M. TROYANOSKI.

AIR MOTOR.

APPLICATION FILED AUG. 13, 1915.

1,193,845.

Patented Aug. 8, 1916.

4 SHEETS—SHEET 1.

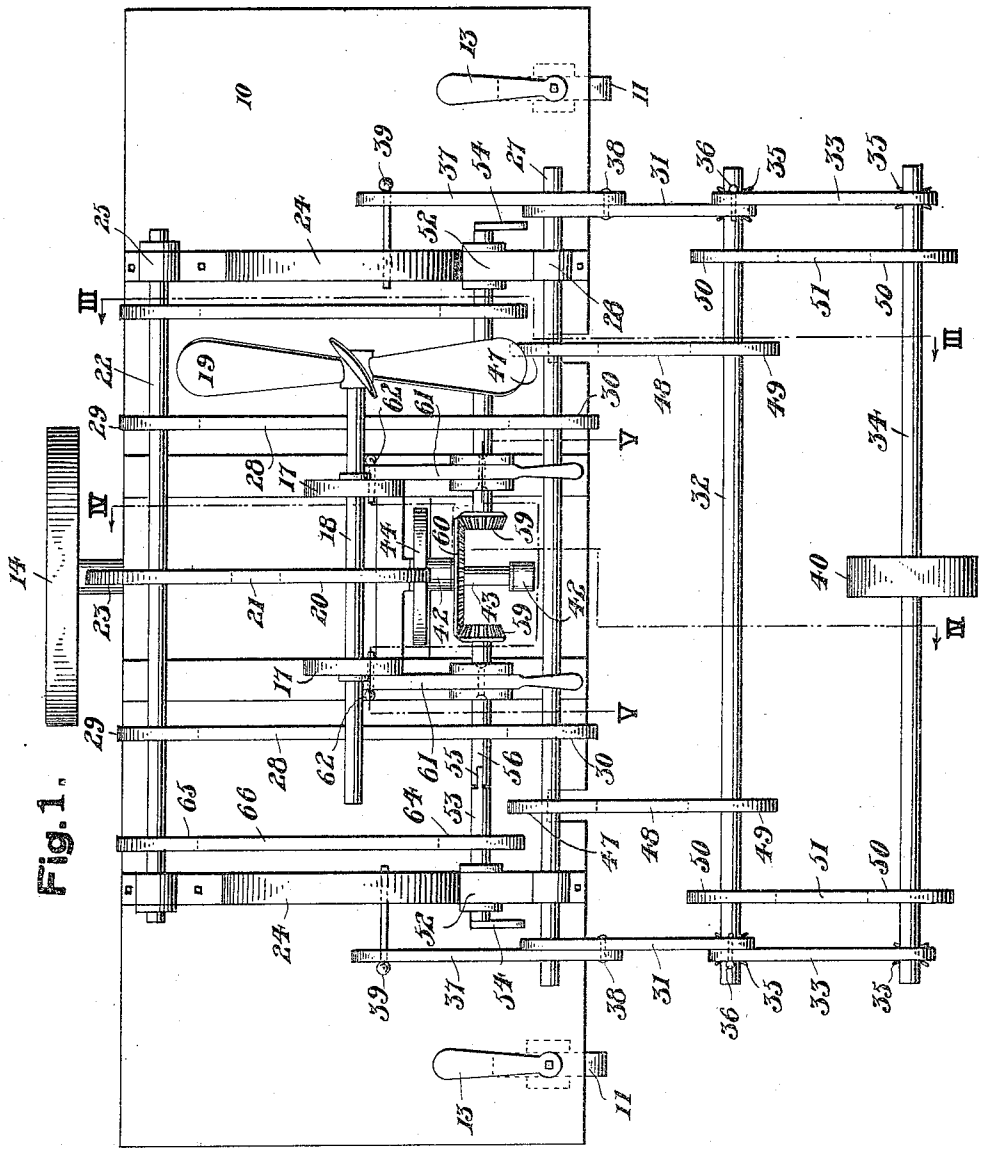


Fig. 1.

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4 SHEETS—SHEET 2.

Fig. 2.

