

F. KOCHER.
Platform Spring.

No. 197,866.

Patented Dec. 4, 1877.

Fig. 1.

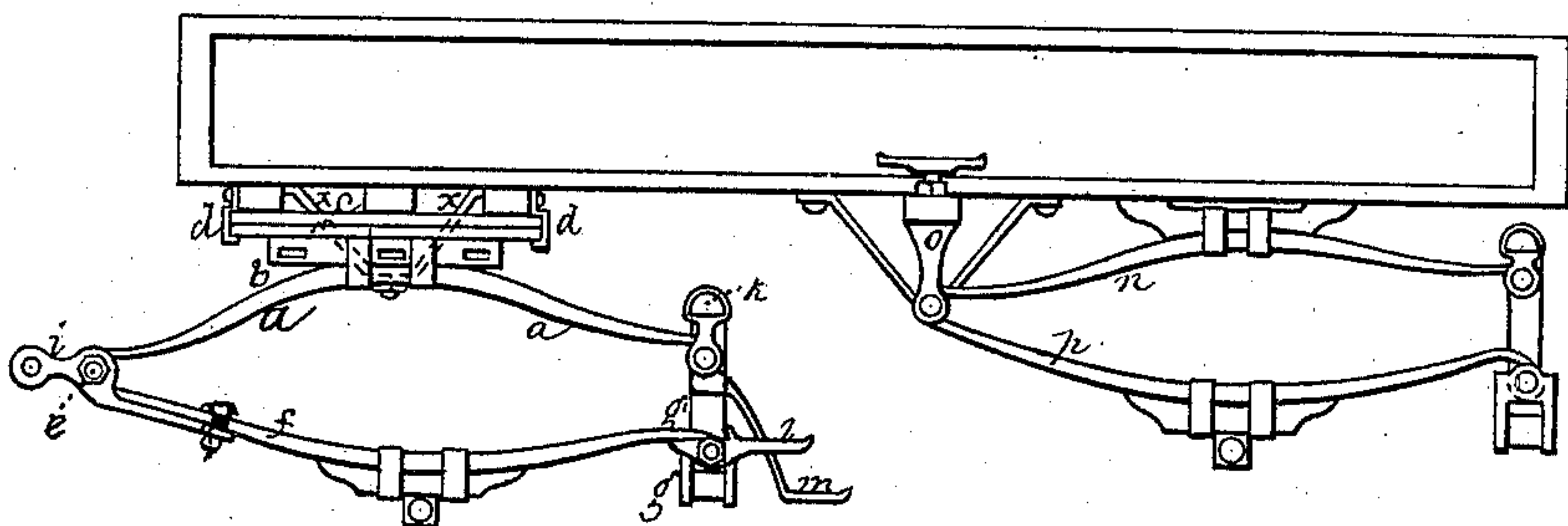


Fig. 2.

