

No. 845,461.

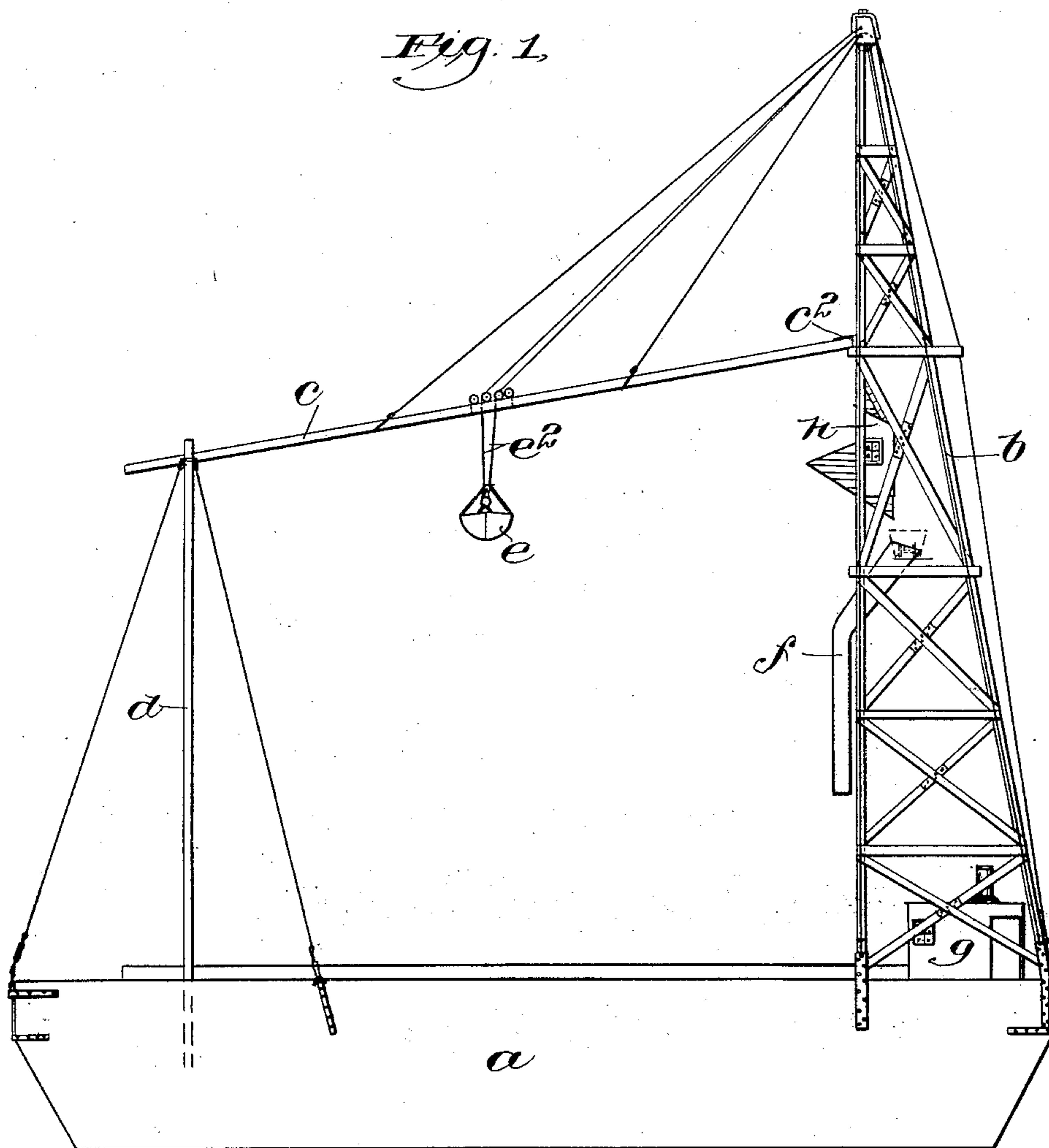
PATENTED FEB. 26, 1907.