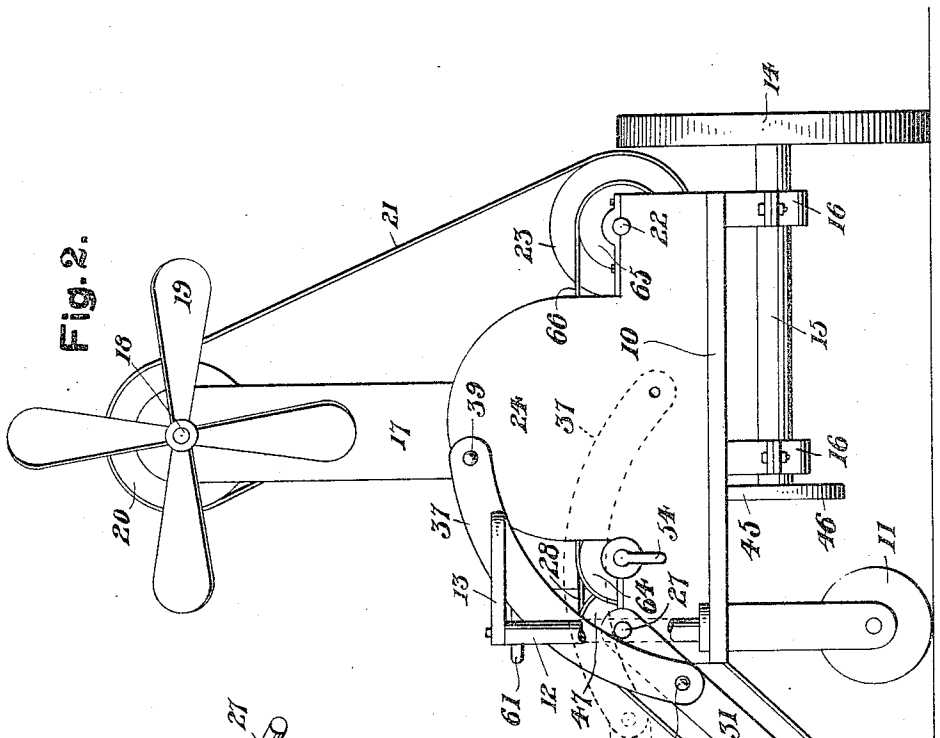


Fig. 7.

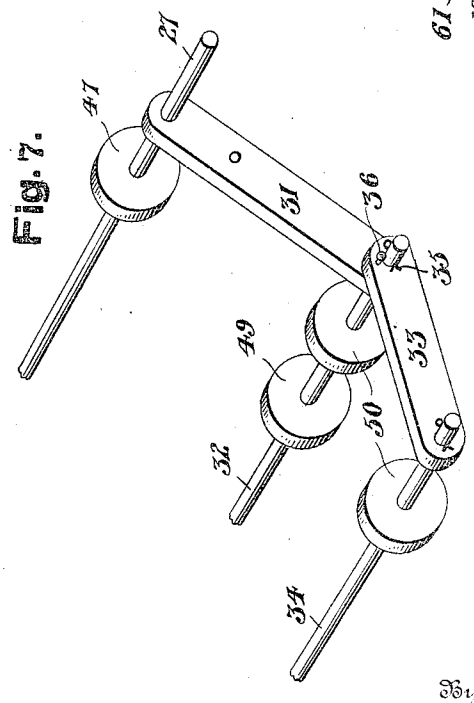
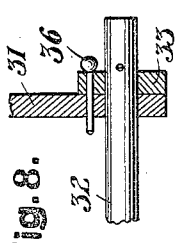


Fig. 8.



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4 SHEETS—SHEET 3.

Fig. 3.

