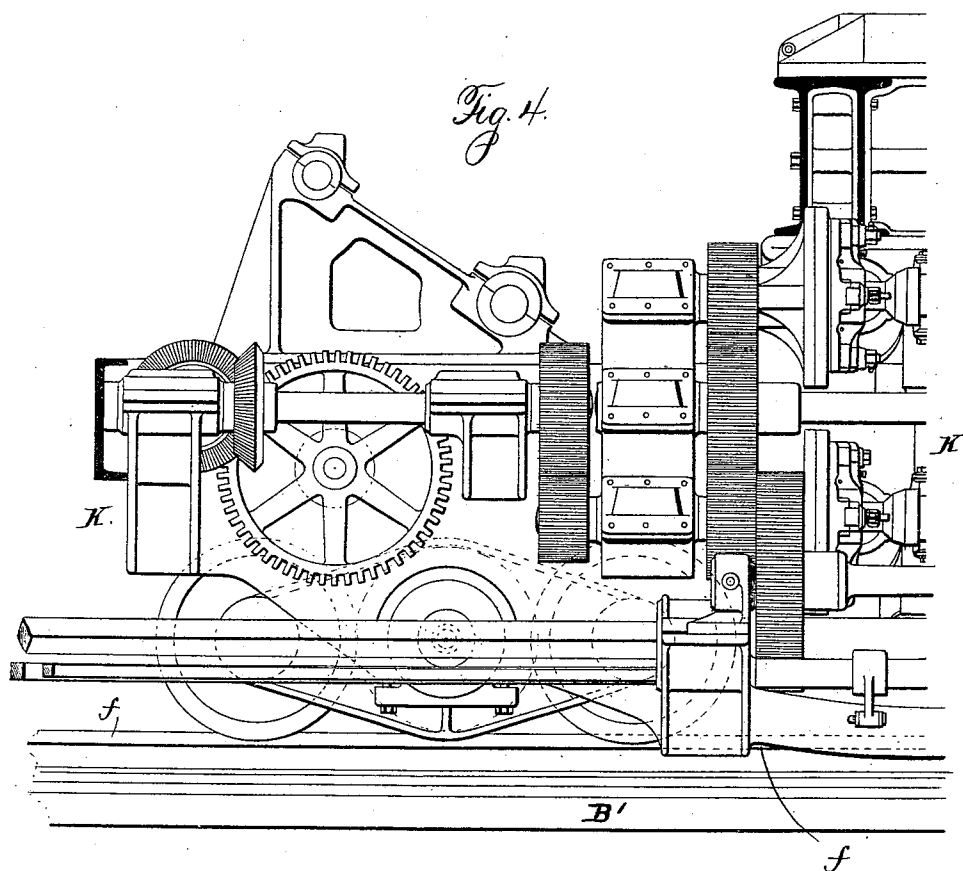
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Patented Sept. 6, 1892.



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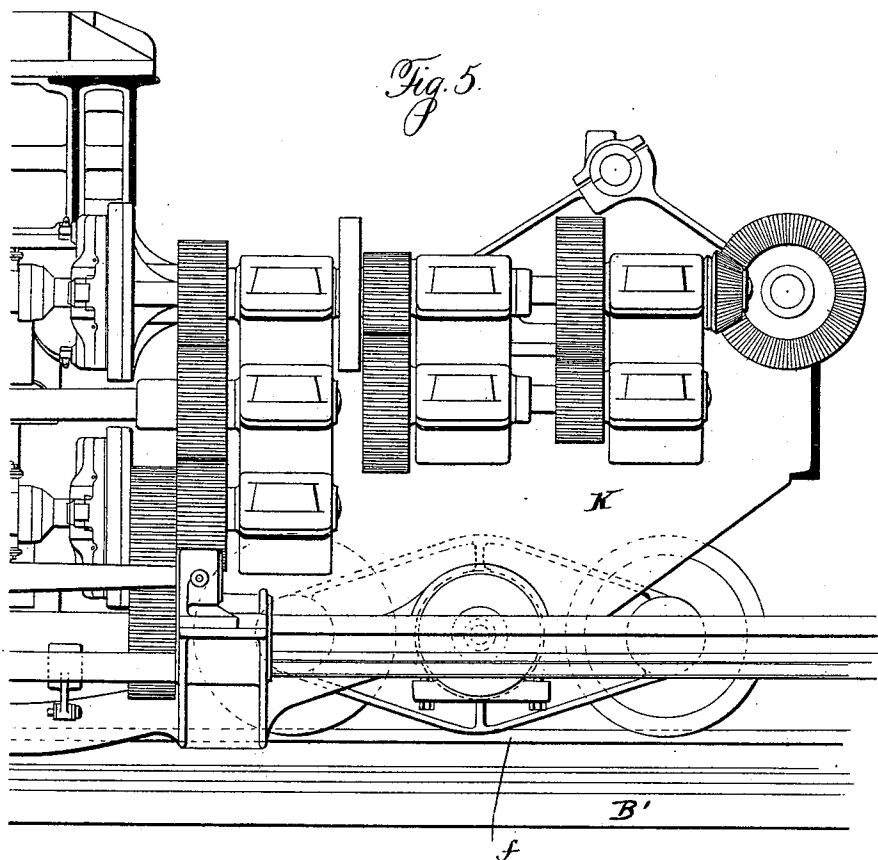
(No Model.)

