

(No Model.)

2 Sheets—Sheet 1.

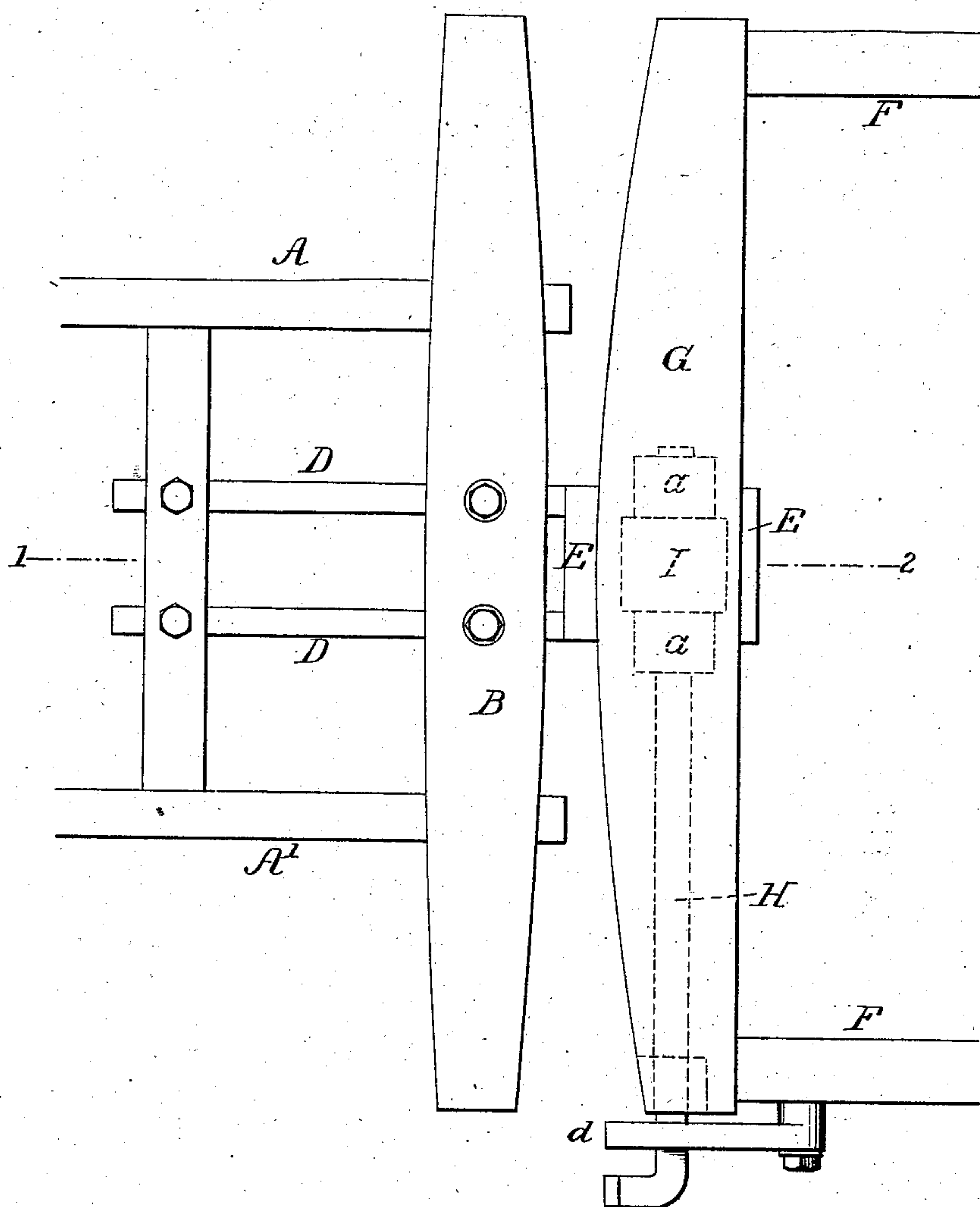
J. ELDER.

DEVICE FOR INCREASING THE TRACTION OF LOCOMOTIVES.

No. 290,012.

Patented Dec. 11, 1883.

FIG. 1



WITNESSES:

James F. Jobin  
David S. Williams

INVENTOR:

Joseph Elder  
by his Attorneys  
Howson & Son

(No Model.)