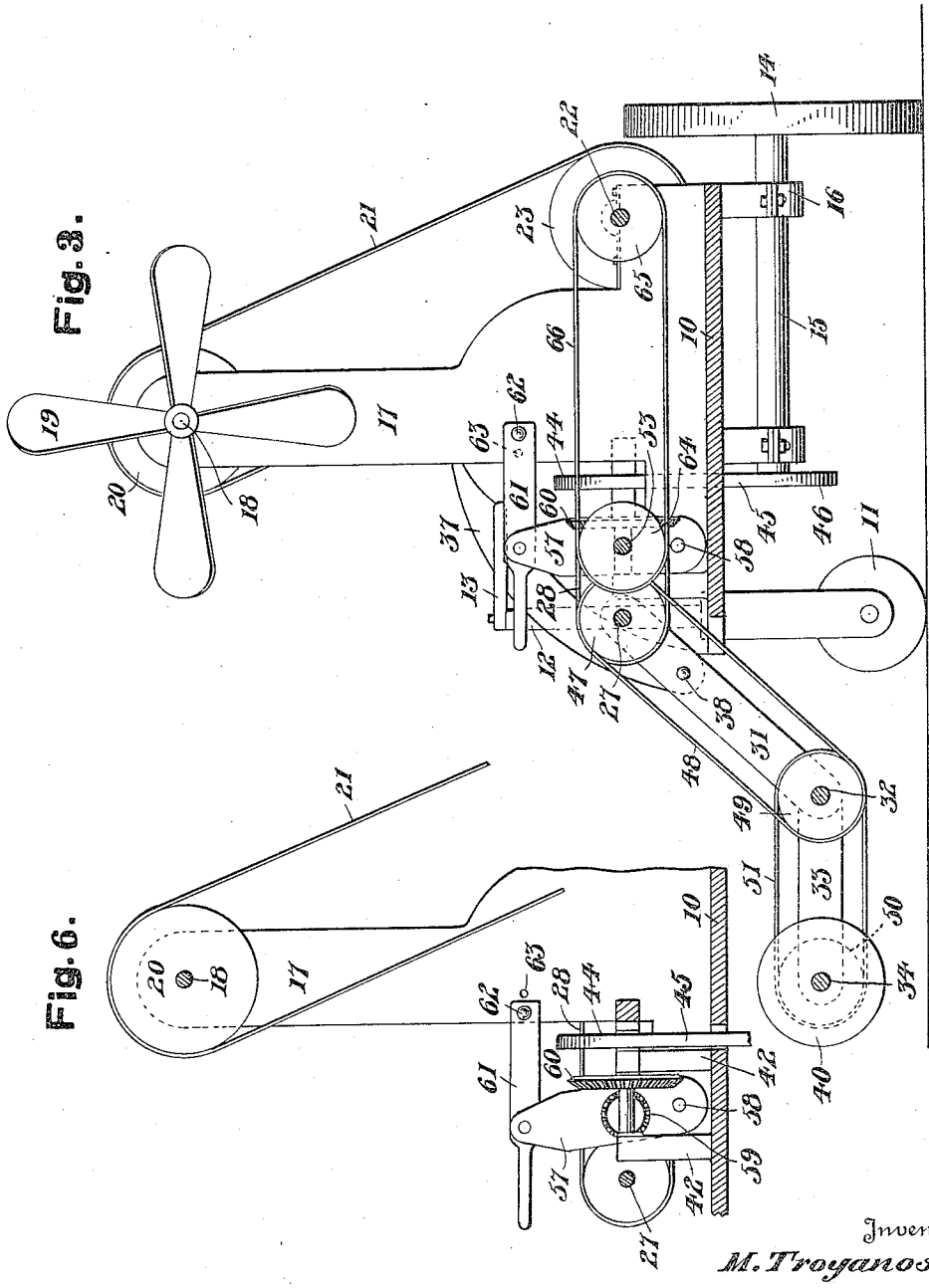


Fig. 6.

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4 SHEETS—SHEET 4.

Fig. 4.

