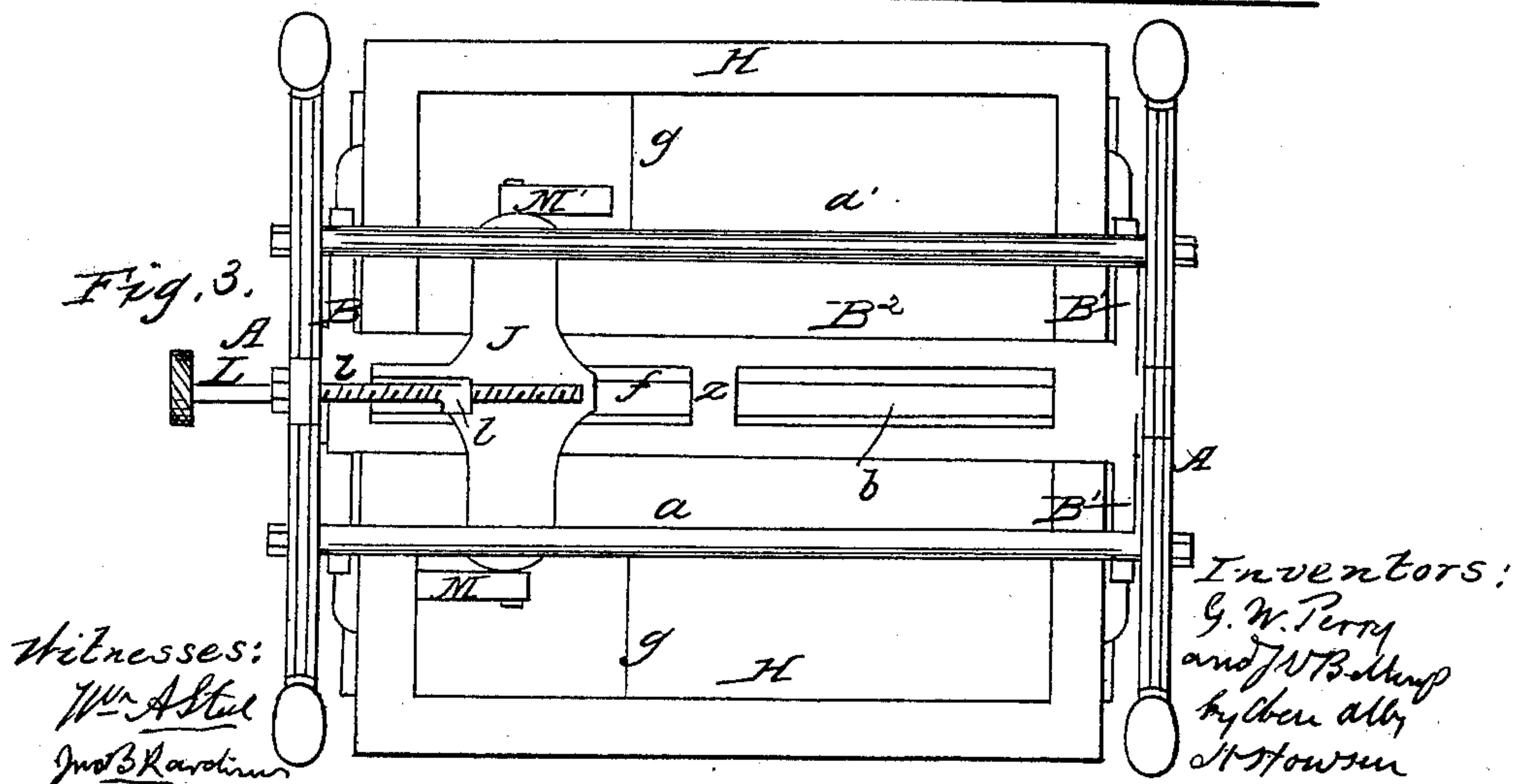
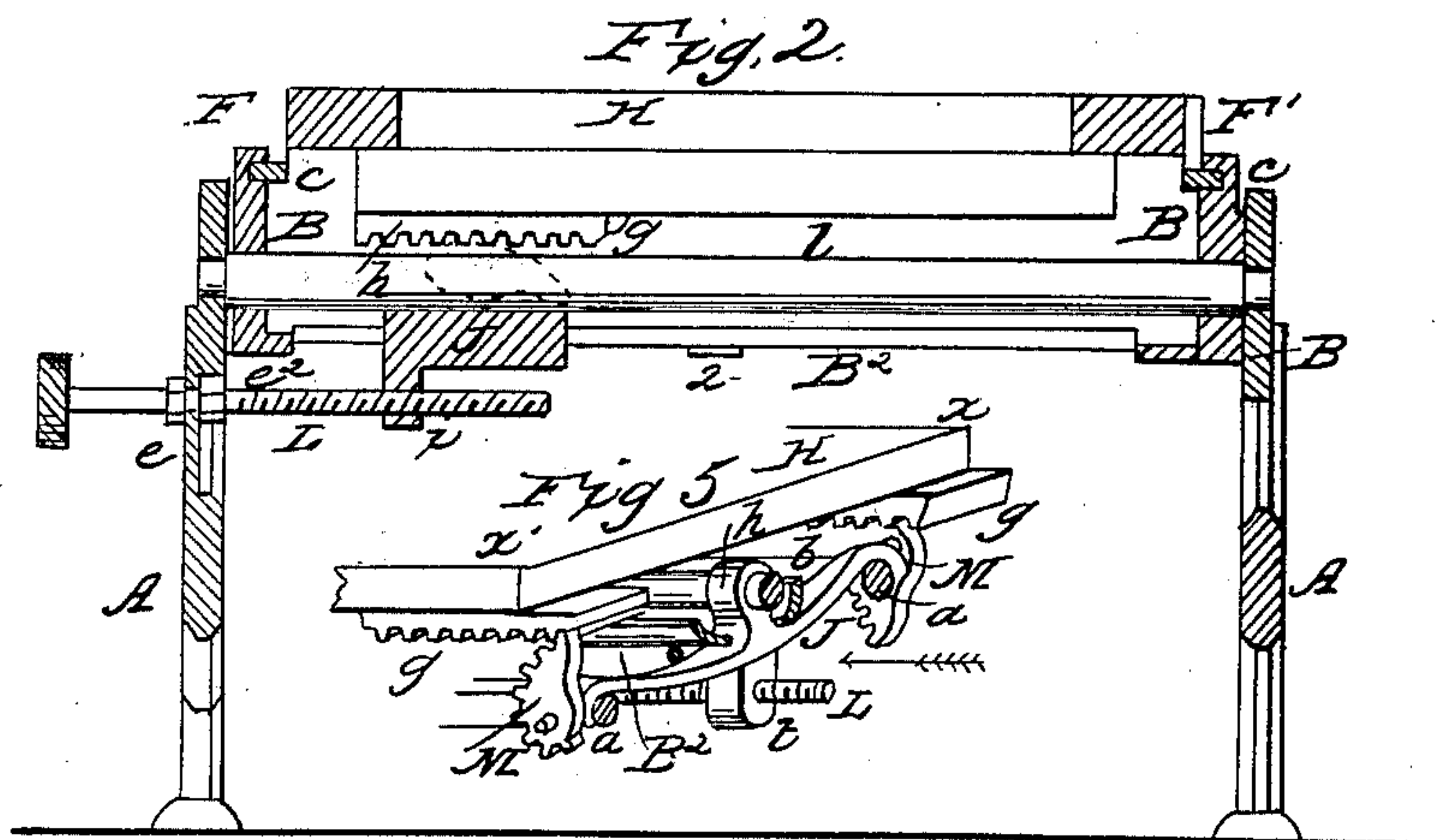
