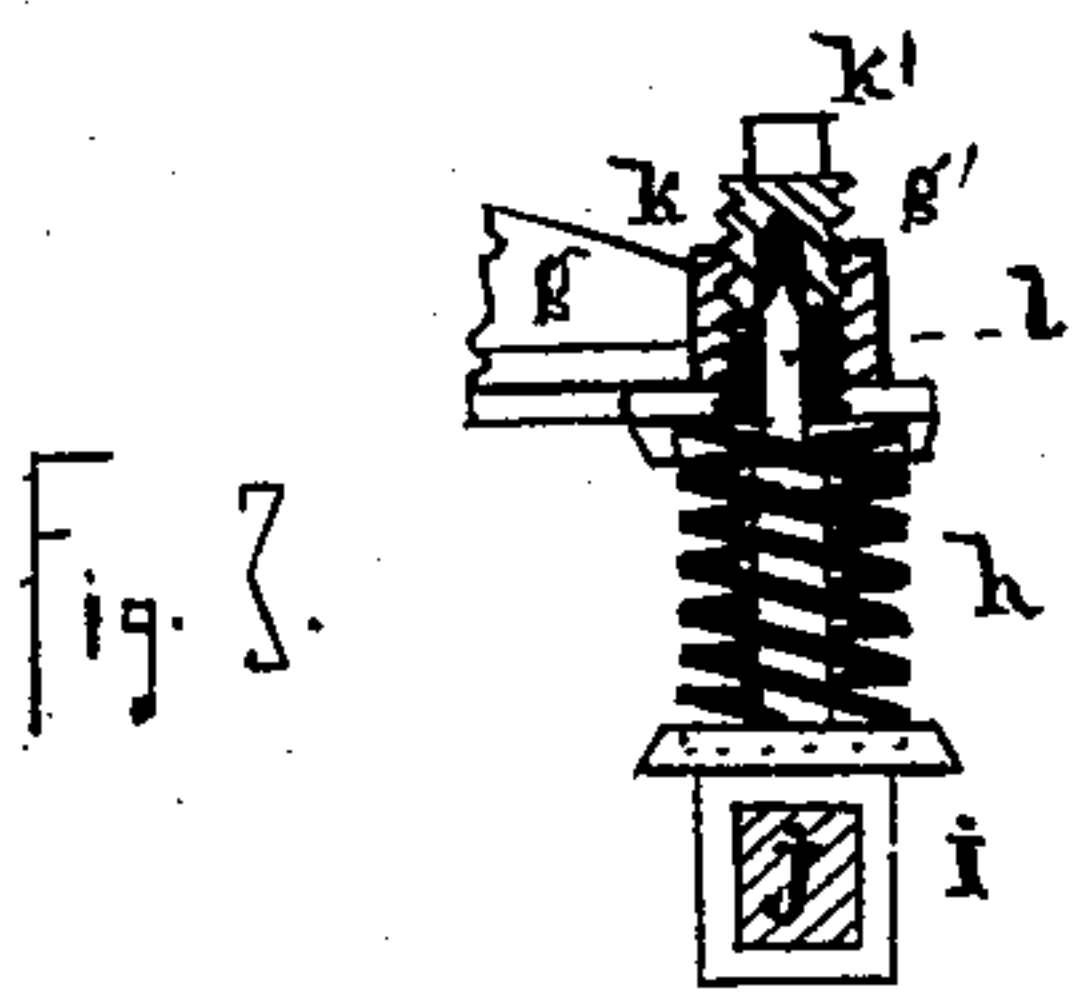
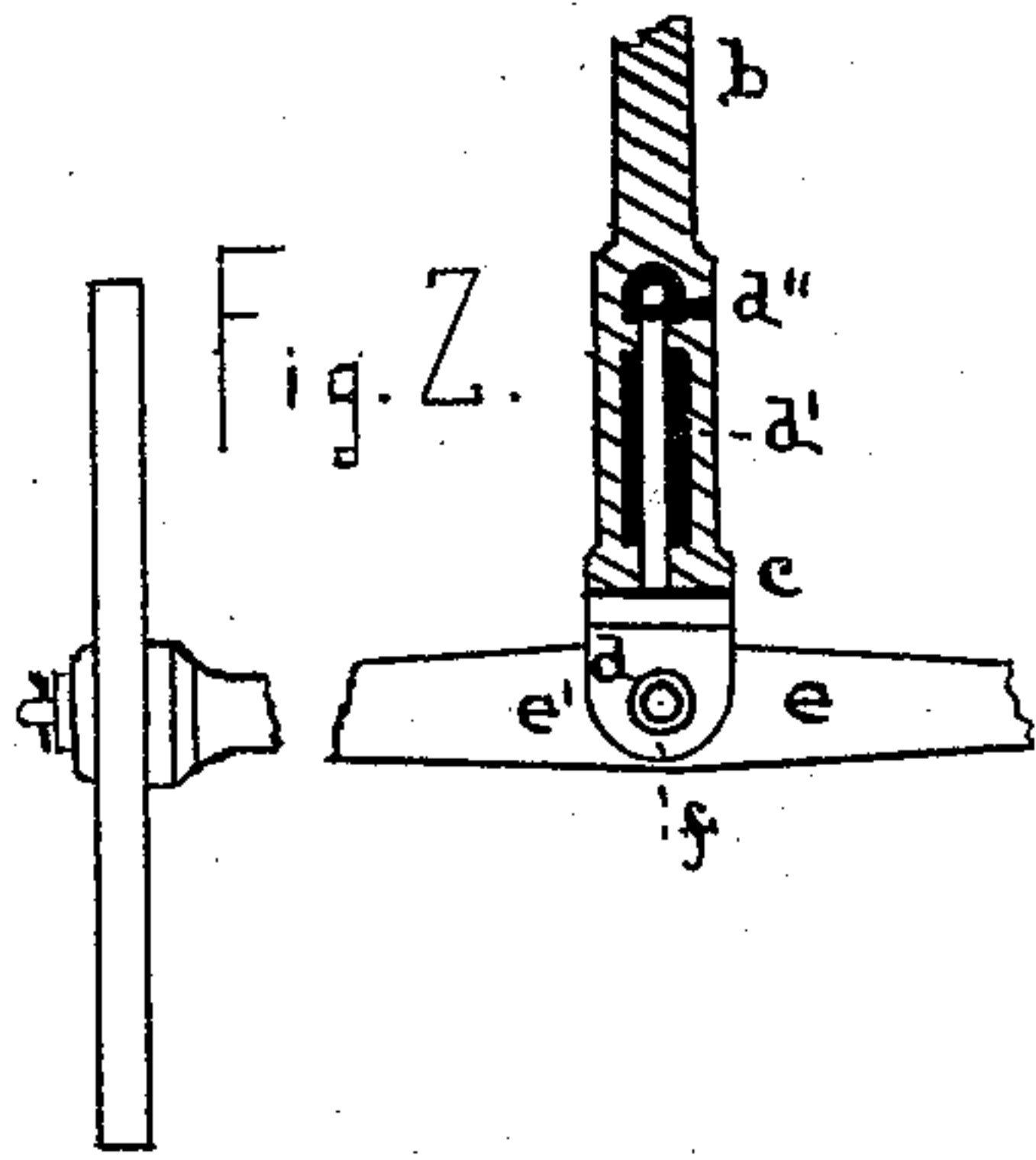