2 Sheets—Sheet 2.

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FIG. 2

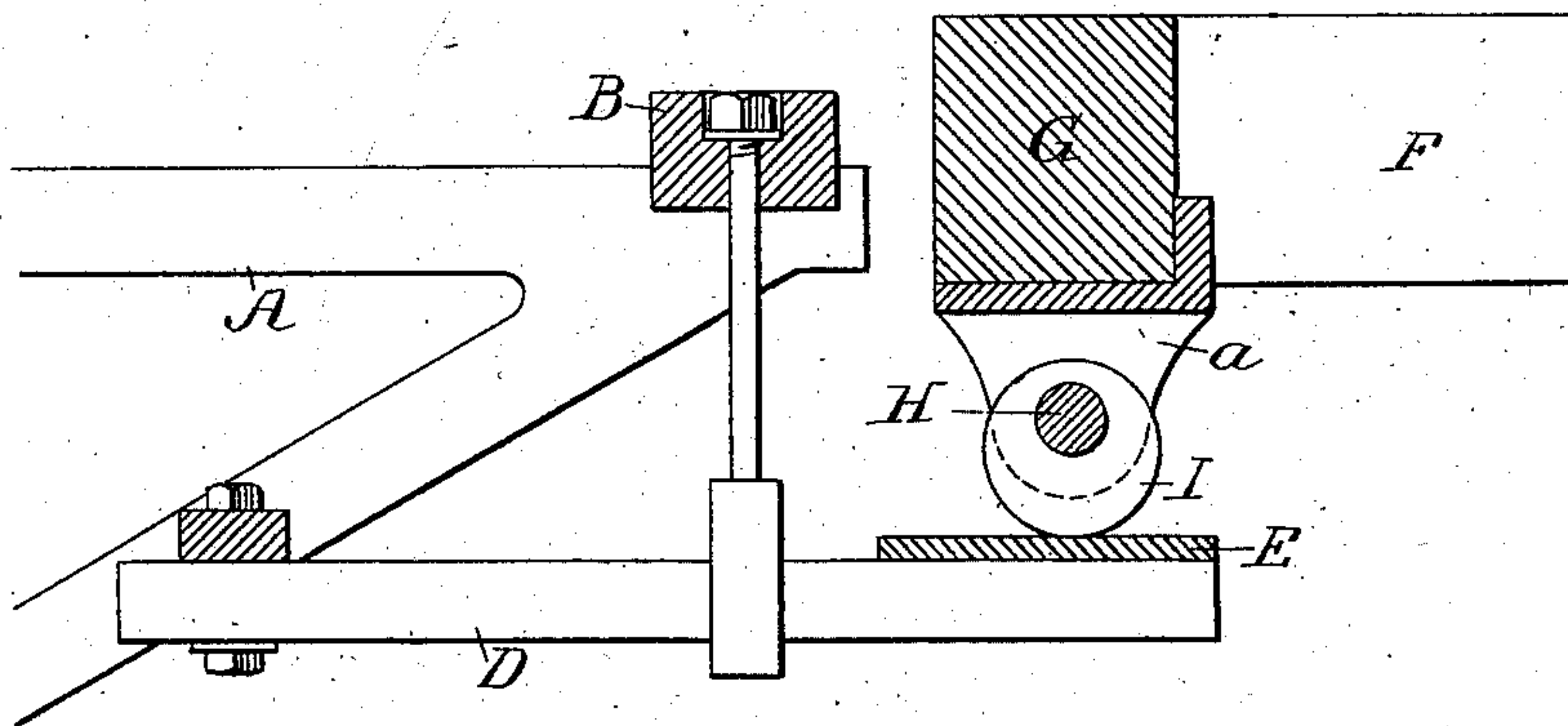


FIG. 3.