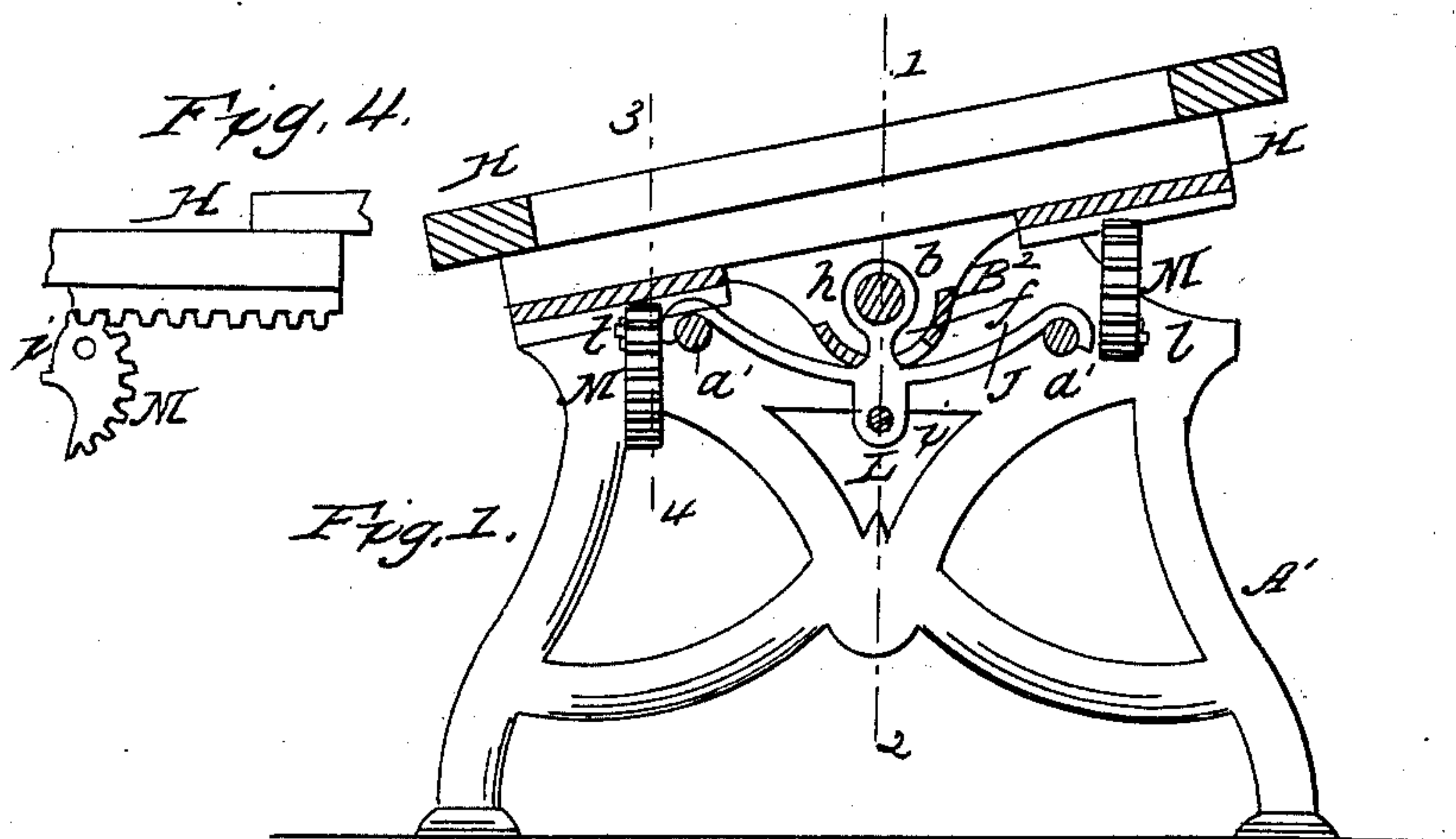