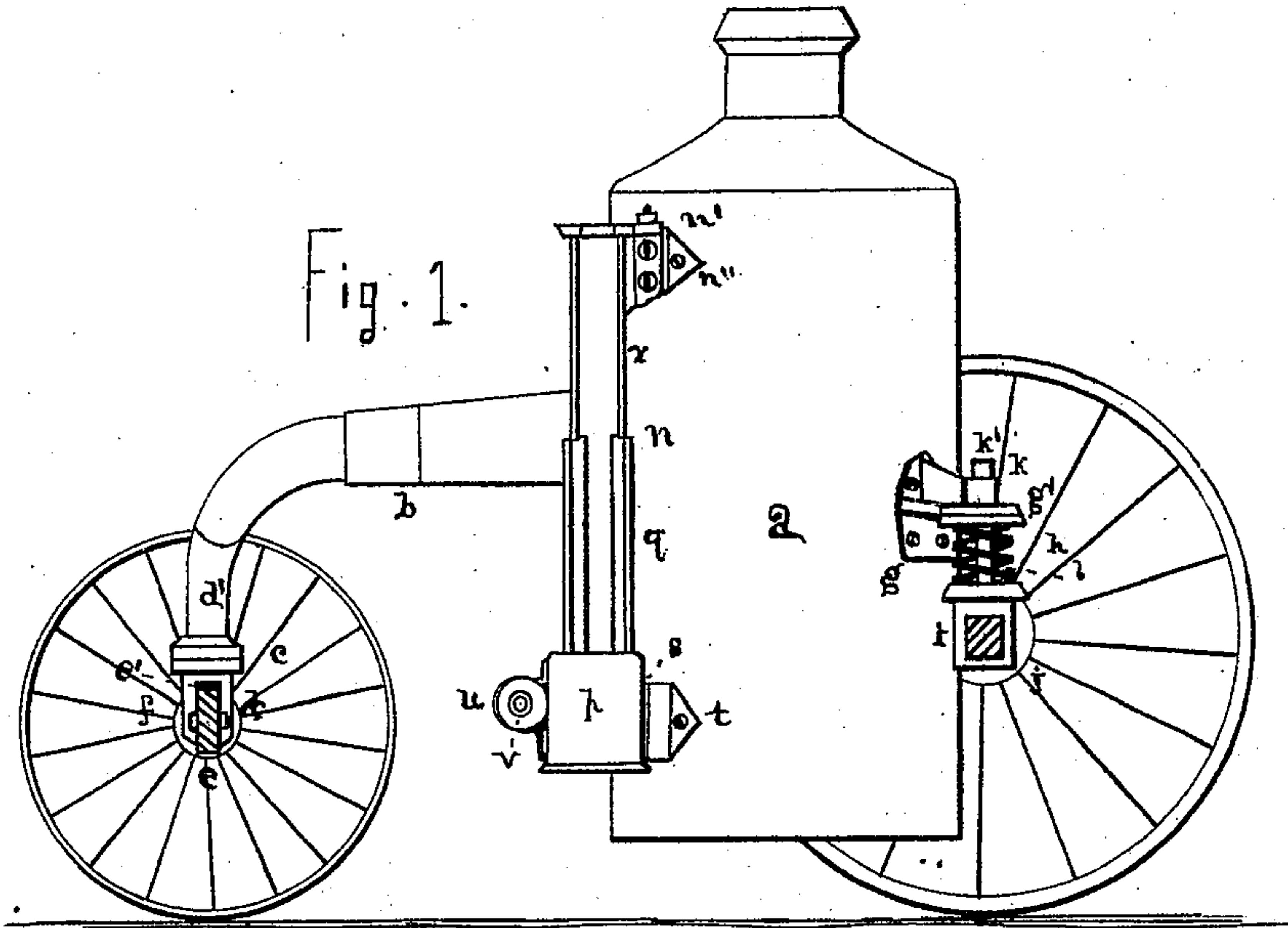