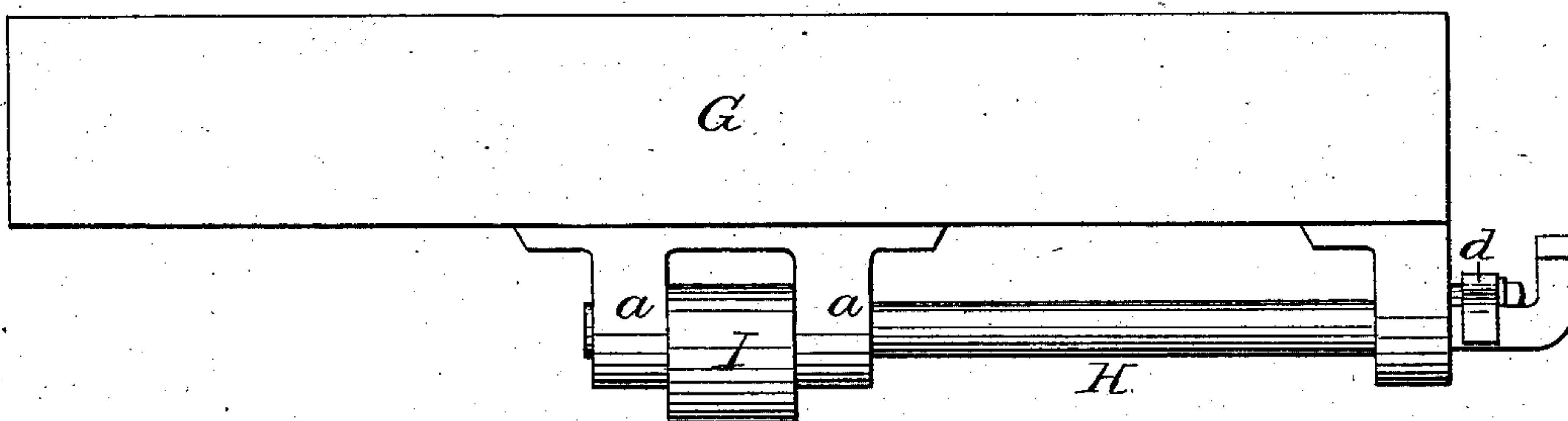
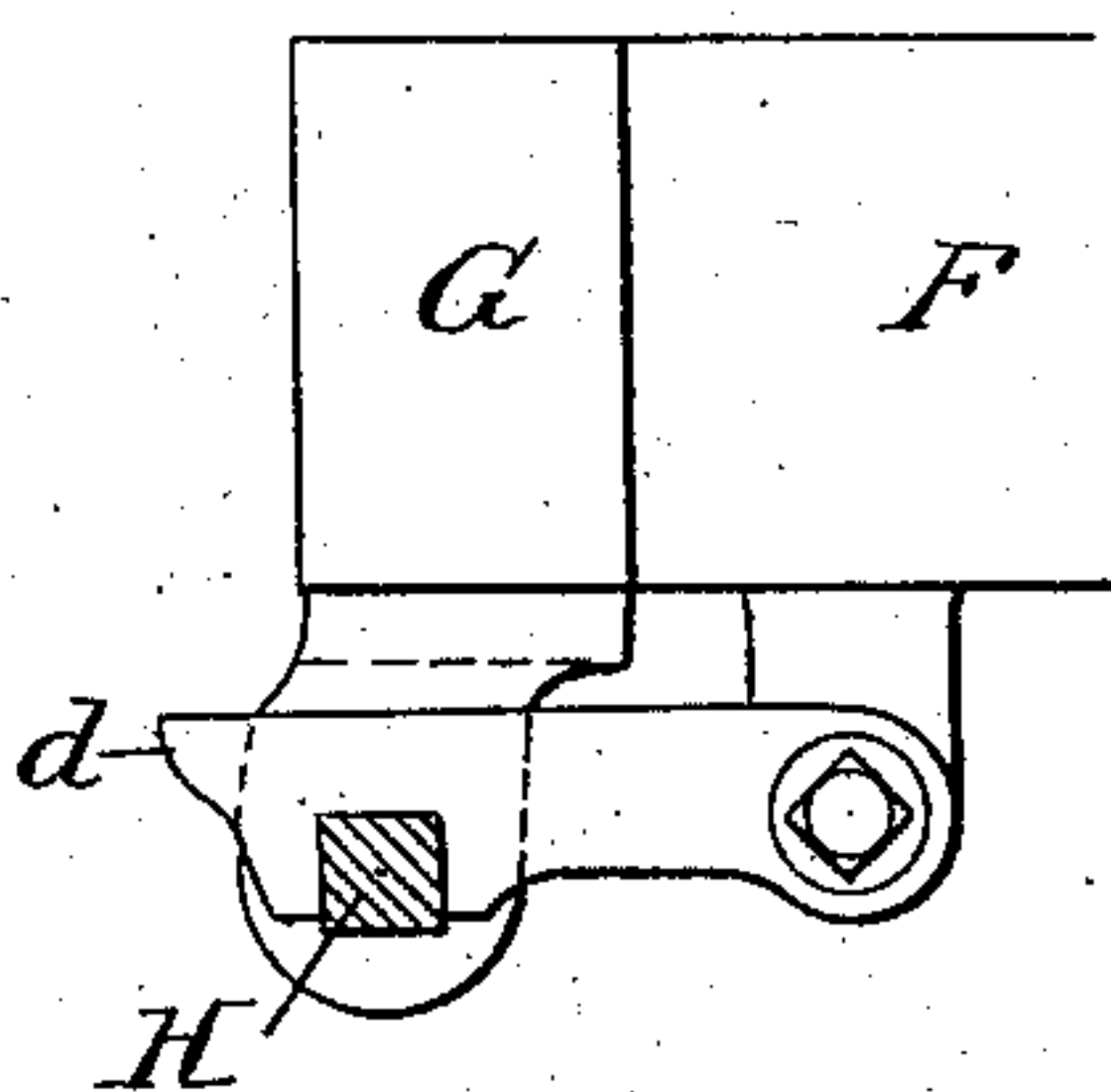


