No. 740,210. PATENTED SEPT. 29, 1903.

R. H. WHITE.

PUMP MECHANISM FOR AUTOMOBILES.

APPLICATION FILED JAN. 15, 1903.

NO MODEL.

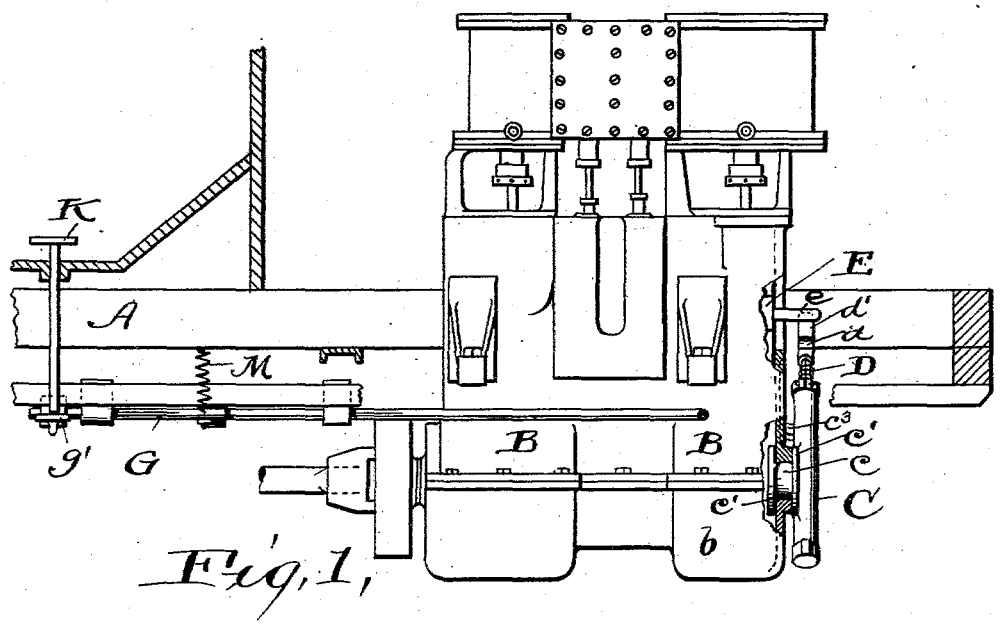

Fig. 1,

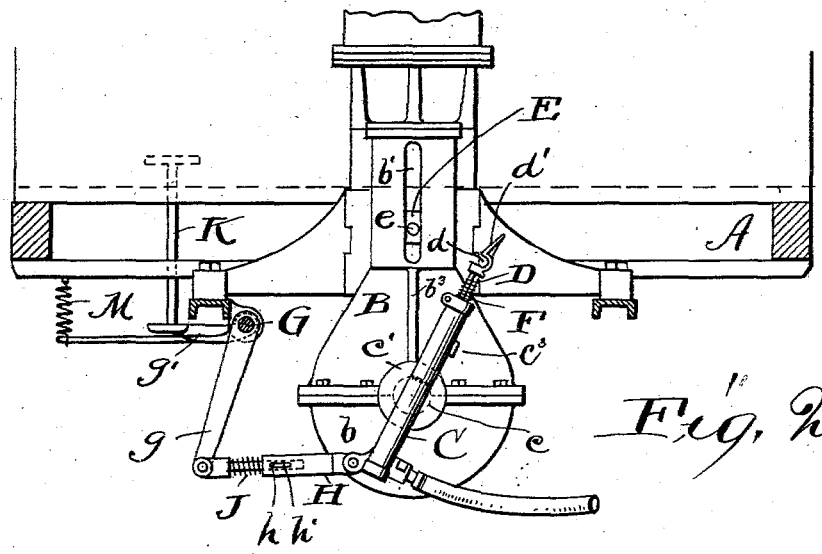

Fig. 2,

Witnesses.
E. B. Gilchrist
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Inventor.
Rollin H. White.
By his Attorneys,
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No. 740,210. Patented September 29, 1903.

UNITED STATES PATENT OFFICE.

ROLLIN H. WHITE, OF CLEVELAND, OHIO, ASSIGNOR TO THE WHITE SEWING MACHINE COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

PUMP MECHANISM FOR AUTOMOBILES.

SPECIFICATION forming part of Letters Patent No. 740,210, dated September 29, 1903.

Application filed January 15, 1903. Serial No. 139,213. (No model.)

To all whom it may concern:

Be it known that I, ROLLIN H. WHITE, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Pump Mechanism for Automobiles, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

This invention is in the nature of an improvement on the invention which forms the subject-matter of my pending application, Serial No. 103,854, filed April 21, 1902.

The present invention relates to the specific means for pivoting the air-pump, to the means for moving it upon its pivot into a position where its piston-rod will automatically connect itself with a pin on the cross-head of the engine, and to means for preventing the pump from moving too far in said direction.

The invention may be here summarized as consisting of the construction and combination of parts hereinafter described, as definitely set forth in the claims.

Figure 1 is a side elevation of my invention and so much of an automobile-frame and its engine as is necessary to show the position which said parts occupy on the automobile. Fig. 2 is a view of the same parts from the right side of Fig. 1.

Referring to the parts by letters, A represents a part of the frame of a steam-automobile.

B represents a casing which is supported upon the automobile-frame and incloses the engine-shaft and its operating mechanism. The lower part *b* of this casing is removable from the upper part, to which it is normally connected by bolts.