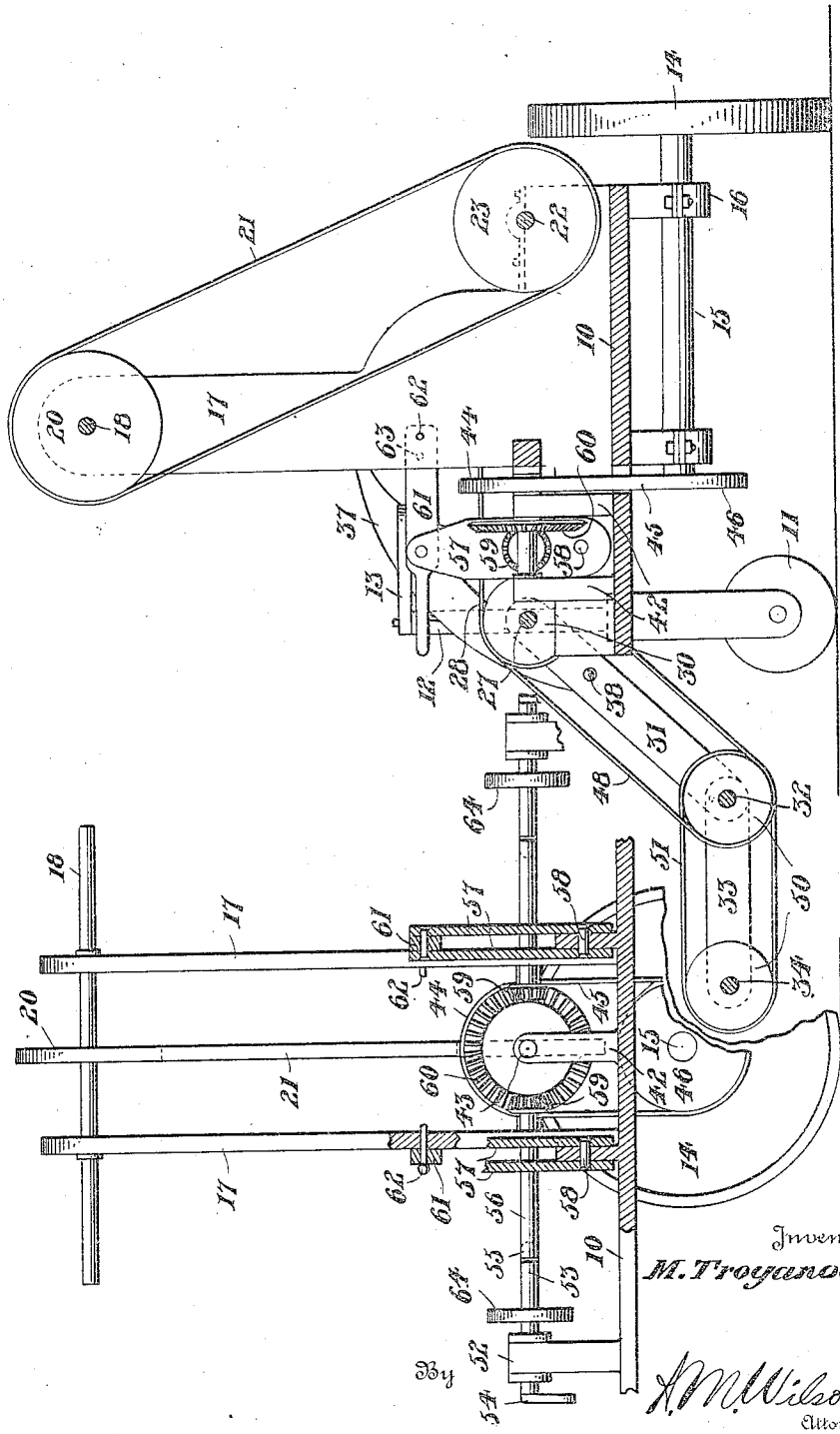


Fig. 5.

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UNITED STATES PATENT OFFICE.

MARYAN TROYANOSKI, OF ROCKFALL, CONNECTICUT.

AIR-MOTOR.

1,193,845. Specification of Letters Patent. Patented Aug. 8, 1916.

Application filed August 13, 1915. Serial No. 45,422.

To all whom it may concern:

Be it known that I, MARYAN TROYANOSKI, a subject of the Czar of Russia, residing at Rockfall, in the county of Middlesex and State of Connecticut, have invented certain new and useful Improvements in Air-Motors, of which the following is a specification.

This invention relates to certain new and useful improvements in air motors.

An object of the invention is to provide an air motor in which the driven mechanism is supported on a movable platform which will enable the device to be positioned at the desired location.

A further object of the invention is to provide an air motor in which the power shaft is provided with a fan or paddle wheel on each end while the mechanism to be driven by the fan wheels is provided in duplicate to add greater power thereto.

A still further object of the invention is to provide an air motor including a fan wheel for operating the driven mechanism with a supporting frame and supporting wheels that are caused to be operated by the driven mechanism to propel the supporting frame in a desired direction when it is desired to transfer the machine from one position to another.

With these general objects in view and others that will appear as the nature of the invention is better understood, the same consists in the novel construction, combination and arrangement of parts hereinafter more fully described, illustrated in the accompanying drawings, and pointed out in the appended claims.

