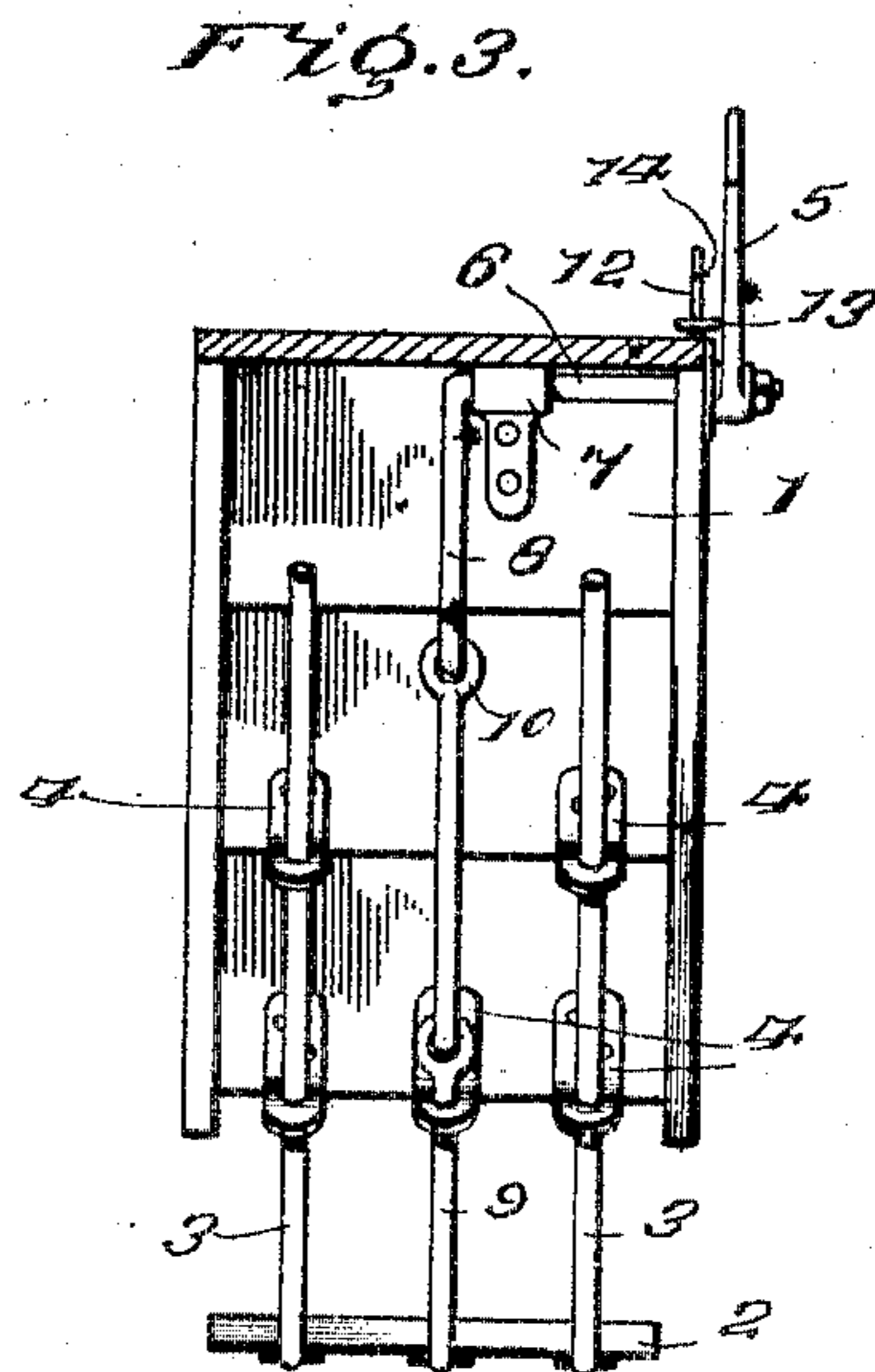
