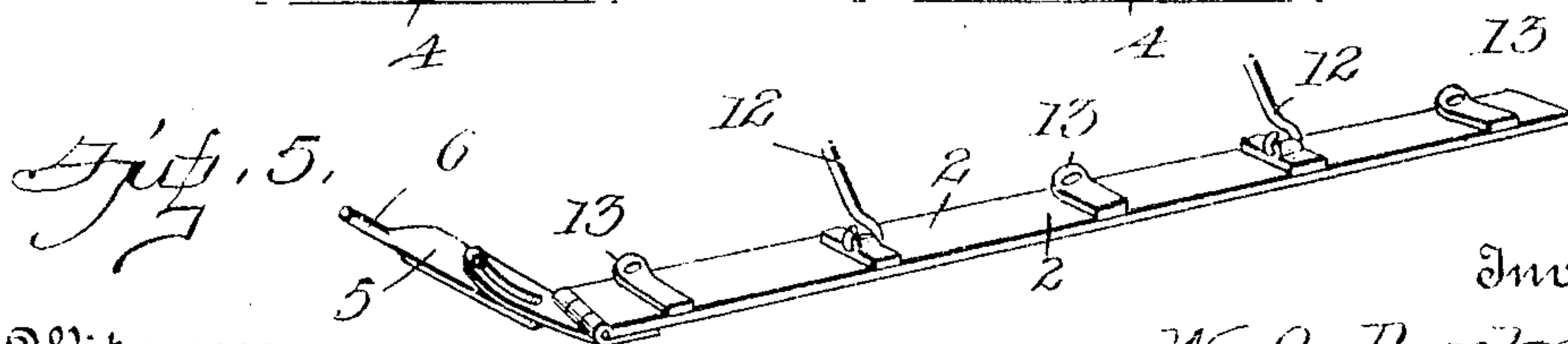
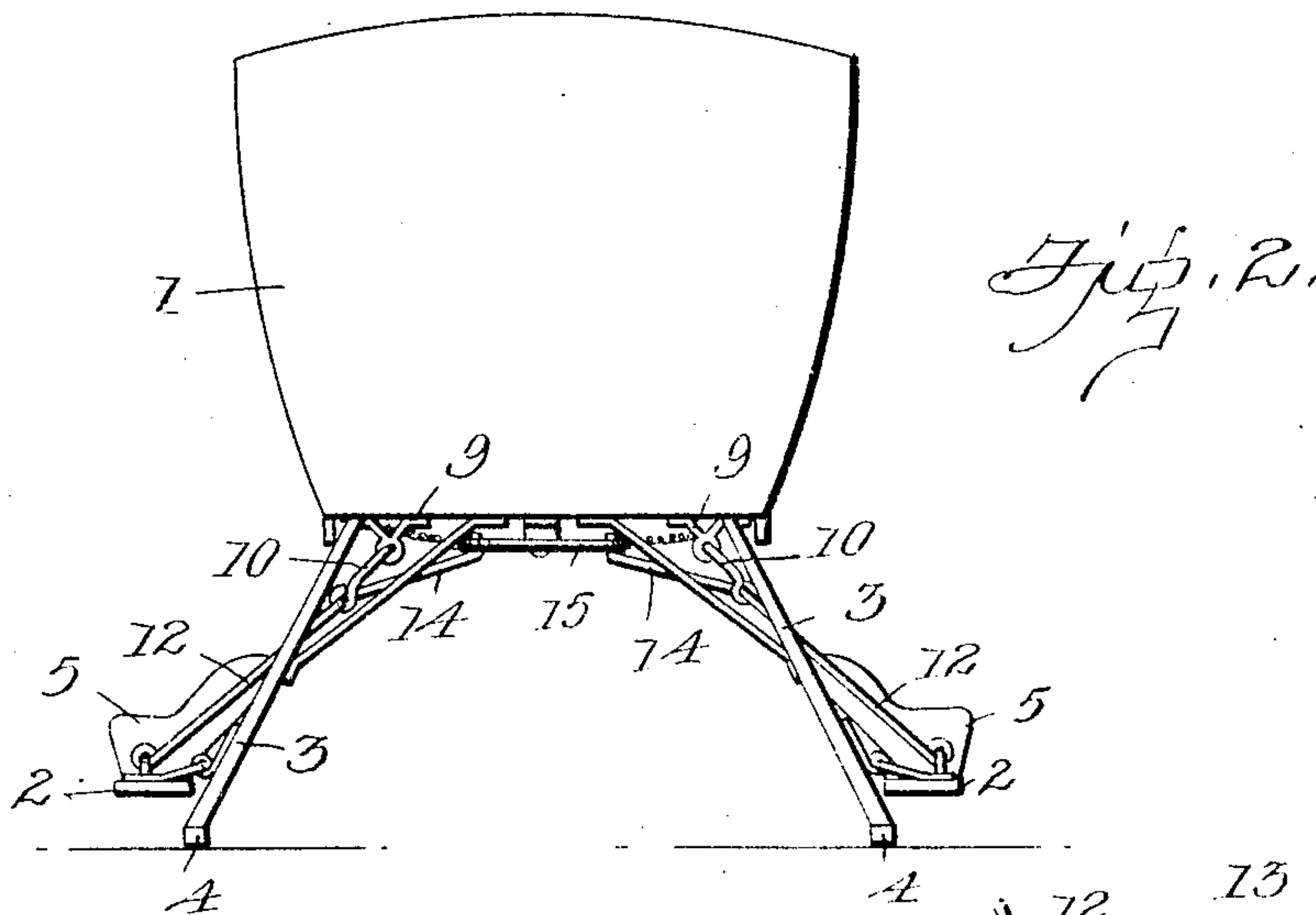
