No. 650,191. Patented May 22, 1900.

W. S. ROBINSON.

FAN ATTACHMENT FOR VEHICLES.

(Application filed Aug. 18, 1899.)

(No Model.) 3 Sheets—Sheet 1.

Fig. 1.

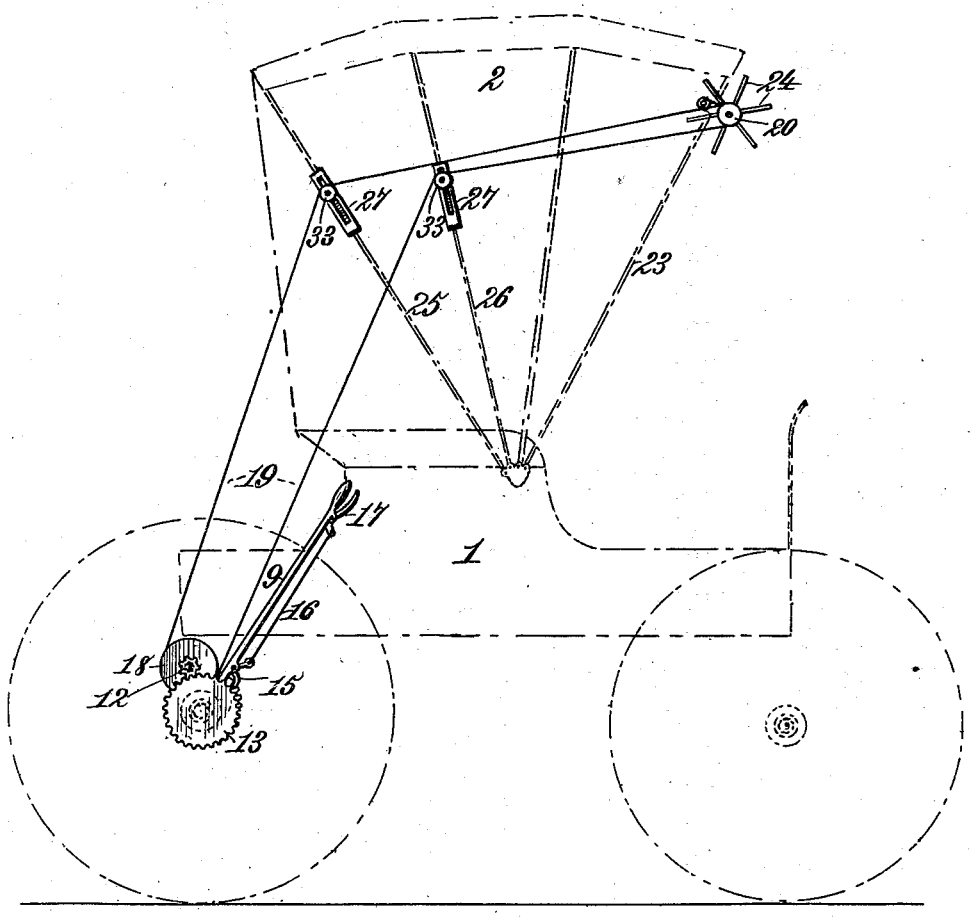
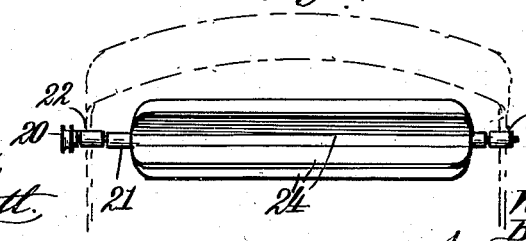


Fig. 2.



Witnesses,
Robt Ewett.
H. B. Cooper

Inventor:
William S. Robinson.
By
James L. Norris.
Atty.

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(No Model.) 3 Sheets—Sheet 2.

Fig. 3.

