

**AMERICAN AND ENGLISH
REPORTS, REFERENCES AND
CERTIFICATES CONCERNING THE
PATENT BOX LINED WITH SOFT
METAL**

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649300280

American and English reports, references and certificates concerning the patent box lined with soft metal by Isaac Babbitt

Except for use in any review, the reproduction or utilisation of this work in whole or in part in any form by any electronic, mechanical or other means, now known or hereafter invented, including xerography, photocopying and recording, or in any information storage or retrieval system, is forbidden without the permission of the publisher, Trieste Publishing Pty Ltd, PO Box 1576 Collingwood, Victoria 3066 Australia.

All rights reserved.

Edited by Trieste Publishing Pty Ltd.
Cover @ 2017

This book is sold subject to the condition that it shall not, by way of trade or otherwise, be lent, re-sold, hired out, or otherwise circulated without the publisher's prior consent in any form or binding or cover other than that in which it is published and without a similar condition including this condition being imposed on the subsequent purchaser.

www.triestepublishing.com

ISAAC BABBITT

**AMERICAN AND ENGLISH
REPORTS, REFERENCES AND
CERTIFICATES CONCERNING THE
PATENT BOX LINED
WITH SOFT METAL**

AMERICAN AND ENGLISH

Reports, References and Certificates

CONCERNING THE

PATENT BOX

LINED WITH SOFT METAL,

INVENTED BY

ISAAC BABBITT.

PRINTED FOR THE PATENTEE.

BOSTON:

OAKES & SOLOMONS,

Stationers, 20 State Street.

1848.

155334
OCT 29 1912
TEB
AM3

6936993

REFERENCES, CERTIFICATES, &c.

ISAAC BABBITT, of Boston, Mass., having obtained Letters Patent of the United States for a Lined Box, suitable for all revolving and sliding motions in the various kinds of machinery, where great weight or speed are applied, would respectfully invite the attention of all persons interested in machinery to the following Certificates, References and Reports concerning it. He would refer, in the first place, to the following Railroad, Steamboat and Manufacturing Companies — by whom its use has been extensively adopted — as to the value of the improvement, viz.:

RAILROADS.

Eastern; Boston and Worcester; Boston and Providence; Boston and Lowell; Lowell and Nashua; Nashua and Concord; Taunton Branch; Taunton and New Bedford; Norwich and Worcester; Western; Portland, Saco and Portsmouth; Old Colony; Concord; Boston and Fitchburg; Boston and Fall River; Boston and Maine; Providence and Worcester; Champlain and Connecticut River; Springfield, Hartford and New Haven; Vermont Central; Northern, N. H.; Northern, N. Y.; Troy and Schenectady; New York and Erie; Attica and Buffalo; Buffalo and Niagara; Jersey City and New Brunswick; Philadelphia, Wilmington and Baltimore; Baltimore and Susquehanna; and Philadelphia and Reading.

STEAMBOATS.

The New Jersey Steam Navigation Company, — and the following, among others: the Worcester, New York, Charter Oak, Bangor, Huntress, Bay State, and Empire State.

MANUFACTURING COMPANIES.

Amoskeag, Manchester, N. H.; Lowell Machine Shop; Essex, Lawrence, Mass.; Boston Iron; Tremont Iron, Wareham; Massasoit Steam Mill, Fall River; Fall River Iron; American Print Works; Anawan; Fall River; Troy; Robson & Sons Print Works; Pocassett; Fall River, Mass.; Lewiston Manufacturing Company, Me.; Fairbanks, Bancroft & Co., Providence, R. I.; Boston Manufacturing Co., Waltham, Mass.; Allaire Works, New York City; Buffalo Steam Engine Works, Buffalo, N. Y.; Phoenix Foundry, New York City; Secor & Co., New York City; Joseph Hall, Rochester, N. Y.; J. Norton Poole, Rockford, near Wilmington, Del.; Merrick & Towne, Philadelphia, Penn.; Andrew Fulton, Pittsburg, Penn.; E. T. Taylor & Co., Columbus, Ga.; and Leeds & Company, New Orleans, La.

It is also used on board all the Steam Frigates, and in all the Public Works of the United States.

CERTIFICATES.

We, the undersigned, being practical mechanics, and having used Mr. ISAAC BABBITT'S PATENT IMPROVED LINED BOXES, for a sufficient length of time to test fully the merits of the improvement, hereby certify, that we know of no kind of Box so durable, nor any which operates so smoothly and with so little wear when applied to any kind of revolving or sliding motion in machinery, where great weight and speed are applied.

In the use of these Boxes, friction is reduced in a remarkable degree. Oil is required only in small quantities, and the wear is hardly perceptible during a period in which a

hard metal box of the same thickness would be worn out. Journals running in these boxes, attain a smoother surface than we have seen on those which have been run in any other Box.

We can also certify that the Patentee of this improvement has received the highest award of the Massachusetts Charitable Mechanic Association, for specimens of these Boxes, (some of which had been run on the crank of a locomotive engine more than 30,000 miles,) at the Fair of the Institution held in Boston, in September and October, 1841.

HINKLEY & DRURY — Locomotive and Stationary Engine Builders, Boston, Mass.

BUSH & LOBDELL — Founders, Machinists and Engineers, Wilmington, Del.