In the drawings forming a part of this application and in which like designating characters refer to corresponding parts throughout the several views:—Figure 1 is a top plan view of an air motor built in accordance with the present invention. Fig. 2 is an end elevational view of the same partly broken away, Figs. 3, 4 and 5 are sectional views taken on lines III—III, IV—IV and V—V of Fig. 1. Fig. 6 is a detail sectional view showing the manner of shifting the gear mechanism for driving the motor from one position to another. Fig. 7 is a detail perspective view of a portion of the power transmitting mechanism, and, Fig. 8 is a detail sectional view of a portion of the power mechanism illustrating the manner of holding the forward driven shaft in elevated position.

Briefly described, the present invention aims to provide an air motor including a base plate mounted on supporting wheels that are caused to be driven by the motor mechanism and manually steered. Suitable supports are provided for the air driven fan wheels while the driven mechanism is mounted on the base board and shiftable relative thereto.

Referring more in detail to the accompanying drawings, the reference numeral 10 designates a platform or base support having forward supporting wheels 11 positioned adjacent each end thereof and extending upwardly through the platform 10 as at 12 and provided on their upper ends with operating handles 13. A single rear supporting wheel 14 is provided for the opposite side of the platform and includes the axle 15 mounted in the bearings 16 carried by the bottom of the platform. The driving and driven mechanism is wholly supported upon the platform 10, there being provided a pair of centrally-positioned spaced standards 17 in which is journaled at the upper ends thereof a horizontal shaft 18. The shaft projects laterally of the standards 17 and is provided on each end thereof with a fan wheel 19. A pulley 20 is fixed to the horizontal shaft 18 at a point intermediate the standards 17 and through the medium of the connecting belt 21 transmits power from the shaft 18 to a lower horizontal shaft 22, the said belt passing over a pulley 23 fixed to the central portion of the said shaft 22.

An upstanding bracket 24 is mounted on the platform 10 adjacent each end thereof and is provided at the rear ends thereof with bearing supports 25 for the shaft 22. Bearing supports 26 are carried by the forward ends of the brackets 24 and constitute supports for the forward horizontal shaft 27, power being communicated from the rear shaft 22 to the forward shaft 27 by means of belts 28 passing over pulleys 29 fixed to the rear shaft at suitably spaced points and over pulleys 30 fixed to the forward shaft 27 in alinement with the corresponding rearwardly-positioned pulley. It will be seen that when the fan wheel 19 is driven, that power from the shaft 18 will be communicated to the shaft 22 and subsequently to the forward shaft 27.

A swinging frame is positioned forwardly of the platform 10 and is supported on the forward shaft 27 and the upstanding brackets 24, the forwardly-positioned swinging frame including a pair of end link members 31 journaled at their inner ends on the extended ends of the shaft 27 as clearly shown in Fig. 1, while the outer ends thereof are journaled on the horizontal shaft 32 supported thereby. A pair of end link arms 33 are journaled at their inner ends on the ends of the shaft 32 and have journaled in the outer ends thereof another horizontally positioned shaft 34. The cotter pins 35 retain the links 31 and arms 33 in position on the shafts 32 and 34 while the relative angular position of the arms 31 and 33, as is indicated in Figs. 2, 3 and 4, is controlled by the pins 36 passing through registering openings in the adjacent ends of the links 31 and arms 33.

As shown in Fig. 7, the shaft 27 carries pulleys 47 adjacent each end thereof over which pass the driving belts 48 which in turn pass over the pulleys 49 mounted on the shaft 32 in alinement with the pulleys 47, and power is communicated from the shaft 32 to the shaft 34 in a similar manner by the alined pulleys 50 and the connecting belt 51.

When it is desired that the forward frame be supported in the position shown in Figs. 2, 3 and 4, the segment links 37 that are pivoted as at 38 at their forward ends to the links 31 are moved to the full line position as shown in Fig. 2, wherein the pins 39 carried by the inner ends thereof are adapted to be inserted in openings provided adjacent the upper ends of the brackets 24. The relative angular positions of the links and arms 31 and 33 are shifted by a movement of the segments 37, the segments bearing at points intermediate their ends on the forward shaft 27 and by pressing downwardly on the rear ends thereof, the same are caused to assume the position shown in dotted lines in Fig. 2 and be retained in such position by the holding pin 39 passing into an opening provided in the brackets 24 at points adjacent the platform 10, it being noted that the links and arms now assume a position substantially at right angles and in which the outwardly-positioned shaft 34 is moved into closer relationship with the remaining mechanism.