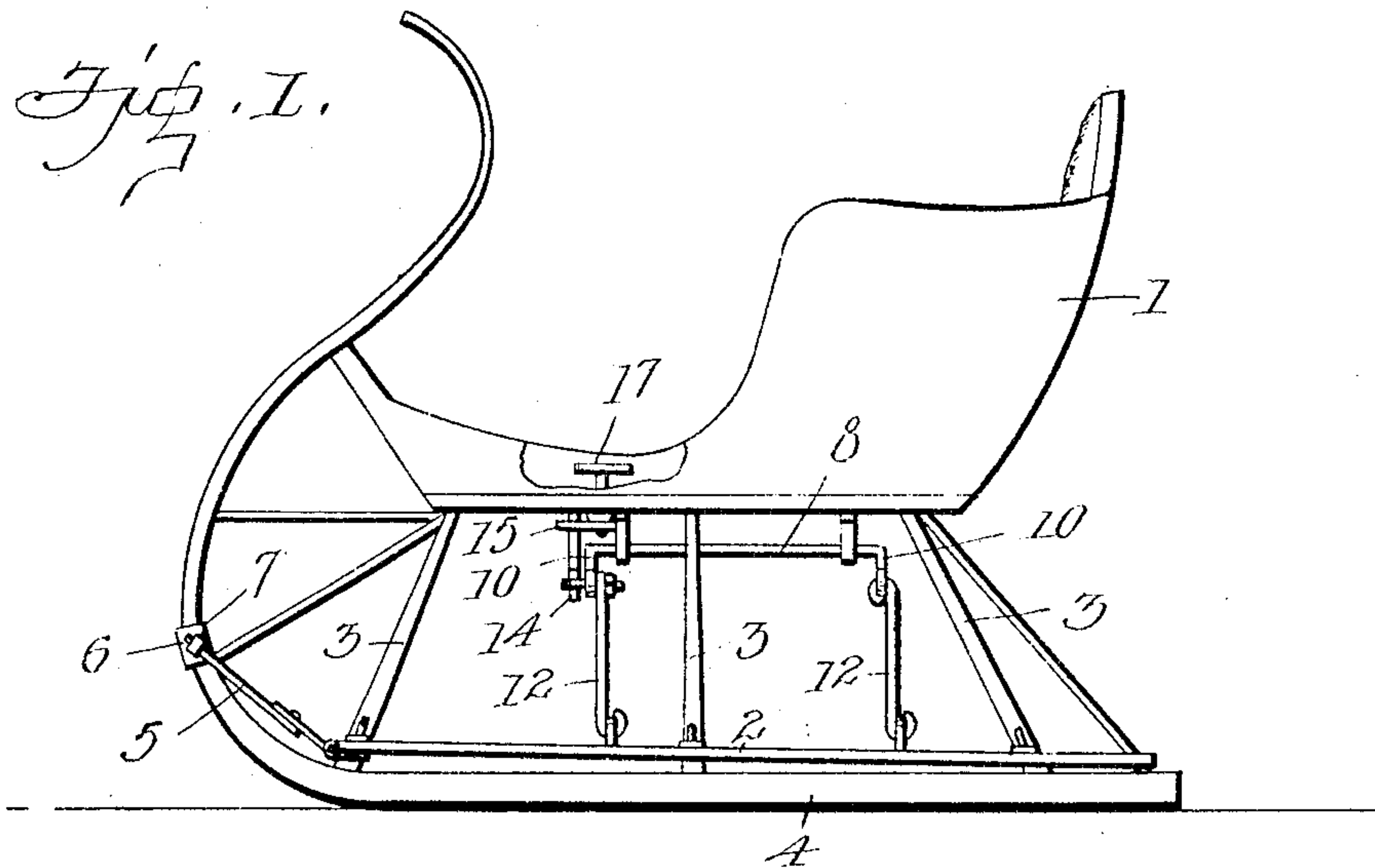