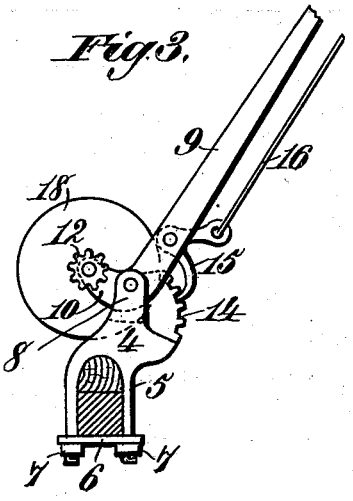


Fig. 4.

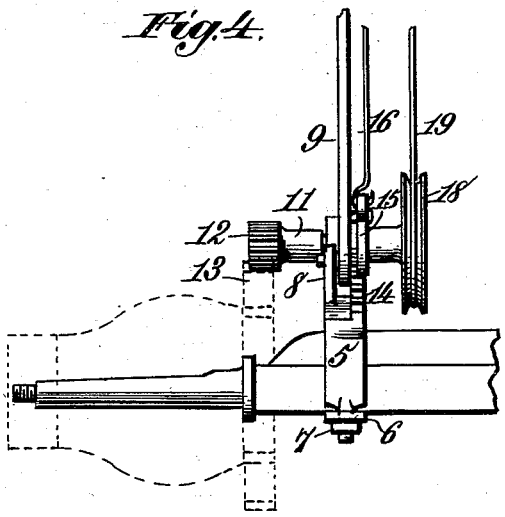


Fig. 5.

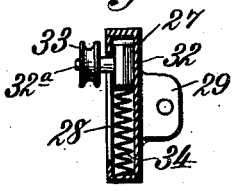
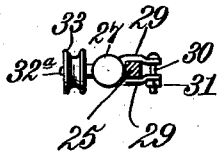


Fig. 6.



Witnesses.
Robert Everett.
H. B. Keeler

Inventor.
William S. Robinson.
By James L. Norris.
Atty.

No. 650,191. Patented May 22, 1900.

W. S. ROBINSON.

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(No Model.) 3 Sheets—Sheet 3.

Fig. 7.

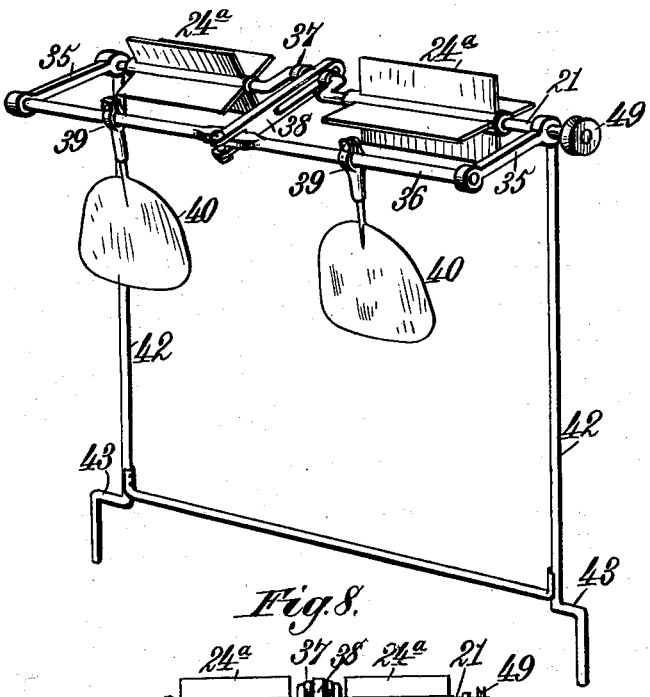
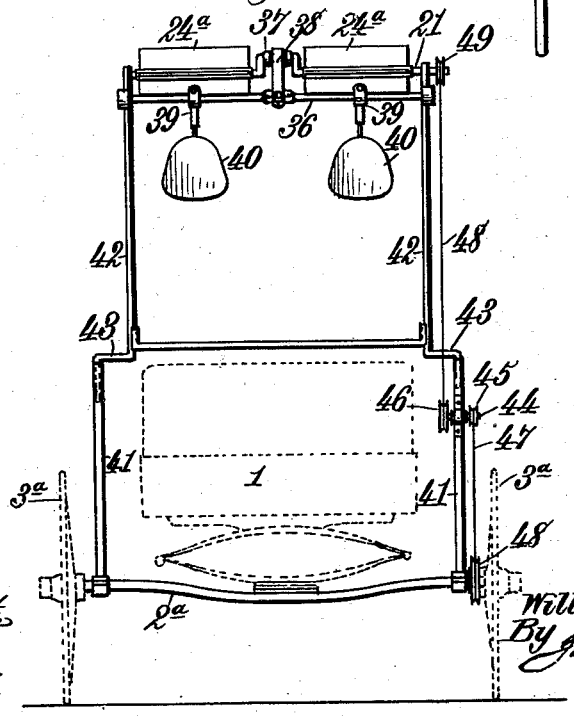