FIG. 4



WITNESSES:

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# UNITED STATES PATENT OFFICE.

JOSEPH ELDER, OF PEORIA, ILLINOIS.

## DEVICE FOR INCREASING THE TRACTION OF LOCOMOTIVES.

SPECIFICATION forming part of Letters Patent No. 290,012, dated December 11, 1883.

Application filed October 5, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH ELDER, a citizen of the United States, and a resident of Peoria, Illinois, have invented certain Improvements in Devices for Increasing the Traction of Locomotives, of which the following is a specification.

My invention consists of certain simple and economical mechanism, fully described herein-  
after, for transferring part of the weight of a tender to the frame of the locomotive whenever it becomes advisable to increase the traction of the driving-wheels—as, for instance, in ascending inclined planes—a result which has heretofore been accomplished by more complex and costly mechanism than that which forms the subject of my invention.

In the accompanying drawings, Figure 1 is a plan view of parts of the frame of a locomotive and tender, showing my invention; Fig. 2, a vertical section on the line 1 2, Fig. 1; Fig. 3, an end view of the tender-frame, and Fig. 4 a device which may be used in connection with my invention.

A and A' are the end portions of the opposite side frames of a locomotive, and B the usual end beam connecting the frames together.

An extension of the locomotive frame-work consists, in the present instance, of two bars, D D, secured at their inner ends to the frame, and suspended from the beam B by strap-bolts, the bars being connected together at and near their outer ends by a plate, E. Extensions of the engine frame-work may be differently constructed, as different styles of such frame-work may suggest.

F F are parts of the opposite side beams, and G the end beam, of the tender-frame, and beneath the latter is a shaft, H, adapted to suitable bearings, a, secured to the beam G, or to any attachment to the frame. To this shaft is secured a cam or eccentric, I, the shaft being bent up to receive a socketed lever; or it may be otherwise constructed, so that any appropriate lever may be fitted to it. A keeper, d, Fig. 4, may be pivoted to the frame of the tender, or to any attachment thereon,

the keeper being recessed to fit over a square or many-sided portion of the shaft, for the purpose of retaining the same in the position to which it may have been turned by the operating-lever.

As shown in Fig. 2, the tender and locomotive are supposed to be coupled together. The shaft has been so turned that the cam bearing on the plate F has had a tendency to force the locomotive frame-work and that of the tender vertically apart from each other, and the consequence of this has been the transfer of part of the weight of the tender to the locomotive frame-work and an increased bite of the driving-wheels on the rails. When increased traction is no longer necessary, the shaft may be so turned that the cam will be free from contact with the plate E, the entire weight of the tender being consequently supported by the rails.

It will be seen that the shaft may be in bearings on the extension of the locomotive frame-work, the cam in this case being arranged to bear on a plate on the under side of the tender-frame, the essence of my invention being the extension of the engine frame-work beneath the tender-frame when the said tender and engine are coupled together, and the interposition between the two frames of a cam or eccentric, by means of which a portion of the weight of the tender may be transferred to the engine when increased traction is desired.

I claim as my invention—

The combination of an engine-frame and tender-frame, an extension of the former being constructed to extend beneath the latter, with a cam or eccentric interposed between the said extension of the engine-frame and the tender-frame, and with mechanism for operating the said device, all substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOSEPH ELDER.

Witnesses:

JOHN E. PARKER,  
HARRY SMITH.