No. 871,907.

PATENTED NOV. 26, 1907.

W. A. BERTRAM.  
SLEIGH ATTACHMENT.  
APPLICATION FILED JUNE 10, 1907.

2 SHEETS—SHEET 1.



Witnesses

*for attached*  
*C. H. Giesbauer*

Inventor

*W. A. Bertram*

by *A. B. Wilson & Co*

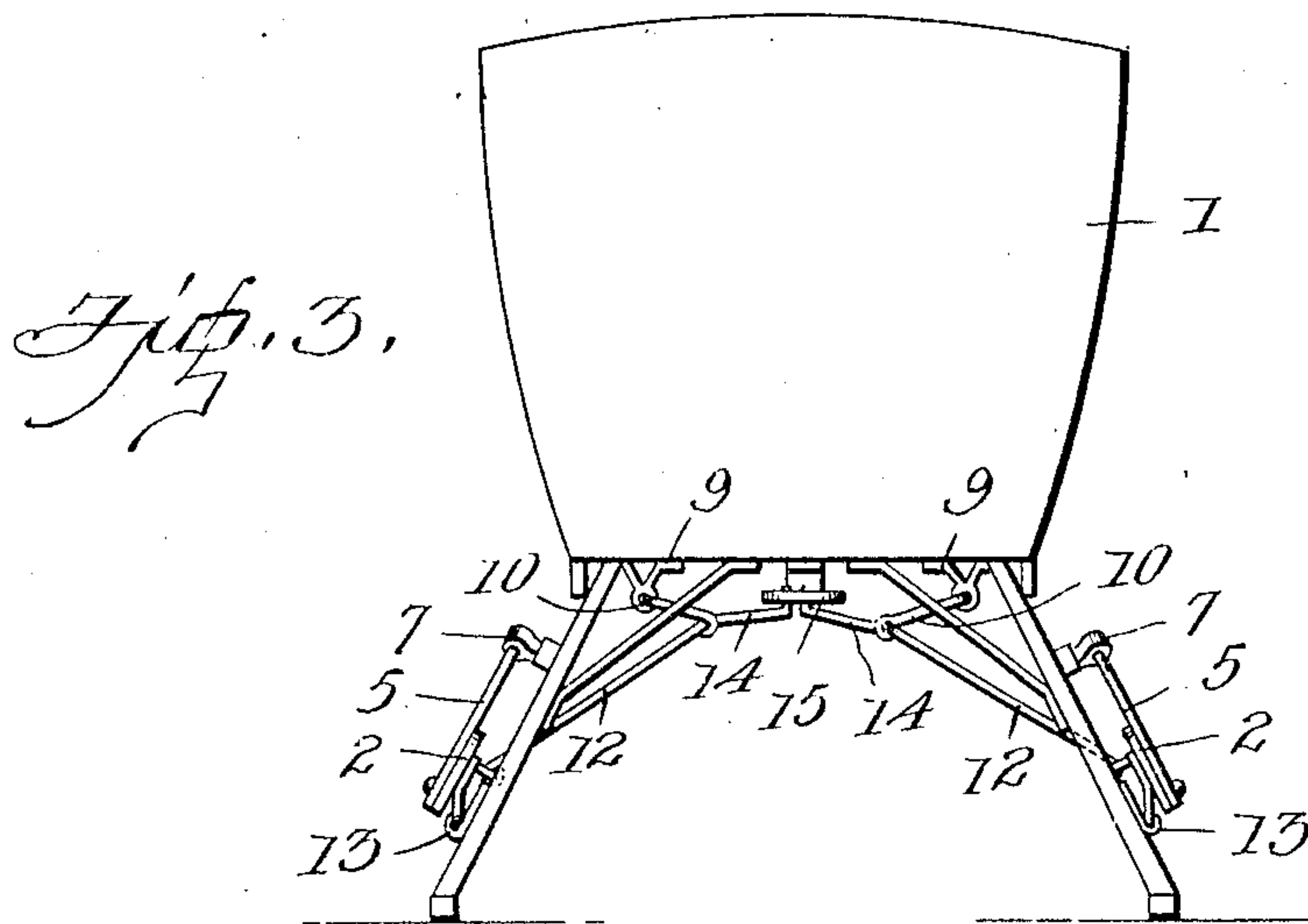
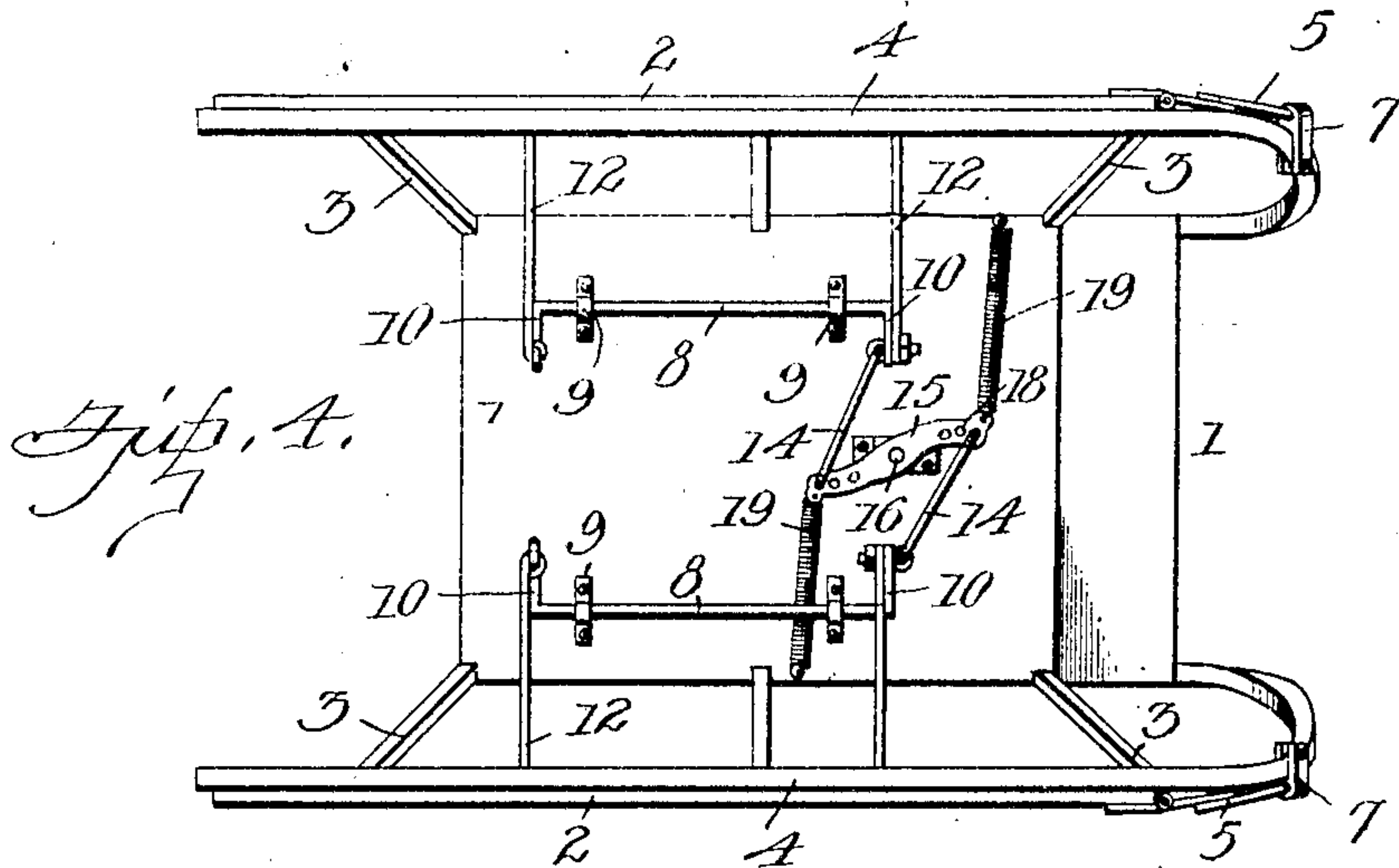
Attorneys