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J. R. MORGAN.
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No. 481,964.

Patented Sept. 6, 1892.



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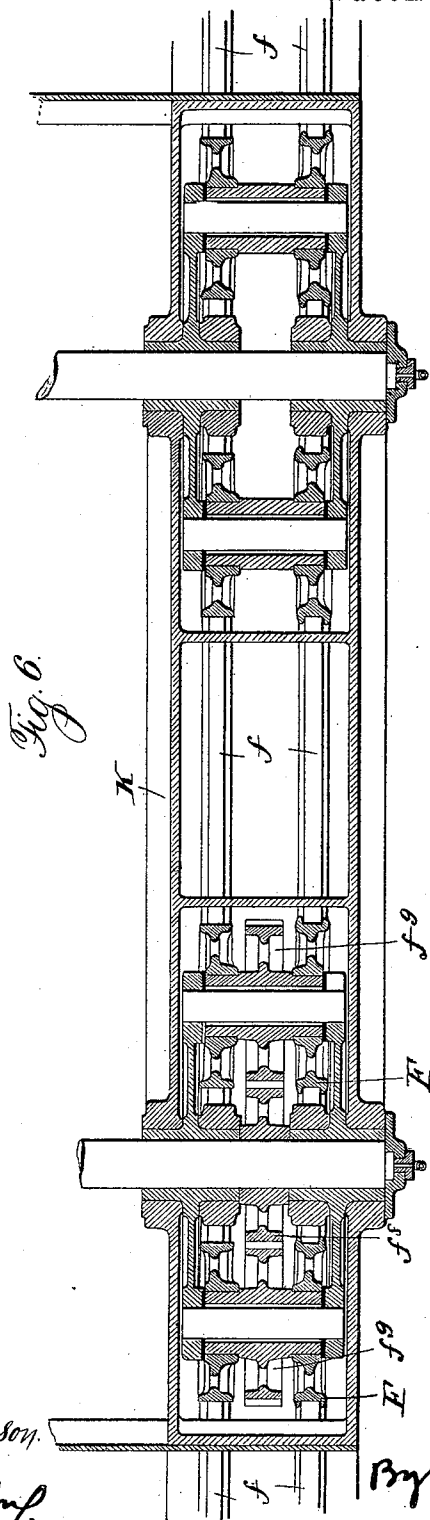
(No Model.)

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J. R. MORGAN.
OVERHEAD TRAVELING CRANE.

No. 481,964.

Patented Sept. 6, 1892.



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UNITED STATES PATENT OFFICE.

JOHN R. MORGAN, OF ALLIANCE, OHIO, ASSIGNOR OF THREE-FOURTHS TO
THOMAS R. MORGAN, SR., THOMAS R. MORGAN, JR., AND WILLIAM H.
MORGAN, OF SAME PLACE.

OVERHEAD TRAVELING CRANE.

SPECIFICATION forming part of Letters Patent No. 481,964, dated September 6, 1892.

Application filed August 4, 1891. Serial No. 401,662. (No model.)

To all whom it may concern:

Be it known that I, JOHN R. MORGAN, of Alliance, in the county of Stark and State of Ohio, have invented certain new and useful
5 Improvements in Overhead Traveling Cranes; and I 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 appertains to make and use
10 the same.

My invention relates to an improvement in overhead traveling cranes.

In overhead traveling cranes consisting, essentially, of a bridge mounted on wheels, the
15 latter running on tracks placed lengthwise the shops, and a trolley mounted on the bridge and adapted to travel lengthwise the bridge, the tracks on which the bridge travels are usually placed adjacent to the side walls of
20 the building, so as to bring the entire floor-space of the shop or foundry within reach of the lifting-chains carried by the trolley. The tracks or rails supporting the bridge are or should be in perfect alignment; but it fre-
25 quently happens that one rail will wear at one or both ends more rapidly than the adjacent ends of the next rails, thus forming depressions, and hence if the trucks carrying the wheels are rigid it follows that when a wheel
30 passes over a depression the weight is thrown onto the other wheels, thus straining the parts. This straining of the parts is also caused by the deflection of the track under the strain of the bridge and weight carried thereby and
35 also by the accumulation of dirt on the track.

The object of this invention is to so construct the trucks of the bridge and trolley that the supporting-wheels thereof are always in
40 contact with the rails and equally assist in sustaining the load without straining the trucks, bridge, or trolley; and it consists in mounting the trucks on centrally-located horizontal pivots, whereby the truck can tilt and permit
45 any wheel or wheels to sink into depressions and ride over obstructions without throwing the weight onto or taking it off of the other wheels, combined with a pinion concentric with the horizontal pivot of one truck and a pinion carried by or rigid with a track-wheel

of said truck and meshing with the pinion 50 concentric with the horizontal pivot.

