No. 625,519. Patented May 23, 1899.

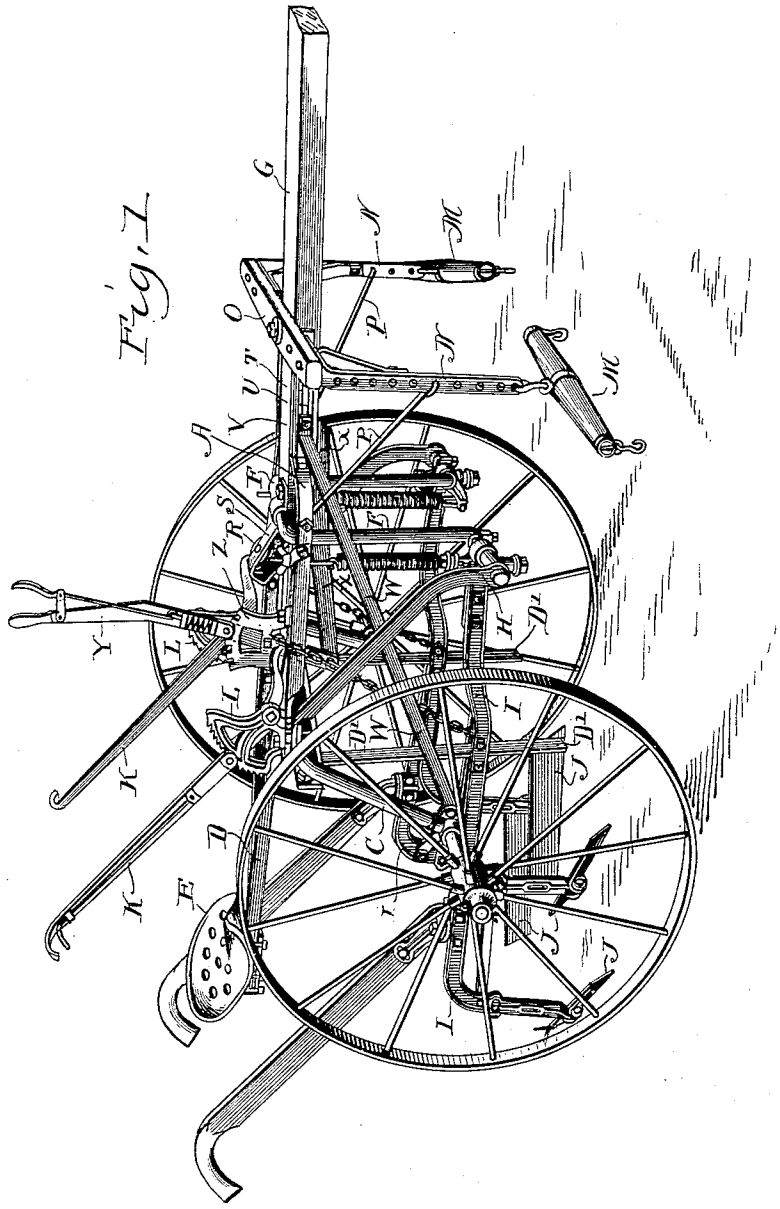
C. S. RUEF.

CULTIVATOR.

(Application filed July 5, 1898.)

(No Model.) 4 Sheets—Sheet 1.

Fig. 1.