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2 SHEETS--SHEET 2.



Witnesses  
*for and to the effect of*  
C. H. Giesbauer

Inventor  
W. A. Bertram  
by *A. B. Wilson & Co*  
Attorneys



# UNITED STATES PATENT OFFICE.

WILLIAM A. BERTRAM, OF BRIMLEY, MICHIGAN.

## SLEIGH ATTACHMENT.

No. 871,907.

Specification of Letters Patent.

Patented Nov. 26, 1907.

Application filed June 10, 1907, Serial No. 378,213.

*To all whom it may concern:*

Be it known that I, WILLIAM A. BERTRAM, a citizen of the United States, residing at Brimley, in the county of Chippewa and State of Michigan, have invented certain new and useful Improvements in Sleigh Attachments; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to attachments for sleighs.

The object of the invention is to provide an attachment adapted to be applied to the runners of a sleigh to prevent the same from upsetting when being turned in deep snow.

A further object of the invention is to provide means whereby the attachment may be readily moved to an operative or inoperative position by the occupant of the sleigh.

With these objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts as will be fully described and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a side view of a sleigh showing the attachment applied thereto, and in operative position, the parts of the sleigh being broken away to illustrate the operating mechanism; Fig. 2 is a rear view of the same, showing the attachment in operative position; Fig. 3 is a similar view showing the attachment in folded or inoperative position; Fig. 4 is a bottom plan view of a sleigh, showing the arrangement of the operating mechanism for the attachment; and Fig. 5 is a detail perspective view of one of the supplemental runners and the operating rods connected therewith.

Referring more particularly to the drawings, 1 denotes the sleigh, which may be of any style or construction and is here shown as a cutter. The attachment consists of a pair of supplemental runners, 2, which are in the form of flat boards of suitable width, and are hingedly connected along their inner edges to the braces or supporting bars, 3, of the sleigh runners, 4. The forward ends of the supplemental runner bars are hingedly connected to an angular extension plate, 5, the forward end of which is reduced to form a bearing bolt, 6, which is pivotally engaged with a bracket 7, secured to the forward up-

wardly turned portion of the runner 4 on each side of the sleigh.

The extension plates 5 on the end of the supplemental runner boards are disposed in an inclined position at the forward ends of the runner boards when the latter are in an operative position and provide deflecting plates, by means of which the runner boards 2 are directed over the surface of the snow instead of plowing through the same. The plates 5 also serve to provide a support for the forward ends of the runner boards when the latter are in an operative or inoperative position.