Fig. 8.



Witnesses,
Robt. Gerdtt.
F. B. Keeler

Inventor.
William S. Robinson.
By James L. Norris.
Atty.

UNITED STATES PATENT OFFICE.

WILLIAM S. ROBINSON, OF FANCY FARM, KENTUCKY.

FAN ATTACHMENT FOR VEHICLES.

SPECIFICATION forming part of Letters Patent No. 650,191, dated May 22, 1900.

Application filed August 18, 1899. Serial No. 727,668. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM S. ROBINSON, a citizen of the United States, residing at Fancy Farm, in the county of Graves and State of Kentucky, have invented new and useful Improvements in Fan Attachments for Vehicles, of which the following is a specification.

This invention relates to fan attachments for vehicles, and has for one object to provide a simple, inexpensive, and efficient attachment that may be readily applied to vehicles and when so applied will operate a fan to keep the occupants cool and also keep off the dust and flies from both the occupants and the team.

It has for a further object to provide improved means whereby either rotary or oscillating fans, or both, may be employed for the purpose.

It also has for an object to provide a fan attachment of the character described that may be applied to a buggy and drive a fan carried by the buggy-top, means being provided to enable the buggy-top to be raised and lowered without disarranging the fan-driving mechanism.

It has for a further object to provide means for throwing the fan-driving mechanism into and out of operation, and, finally, it has for an object to improve and simplify the construction and render more efficient the operation of this class of devices generally.

To these ends my invention consists in the features and in the construction, combination, and arrangement of parts hereinafter described, and particularly pointed out in the claims following the description, reference being had to the accompanying drawings, forming a part of this specification, wherein—

Figure 1 is a view in side elevation of a buggy, showing my improved fan attachment applied thereto. Fig. 2 is a front elevation of the upper portion of the buggy-top, showing the fan. Fig. 3 is a detail view showing the means for throwing the driving mechanism into and out of operation and the means for attaching the same to the axle. Fig. 4 is an edge view of the parts shown in Fig. 3. Fig. 5 is a detail longitudinal sectional view of the means for yieldingly supporting the guide-pulleys; and Fig. 6 is a top plan view of the same, illustrating the manner of attaching the pulley-supports to the bows of the top. Fig. 7 is a detail perspective view of a modified form of fan; and Fig. 8 is a view in end elevation of another modification, illustrating the fan attachment supported on the front axle of the vehicle and driven by different driving mechanism from that shown in the other figures of drawings.

Referring to the drawings, the numeral 1 indicates the body, and 2 the folding top, of a buggy constructed in the usual and well-known manner. Fixed on the rear axle 3, adjacent to one of the hubs, is a bracket 4. As shown, the bracket is formed at its lower end with a depending axle-clip 5, that fits over the rear axle in manner similar to a carriage-axle and is secured thereto by a clip-plate 6 and nuts 7 in the usual well-known manner. The upper portion of the bracket is forked or bifurcated to form two ears or lugs 8, between which is pivoted a hand-lever 9, bent rearwardly at a right angle to form a short arm 10, in the extremity of which latter is transversely journaled a shaft 11. On the outer end of the shaft is fixed a pinion 12, which is adapted to gear with a gear-wheel 13, fixed on the inner end of the hub. It will be evident that when the hand-lever is swung rearward the pinion 12 will gear with the gear-wheel 13 and that when said lever is swung in the opposite direction said pinion and gear-wheel will be thrown out of engagement with each other. In order to hold the lever in its adjusted positions, I form a segmental extension on the innermost ear or lug 8 and provide the same on its edge with a series of rack-teeth 14. On the hand-lever 9, adjacent to the rack, is pivoted a dog or pawl 15, the free end of which is adapted to engage the rack-teeth, and to the other end of said dog or pawl is attached one end of a rod or wire 16. The opposite end of the rod or wire 16 is attached to one end of a hand-grip 17, pivoted intermediate its ends to the hand-lever 9 near the handle end of the latter. When the hand-lever is grasped by the operator to throw it into either of its adjusted positions, the dog or pawl will be drawn out of engagement with the rack, and when the hand-lever is released said dog or pawl will engage the rack and hold it in its adjusted position in a well-known manner. The hand-