Witnesses
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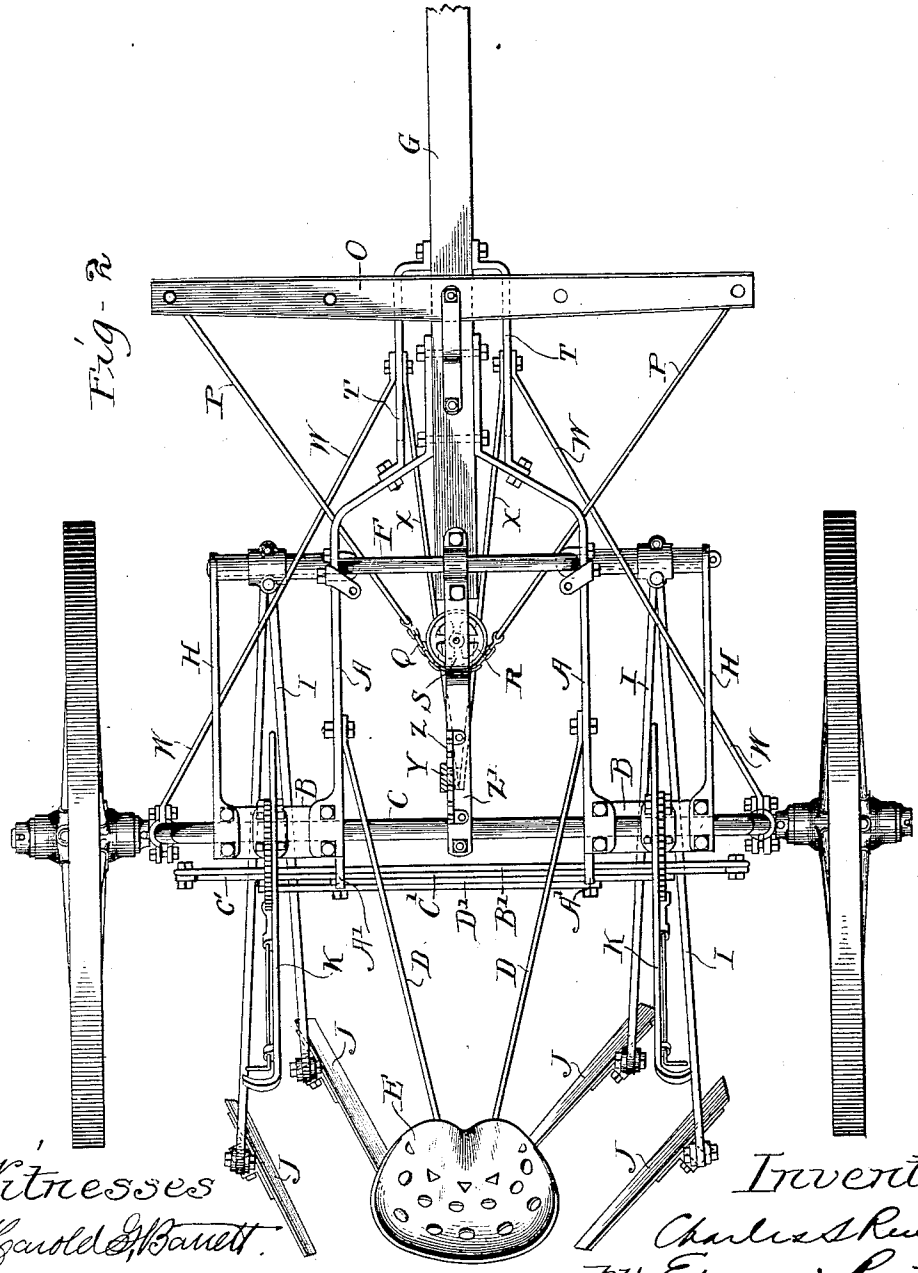
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Fig. 2.