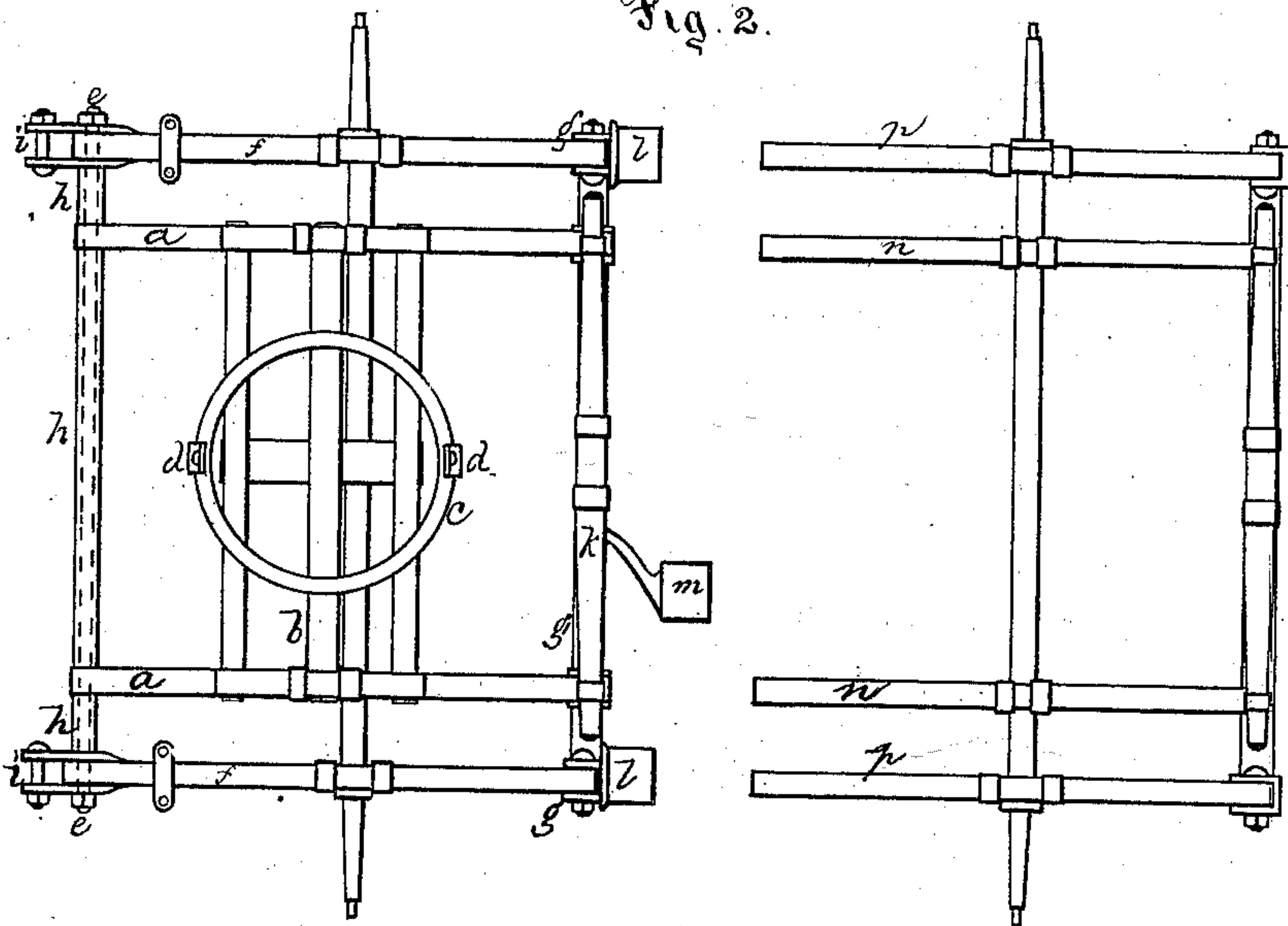
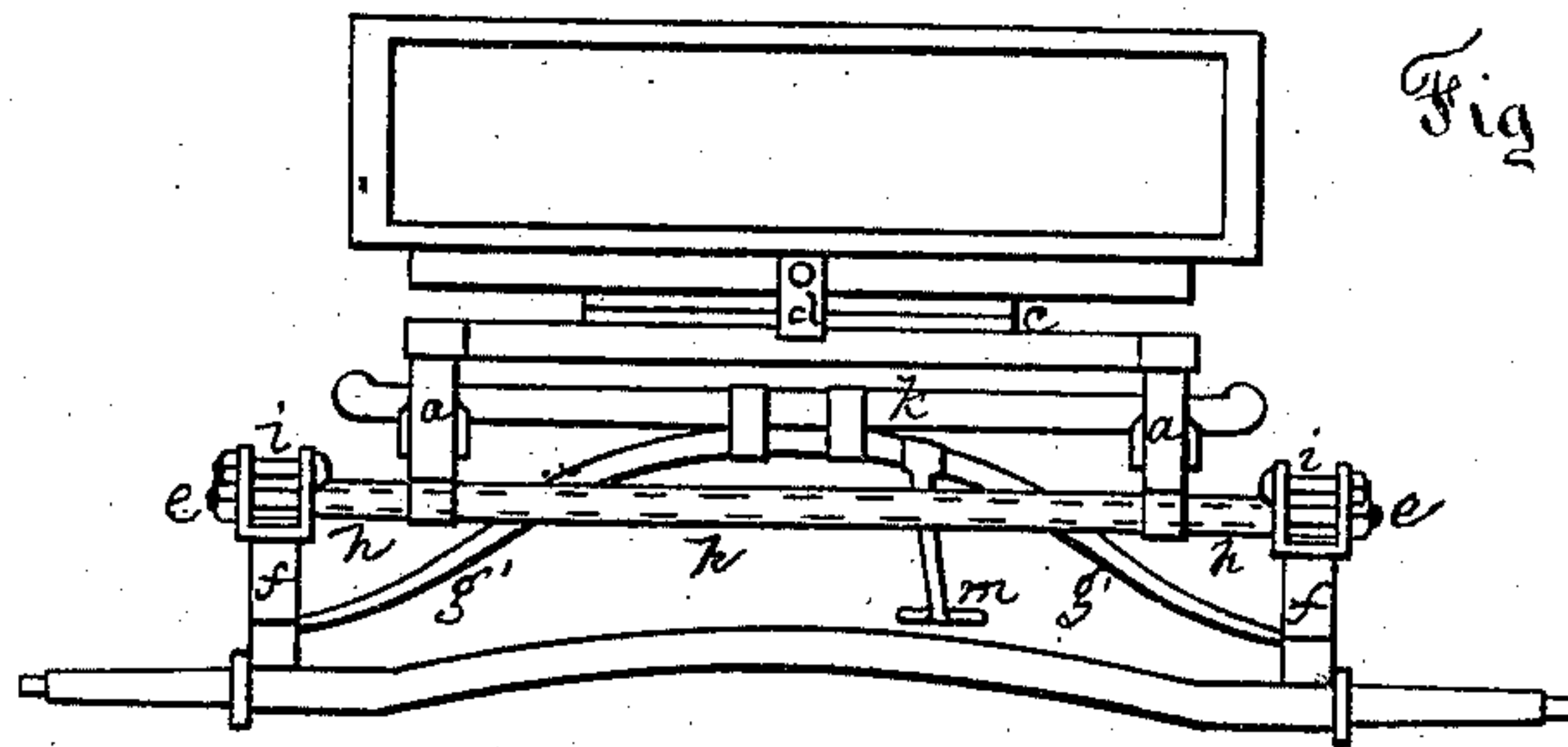