lever extends up within convenient reach of the occupant of the buggy, whereby the pinion and gear-wheel may by a slight movement of the hand be thrown into and out of engagement with each other and locked in either position.

On the inner end of the shaft 11 is fixed a circumferentially-grooved pulley 18, about which is passed a belt 19, which also passes about a similar, but preferably smaller, pulley 20, fixed on one end of the fan-shaft 21. As most clearly shown in Figs. 1 and 2 of the drawings, the fan-shaft is journaled at its opposite ends in sleeves 22, clipped to the upper ends of the forward bows 23 of the buggy-top, and on said shaft is fixed a plurality of radial blades 24. On the rear bow 25 and one of the intermediate bows 26 are arranged guide and take-up pulleys constructed as follows:

The numeral 27 indicates a tubular casing closed at its opposite ends and longitudinally slotted, as at 28, on one side. The tubular casing on the side opposite the slot is provided with two laterally-projecting perforated ears 29, which are adapted to embrace the bow and are clamped tightly about the latter by a headed bolt 30, which is passed through the perforated ends of the ears and has screwed over its threaded end a nut 31. This is the same arrangement as is employed for locking the sleeves 22 to the front bow. In the tubular casing is loosely arranged a slide-block 32, having fixed in one side a pin 32^a, which projects through the slot 28 and has journaled on its outer end a grooved pulley 33. Disposed in the tubular casing beneath the slide-block is a coiled spring 34, which exerts its expansive force to constantly press the slide-block and the pulley carried thereby upward. The belt 19 passes over the pulleys 33, which latter operate to guide the belt between the drive-pulley 18 and fan-pulley 20 and also automatically operate to take up the slack of the drive-belt, and in order to aid in accomplishing this last-named result the belt preferably consists of a rubber band or cord or similar elastic or contractile and expansible material.

The operation of my improved fan attachment is as follows: Let it be assumed that the parts are in the position shown in Fig. 1 of the drawings. Then as the buggy is drawn forward by the team the shaft 11 is rotated through the medium of the pinion 12 and gear-wheel 13, and thus rotates the drive-pulley 18. The rotary motion of the drive-pulley is communicated by the belt 19 to the fan, which latter operates to deliver a constant current of air down upon both the occupant of the buggy and the team, thereby keeping both cool and driving off the dust and flies. If it be desired to put the fan out of operation, it is only necessary for the driver to swing the hand-lever 9 forward, thereby throwing the pinion 12 out of gear with the gear-wheel 13, upon which the fan will cease to operate. Upon a reverse movement of the hand-lever the fan may as quickly be again put into operation. When the buggy-top is thrown back or lowered, the slack of the belt 19, owing to its elasticity, aided by the outward thrust of the spring-projected guide and take-up pulleys, is taken up, so that the belt is not thrown off from the pulleys, whereby when the top is again raised it is unnecessary to arrange or adjust the belt.