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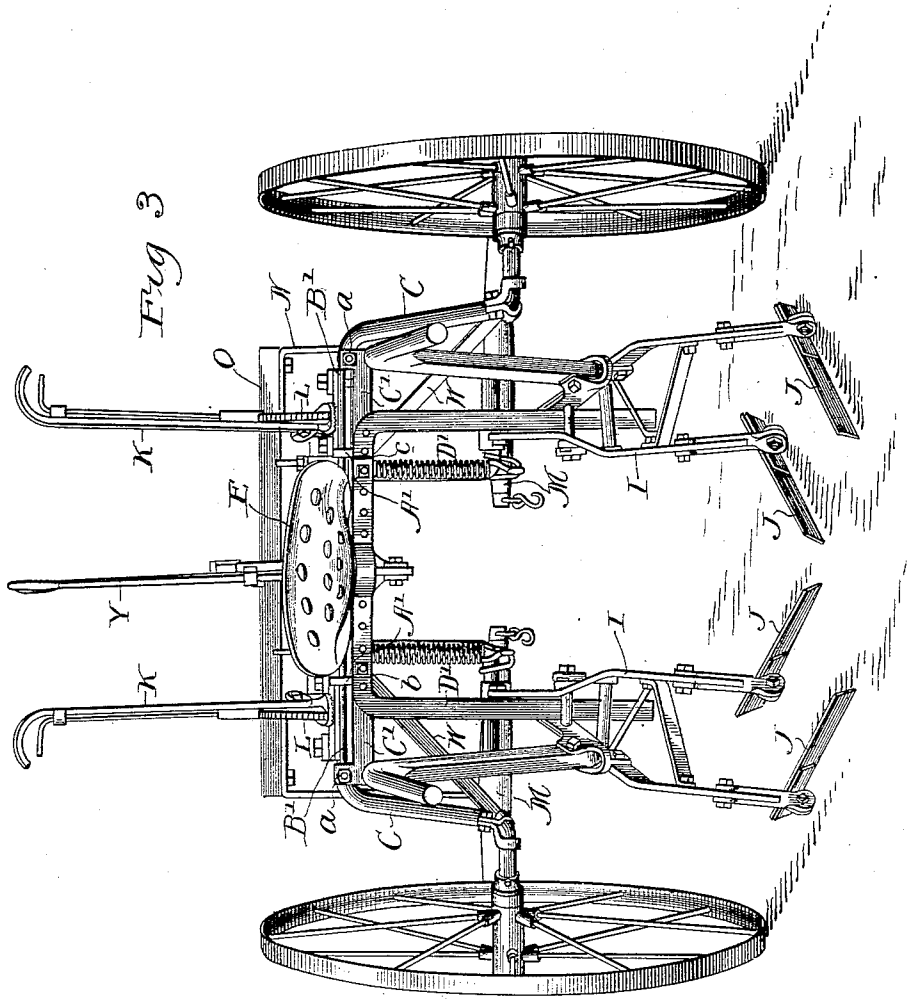
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Fig 3



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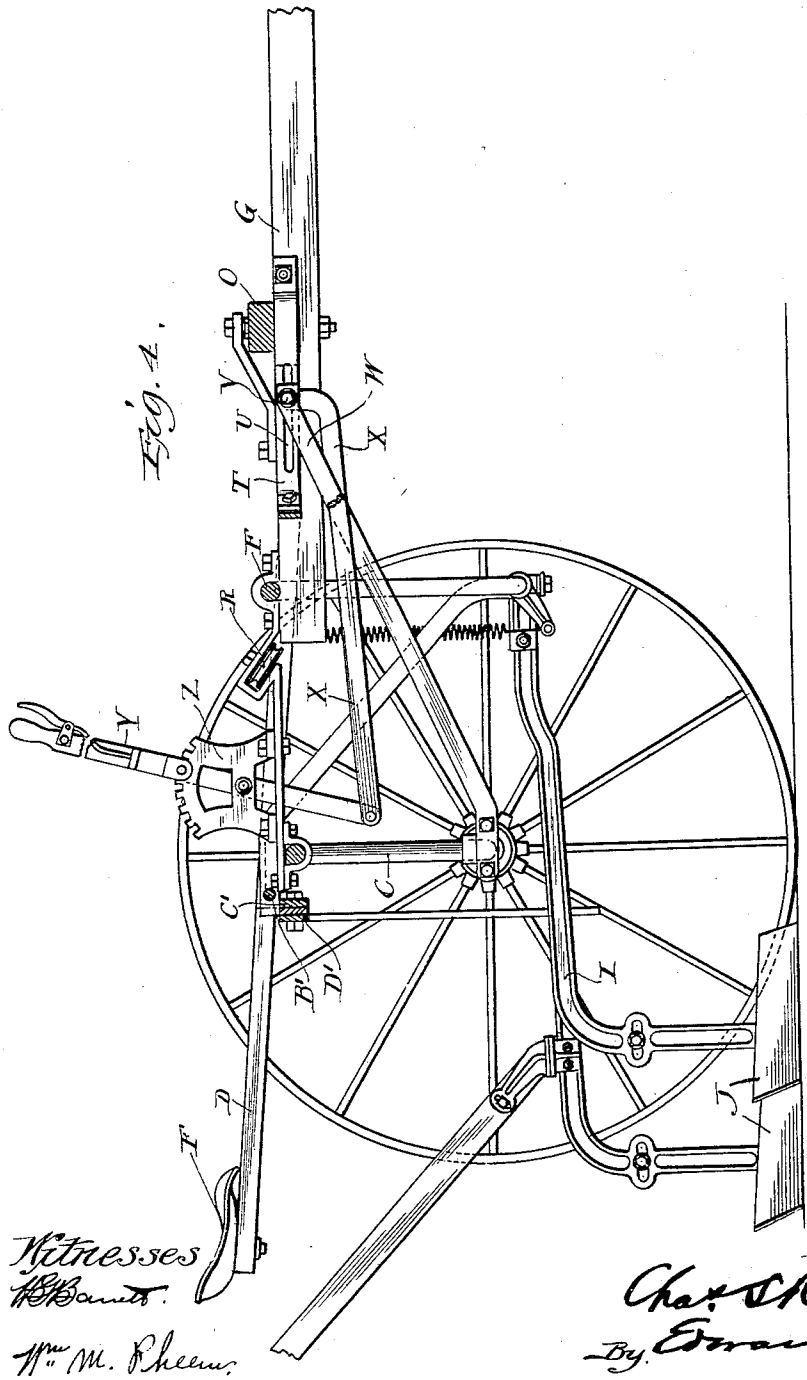
CULTIVATOR.