The mechanism above described is arranged in duplicate on each side of the machine so that additional power is given to the forwardly positioned shaft 34 and the driven pulley 40 centrally carried thereby and over which passes the belt 41 as indicated in Fig. 2.

The remaining mechanism is manually controlled and is caused to be thrown into operation when it is desired to transfer the machine from one location to another. This mechanism includes in detail bearing standards 42 in which is journaled a horizontal shaft 43 arranged at right angles to the shafts 22 and 27, a pulley 44 being fixed to the shaft 43, this pulley being in communication with the axle 15 by the belt 45 passing over the pulley 44 and the pulley 46 carried by the inner end of the axle. The upstanding end brackets 24 are provided with journal bearings 52 for the horizontal stub shafts 53 capable of axial movement by the operating handle 54 and adapted to have a clutch connection 55 to the outer ends of the shafts 56 that are journaled in the arms 57 pivoted at their lower ends as at 58 to the central standards 17. A beveled pinion 59 is carried by the inner end of each of the shafts 56 and is adapted to mesh with the beveled gear 60 mounted on the stub shaft 43. The swinging movement of the arm 57 on its pivot 58 is controlled by the handle 61, the inner end thereof being apertured and carrying a pin 62 that is adapted to be selectively positioned in either forward or rearward openings 63 in the central standard 17 so as to hold the pinion and gear either in mesh or out of mesh. The stub shafts 53 carry pulleys 64 while the rearwardly-positioned shaft 22 carries pulleys 65, power from the pulleys 65 being communicated to the pulleys 64 by the connecting belt 66.

It will therefore be seen that when it is desired to transfer the machine from one location to another, the shafts 53 may be shifted axially to clutch with a selected shaft 56, and such shaft may subsequently be moved so that the pinion 59 carried thereby will be caused to mesh with the beveled gear 60, it being noted that the shaft 53 is driven by its connection with the shaft 22 and this power will be communicated to the axle 15 through this mechanism referred to and the pulleys 44, 46 and the belt 45. The steering wheels 11 may be controlled in their direction of movement by the handles 13 and the machine transported in the direction and to the location desired. When the machine is in ordinary use, both pinions are disconnected from the gear 60 and the power from the shaft 18 is communicated directly to the shafts 22, 27, 32, 34 and pulley 40.

While the form of the invention herein shown and described is what is believed to be the preferred embodiment thereof, it is nevertheless to be understood that various forms, modifications and arrangements of the parts may be made without departing from the spirit and scope of the invention as claimed.

What I claim as new is:—

1. A fan motor including a supporting platform, a driving wheel and steering wheels carried thereby, a pair of centrally-

positioned standards, a horizontal shaft journaled in the upper ends of said standard, a fan wheel mounted on the shaft, a pulley mounted on said shaft, a pair of upstanding brackets arranged adjacent the ends of the platform, a rearwardly-positioned horizontal shaft journaled in said brackets, a centrally-positioned pulley carried thereby in alinement with the pulley on the aforesaid shaft, a connecting belt between the two pulleys, a forward shaft journaled in the forward ends of said brackets, alined pulleys and connecting belts carried by the rearward and forward shafts, a link connected to each end of the forward shaft, a shaft journaled in the outer ends of said links, link arms connected at their inner ends to said last-named shaft, a shaft journaled in the outer ends of the link arms, alined pulleys and belt connections carried by the forward shaft and the two last-named shafts, means for controlling the positions of the outermost shafts, stub shafts supported on the end brackets, centrally-positioned stub shafts in alinement with the aforesaid stub shafts and adapted to be engaged thereby, a stub shaft journaled at right angles to the aforesaid shafts, a pulley and beveled gear carried thereby, pinions carried by the inner ends of the centrally-positioned stub shafts, means for causing said pinions and gear to selectively engage, and connections between the pulley on the gear supported shaft and axle whereby the entire frame may be moved.

2. An air motor comprising a platform, central standards mounted thereon, a shaft journaled in the upper ends of said standards, a pair of upstanding brackets arranged adjacent the ends of the platform, rearwardly and forwardly positioned shafts journaled in said brackets, connections between all of said shafts, a fan wheel carried by the upper shaft, and a forwardly swinging frame including a plurality of driven shafts in communication with the aforesaid shafts.