Fig. 3.



Witnesses:

F. Howard
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Inventor:

Fred Kocher
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Att'y.

UNITED STATES PATENT OFFICE.

FRED KOCHER, OF SYRACUSE, NEW YORK.

IMPROVEMENT IN PLATFORM-SPRINGS.

Specification forming part of Letters Patent No. 197,866, dated December 4, 1877; application filed September 10, 1877.

To all whom it may concern:

Be it known that I, FRED KOCHER, of Syracuse, New York, have invented certain Improvements in the Running-Gear of Carriages, of which the following is a specification:

These improvements relate to the construction and arrangement of the springs supporting the body of a carriage.

The following is a description of my improvements, referring to the accompanying drawings, in which—

Figure 1 is a side elevation; Fig. 2, a plan, and Fig. 3 a front view.

The springs are all leaf-springs of usual construction. The upper forward ones *a* are affixed to the bolster *b* by clips. To the upper side of this bolster the lower circle of the fifth-wheel *c* is attached, the upper circle being attached to the body. In front and rear two hooks, *d*, are bolted, that hold the circles securely together and steady them. (See Fig. 1.) There is a brace, *x*, attached at its ends to the under side of the body, in front and rear of the king-bolt, the lower end of which passes through said brace, which supports and strengthens it.

The forward ends of the springs *a* have eyes formed in them, through which a rod or bolt, *e*, passes, (see Fig. 2,) and also through pieces of iron pipe *h*, that serve to hold the springs in place. The lower springs *f* are similarly fastened by the same rod *e* to outside springs *a*, as seen in Fig. 2. The rod *e* also passes through and holds the draw-irons *i*, embracing the ends of the outer lower springs *f*. To these draw-irons there is a projecting piece extending under the spring, to which it is held by a clip. The dotted lines, Fig. 2, show the rod *e* passing through pipes *h*. There are nuts on the ends of rod *e*, by which the parts are securely drawn and held together. The springs *f* are secured to the axle at their centers. The rear ends extend back to couplings *g*, uniting them to a cross-spring, *g'*, attached to the center of a cross-bar, (*k*) to the ends of which the rear ends of the springs *a* are coupled. (See Fig. 1.)

A step, *l*, may be attached at the coupling of the lower spring in rear, and another step,

m, may be fastened near the center of the cross-spring *g'*. This swings out for use if the forward axle is turned, as clearly appears by the plan.

The rear springs are similarly arranged as the front ones. The upper ones *n* are affixed to the body at their center, having an oblong eye at their forward ends, which are held steady by brackets *o*, through which and the oblong eye a bolt passes to unite them, so that the spring can have play as it elongates. The brackets *o* are affixed to the body and braced properly to hold securely the front ends of the lower springs *p*, which are attached at their centers to the hind axle. The rear ends of these springs are coupled to a cross-spring in the same way as the forward spring.

This construction and application of the springs render their removal and replacement, for repair or otherwise, convenient and easy, and the running-gear and body can be easily adjusted, elevated, or leveled, and the forward wheels be made to run under the body, if desired.

These springs are peculiarly easy in their action, especially in passing over any inequalities or obstructions in the road, and they are stronger and more durable, as well as cheaper and more perfect in their working, than any other springs with which I am acquainted.

Having thus fully described my improvements, I claim—

1. The combination of the springs *n p* and brackets *o*, affixed to the carriage-body, with the cross-spring and spring-bar uniting the rear ends of said springs, as herein described.

2. The rod *e* and pipes *h*, for uniting the ends of the forward springs and the draw-irons, as and for the purposes specified.

3. The combination of the forward springs *a f g*, and back springs *n p*, and cross-spring, and their connections, with the carriage-body, as herein described.

FRED KOCHER.

Witnesses:

J. J. GREENOUGH,
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