(Application filed July 5, 1898.)

(No Model.)

4 Sheets—Sheet 4.

Fig. 4.



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UNITED STATES PATENT OFFICE.

CHARLES S. RUEF, OF DIXON, ILLINOIS, ASSIGNOR TO THE GRAND DETOUR PLOW COMPANY, OF SAME PLACE.

CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 625,519, dated May 23, 1899.

Application filed July 5, 1898. Serial No. 685,184. (No model.)

To all whom it may concern:

Be it known that I, CHARLES S. RUEF, a citizen of the United States of America, residing at Dixon, in the county of Lee, in the State of Illinois, have invented certain new and useful Improvements in Cultivators, of which the following is a description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates more particularly to that class of cultivators in which the frame of the machine (carrying the driver's seat) is mounted upon an arched axle and is adjustable backwardly and forwardly relatively to the wheels supporting the axle for the purpose of balancing the frame upon the axle according to the weight of the driver seated upon the rear end of the frame. Means have heretofore been provided in such machines for effecting such forward and backward adjustment of the frame, the arch of the axle being swung forward or backward with the forward or backward movement of the frame; but in all machines of this character with which I am familiar the adjusting means have been such as to require the driver to dismount from the machine and effect the adjustment by hand by turning the adjusting-screws or by shifting a connecting-bolt from one to another of a series of holes in the tongue or frame of the machine.

The first feature of my present invention relates to the provision of means whereby this adjustment of the frame may be effected by the driver while seated in position upon the machine and by means of the simple manipulation of a single lever.

Another feature of my invention relates to a novel construction and arrangement of guide-arch for connecting the two shovel-rigs and causing them to move laterally together, all as hereinafter more fully described by reference to the accompanying drawings, in which—

Figure 1 is a perspective view of my improved machine; Fig. 2, a top plan view thereof; Fig. 3, a rear elevation, and Fig. 4 a longitudinal vertical section at the right of the middle of the machine.

The same letters of reference are used to indicate corresponding parts in the several views.

The frame of the machine in the present instance may be said to consist of two forward side bars A A, secured at their rear ends to suitable boxes or castings B B, mounted upon the arched axle C, Fig. 2, two rearwardly-extending and converging bars D D, secured at their forward ends to the side bars A A and carrying at their rear ends the driver's seat E, and an arch-bar F, secured at the middle of its upper portion to the rear end of the pole or tongue G and at the extremities of such upper portion to the side bars A A and having the extremities of its laterally-projecting lower ends connected by braces H H with the boxes B upon the axle C. The inwardly-bent forward ends of the side bars A A are bolted to the opposite sides of the tongue G, which connection of said bars with the tongue and the above-described connection of the rear end of the tongue with the arch-bar F make the tongue a rigid part of the frame of the machine.

