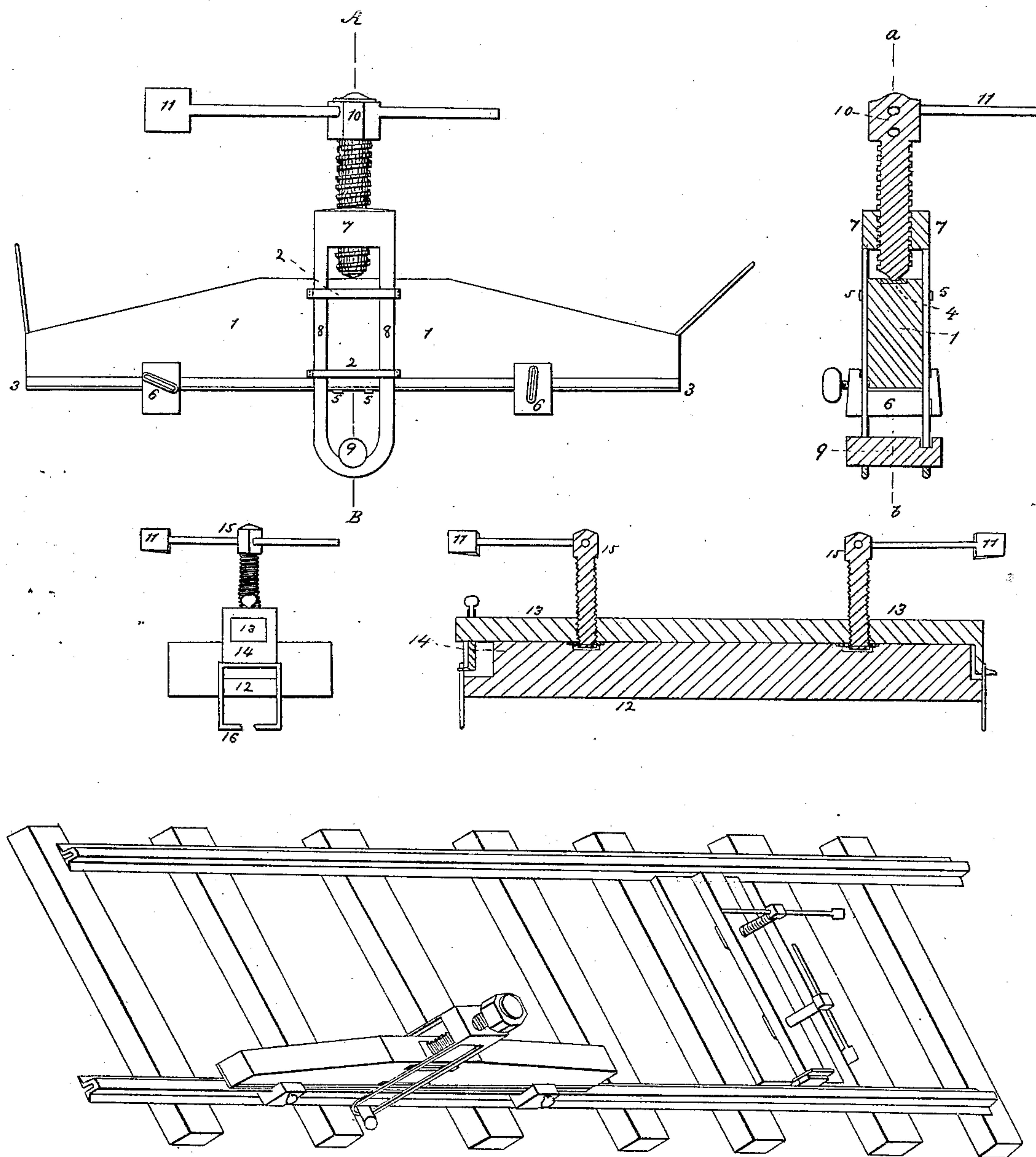


G. WILLISTON.  
Curving Metal Rails.

No. 10,200.