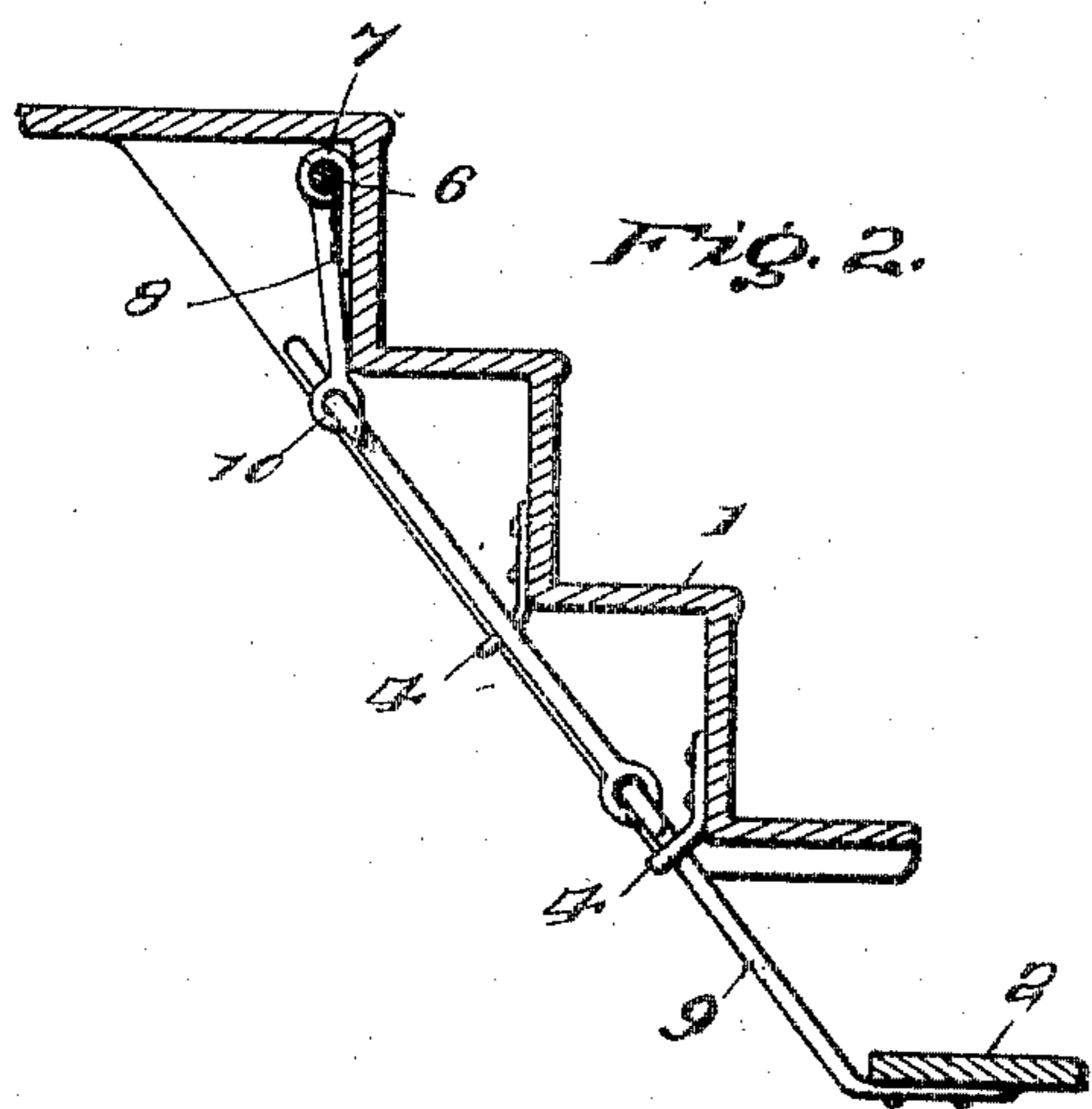