In order that the supplemental runner boards 2 may be readily turned to an operative or inoperative position, I provide a suitable operating mechanism comprising a pair of longitudinally disposed crank shafts 8, which are journaled in bearing brackets 9 secured to the underside of the sleigh body. The shafts 8 are provided on their opposite ends with right-angularly bent crank arms 10, the outer ends of which are connected by link rods 12 to eyes, 13, secured to the upper sides of the runner boards, 2, as shown.

To the crank arms 10 at the forward end of the shafts 8 are connected operating links 14, the opposite ends of which are connected to the opposite ends of an operating lever 15, which is fixedly mounted on the lower end of a shaft 16, which is journaled in suitable bearings arranged in the bottom of the sleigh, as shown.

The upper end of the shaft 16 projects through the bottom of the sleigh, and to said upper end is secured a crank, 17, which is adapted to be engaged by the foot of the occupant of the sleigh so that when pushed in one direction will turn the shaft 16 and lever 15, causing the same to draw inwardly upon the operating links 14, which in turn rock the crank shafts 8 and cause the same to lower the runner boards 2 to an operative position, in which they stand out laterally from the braces 3 in substantially horizontal positions just above the sleigh runners.

The operating links 14 which are connected to the forward cranks of the shafts 8 are adapted to be adjustably connected at their inner ends to the opposite ends of the lever 15, in a series of holes, 18. To the outer ends of the lever 15 are also connected spiral retracting springs 19, the opposite ends of which are secured to the underside



of the sleigh body. When the lever 15 is operated by the crank 17, the same is moved against the tension of the springs 19 so that when said crank is released, the springs will reverse the movement of the operating parts and draw the runner boards inwardly and upwardly to a folded or inoperative position against the sides of the sleigh runner base, in which position the springs will hold said runner boards until the parts are again operated by the crank 17.

When the supplemental runner boards 2 are in an operative position, the sleigh runners will be prevented from sinking into deep snow or drifts, so that when it becomes necessary to turn the sleigh, as when passing another vehicle, this may be readily accomplished without danger of upsetting the sleigh, as is frequently the case when an attempt is made to turn a sleigh in deep or drifted snow.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention may be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention as defined in the appended claims.

Having thus fully described my invention, what I claim as new and desire to secure by Letters-Patent, is:

1. An attachment for sleighs comprising longitudinally disposed hingedly mounted runner boards arranged on opposite sides of the sleigh immediately above the runners thereof, and means for holding said boards in laterally extended position, whereby the runners are prevented from sinking into the deep or drifted snow.

2. An attachment for sleighs, comprising longitudinally disposed runner boards hingedly mounted immediately above the sleigh runners to prevent the latter from sinking

into deep or drifted snow, and means to raise and lower said running boards to operative and inoperative positions.

3. An attachment for sleighs, comprising a pair of longitudinally disposed runner boards adapted to be hingedly connected to the runner braces immediately above said runners, crank shafts mounted in suitable bearings on the underside of the sleigh, link rods connecting said crank shafts with said runner boards, an operating lever, and means to connect the same with said crank shafts, substantially as described.

4. An attachment for sleighs, comprising a pair of longitudinally disposed runner boards adapted to be hingedly connected to the runner braces immediately above said runners, crank shafts mounted in suitable bearings on the underside of the sleigh, link rods connecting said crank shafts with said runner boards, a spring retracted operating lever, links to adjustably connect the opposite ends of the lever with said crank shafts, and means whereby said lever is operated by the foot of an occupant of the sleigh, substantially as described.

5. An attachment for sleighs comprising longitudinally disposed runner boards adapted to be longitudinally connected to the sleigh runner braces immediately above the sleigh runners, deflecting plates hingedly connected to the forward ends of said runner boards, means to pivotally connect the forward ends of said deflecting plates to the sleigh runners, a system of shafts, connecting rods and levers arranged on the bottom of the sleigh and connected to said runner boards whereby the same are raised and lowered to inoperative and operative positions, substantially as described.

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

WILLIAM A. BERTRAM.

Witnesses:

EDWARD KELLY,  
ROLLA WASHBURN.