JAMES MILLHOLLAND — Superintendent of Motive Power, Baltimore and Susquehanna Railroad, Baltimore, Md.

OTIS TUFTS — Engine Builder, Boston, Mass.

SETH WILMARTH — Machinist, Boston, Mass.

GEORGE S. GRIGGS — Superintendent Motive Power, Boston & Providence Railroad, Boston, Mass.

The Committee of the Franklin Institute of Philadelphia, which was appointed for the purpose of awarding the premiums of the Scott Legacy, which are only awarded for such improvements as are proved to be new and useful, have awarded the premium to **ISAAC BABBITT**, for the above-named improvement in Boxes, &c.

REPORTS.

IN SENATE OF THE UNITED STATES.

Mr. Choate made the following report, which was ordered to be printed April 28, 1842.

The Committee on Naval Affairs, to whom was referred a bill authorizing the Secretary of the Navy to purchase for the United States, the right to use Babbitt's anti-attrition metal, present the following report :

The facts upon which the Committee have decided to recommend the passage of the bill are these: Babbitt has letters patent for a mode of applying an anti-attrition metal to exposed parts of machinery, and confining the same thereto. The improvement thus patented, consists in the substitution of a soft unctuous metal, for the hard brass or composition heretofore used, to sustain the journals and other moving parts of machines, which soft metal is enclosed in a new and improved manner, in ribs or ledges of harder metal, to prevent its being spread by the weight of the shafting, or by pressure.

In the judgment of the Committee, the improvement is one which the Government ought to possess the right to use. It secures a great diminution of friction, and a consequent saving of fuel, and saves one half or more than one half of the oil heretofore necessary; lessens the cost of the original construction of the brasses which receive the journals—since they may be made much lighter than before; lessens the expense of repairs, because the soft metal wears longer than the hard, and the ribs and ledges may be relined at small cost; communicates increased efficiency to the engines by the diminution of friction; and prevents the heating of the journals, crank-pins, and other moving parts of the machinery.

The invention has been tested by a satisfactory series of experiments in different places, on different kinds of machinery, and by different persons of skill and judgment, and seems to be universally regarded, so far as it is known, as an improvement of great practical utility. The Committee refer to and make part of their report, the letters of S. V. Merrick, of 15th April, 1842; of J. Ericsson, of the 2d

April, 1842; of George C. Read, of 14th April, 1842, to the Secretary of the Navy; of Charles W. Copeland, of the 5th April, 1842, to Com. L. Warrington; of the Secretary of the Navy, of 12th April, 1842, to Hon. R. Williams; and of Charles Howard, of the 15th April, 1842, to Hon. R. Williams. The Franklin Institute, and other societies for the promotion of practical science, concur in the opinions expressed in those letters; and some one of them or more, has bestowed a gold medal upon the inventor.

The Committee are, therefore, of opinion, that the Secretary of the Navy, as a measure of true economy, should be authorized to purchase the right to use this improvement, and accordingly report the bill which was committed to them.

Washington, April 15, 1842.

Sir: Referring to a conversation with you this morning upon the merits of Babbitt's anti-attrition metal, I beg leave to submit, that Mr. Babbitt's invention consists of substituting a soft unctuous metal, for the hard brass or composition heretofore used to sustain the journals and other moving parts of machinery; which soft metal is enclosed in ribs or ledges of harder metal, to prevent its being spread by the weight of the shafting or pressure.

This metal has been long enough in use fully to test its merits, and I have no hesitation in saying, that it is one of the most valuable improvements, in the construction of moving machinery, that has come to my notice.

The effects produced are,

- 1st. A great diminution of friction.
- 2d. A saving of oil to the extent of one half or more.
- 3d. An economy in the original construction, as the brasses which receive the journals may be made much lighter when lined, than when they come in direct contact with the hard metal.

Again, in a dollar and cent point of view, the anti-attrition metal recommends itself strongly, as it will obviate the necessity of renewing the bearing brasses, the cost of supplying a new coating or lining of the soft metal being very trifling. Another important saving will be effected by the greatly diminished consumption of oil, consequent upon its employment.

To these advantages may be added an increased duty of the engines, owing to diminished friction; some saving of fuel must result from this. Again, and lastly, the important fact must not be lost sight of, that an engine, in which every bearing is provided with the anti-attrition metal, requires very little attention from the engineer, while its performance will be uniformly effective.

Yours truly, (SIGNED) J. ERICSSON.

MESSRS. MERRICK AND TOWNE.

*Commandant's Office, U. S. Navy Yard,
Philadelphia, April 14, 1842.*

SIR: I have the honor to acknowledge the receipt of your letter of the 12th inst., and being desired to make an early reply, I hasten to give you all the information I have been able to obtain in the course of the day, respecting Babbitt's anti-attrition metal. Mr. J. Henry Towne, who knows as much upon this subject as any other person in this city, and who, I believe, was on the committee appointed by the Franklin Institute, gives the following information in answer to the queries contained in your letter.

Utility.—Experience has proved the utility of Mr. Babbitt's application of anti-attrition metal. It has been used with great success on locomotives and steam-boat engines, in parts which are exposed to great stress, and where the ordinary composition is very rapidly abraded. Its advantages are found to be, 1st, increased durability; 2d, dimin-