In addition to the rotary fan above described I may also employ oscillating fans constructed and arranged as shown in Figs. 7 to 8 of the drawings. Referring to said figures, the shaft 21, instead of being journaled in sleeves 22, is journaled in bracket-arms 35, and journaled in the outer forward ends of said bracket-arms and parallel to the shaft 22 is a rock-shaft 36. In such case the shaft 21 is cranked between its ends, as at 37, on which cranked portion is arranged a longitudinally-slotted rack-arm 38, fixed at its forward end to the rock-shaft. On the rock-shaft are riveted or otherwise rigidly fastened clips 39, in the ends of which are inserted the stems or handles of palm-leaf or other similar fans 40, the clips being caused to firmly grasp the fans by set-screws 41. In such an arrangement the rotary fan is made in two sections 24^a, fixed on the opposite sides of the cranked portion of the shaft 21, or, if desired, the rotary fans may be omitted altogether. The operation of the fan attachment thus constructed will be readily understood. The shaft 21 is rotated as before described, and by means of the crank 37 rocks the rock-arm 38 and with it the rock-shaft 36, thereby communicating an oscillating movement to the fans 40.

In both of the above arrangements I have shown and described the fan attachment applied to a buggy-top. In Figs. 7 and 8 I have illustrated the fan attachment applied to a vehicle that may or may not be provided with a top or cover. Referring to said figures the numeral 1 indicates the body of the vehicle, which may be of any desired type or construction; 2^a, the front axle thereof, and 3^a the wheels. Clipped to the front axle between the wheels and the body are vertical tubular standards 41. The standards in practice should at least be as high as the top of the vehicle-body or the dashboard, and in the upper ends of said standards are removably fitted the lower ends of two upright rods 42, each of which at a point slightly above its lower end is bent to form an elbow 43, whereby said rods are caused to extend in vertical planes that lie between the vertical planes of the standards 41 for the purpose hereinafter explained. The bracket-arms 35 are formed on or attached to the upper ends of the rods 42, and in said bracket-arms are journaled the crank-shaft 21 and rock-shaft 36, said shafts being connected and either or both provided with fans in the manner before described. Journaled in a bearing fixed or formed on one of the rods 42 is a counter-shaft 44, on the op-

posite ends of which are respectively fixed pulleys 45 and 46, the outermost pulley 45 being geared by a belt 47 to a pulley 48, fixed on the hub of one of the wheels, while the innermost pulley 46 is in similar manner connected by a belt 48 to a pulley 49, fixed on the end of the shaft 21.

From the foregoing it will be understood that motion is communicated from the vehicle-wheels to the shaft 21, which latter actuates the fans in the manner before described. By unshipping the belts the rods 42 may be detached from the uprights or standards 41 and the fan attachment removed from the vehicle. If the vehicle be provided with a top or cover, it will not interfere with the turning of the forward axle, for by providing the standards 41 with the inwardly-turned elbows 43 the rods 41 are brought nearer together, whereby when the front axle is turned the rods 41, and with them the fan-shafts and fans, are permitted to move between the sides of the top or cover of the vehicle.

From the foregoing description it will be evident that the fan attachment may be applied to a folding buggy-top or to a vehicle either with or without a top or cover and that in either case both the rotary and oscillating fans may be employed or either of them alone.

Having described my invention, what I claim is—

1. In a fan attachment for covered vehicles, the combination with a pulley and means for gearing the same to one of the wheel-hubs, of a rotary fan-shaft, a fan actuated by said shaft, means for rotatably attaching the same to the folding top of the vehicle, a belt for connecting said fan with the drive-pulley, and means for taking up the slack of the belt when the folding top is lowered, substantially as described.

2. The combination with a vehicle having a folding top, of a pulley journaled in a fixed support, means for gearing the pulley to one of the wheel-hubs, a rotary fan-shaft journaled in bearings fixed to the folding top, a fan actuated by said shaft, an elastic belt connecting the fan-shaft to the drive-belt, and yielding guide-pulleys carried by the folding top, about which the driving-belt passes, substantially as described.

3. In a fan attachment for vehicles having a folding top, the combination with a rotary fan-shaft, a fan actuated by said shaft, and means for rotatably attaching the fan-shaft to the folding top, of a drive-pulley, mechanism for driving the same from one of the vehicle-wheel hubs, a belt connecting the fan-shaft and drive-pulley, vertically-movable guide-pulleys arranged on the top frame intermediate the fan and drive-pulley, and springs for pressing said pulleys upward, substantially as described.