J. W. HAMMOND.

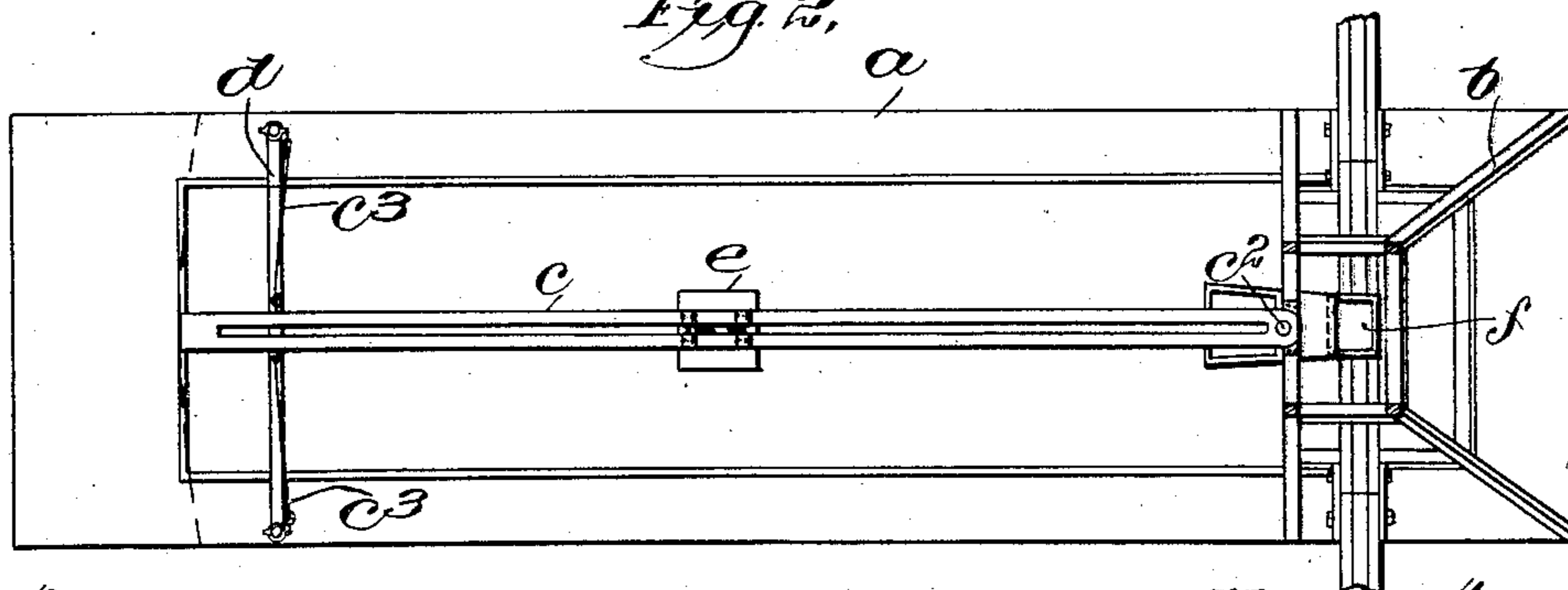
LIGHTER.

APPLICATION FILED JUNE 27, 1906.

*Fig. 1.*



*Fig. 2.*



Witnesses:

Jas. J. Maloney.  
*[Signature]*

Inventor:

John W. Hammond,  
 by J. P. and H. J. Livermore  
*[Signature]*

# UNITED STATES PATENT OFFICE.

JOHN W. HAMMOND, OF TAUNTON, MASSACHUSETTS, ASSIGNOR TO STAPLES COAL COMPANY, A CORPORATION OF MASSACHUSETTS.

## LIGHTER.

No. 845,461.

Specification of Letters Patent.

Patented Feb. 26, 1907.

Application filed June 27, 1906. Serial No. 323,616.

*To all whom it may concern:*

Be it known that I, JOHN W. HAMMOND, a citizen of the United States, residing in Taunton, in the county of Bristol and State of Massachusetts, have invented an Improvement in Lighters, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

The present invention relates to a lighter and is embodied in a mechanical construction whereby a lighter can be unloaded to better advantage and with less manual labor than in constructions heretofore employed.

The invention is especially applicable to coal-lighters of the kind employed in coaling vessels, and the purpose is to obviate to the greatest possible extent the use of trimmers—that is to say, those who shovel the coal—the operation being mainly automatic throughout and taken care of by two or more attendants.