PERRY & BILLINGS.

Railway Car Seat.

No. 90,297.

Patented May 18, 1869.



United States Patent Office.

G. W. PERRY AND J. D. BILLINGS, OF WILMINGTON, DELAWARE.

Letters Patent No. 90,297, dated May 18, 1869.

IMPROVED RAILWAY-CAR SEAT.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that we, G. W. PERRY and J. D. BILLINGS, of Wilmington, county of New Castle, State of Delaware, have invented an Improvement in Seats for Railway-Cars, &c.; and we do hereby declare the following to be a full, clear, and exact description of the same.

Our invention relates to an improvement on the car-seat for which Letters Patent were granted to us on the 8th day of December, 1868; our present invention consisting of devices, fully described hereafter, for so adjusting the seat that it may be depressed in front or at the rear, or may be in a horizontal position.

In order to enable others familiar with mechanism of this class to make and apply our invention, we will now proceed to describe its construction and operation, reference being had to the accompanying drawing, which forms a part of this specification, and in which—

Figure 1 is a vertical sectional view of our improved seat for cars, &c;

Figure 2, a section of the same, on the line 1-2, fig. 1;

Figure 3, an inverted plan view;

Figure 4, a detached sectional view, on the line 3-4, fig. 1; and

Figure 5, a sectional perspective view, illustrating a portion of our invention.

Similar letters refer to similar parts throughout the several views.

The frames A and A', of the chair, are in the present instance of cast iron, and are connected together, near the top, by three rods, *a*, *a'*, and *b*, the latter rod, which is attached to the centre of each side frame, being situated slightly above, but midway between the rods *a* and *a'*.

Two plates, B and B', are fitted loosely to the rod *b*, and are connected together by a semicircular strip or plate B², which passes partly around, but is free from contact with the rod, the whole forming a rigid metal frame, which can turn freely upon but is prevented from moving longitudinally on the said rod *b*.