In the accompanying drawings, Figure 1 is a view showing one half of one end of the bridge and one truck. Fig. 2 is a similar view showing the other half, the two figures when
55 placed end to end showing complete one end of the bridge and the two trucks. Fig. 3 is a view in front elevation of one end of the bridge. Figs. 4 and 5 are views of the trolley, and Fig. 6 is a view in horizontal section
60 through one side of the trolley-frame and the two supporting-trucks.

A represents a track mounted on supports A'. In this instance I have shown a single line of rails supporting one end of the bridge, the
65 opposite end (not shown) of the bridge being supported in a similar manner; but it is evident that I can, if I so desire, use two parallel rails on each side. Such a construction is disclosed in Fig. 6, which shows trolley-rails
70 arranged in pairs on the bridge. With either construction the end cradle or beam B, connecting the ends of the bridge beams or girders B', is provided at points preferably in a line with the girders or beams with depending
75 brackets C, arranged in pairs, each bracket being provided on its lower face with a half-bearing a for the reception of the truck-carrying spindle D. Each spindle D is supported
80 near its ends in the half-bearings of its respective brackets and is retained in place by the caps b, which latter are secured by bolts d, passing through flanges in the brackets and ends of the caps.

Rigidly secured to each truck-carrying spindle 85 is a pair of diamond-shaped plates E, which latter are separated sufficiently for the introduction between them of track-wheels and the gearing which drives the track-wheels. The track-wheels F are mounted on axles e,
90 which latter are secured to the front and rear of the opposite ends of the plates E.

From the foregoing it will be seen that the trucks are pivotally mounted on a centrally-located horizontal bearing and are free to vibrate to allow the wheels carried by same to
95 ride over depressions or elevations without straining the truck or trucks and without tak-

ing any strain from or throwing additional strain onto any other wheels supporting the same end of the bridge. This permits the wheels to accommodate themselves to the track and ride over depressions or elevations without straining the truck or the bridge. The bridge is formed, primarily, by two girders B' B', secured at their ends to the cradles or beams B. The upper surfaces of these girders are flat and each supports a pair of rails f , placed parallel, as shown, on which the trolley K travels. This trolley is also provided with four trucks. The only essential difference between the trucks of the trolley and the trucks of the bridge is that each of the former carries four wheels coupled up in pairs, while the bridge-trucks have two each. One truck at each end of the bridge is provided with a pinion f^{10} , located concentrically with the axis of the truck and driven by the train of gears f^{11} , fast to pinion f^{10} or the sleeve carrying the same, the pinions f^5 and f^{12} , integral or secured to the same shaft, and the pinions f^6 f^7 . The pinion or open wheel f^{10} meshes with and drives corresponding spur-wheels f^{12} , fast to the track-wheels F. The spur-wheel f^7 is connected by shaft f^{14} with the train of wheels at the opposite ends of the bridge and causes both trains to move in unison. The trolley is also driven by spur-wheels concentric with the truck and meshing with spur-wheels fast to the track-wheels. In Fig. 6, f^8 shows the pinion or spur-wheels concentric with the axis of the truck, while f^9 shows the pinions fast to the track-wheels F.

It is evident that many slight changes might be resorted to in the relative arrangement of parts without departing from the spirit of my invention, and hence I would have it understood that I do not limit myself to the exact construction and arrangement of parts herein described; but,

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

1. In a traveling crane, the combination, with a bridge, of a series of trucks supporting each end of the bridge, each truck being connected to the bridge by a centrally-located horizontal pivot, a pinion concentric with the horizontal pivot of one truck, and a pinion carried by or rigid with a track-wheel of said truck and meshing with the pinion concentric with the horizontal pivot, substantially as set forth.

2. In a traveling crane, the combination, with a bridge, of a series of trucks supporting each end thereof, each truck being mounted on a centrally-located horizontal pivot, one truck at each end of said bridge being provided with a driving-pinion concentric with the horizontal pivot connecting the bridge and truck and with a second pinion fast to one of the track-wheels and meshing with the driving-pinion, substantially as set forth.

3. In a traveling crane, the combination, with a bridge provided at its opposite ends with series of depending brackets arranged in pairs, of a truck pivotally mounted in each pair of brackets, a driving-pinion concentric with the axis of one of said trucks, and gearing connecting said driving-pinion with a track-wheel of said truck, substantially as set forth.

4. The combination, with a frame and series of trucks supporting same, each truck being connected to the frame by a centrally-located horizontal pivot, of a driving gear-wheel concentric with the axis of one of said trucks, and gearing connecting said driving gear-wheel with one or more of the track-wheels, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

JOHN R. MORGAN.

Witnesses:

T. R. MORGAN, Sr.,
F. E. DUSSEL.