

No. 50,365.

PATENTED OCT. 10, 1865.

F. JUST & A. KOELLNER.  
AERIAL CAR.

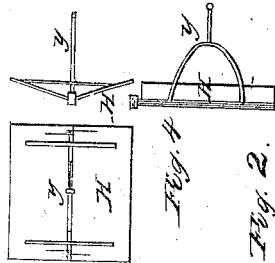


Fig. 4.

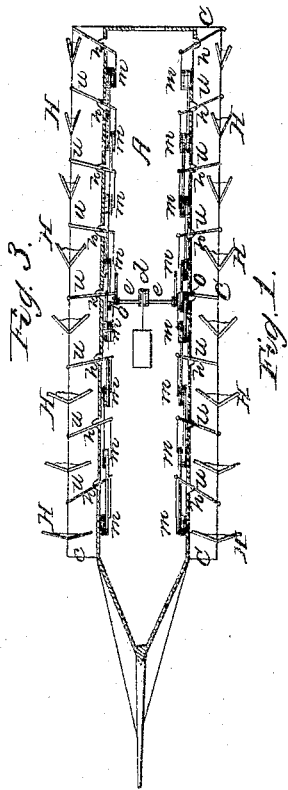
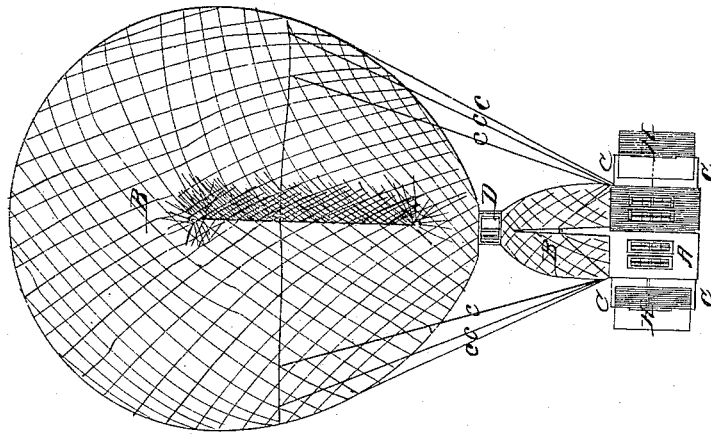
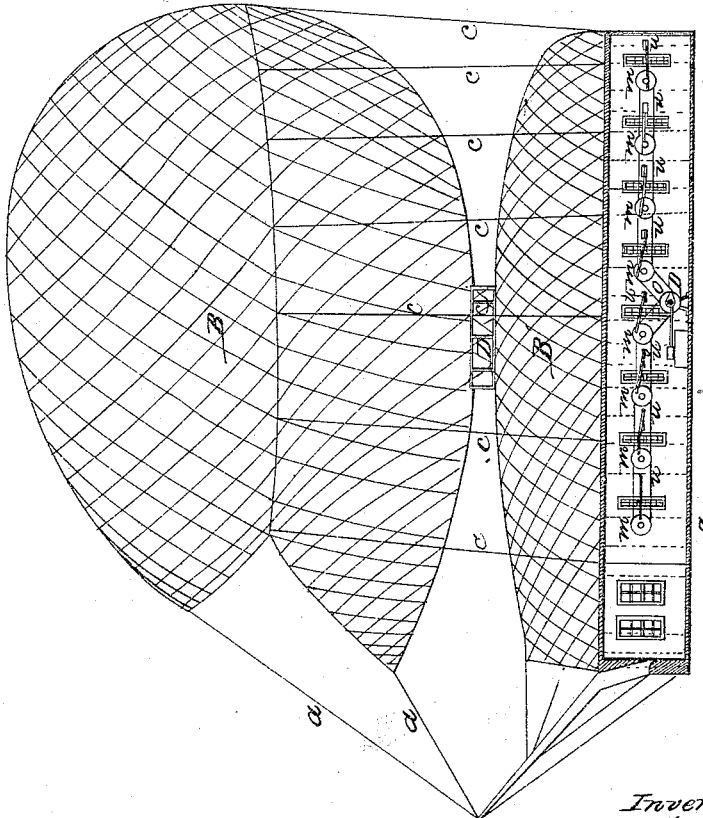


Fig. 3.



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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN AERIAL CARS.

