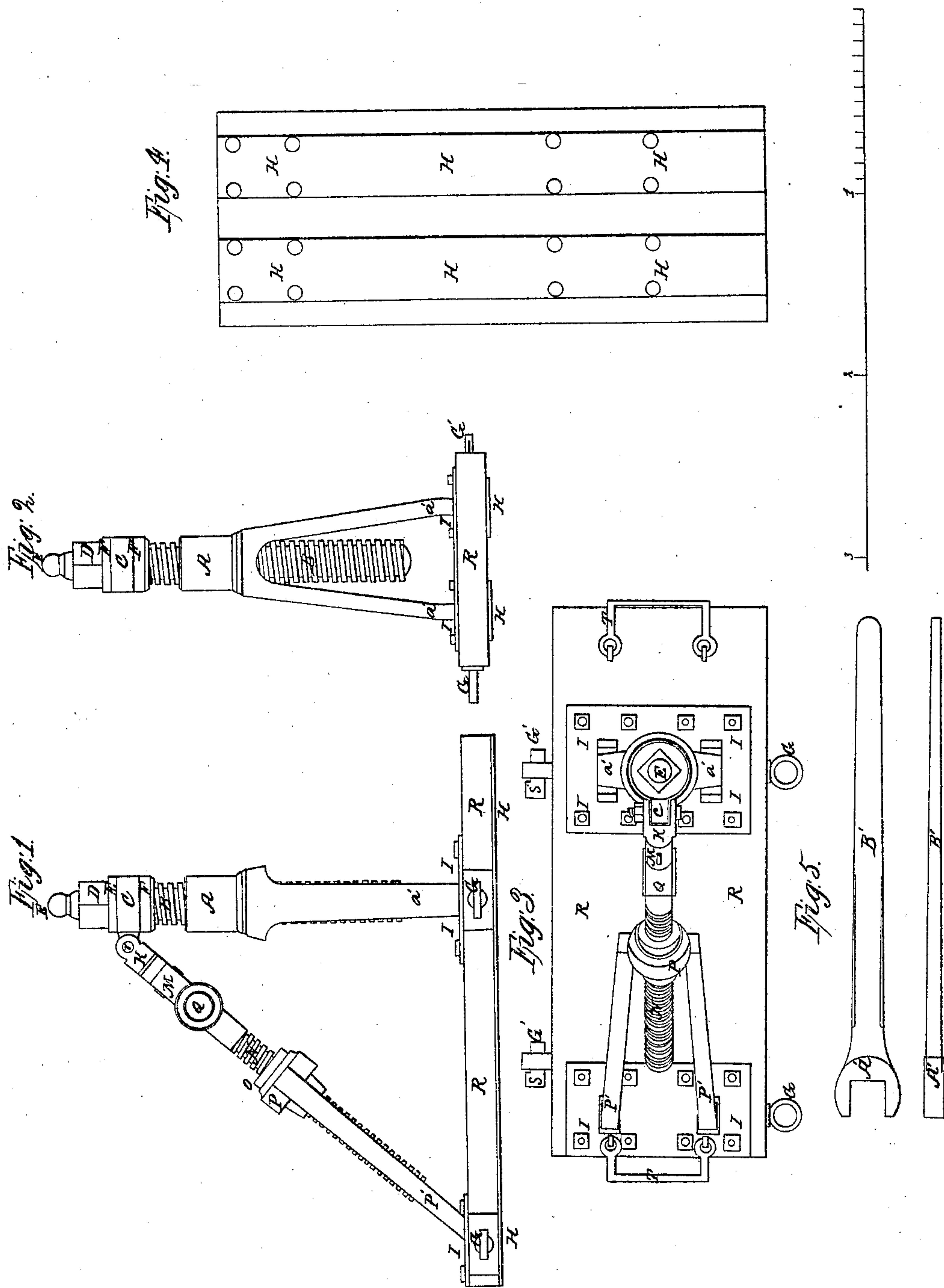


# S. Vail, Lifting Jack.

No. 1,146.