C represents an air-pump, having a projecting trunnion whose axis is at right angles to the axis of the pump. This trunnion is circumferentially grooved between its ends, thereby forming the reduced part *c* between two flanges C' C'. This reduced part is rotatively mounted in a bearing formed partly in the casing-body and partly in the removable lower part thereof. The flanges C' C' engage with the outer and inner faces of the casing, and thereby prevent endwise movement of the trunnion in its bearing.

The pump piston-rod D is square or of some form other than cylindrical, so that it will not rotate, and in its upper enlarged end there is a transverse notch *d* and above that notch a beveled surface *d'*. A spring F surrounds the piston-rod and acts to partly withdraw it. Attached to the cross-head E of one of the engines is a pin *e*, which projects out through a vertical slot *b'* in said casing. By rocking the pump upon its trunnion the beveled upper end of the piston-rod is brought into the path of this pin.

A rock-shaft G is mounted in bearing beneath the frame of the machine, and to one end of this rock-shaft a depending arm *g* is attached. A telescoping link H is pivotally connected at its ends with this arm and with the pump-cylinder below its trunnion. A spring J surrounds that part of the link which telescopes into the other part and acts to elongate the link by withdrawing the one part from the other. On the other end of this rock-shaft is a horizontal arm *g'*, which extends beneath a vertically-movable push-rod *k*, which extends down through the floor of the vehicle and rests upon this arm. By pressing down upon this push-rod the rock-shaft is rocked. The depending arm *g*, operating through the telescoping link, causes the air-pump to rock upon its trunnion until the beveled upper end of the piston-rod is well in the path of the projecting pin on the cross-head. This pin as it comes down strikes the beveled surface and forces the pump to swing backward slightly against the action of the spring J until the pin C has passed down into the plane of the transverse notch *d* in the piston-rod, whereupon the spring J rocks the pump in the reverse direction and the notch takes over the said pin. Thereafter the vertical movement of the cross-head operates the pump. When it is desired to cause the disengagement of the piston-rod and this cross-head pin, the operator lifts his foot by which the push-rod has been pushed down, and a spring M returns the rock-shaft to its normal position. A pin *h*, attached to the inner member of the telescoping link, enters a slot *h'* in the outer member. Therefore as the rock-shaft returns to its normal position this pin engaging with the end of said slot posi-

tively withdraws the pump from its engagement with the pin.

On the engine-casing is a projection b^3, and on the pump is a lug c^3, adapted to engage with said projection, and thus limit the movement of the pump. Except for some such stop the pump might be swung so far that the pin *e* would move down behind the piston-rod and one or the other would be broken.

The purpose of the pump is to pump air under pressure into the fuel-tank; but in this respect it is like the apparatus shown and described in my pending application before mentioned, and therefore the fuel-tank is not shown. The pipe Q is for the purpose of connecting the pump with the tank.

What I claim is—

1. In an automobile, the combination of a split engine-casing, a split bearing rigid with said casing, the line of the split of said bearing coinciding with the line of the split of said casing, and an air-pump having a single laterally-projecting trunnion provided with a circumferential groove, said grooved part of said trunnion being embraced by said bearing, and a pump piston-rod having a lateral notch and a beveled surface just above it, with the reciprocating engine cross-head, a pin secured thereto, and means for moving the pump to and yieldingly holding it in a position where the beveled surface of said piston-rod is in the path of said pin, substantially as described.

2. In an automobile, the combination of a reciprocating member having a projecting pin, a pivoted air-pump, and its piston-rod having a notched and beveled end, with means for swinging said air-pump to and yieldingly holding it in a position where the notched and beveled end of the piston-rod is in the path of said pin, and a stop with which the air-pump engages for limiting the movement thereof in said direction, substantially as specified.

3. In a steam-automobile, the combination of the engine-casing having a slot and an external projection, the reciprocating cross-head in said casing having a pin which projects out through said slot, an air-pump pivoted to said casing and having a lug for engagement of said projection, and a pump-piston having a notched and beveled end, with means for swinging said pump to and yieldingly holding it in a position where the beveled end of the piston-rod is in the path of said pin, substantially as specified.

4. In an automobile, the combination of a reciprocating member having a projecting pin, a pivoted pump, and a non-cylindrical piston-rod having a notched and beveled end, with means for yieldingly swinging said pump to a position where the beveled end of the piston-rod is in the path of said pin, substantially as specified.

5. In an automobile, the combination of a reciprocating member, having a projecting pin, a pivoted pump, and a non-rotatable piston-rod having a notched and beveled end, with means for yieldingly swinging said pump to a position where the beveled end of the piston-rod is in the path of said pin, and a spring acting to withdraw the piston-rod from the pump-cylinder, substantially as specified.

6. In a steam-automobile, the combination of a reciprocating member having a projecting pin, a pivoted pump and its piston-rod, having a notched and beveled end, with a rock-shaft, an arm secured to one end thereof, a compound link pivotally connected with said arm and with the pump, said link consisting of two telescoping parts, a spring acting to elongate said link and means for limiting the extent of said elongation, a second arm secured to said rock-shaft near the opposite end thereof, a spring for moving this arm in one direction, and means engaging with the last-named arm for moving the same in the opposite direction, substantially as specified.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

ROLLIN H. WHITE.

Witnesses:
E. B. GILCHRIST,
E. L. THURSTON.