On the inner sides of the plates B and B' are grooves, to which are adapted lugs *c* *c*, formed on the lower edges of two plates, F and F', which are secured to the opposite sides of a box, H, the latter forming the lower portion of the seat of the chair, which, when thus attached to the plates B and B', can be moved thereon longitudinally, to the limited extent required in adjusting the back of the seat to different angles, as fully described in our aforesaid patent of December 8, 1868.

In our former patent, the seat, although permitted to slide longitudinally between the side frames, was always maintained in a horizontal position. By the employment of certain devices, however, which we will

proceed to describe, we are now enabled to adjust the seat, as well as the back, to any desired angle.

A curved plate or yoke, J, passes beneath the rod *b* and plate B², and over the rods *a* and *a'*, its curved ends partly embracing the latter, as best observed in fig. 1.

A vertical arm of this yoke passes through a longitudinal slot, *f*, of the plate B², and forms a sleeve, *h*, which is arranged to slide upon the rod *b*, and at a point directly beneath this sleeve is a nut, *i*, having threads corresponding to those of a screw, L, which passes through and is arranged to turn freely in the frame A of the chair, but which is prevented from moving longitudinally in the same by its collars *e* *e*. (See fig. 2.)

To a pin, *l*, at one end of the yoke J, is hung a toothed cam, M, which gears into a rack, *g*, secured to the under side of the seat H, and at the opposite end of the yoke is hung a similar toothed cam, M', which also gears into a rack, *g*, of the seat.

As the seat is arranged to have a sliding motion between its frames, while the toothed cams M and M', are stationary, it is necessary that some provision should be made to prevent the latter from being thrown out of gear, and for this purpose the racks *g* *g* are made considerably wider than the toothed cams, as best observed in figs. 3 and 5, so that whatever may be the position of the sliding seat, the said cams are always in gear with the racks.

The seat H is in effect pivoted to the rod *b*, and rests upon the cams M and M', its inclination being determined entirely by the latter, which are so arranged, that when one cam is elevated, the other is depressed, as seen in fig. 2.

When the yoke J is caused to slide upon the rods *a*, *a'*, and *b*, by operating the screw L, the toothed cams will also be caused to traverse the racks *g*, and to turn upon their pins *l*, one of the cams being raised as it is turned, and thus elevating that edge of the seat to which it is in nearest proximity, while the opposite cam will be correspondingly lowered, and will permit the proper depression of the opposite edge of the seat.

This will be illustrated by referring to fig. 5, and supposing that the yoke J is being moved in the direction of the arrow, by a proper operation of the screw L. The racks being stationary, the cams will both turn, and in the same direction; but owing to the manner in which they are adjusted in relation to each other, the edge *z* of the seat will be elevated by the cam M', while the cam M will be so operated as to permit the opposite edge *z'* of the seat to descend.

It will be evident that on reversing the motion of the screw, and thus sliding the yoke in a different direction, the action of the cams will be also reversed.

Stops *z* *z*, at the opposite ends of the slot *f*, of the plate B², are arranged to arrest the yoke J, in order

to prevent the latter from being moved to such an extent as to show the toothed cams out of gear with the racks *g g*.

When the seat has been adjusted to a horizontal position, or to any desired angle, and the motion of the cams is stopped, the latter will form effectual rests for the seat, and will prevent it from tilting.

Although we prefer to use the above devices in connection with a chair having an adjustable back, as described in our former patent, yet it will be evident that they can be used independently of the same, in which case the seat, not requiring a sliding motion, can be secured directly to the plates *B* and *B'*, and the racks *g g* can be made of a width corresponding to that of the toothed segments.

We claim as our invention, and desire to secure by Letters Patent—

1. The seat *H*, pivoted directly or indirectly to the

rod *b* of the frame, and having racks, *g g*, adapted to toothed cams *M M'*, by the movement of which, through the medium of the devices herein described, or any equivalent to the same, the said seat *H* may be adjusted as set forth.

2. The sliding yoke *J*, carrying the toothed cams *M* and *M'*, and controlled by the screw *L*, in combination with the racks *g g* beneath the seat *H*, the whole being arranged and operating substantially as and for the purpose herein set forth:

In testimony whereof, we have signed our names to this specification, in the presence of two subscribing witnesses.

G. W. PERRY.
J. D. BILLINGS.

Witnesses:

E. H. BAILEY,
LOUIS BOSWELL.