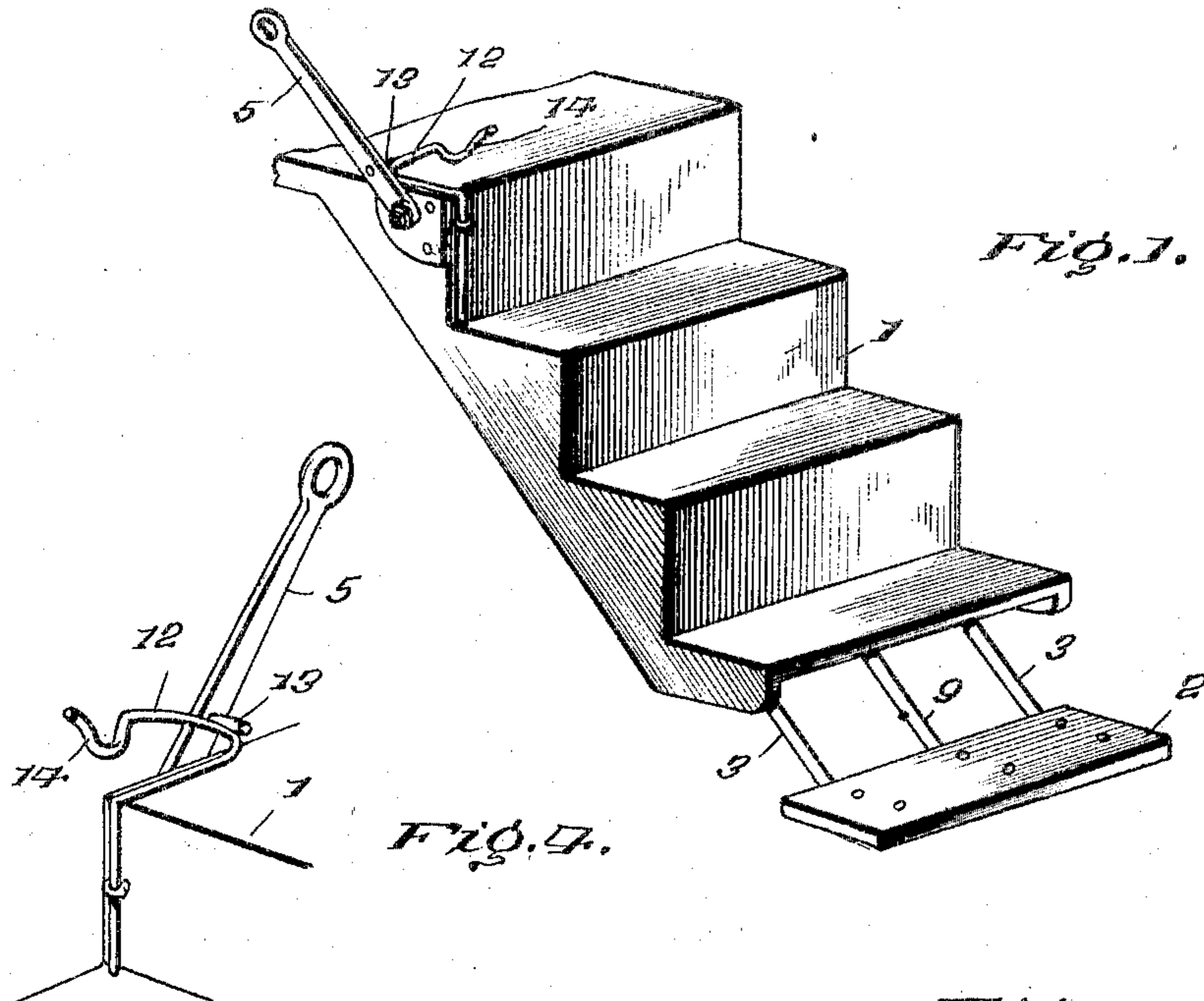