The shovel-rigs I I, carrying the cultivator-blades J, are hung at their forward ends upon the lower laterally-projecting ends of the arch-bar F and are raised and lowered by means of levers K K, connected to the shovel-rigs by chains, (shown in Fig. 1,) the levers K K being provided with detents or latches coöperating with racks L L to hold the levers in adjusted position, as usual.

The singletrees M M are connected to the lower ends of the draft-bars N N, rigidly secured to and depending from the opposite ends of the evener-bar O. The bars N N are connected by rods P P with a chain Q, passing around a sheave R, mounted in a casting S, secured to the rear end of the tongue G, this arrangement permitting freedom of movement of the evener-bar O while sustaining the draft strain.

So much of the machine as above described is substantially old and not of my present invention.

Secured at their rear ends to the inwardly-bent forward portions of the side bars A A of the frame are two supplemental side bars T T, whose inturned forward ends are bolted to

the opposite sides of the tongue G, leaving longitudinal open spaces within the bars T T between the latter and the tongue. Each of the bars T is provided with a longitudinal slot U, Figs. 1 and 4, through which passes a bolt V, adapted to slide backwardly and forwardly in the slot U. To the outer end of each bolt V is secured the upper forward end of a rearwardly and outwardly extending bar W, the rear ends of which bars W are connected to boxes upon the arched axle C at the junction of its vertical and lower horizontal portions, Figs. 1, 2, and 4. To the inner ends of the bolts V, upon the inner sides of the slotted guide-bars T T, are connected the forward ends of rearwardly-extending bars or links X X, whose rear extremities are pivoted to the lower end of a lever Y, fulcrumed upon the side of a rack-plate Z, which is bolted at its lower end to a rearward extension Z′ of the casting S, heretofore referred to, said casting S Z′ connecting the rear end of the tongue G with the middle of the arched axle C, Fig. 2. The lever Y is provided with the usual detent-latch coöperating with the rack Z to lock the lever in its different adjusted positions.

It will be understood from the foregoing description that when it is desired to shift the frame of the machine rearward to properly balance the weight of the driver in rear of the axle and the weight of the tongue and forward part of the frame in front of the axle it is simply necessary for the driver to disengage the lever Y from the rack and pull it rearward, which will serve to force the frame of the machine in that direction, while the wheels remain stationary upon the ground, the arched axle C swinging rearward with the rearward movement of the frame. When, on the other hand, it is desired to shift the frame forward, the driver has simply to force the lever Y forward. (In Fig. 1 the frame is shown in forward position, and in Fig. 2 in rearward position, although not adjusted rearward to its limit of movement.) In this manner and by these means the driver can at any time shift the frame of the machine backward or forward relatively to the wheels resting upon the ground, and thus properly balance the frame of the machine without dismounting from the machine, without the use of any separate adjusting implements of any kind and without any appreciable loss of time.

As previously stated, I am aware that machines of this character have heretofore been provided with means for adjusting the frame backwardly and forwardly relatively to the wheels for the purpose of properly balancing it; but so far as I am aware I am the first to effect this adjustment by means of a lever located within reach of the driver seated upon the machine, and my invention in this respect is therefore not restricted to details of construction and arrangement or to the particular form of connections between the lever and frame and arched axle, but contemplates in its broader scope any and all means for effecting the described adjustment or shifting of the frame of the machine when controlled and operated by a lever located within reach of the driver seated upon the machine.

The remaining feature of my invention consists in an improved guide-arch for connecting the two shovel-rigs and causing them to be shifted laterally together, such guide-arch being shown more particularly in Fig. 3. As there shown, and also in Fig. 2, the boxes B B of the frame of the machine are provided with two rearwardly-extending eyes A′ A′, through which passes a transverse rod B′, whose opposite ends are secured to vertically-projecting ears *a a* upon the opposite ends of a horizontal bar C′. Bolted to the rear side of this bar C′ are the upper horizontal portions of the two halves of the guide-arch D′, whose lower ends pass downward between the two side bars of the respective shovel-rigs I and are confined therebetween, as shown. The horizontal bar C′, which supports the guide-arch D′, is provided with a longitudinal series of bolt-holes, and the upper horizontal portions of the guide-arch D′ are provided with coincident holes, and the guide-arch is secured to the bar C′ by bolts passed through these holes. The upper horizontal portions of the two halves of the guide-arch are of such length as to overlap each other a considerable distance, the left-hand extremity of the horizontal portion of the right-hand half of the arch being indicated by the dotted line at *b* in Fig. 3 and the right-hand end of the horizontal portion of the left-hand half of the arch being indicated by the line at *c*. It will be seen that by removing the bolts the two halves of the guide-arch may be adjusted toward or from each other to bring the shovel-rigs nearer together or spread them apart and that when they are then bolted firmly to the bar C′ the entire guide-arch, together with the bar C′, is free to slide back and forth transversely of the machine, the rod B′ sliding in the eyes A′, so that when either shovel-rig is moved laterally in one direction or the other the other shovel-rig will be moved with it and their relation to each other thus preserved.

