

## Franklin Institute.

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[*Proceedings of the stated meeting held Wednesday, October 20, 1897.*]

HALL OF THE FRANKLIN INSTITUTE,  
PHILADELPHIA, October 20, 1897.

MR. JOHN BIRKINBINE, President, in the chair.

Present, 78 members and visitors.

Additions to membership since last report, 11.

The President opened the proceedings by giving a brief statement of the pending negotiations between the Institute and the Philadelphia Museums, with the object of holding, in the autumn of 1898, a national exhibition under the joint patronage of the two bodies.

The Secretary reported a vacancy in the Committee on Science and the Arts caused by the resignation of Dr. W. C. Head.

Mr. Arthur Falkenau was elected to the vacant position.

The meeting then proceeded to the business announced on the bulletin, to wit: The consideration of the subject of "Improved Furnaces and Automatic Stokers."

The following inventions were described and shown either with lantern slides or by model, viz.:

The Murphy Automatic Stoker, manufactured by the Murphy Iron Works, Detroit, Mich. Represented by Mr. — Cotton.

The American Stoker, manufactured by the American Stoker Company, Dayton, O. Represented by Mr. C. H. Bierbaum.

The Acme Stoker, manufactured by the Falls River Rivet and Machine Company, Cuyahoga Falls, O. Represented by Mr. Wm. E. Gray.

The Coxe Mechanical Stoking Furnace, manufactured by the Coxe Iron Manufacturing Company, New York. Represented by Mr. M. C. Jenkins.

The Arndt Economizer, manufactured by Mr. Joseph Wilkes, New York. Represented by Mr. A. Falkenau.

The Hutchinson Smokeless Furnace. Represented by Colonel C. Wolsley Coxe.

The following devices were presented by the Secretary, from written descriptions furnished by the manufacturers, viz.:

The McKenzie Smokeless Furnace, manufactured by the McKenzie Furnace Company, Chicago.

The Black Diamond Smokeless Furnace, manufactured by Bowe & Co., Chicago.

The Columbia Mechanical Stoker, manufactured by the Columbia Stoker Company, Holyoke, Mass.

The Davies Stoker, manufactured by the Davies Stoker Company, Bridgeport, Pa.

At the close of these presentations, the subject was thrown open for general discussion. Messrs. James Christie, Thos. Shaw, Spencer Fullerton and

others participated, and the matter was referred to the Committee on Publications.

The President made an appropriately worded reference to the recent death of Dr. Wm. H. Ford, for many years President of the Bureau of Health of the City of Philadelphia, who had not only been instrumental in securing the reference by the Board of Health of the question of the smoke nuisance as it affects Philadelphia, to the Institute for advice and co-operation, but had also exhibited much personal interest in the discussion of the subject at the Institute meetings during the past few months. The President suggested that some action by the meeting would be fitting as the expression of the sentiment of the Institute, respecting the loss which the city has suffered in the death of a most intelligent and efficient public servant.

It was thereupon voted that the Secretary be directed to record on the minutes of the meeting, the expression of the Institute's appreciation of Dr. Ford's valued service as President of the Board of Health, and its regret at his death.

The Secretary presented the report of Dr. Joseph W. Richards, delegate of the Institute to the Seventh International Congress of Geologists in St. Petersburg. Referred to the Committee on Publications.

Adjourned.

WM. H. WAHL, *Secretary*.

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## COMMITTEE ON SCIENCE AND THE ARTS.

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[*Abstract of proceedings of the stated meeting held October 6, 1897.*]

MR. JAMES CHRISTIE in the chair.

Reports on the following subjects passed first reading :

Balanced Locomotive Driving-Wheel, Philip Z. Davis, Philadelphia.

Holophane Globes, George A. Macbeth Company, Pittsburgh, Pa.

Combination Book-Shelf and Book-Support, August Lundberg, Worcester, Mass.

Pneumatic Pyrometer, Uehling, Steinbart Company, Limited, New York.

Reports on the following subjects were adopted :

*Testing Machine for Measuring the Intensities of Impulsive Forces.*—B. W. Dunn, Lieut. U. S. A., Frankford Arsenal, Philadelphia.

ABSTRACT.—The purpose of this apparatus is to obtain a permanent diagrammatic record of the varying compression produced in a test specimen by a blow, together with an accurate time scale by which the duration of the blow in its component parts can be measured, it having been found that the compression obtained in a static testing machine varies slightly with the time during which pressure is applied.

As these quantities are extremely minute, the record of the Dunn machine is made in magnified form by two rays of light deflected, respectively, by the compression of the test specimen and by the vibration of a tuning-fork, so that they travel over a photographic film carried on the periphery of a rapidly revolving cylinder. The description of this extremely delicate and automatically operating apparatus is not susceptible of intelligible abstract without the use of illustrations. The reader is, therefore, referred to the text of the