H. M. DURPHY.
PORTABLE STEAM-ENGINE.

No. 172,916.

Patented Feb. 1, 1876.



J. J. Parker.
Wm. G. King

Witnesses

H. M. Durphy
Inventor.

UNITED STATES PATENT OFFICE.

HENERY M. DURPHY, OF ITHACA, NEW YORK, ASSIGNOR TO WILLIAMS BROTHERS, OF SAME PLACE.

IMPROVEMENT IN PORTABLE STEAM-ENGINES.

Specification forming part of Letters Patent No. 172,916, dated February 1, 1876; application filed October 21, 1875.

To all whom it may concern:

Be it known that I, HENERY MARTYN DURPHY, of Ithaca, Tompkins county, New York, have invented certain Improvements in Running-Gear for Portable Steam-Engines, which improvements I have set forth in the following specification, reference being had to the accompanying drawings.

My invention relates to several parts—first, to the double joint I make for the front axle. The rear of the carriage front or frame is divided for a broad attachment to the boiler, and is united into a single bar at its front, where it is curved downward and rounded. In the rounded part is a cylindrical chamber, holding a cylindrical pintle or king-bolt. An axle, flat in its middle, is in a slot in the lower end of the pintle, and is secured there by a transverse bolt; and my improvement here consists in the double joint thus made. Second, my invention relates to making the screws which lift the main weight of the boiler and its attached parts off of the springs of the rear axle, as a part of the rear brackets, and consequently ever transported with them; and here my invention consists of the screw and bracket being made in one device or part.

Figure 1 is a side elevation of my engine, partially sectional. Fig. 2 is a front view of my front axle-joint, also partially sectional. Fig. 3 is a view of my screw device, in part sectional.

In Fig. 1, *a* is a cylindrical upright boiler, with the iron frame or front *b* bent downward at its forward end, and having at *c* the cramping-joint, which is made by a portion of the pintle *d*, which is in the chamber of the frame *b*, and which part of the pintle is secured by a key near its top, inserted through a hole in the side of the frame, the place for which is seen at *d'*, Fig. 2. The pintle has two bearings in the chamber, one near the letter *c*, Fig.

2, and the other near the letter *d''*, Fig. 2. The flattened middle of the axle *e* is held to the pintle *d* by the bolt *f* through it and the pintle. At *g*—one of the two rear axle-brackets which are fast to the boiler—are the springs *h*, between the brackets and the axle-clips *i*, which springs are about their pintles *l*. Screws *k*, turned by their heads *k'*, are in threads cut in the outer ends of the brackets, and when turned downward (see Fig. 3) on the top of the pintles *l*, which fit hollows in the screws, lift the weight of the boiler off of the springs, and thus the springs can no longer act; and these springs are made useful in transportation, and are prevented from action when the engine is working.

The further parts, advantages, and uses of my invention are apparent to those skilled in the art to which it appertains.

I claim—

1. A pintle-piece or joint structure between the frame *b* and the axle *e* of a portable steam-engine, consisting of the pintle *d*, chambered in the lower end of the frame *b*, and held in place by a bolt or key through the top of the said pintle, which key turns on a shoulder in the said chamber, and of a slot in the lower end of the said pintle-piece, which slotted part embraces the front and rear sides of the axle *e*, and is held to the axle by a bolt through the axle and the slotted ends of the pintle-piece, as set forth.

2. I claim the lifting-screw *k*, made as part of the bracket *g*, in combination with the spring *h* and spring-pintle *l*, whereby the weight of the boiler and engine is lifted off of the transporting-springs *h* when the engine is at work, as set forth.

HENERY MARTYN DURPHY.

Witnesses:

S. J. PARKER,
WM. G. KING.