Specification forming part of Letters Patent No. 50,365, dated October 10, 1865.

*To all whom it may concern:*

Be it known that we, FRANCIS JUST and AUGUST KOELLNER, of the city of Buffalo, county of Erie, and State of New York, have invented new and useful Improvements in Aerial Locomotives; and we do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of our invention relates to a car attached to a ballon and propelled through the air in a peculiar and novel manner. It is believed that by this invention the air may be successfully navigated and all the difficulties heretofore attending aerial navigation overcome.

To enable others skilled in the art to make and use our invention, we will proceed to describe its construction and operation.

In our improved aerial locomotive, Figure I is a vertical longitudinal section; Fig. II, a front elevation; Fig. III, a top plan; Fig. IV, detailed view of wings.

In constructing our aerial locomotive, we build the car from forty to fifty feet in length, from eight to nine feet high, and from eight to nine feet in width. The wings, from which the car receives its motion, are eight feet in length and from five and a half to six feet in width when open, with a lateral motion of from four to five feet.

Letters of like name and kind in the specification refer to like parts in the drawings.

A, Fig. I, represents the car with the balloons B B' filled with hydrogen gas. The car is propelled by a small caloric engine of from two to three horse power, which is of ordinary construction, a description of which is therefore deemed unnecessary.

B B' represent the balloons communicating with each other at D, Figs. I and II. The purpose of constructing it in this manner is to prevent the balloon from affecting the position of the car in case of violent wind or squalls. When the wind strikes the balloon it careens over and does not effect the position of the lower section of the balloon or car. This manner of constructing and attaching the balloon to the car is considered of great importance, for the reason that while a large portion of the buoy-

ancy is in the lower section of the balloon, neither that nor the car is affected by the swaying or careening of the upper section.

*a a* are stays firmly secured to the body of the balloon, and running down and forward to the bowsprit, where they are also firmly secured. At the stern or rear end, and along the sides of the car, are also stays *c c*, secured to the body of the balloon in like manner to the ones before described, and running down and securely fastened to the rear end and sides of the car A.

The power from the engine is applied to the machinery by a connecting-rod (which is not shown in the drawings) to crank *d*, which is connected to shaft *e*, which extends across the car, upon which are band-wheels O O at each end, said shaft having journals running in suitable bearings. From the band-wheels O O are belts, running over crank-pulleys *m*, to which are connected connecting rods, connected with a joint to levers *u*, the fulcrum of which is at *h*. This lever *u* extends outside the body of the car, and is connected to the wing by a joint to a bail or semicircular brace, *y*, rigidly secured to the central upright of the wing.

H H represent the wings, of which any number may be attached to the car. These wings are attached to a suitable frame, C, extending from the outside of the car to a distance sufficient for them to work. Motion to the wings is communicated from the engine through the medium of the belts and pulleys and lever *u*, as before described.

It will be observed that the cranks that are attached to their respective wings are set in a manner so that while the forward wings are spread those at the rear end are closed. These wings are gradually closed from the forward to the rear end of the car, and work in a manner that while the forward wings begin to close those at the rear begin to spread, and vice versa, so that a continuous propelling power is applied to the car without a surging motion, as would be the case provided all the wings made the stroke at the same time. These wings are made with a joint connected to springs, as before described. As the wings are worked by the lever *u*, the wing is thrown backward and forward, the upright or central portion of the wing slides back and forth upon the frame

As the wings are thrown forward it becomes closed, and when back the wind instantly catches the wings, when they are immediately spread, and a forward movement given to the car.

The balloon is guided by running the belts onto loose pulley or by the use of tension-pulleys, by which only the wings on one side of the car are in motion, the tendency of which is to throw or turn the car in a different direction. In this manner the car may be guided in any desired direction.

We provide the balloon with the necessary valves, which are operated by lines in the ordinary manner.

The engine is placed as near the middle or center of the car as may be for the purpose of preserving its equilibrium.

Having thus described our invention, what

we claim, and desire to secure by Letters Patent, is—

1. A balloon constructed in two sections and connected as described, for the purposes set forth.

2. The balloon constructed in two sections, in combination with the car A, as herein set forth.

3. The car A, balloon B B', the connection D, as arranged, with the engine, when constructed as herein shown and described.

4. The wings H H, the frame C, in combination with the car A, all constructed and arranged as herein described.

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