Patented Nov. 1, 1853.



# UNITED STATES PATENT OFFICE.

GEORGE WILLISTON, OF BRUNSWICK, MAINE.

IMPROVEMENT IN MACHINES FOR STRAIGHTENING OR CURVING RAILS.

Specification forming part of Letters Patent No. 10,200, dated November 1, 1853.

*To all whom it may concern:*

Be it known that I, GEORGE WILLISTON, of Brunswick, in the county of Cumberland and State of Maine, have invented a new and useful machine for straightening or curving rails after they are laid on the track without removing them from the bed or sleepers, of which the following is a specification.

It often occurs on railroads that when the train passes over the track those rails which have not uniformly solid bearings bend under the weight and render the road at such places uneven. For straightening rails so bent my machine is applicable, with this advantage, that the rail is straightened to its proper place without being taken from the sleepers.

I do declare that the following is a full and exact description of the machine, reference being had to the accompanying drawings, which make a part of this specification.

The nature of my invention consists in placing over the part of the rail which is bent (by the weight of the train in passing) a curved beam which has its bearings on the rail near the end of the beam. Then by a contrivance which embraces the rail I turn a screw which has power sufficient to raise the bent portion to its original position, where it may be secured.

To enable others to make and use my invention, I will describe its construction and operation.

I first prepare a beam, say, six feet long, one foot wide, and six inches thick, or the same thickness as the rail to be straightened. This may be one stick or two planks bolted together, as shown on Figure 1 of the accompanying drawings. On the edge of the beam I bolt two bars of iron for the purpose of receiving two slides, Fig. 6, which are the bearings on which the beam rests on the rail to be straightened, and they should be so extended on the beam as to embrace the bent part of the rail when placed upon it. On the opposite edge of the beam, or uppermost side when on the rail, I secure a socket, Fig. 4, on which the screw must bear. I now obtain a screw, Fig. 10, say, two feet or two and a half in length, with two holes through the head at right angles to receive a lever to work it, and the screw of sufficient size to give the necessary power. I now procure a nut, Fig. 7, say, eight inches wide and six

inches thick. I now take a bar of iron, say, an inch square, welded in the form of a link. This I bend, having both ends of a length, until the two sides shall be of the distance asunder as the beam is thick. This link, now in the form of a strap, is passed over the nut, Fig. 7, and the nut mortised or cut on the corners to receive the strap similar to a tenon. This strap is kept in its place in the middle of the beam by two iron clasps on each side, Fig. 2, so that the strap is kept in its place and yet allowed to move up and down on the sides of the beam when operated upon by the turning of the screw. The machine so constructed I place upon the rail to be straightened, and the slides, Fig. 6, properly adjusted on the rail. The strap now reaches below the rail, and an iron pin, Fig. 9, is passed under the rail and rests on the lower part of the strap, the same being the ends of the link. In this position the clasp by the bolt embraces the rail and the nut, Fig. 7, so that as much as the distance is increased between the nut, Fig. 7, and the beam, Fig. 1, so much is the rail raised at the clasp by turning the screw. When the rail so raised is brought to its proper height, the sleepers are secured, if necessary, by additional gravel or other substances placed under them. The beam, Fig. 1, may be slightly curved, if necessary; but in general the slides are sufficient. When it is necessary to curve a rail or straighten it laterally, the machine can be used with equal advantage by turning the machine on its side and the screw operated by lever, as above described.

I am aware that a machine has been used in Bavaria which acts by the pressure of a screw upon the bar to be bent, the bearing or platform being placed underneath the bar. This mode of action I do not claim; but

What I do claim, and desire to secure by Letters Patent, is—

The combination of the screw, strap, beam, and slides, constructed and combined substantially in the manner described, with the beam placed on the top or side of the rail, for the purpose of straightening or curving rails on railroads without the necessity of removing the same from the sleepers.

GEORGE WILLISTON.

Witnesses:

THOMAS ESTABROOK,  
E. G. SIMPSON.