I am aware that a laterally-adjustable guide-arch supported upon the frame of the machine and having its depending lower ends connected to the respective shovel-rigs has heretofore been employed in machines of this class, and hence do not claim the same broadly as my invention; but the construction and arrangement of parts which I have provided, including the longitudinally-sliding bar C′, supporting the guide-arch, with the latter adjustable thereupon, presents advantages not found in prior constructions and arrangements with which I am familiar.

Having thus fully described my invention, I claim—

1. In a cultivator, the combination of the

arched axle, the frame mounted upon the arch of said axle and movable backwardly and forwardly therewith relatively to the supporting-wheels of the machine, said frame projecting to the front and to the rear of the axle-arch and carrying the driver's seat in rear thereof, and means controlled by a lever located within reach of the driver upon the machine and coöperating with a rack thereon for adjusting the axle-arch and frame forwardly and backwardly relatively to the supporting-wheels of the machine and maintain them in any desired position of adjustment either at their forward or backward limit of movement or at an intermediate point, for the purpose described.

2. In a cultivator, the combination of the arched axle, the frame mounted upon the arch thereof and carrying the driver's seat a lever located within reach of the driver upon the machine and coöperating with a rack thereon, and connections between said lever and the lower portions of the arched axle for adjusting the frame and driver's seat backward or forward relatively to the supporting-wheels by means of said lever, substantially as described.

3. In a cultivator, the combination of the arched axle, the frame mounted upon the arch thereof and carrying the driver's seat, bars connected at their rear ends to the lower portions of the arched axle and movable backwardly and forwardly relatively to the frame at their forward ends, and a lever located within reach of the driver upon the machine and connected with the forward ends of said bars, for the purpose described.

4. In a cultivator, the combination of the arched axle, the frame mounted upon the arch thereof and carrying the driver's seat, the bars connected at their rear ends with the lower portions of the arched axle and having a backwardly and forwardly adjustable connection with the frame at their forward ends, a lever located within reach of the driver upon the machine, and links connecting said lever with the forward ends of said bars, for the purpose described.

5. In a cultivator, the combination of the arched axle, the frame mounted upon the arch thereof and carrying the driver's seat, and provided with guideways, bars guided at their forward ends backwardly and forwardly to said frame by said guideways and connected at their rear ends to the lower portions of the arched axle, a lever located within reach of the driver seated upon the machine, and links connecting said lever with said bars, for the purpose described.

6. In a cultivator, the combination of the arched axle C, the frame A D mounted thereon and carrying at its rear end the driver's seat E and at its forward end secured to the tongue G, the supplemental frame or guide bars T T provided with the longitudinal guideways U, the bars W W guided at their forward ends along said guideways and connected at their rear ends to the lower portions of the axle C, the lever Y coöperating with the rack Z, and the links X X connecting said lever with the forward ends of the bars W W, for the purpose described.

7. In a cultivator, the combination, with the pair of shovel-rigs I I, of the transversely-sliding bar C′ mounted upon the machine, and the two-part guide-arch D′ adjustably secured upon the bar C′ and serving to connect the two shovel-rigs, as and for the purpose described.

8. In a cultivator, the combination, with the two shovel-rigs, of the transversely-sliding bar C′ supported by the rod B′ passing through guide-eyes A′ A′ upon the frame of the machine, and the two-part guide-arch D′ adjustably secured to the bar C′ and serving to connect the two shovel-rigs, as and for the purpose described.

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Witnesses:
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