

Sept. 16, 1924.

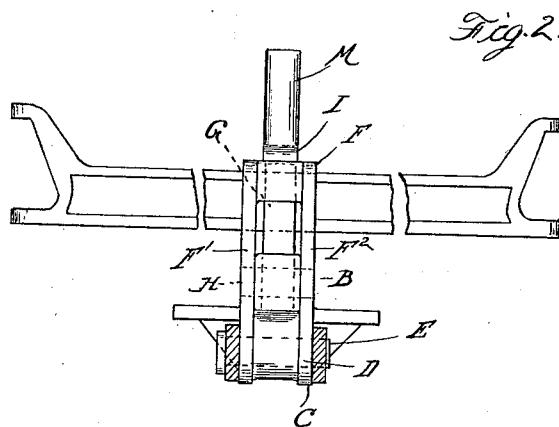
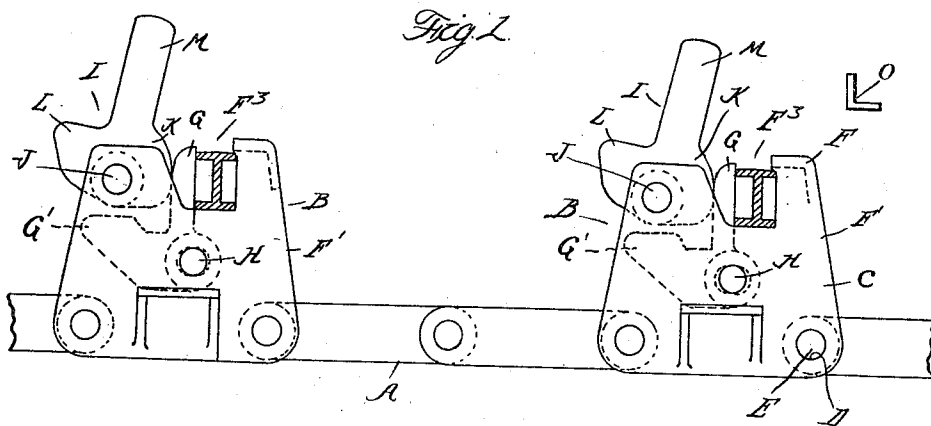
J. E. McBRIDE

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AXLE ASSEMBLING MACHINE

Filed Dec. 19, 1919

2 Sheets-Sheet 1



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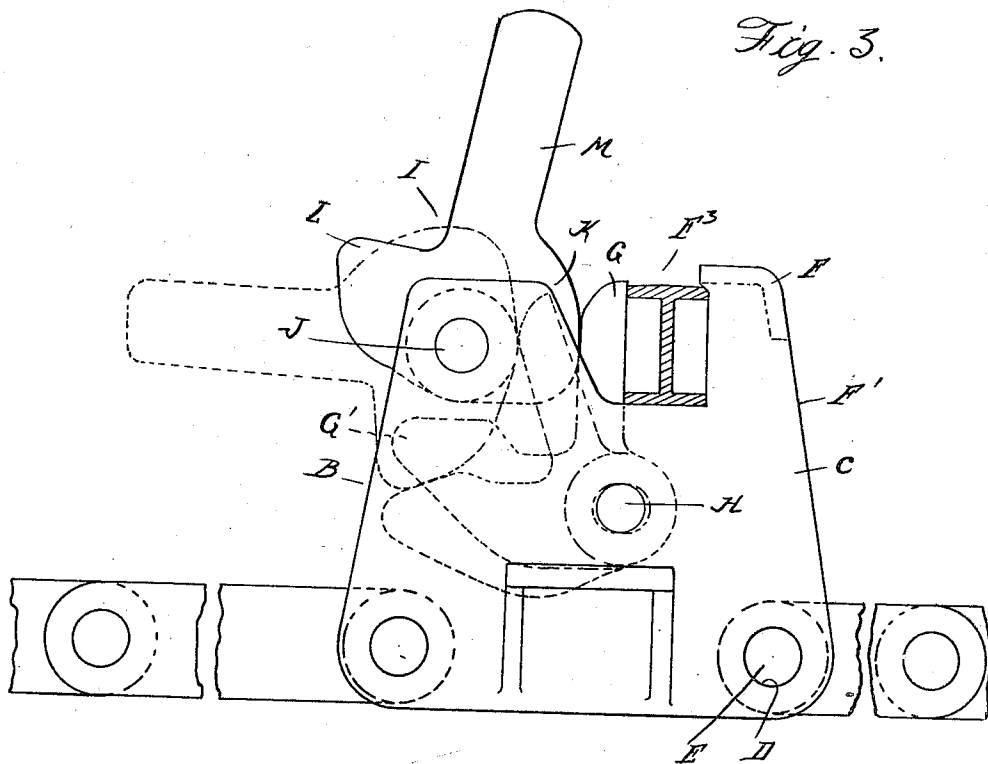
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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE.

JESSE E. McBRIDE, OF DETROIT, MICHIGAN, ASSIGNOR TO PALMER-BEE COMPANY,
OF DETROIT, MICHIGAN, A CORPORATION OF MICHIGAN.

AXLE-ASSEMBLING MACHINE.

Application filed December 19, 1919. Serial No. 345,930.