No. 780,243.

PATENTED JAN. 17, 1905.

J. M. TOZER.
STEP FOR CARS.

APPLICATION FILED OCT. 15, 1904.



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STEP FOR CARS.

SPECIFICATION forming part of Letters Patent No. 780,243, dated January 17, 1905.

Application filed October 15, 1904. Serial No. 228,589.

To all whom it may concern:

Be it known that I, JOHN M. TOZER, a citizen of the United States, residing at Westover, in the county of Clearfield and State of Pennsylvania, have invented certain new and useful Improvements in Steps for Cars, of which the following is a specification.

This invention consists of an auxiliary step particularly adapted for use in connection with the usual steps of a Pullman or ordinary passenger car and designed to be lowered for use when the car is run into a depot or alongside an alighting-platform to admit of greater ease in passing into and out of the car. The present disadvantages arise from the fact that the lowermost step of the average passenger-coach is too high for one to step to or from without difficulty, stools being often used to facilitate the above; and it is therefore an object of the invention to obviate the foregoing by the provision of the auxiliary step mentioned and novel operating means for the same.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and accompanying drawings.

While the invention may be adapted to different forms and conditions by changes in the structure and minor details without departing from the spirit or essential features thereof, still the preferred embodiment thereof is shown in the accompanying drawings, in which—

Figure 1 is a perspective view showing the invention applied. Fig. 2 is a vertical sectional view showing the steps of the usual construction of railway-coach, an auxiliary step being shown adjusted in a lowermost position as when in use. Fig. 3 is a rear elevation bringing out more clearly the mounting of the auxiliary step upon the main steps of the coach. Fig. 4 is a perspective view showing a portion of the steps, bringing out more clearly the arrangement of the spring which coöperates with the operating-lever.

Corresponding and like parts are referred to in the following description and indicated

in all the views of the drawings by the same reference characters.

It will be understood that the invention is susceptible of application in any instance wherein it is desirable to use an auxiliary step in connection with other steps, whether the latter be carried by rolling-stock or located in any other position.

Referring to the drawings, the rigid steps of the car are indicated at 1, and said steps are of any common approved construction. The auxiliary step is designated 2, and this step when out of use is normally held in a position just beneath the lowermost of the steps 1. Special means are provided for supporting and operating the step 2, said step being secured to guide-rods 3, extending upwardly therefrom and movable in brackets or guide members 4, substantially attached to the rear sides of adjacent steps 1. The step 2 is directed in its movement primarily by the rods 3, being actuated, however, by means of a lever 5, mounted upon a crank 6. The crank 6 is mounted in a bearing 7, located in rear of the uppermost step, and one end of the crank 6 is projected through a side of said step, so that the lever 5 may be readily mounted thereon in a convenient position. An arm 8 of the crank 6 is connected with a rigid bar 9, projected upwardly from the step 2 and extended therefrom at a point preferably about intermediate the guide-rods 3. The bar 9 is suitably attached to the step 2, and the upper end of the bar is connected with the arm 8 by means of a link 10.

When in its uppermost position, the step 2 is just beneath the lowermost of the steps 1, as mentioned above, and the outer edge of the step 2 is about flush with the step 1 aforesaid. The step 2 is held in its uppermost position by means of a curved spring 12, which projects upwardly from the uppermost step 1 and engages beneath a lug 13, projected laterally from the lever 5. An interlocking connection is established between the spring 12 and the lug 13 by deflecting said springs somewhat adjacent its front end, so that when the lever 5 is so disposed as to force the lug 13 into the deflected portion of the spring (indi-

cated at 14) the step 2 is virtually locked from downward movement. By forcing the lever 5 rearwardly, however, the crank-arm 8 is moved downwardly, actuating the step 2 in the same direction, and when said crank-arm reaches an approximately vertical position, engaging the rear side of the uppermost step 1, the step 2 will be rigidly held in a position sufficiently near the depot or alighting-platform as to admit of stepping into and out of the car without difficulty. One of the guide members 4 is preferably used for operation with the bar 9 also. It will be noted that the device, as hereinbefore described, is very simple and may be operated by the conductor or porter of the car as the train enters and leaves a depot or the like.

Having thus described the invention, what is claimed as new is—

20 1. In combination with a plurality of steps, an auxiliary step normally disposed beneath the lowermost of said steps, a plurality of guide members attached to the rear sides of the first-mentioned steps, a plurality of guide-rods projected upwardly from the auxiliary step and cooperating with the guide members aforesaid, a bar extended upwardly from the auxiliary step, a crank mounted in rear of one of the first-mentioned steps and having its arm projected rearwardly therefrom, a link

connection between the crank-arm and the bar of the auxiliary step, a lever mounted upon the crank aforesaid for connection thereof, a lug projecting laterally from the lever, and a curved spring extending upwardly from the uppermost step and provided in its length with a deflected portion adapted to receive the lug of the lever to thereby interlock therewith. 35

2. In combination with a plurality of steps, an auxiliary step normally disposed beneath the lowermost of said steps, a plurality of guide members attached to the rear sides of the first-mentioned steps, a plurality of guide-rods projected upwardly from the auxiliary step and cooperating with the guide members aforesaid, a bar extended upwardly from the auxiliary step, a crank mounted in rear of one of the first-mentioned steps and having its arm projected rearwardly therefrom, a link connection between the crank-arm and the bar of the auxiliary step, a lever mounted upon the crank aforesaid for connection thereof, and a spring cooperating with said lever and adapted to interlock therewith. 40 45 50

In testimony whereof I affix my signature in presence of two witnesses. 55

JOHN M. TOZER. [L. s.]

Witnesses:

ISAAC STRAW MERCHANT,
N. T. YINGLING.