4. In a fan attachment for vehicles having a folding top, the combination with a rotary fan-shaft, a fan actuated by said shaft, and means for rotatably attaching the fan-shaft to the folding top, of a drive-pulley, mechanism for driving the same from one of the vehicle-wheel hubs, a belt for connecting the fan and drive-pulley, tubular slotted casings clamped to the bows of the top, slide-blocks arranged in said casings and carrying pins projecting laterally through the slots in the casings, pulleys journaled on the ends of the pins about which the belt passes, and coiled springs disposed in the casings beneath the slide-blocks, substantially as described.

5. In a fan attachment for vehicles having a folding top, the combination with a rotary fan-shaft, a fan actuated by said shaft, and means for rotatably attaching the fan-shaft to the folding top, of a drive-pulley, mechanism for driving the same from one of the vehicle-wheel hubs, a belt for connecting the fan and drive-pulley, tubular slotted casings provided with laterally-projecting perforated ears, bolts passed through said ears and operating to clamp them upon the bows, slide-blocks arranged in said casings and carrying pins projecting laterally through the slots in the casings, pulleys journaled on the ends of the pins about which the belt passes, and coiled springs disposed in the casings beneath the slide-blocks, substantially as described.

6. In a fan attachment for vehicles having a folding top, the combination with a rotary fan-shaft, a fan actuated by said shaft, and means for rotatably attaching the fan-shaft to the folding top, of a bracket constructed for attachment to the rear axle of the vehicle, a hand-lever pivoted to the bracket, a shaft journaled in the hand-lever and carrying at one end a drive-pulley, a pinion on the opposite end of the shaft and arranged to be thrown into and out of gear with a gear-wheel on the hub of one of the rear wheels of the vehicle, and means for locking the hand-lever to hold the pinion in or out of engagement with the gear-wheel on the hub, substantially as described.

7. In a fan attachment for vehicles having a folding top, the combination with a rotary fan-shaft, a fan actuated by said shaft and means for rotatably attaching the same to the folding top, of a bracket constructed for attachment to the rear axle of the vehicle and provided with a segmental rack, a hand-lever pivoted to the bracket, a shaft journaled in the hand-lever and carrying at one end a drive-pulley, a pinion on the opposite end of the shaft and arranged to be thrown into and out of gear with a gear-wheel on the hub of one of the rear wheels of the vehicle, and a dog carried by the lever and operating to lock the hand-lever to the rack to hold the pinion in or out of engagement with the gear-wheel on the vehicle-hub, substantially as described.

8. In a fan attachment for vehicles having a folding top, the combination with a rotary fan-shaft, a fan actuated by said shaft, and means for rotatably attaching the fan-shaft to the folding top, of a bracket constructed for attachment to the rear axle of the vehicle and provided with a segmental rack, a

hand-lever pivoted to the bracket and bent approximately at a right angle at its pivoted end, a shaft journaled in the bent end of the hand-lever and carrying at one end a drive-pulley, a pinion on the opposite end of the shaft and arranged to be thrown into and out of gear with a gear-wheel on the hub of one of the rear wheels of the vehicle, and a dog carried by the lever and operating to lock the hand-lever to the rack to hold the pinion in or out of engagement with the gear-wheel on the vehicle-hub, substantially as described.

9. In a fan attachment for vehicles having a folding top, the combination with a rotary fan-shaft, a fan actuated by said shaft, and means for rotatably attaching the fan-shaft to the folding top, of a bracket formed at its lower end with a clip for attaching the bracket to the rear axle of the vehicle and provided with a segmental rack, perforated ears formed on the upper end of the bracket, a hand-lever pivoted between said ears and bent approximately at a right angle at its pivoted end, a shaft journaled in the bent end of the hand-lever and carrying at one end a drive-pulley, a pinion on the opposite end of the shaft and arranged to be thrown into and out of gear with a gear-wheel on the hub of one of the rear wheels of the vehicle, and a dog carried by the lever and operating to lock the hand-lever to the rack to hold the pinion in and out of engagement with the gear-wheel on the vehicle-hub, substantially as described.

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

WILLIAM S. ROBINSON.

Witnesses:

ALEXANDER JAMES WILLETT,

FRANCIS X. PIERCEALL.