To all whom it may concern:

Be it known that I, JESSE E. McBRIDE, a citizen of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Axle-Assembling Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates to machines for facilitating the assembly of work and particularly for the assembly of parts of a vehicle axle. It is the object of the invention to obtain a construction in which a traveling carrier is provided with means for engaging and securely holding one member of each assembly, so as to permit of securing the other members thereto. A further object is to facilitate the release of the assembled structure at the completion of the assembling operation.

In the drawings:

Figure 1 is a side elevation;

Figure 2 is a cross-section of the assembling conveyer;

Figure 3 is a side elevation of one of the work clamps mounted on the conveyer.

A is a conveyer of any suitable construction permitting a connection thereto at intervals of work clamps B. Each of these clamps has a member C apertured at D at opposite ends thereof for engagement with the pins E which connect with the conveyer chain. The member C is further provided with an upwardly-extending jaw portion F, preferably formed of spaced side plates F' and F² with a notch or recess F³ at the upper edges thereof, and G is a cooperating clamping jaw member which is pivotally secured at H between the side plates F' and F² and is formed with a laterally extending portion G' between said side plates. I is a clamping cam member pivotally secured at J between the plates F' and F² and having a cam portion K for engaging the member G to force the same towards the jaw F, and a cam portion L for engaging the portion G'. The member I is further provided with the handle M which in clamping position extends upward and which is turned down to extend laterally when the clamp is released.

With the construction as thus described, when the clamping lever is in the position shown in dotted lines in Figure 3, the jaw

member G will be retracted, so as to permit the dropping of the axle section into the notch F³ of the plates F' and F². The handle M of the member I is then thrown upward, which will cause the cam portion K to bear against the member G forcing it towards the jaw F and clamping the axle between said jaws. When thus secured, the axle section will travel with the conveyer and the other elements of the assembly may be secured thereto at various points in its travel. At the completion of the assembling operation, the axle is released, preferably automatically, by the engagement of the handle M with a stop O which throws the lever backward, causing the cam portion L to force downward the portion G', thereby withdrawing the jaw G.

What I claim as my invention is:

1. A work clamp comprising spaced side plates having transversely extending pin bearings at the opposite ends of the lower portions thereof the upper portions of said plates having registering notches for receiving the work, one side of said notches forming a stationary clamping jaw, a movable clamping jaw pivotally secured between said plates and movable from a position clearing said notches to a position for engaging the work in said notches, and a cam pivoted between said plates and engaging said movable jaw to actuate the same.

2. A work clamp comprising a pair of spaced side plates having transversely-extending pin bearings at the opposite ends of the lower portions thereof, the upper portions of said plates being provided with registering notches for receiving the work and one side of said notches forming a stationary clamping jaw, a movable clamping jaw pivotally secured between said plates and movable to clear said notches when the work is placed therein, a cam also pivotally secured between said plates engageable with said movable jaw to actuate the same towards and from the work, and a lever for operating said cam extending laterally in released position and substantially vertically in the clamped position.

3. A work clamp comprising spaced side plates having transversely-extending pin bearings at opposite ends of the lower portions thereof, the upper portions of said plates having registering notches for receiving the work, one edge of each notch

being obliquely inclined, and the opposite end forming a jaw for engaging the work, a movable jaw pivotally secured between said plates and normally withdrawn therebetween to clear the inclined edge of the notch, said movable jaw having a laterally-extending arm, a cam pivotally secured between said plates and having a portion for engaging said jaw to move the same into said notches and into engagement with the work and another portion for engaging said laterally extending arm to withdraw said movable jaw from the work, and a lever for actuating said cam extending laterally in the released position of said jaw and substantially vertically in the clamped position.

4. A work clamp comprising a stationary jaw, a movable clamping jaw, a rotatable cam for moving said clamping jaw toward and away from said stationary jaw, and means for rotating said cam.

5. A work clamp comprising a stationary jaw, a pivoted clamping jaw having a laterally extending arm and a pivoted lever provided with portions for engaging said clamping jaw and laterally extending arm for respectively moving said clamping jaw toward and away from said stationary jaw upon rotation thereof in opposite directions.

6. A work clamp comprising a stationary jaw, a clamping jaw movable from a position clearing the work engaging said stationary jaw to a position engaging the work, a cam for moving said clamping jaw toward and away from said stationary jaw, and a lever for actuating said cam, said lever when moved in one direction actuating said cam to

move said clamping jaw into engagement with the work, and when moved in the opposite direction actuating said cam to move said clamping jaw out of engagement with the work.

7. A work clamp comprising spaced side plates forming a conveyor link and having portions adapted to receive the work, a movable clamping jaw pivoted between said side plates and engageable with the work, and means carried by said side plates for actuating said movable clamping jaw alternately in opposite directions.

8. A work clamp comprising a stationary jaw forming a conveyor link, a movable clamping jaw, and a rotatable member carried by one of said jaws for moving said clamping jaw positively toward and away from said stationary jaw.

9. A work clamp comprising a stationary jaw forming a conveyor link, a pivoted clamping jaw having a laterally extending arm, and a pivoted lever provided with portions for engaging said clamping jaw and laterally extending arm for respectively moving said clamping jaw toward and away from said stationary jaw upon rotation of said lever in opposite directions.

10. A work clamp comprising a stationary jaw forming a conveyor link, a clamping jaw, and a lever for actuating said clamping jaw to clamp the work when moved in one direction and for actuating said clamping jaw to release the work when moved in an opposite direction.

In testimony whereof I affix my signature.

JESSE E. McBRIDE,