Patented May 7, 1839



# UNITED STATES PATENT OFFICE.

STEPHEN VAIL, OF MORRIS TOWNSHIP, MORRIS COUNTY, NEW JERSEY.

## JACK-SCREW.

Specification of Letters Patent No. 1,146, dated May 7, 1839.

*To all whom it may concern:*

Be it known that I, STEPHEN VAIL, of Speedwell Iron Works, in the township of Morris and county of Morris, New Jersey, have invented an Improved Jack-Screw, which I denominate the "railroad jack-screw," and which is intended principally for the purpose of lifting locomotive-engines and cars onto the track whenever it becomes necessary so to do, but which is applicable also to the lifting of other heavy weights; and I do hereby declare that the following is a full and exact description thereof.

In the accompanying drawings, Figure 1, is a side view of the instrument; Fig. 2, an end, and Fig. 3, a top view. Fig. 5, is a wrench for turning the screws; and Fig. 4, shows the under side of the platform, strengthened by plates of iron H, H, running along it, and attached thereto by screws and nuts.

In the respective figures, the same letters of reference are used wherever the same parts are represented.

A,  $a'$ , is a standard which sustains and forms the nut of the strong, lifting screw B. The portion A, of this standard constitutes the nut, or female screw, through which the screw B, works; this standard, below the nut A, is bifurcated, or divided into two parts  $a'$ ,  $a'$ , the lower ends of which enter mortises in the platform, or base, R, R, of the instrument; these lower ends, are bored out so as to constitute rings, or eyes, which receive bolts, or pins, G,  $G^1$ , that serve as joint pins to the standard.

I, I, are plates of iron, bolted to the upper side of the platform R R. A ring, or collar, C, is received into a neck in the head of the screw B, between shoulders formed by F, F, allowing the screw to be turned by means of the wrench  $A^1$ ,  $B^1$ , Fig. 5, without turning the collar C. The head E, of the screw is the part by which it is to be made to bear against the locomotive, or other article, to be lifted.

A second screw N, works in a nut P, in a standard P,  $P^1$ ,  $P^1$ , formed like the standard of the first named screw, and attached to the platform in the same manner. The head K, of the screw N, is connected, by the joint and pin  $r$ , to the collar C, of the screw B, and this head is united to the part M, by a swivel, admitting of the turning of the

screw without causing the head K, to revolve. This screw is turned by passing a bar through an opening at Q, or by making that part square, and applying the wrench thereto. T, T, are handles by which to move the instrument.

When the machine is to be used, it is to be placed in such a position that the weight of the body to be raised, or moved, will, when the screw B, is turned up, bear upon the head E. During the operation of turning the screw B, the screw N, must also be turned upward, for the purpose of keeping the screw B, in a vertical position, and this operation is to be continued until the body is raised to the required height. When this is effected, the body is to be moved laterally, so as to bring it to the required position; this is accomplished by simply turning the screw N, which will cause the point E, of the screw B, and, consequently, the weight upon it, to move in the arc of a circle of which G, E, is the radius. By repeating this process, the body may be moved to any required distance. When the body is too low to admit the machine to pass under it, a suitably formed hook may be used, one end of which may rest on the head E, and the other reach down so as to pass under the article to be raised. When the instrument is not in use, it may be taken apart by merely removing the bolts G,  $G^1$ , and the joint pin  $r$ ; and it may then be packed away in a suitable box.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combining together of the two screws, B, and N, in the manner above set forth; that is to say, by giving to their standards a hinge motion on the platform, or base, of the apparatus, and by connecting them to each other at their upper ends by a joint, while they are allowed to turn freely, by the arrangement of the collar C, and the swivel K, M, or by some analogous contrivance; by which arrangement, the locomotive, or other heavy body, to be raised, may be first lifted vertically, and then moved laterally, for the purpose, and, substantially, in the manner, herein set forth.

STEPHEN VAIL.

Witnesses:

GEORGE VAIL,  
DAVIS V. CANFIELD.