3. An air motor including a supporting frame, supporting wheels therefor, supporting standards carried by said platform, a shaft journaled in said standards, a fan carried by said shaft, forwardly and rearwardly positioned shafts journaled on said platform, connections between the shaft supported in the central standards and the other shafts, and mechanism forming communication between the supporting wheels and driving mechanism whereby the platform may be moved from one position to another.

4. An air motor including a platform, a power shaft carried thereby, a fan wheel mounted on said power shaft, driven shafts in communication with said power shaft, a forwardly-positioned swingingly mounted frame associated with said driven shafts, and means for controlling the position of said frame.

5. An air motor including a platform, supporting wheels therefor, a driving shaft carried by said platform, driven shafts carried by said platform in communication with said driving shaft, a forwardly positioned swingingly mounted frame associated with said driven shafts, and journaled shafts carried by said frame.

6. An air motor including a platform, a power shaft carried thereby, horizontally-arranged driven shafts positioned beneath the power shaft, a connecting belt forming communication between the power shaft and one of the driven shafts, connecting belts forming communication between each driven shaft, a swingingly-mounted forwardly-positioned frame carried by the forward driven shaft, journaled shafts carried by said frame, and belt connections between the forward driven shaft and the shafts carried by the frame.

7. An air motor including a platform, a power shaft carried thereby, horizontally-positioned shafts arranged beneath the power shaft, alined pulleys carried by the power shaft and rearwardly-positioned driven shafts, alined pulleys carried by each of the driven shafts, connecting belts between the alined pulleys, a forwardly-positioned swingingly-mounted frame carried by the forward driven shaft, driven shafts journaled in said frame, alined pulleys carried by the forwardly-positioned shaft and the driven shafts carried by the frame, connecting belts for the alined pulleys, and means for controlling the relative positions of the forward driven shaft and the shafts carried by the frame.

8. An air motor including a platform, supporting wheels therefor, a power shaft carried by the platform, a driven shaft in communication with said power shaft, axially shiftable stub shafts in communication with said driven shaft, bodily movable stub shafts in communication with said axially shiftable stub shafts, a transversely-positioned stub shaft in communication with the driving wheels, and means for causing said bodily shiftable stub shafts to engage said transversely positioned stub shaft whereby power from the power shaft is communicated to the supporting wheels.

9. An air motor including a platform, supporting wheels therefor, a power shaft supported thereby, a fan mounted on said power shaft, driven shafts in communication with said power shaft, a forwardly-positioned swingingly-mounted frame journaled on the forward one of said driven shafts, shafts journaled in said frame, connections between said last-named driven shaft and the frame shafts, coöperating stub shafts mounted on said platform and shift-

able relative thereto, a transversely-positioned shaft, a beveled gear carried thereby, beveled pinions carried by the inner ends of the inwardly-positioned shiftable stub shafts adapted to selectively engage the beveled gear to revolve said transversely-positioned shaft, and connections between the transversely-positioned shaft and the supporting wheels.

10. An air motor including a platform, supporting wheels therefor, the wheels positioned at one side of said frame constituting steering wheels, air driven mechanism mounted on said platform, and operative connections between said air driven mechanism and the other supporting wheel.

11. An air motor including a platform, an axle journaled beneath said platform, a supporting wheel mounted on one end of said axle, manually-controlled steering wheels positioned at the opposite side of said platform, air driven mechanism mounted on said platform, and manually-controlled operative connections between the air driven mechanism and the other end of said axle.

12. An air motor including a platform, supporting wheels therefor, a power shaft supported on said platform, driven shafts supported on said platform in communication with said driving shaft, alined pulleys carried by said power shaft and driven shafts, connecting belts for the alined pulleys, a forwardly-mounted frame, a pair of shafts journaled in said frame, alined pulleys carried by the last-named shafts, connecting belts for the pulleys, and means for controlling the position of the last-named shafts and frame with respect to the platform.

13. An air motor including a platform, supporting wheels therefor, a power shaft carried by said platform, driven shafts carried by said platform positioned below said power shaft, operative connections between said shafts, a forwardly-positioned swingingly-mounted frame carried by the forward shaft, driven shafts carried by said frame, operative connections between the driven shafts and the forwardly-positioned driven shaft mounted on the platform, and a segment arm connected at one end to said frame and adjustably connected at its other end to the platform whereby the position of the swinging frame is changed with respect to the platform.

In testimony whereof I affix my signature.

MARYAN TROYANOSKI.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents. Washington, D. C."