In accordance with the invention the lighter is provided with a tower at one end, this tower being of skeleton framework, so that the house for the donkey-engines can be located at the base of the tower, while the operators are provided with a stand or housing part way up the tower, where they can observe the operation of the grab-bucket which is used to convey the cargo from the hull of the lighter. The contents of the hull are removed by hoisting the same by means of a grab-bucket, which in accordance with the invention is controlled by a trolley running on a trolley-boom, which boom is pivoted to the tower, but free to swing laterally upon its pivot, being supported at the opposite end upon a frame on which it is free to slide.

The position of the trolley which carries the pulleys over which the controlling-cables for the grab-bucket run is controlled in the usual way by the engine, and the grab-bucket is hoisted and drawn up the trolley-boom to the point of discharge after having been lowered into the hold and filled. By this construction the entire contents of the hold becomes accessible, since the grab-bucket each time it is lowered can be varied in position not only laterally, but longitudinally, so that all the contents of the hold can be removed without the manual labor of moving the con-

tents to a position where the automatic grab-bucket is accessible.

Figure 1 is a side elevation of a scow or lighter embodying the invention, and Fig. 2 is a partial top plan view of the same.

Referring to Fig. 1, the hull *a* of the scow or lighter is provided at one end with a tower *b*, which is arranged to support a trolley-boom *c*, pivotally connected at *c*<sup>2</sup> with the tower and supported at the opposite end upon the top of a frame *d*, which is so arranged as to admit of a lateral movement of the free end of the boom *c*. The grab-bucket *e* is controlled by hoisting-ropes *e*<sup>2</sup>, which run over pulleys *e*<sup>3</sup> on a trolley which runs on the trolley-boom *c*, so that the longitudinal position of the trolley with relation to the boom can be determined, while the trolley, with the grab-bucket suspended therefrom, can be held by the boom to admit of the dumping of the contents of the grab-bucket *e* into a chute *f* or any equivalent device for carrying away the material. It is obvious that a coal-car, as indicated in dotted lines, running on tracks rigged from the tower *b* to the final point of discharge, or an endless conveyer rigged in the same way, or any equivalent conveying device, might be substituted, all these things, however, being common expedients and not forming any part of the present invention.

As best indicated in Fig. 2, the boom *c* is provided with tackle connections *c*<sup>3</sup>, which run to the engine-house *g* on the deck of the lighter, so that the position of the boom, as well as the operation of the bucket *e*, are under the control of one or more operators who may be located in a house *h* near the top of the tower, where they can observe the operation of the bucket *e*, which is under their control. Assuming, therefore, that a cargo of coal is to be discharged from the lighter to a wharf or into the hold of a vessel, it will be seen that nearly the entire contents of the hull of the lighter can be reached by the grab-bucket *e* by controlling the lateral position of the boom *c* from side to side and the position of the trolley with relation to the boom, so that very little trimming is required to discharge the entire cargo from the lighter.

The actual mechanical connections between the end of the boom, the trolley which

runs on the boom, and the hoisting apparatus for the grab-bucket *e* are not herein shown in detail, since they do not depart in any way from similar devices now commonly in use, it being readily understood that these are merely cable connections connected by means of pulleys through the tower with the engine or engines in the house *g*.

I claim—

1. In a lighter, the combination with the hull; of a stationary tower located near one end thereof; a stationary supporting member extending laterally across the hull near the opposite end thereof; a trolley-boom pivotally connected at one end with said tower, and supported at the other end on said support along which it is free to travel laterally; a trolley running on said boom; a grab-bucket, the position of which is determined by the position of said trolley; and means for producing a lateral movement of the

outer end of said trolley-boom along said stationary supporting member, substantially as described.

2. The combination with the hull of a lighter; of a stationary tower located near one end thereof; a trolley-boom pivotally connected with said tower; a stationary support for the free end of said boom at the opposite end of the lighter; a grab-bucket, the position of which is controlled by swinging said boom on its pivot; and an operator's stand located near the top of said tower, substantially as described.

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

JOHN W. HAMMOND.

Witnesses:

W. E. COVENEY,  
H. J. LIVERMORE.