

when the speed is what it should be, rotate without alarm, but when the speed is either above or below that for which it is set, the balls strike a projecting arm or pin which communicates with a gong and rings a continual alarm. The number of revolutions is indicated on a dial. The apparatus was sent for description by N. P. Bowsher, South Bend, Indiana.

A number of samples of Rubber-covered Carriage Steps, for carriages of various styles, were shown. In these the rubber gives a soft, elastic treading surface, which being ornamented with ribs, etc., affords a secure foothold. These specimens were sent for inspection by the Rubber Step Manufacturing Company, Boston.

A specimen of an Anti-friction Bearing for shafting, carriages, team wagons, cars, etc., was described. The bearing surfaces were made of a series of hardened steel rollers. The inventor claimed by the use of this bearing to be able to dispense with lubricants and to save considerable power. This exhibit was made in behalf of John G. Avery, Spencer, Worcester co., Mass.

Mr. Robert Grimshaw, Secretary of the Mechanical Section, announced, under the head of new business, that the next meeting of the section would be held on Monday evening, March 20th, at which time there would be presented for discussion and action the very important subject of determining and recommending a national standard gear-tooth system, by which all gears of the same pitch, no matter what the pitch circle, should gear properly and truly together.

Mr. D. S. Holman made the announcement of a lecture to be delivered before the Phonetic Short-hand Section on Wednesday, March 22d, upon which the meeting was adjourned.

WILLIAM H. WAHL, *Secretary.*

LIST OF BOOKS ADDED TO THE LIBRARY DURING JANUARY,
FEBRUARY AND MARCH, 1882.

Abernathey, R. J. Practical Hints on Mill Building. Moline, 1880.
Presented by the Author.

Adjutant-General of Pennsylvania. Report for 1881. Harrisburg,
1882. Presented by Adjutant-General.

American Mail. Vols. 1—6. N. Y.

American Stationer. Vol. 7. N. Y.

Presented by Howard Lockwood; Publisher.

Annual Reports of Births, Marriages and Deaths in Michigan for 1874 and 1875. Presented by Superintendent of Vital Statistics.

Appleton's Cyclopædia. N. S., Vol. 5. New York, 1880.

Armengaud's Publication Industrielle. Vols. 11—27. Paris.

Baldwin, W. J. Steam Heating. N. Y., 1881.

Belgrand. Aqueducts Romains. Paris, 1875.

Black Hills of Dakota. Report on the Geology and Resources of. J. W. Powell, Washington, 1880.

Presented by the Department of the Interior.

British Patent Office.

Abridgments relating to Brewing. London, 1881; Music and Musical Instruments. Part 2. London, 1881.

Disclaimers for 1875—1880.

Specifications and Drawings. Vols. 21—41. London, 1880.

Subject Matter Index. London, 1881.

Building Construction. Notes on. Vol. 3. London, 1879.

Bureau of Education. Circulars of Information. Nos. 4 and 5. Washington, 1881. Presented by the Bureau.

Chief of Engineers, U. S. A. Index to Reports of, 1866—1879. Washington, 1881. Presented by the Chief of Engineers.

Colonial History of the State of New Jersey. Documents relating to. Vol. 2, 1687—1703. Newark, 1881.

Presented by the State Librarian.

Commerce and Navigation, U. S. Report of the Chief of Bureau of Statistics for 1880. Presented by the Chief of Bureau.

Commercial Relations of the United States. Report on for 1878.

Presented by the Department of State.

Commercial Relations of the United States with Foreign Countries. Report on, for 1879. Washington, 1880.

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Compagnie Universelle du Canal maritime de Suez. Bulletin decadaire. Nos. 310—330. Paris. Presented by Prof. J. E. Nourse.

Darwin, C. Vegetable Mould, etc. N. Y., 1882.

Emanuel, H. Diamonds. London, 1867.

Fairmount Park Art Association. Eighth and Ninth Annual Reports. Philadelphia, 1880—1881. Presented by the Association.

Germanischer Lloyd. Internationales Register. Berlin, 1882.

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Gillmore, Q. A. Report on Strength of Building Material. Washington, 1874. Presented by Engineer Department.

- Gouge, H. A. Ventilation. New York, 1881.
- Harvard College Observatory, Thirty-sixth Report of Director of Cambridge, 1882. Presented by the College.
- Ingersoll, E., and H. W. Elliott. Fisheries Industries. Washington, 1881. Presented by Census Bureau.
- Internal Revenue. Report of Commissioner, for 1881. Presented by the Commissioner.
- Journal de l'Union des Eaux des deux Mers. June—December, 1856. Presented by Prof. J. E. Nourse.
- Lewis, Jr., L. Bank of North America, History of. Philadelphia, 1882.
- Lobintz, M. Lecture. Paris, 1868. Presented by Prof. J. E. Nourse.
- Lunge. Sulphuric Acid. Vol. 3. London, 1880.
- Magnetical and Meteorological Observations made at Bombay in 1871—1878. Presented by the Governor.
- Mallory Steering and Propelling Screw, Report on. Washington, 1882. Presented by Engineer Department.
- Marine and Fisheries Department, Canada.
Annual Reports of the Department for 1879 and 1880.
Fisheries Statements for 1877 to 1880.
List of Lights and Fog Signals, 1879 and 1880.
List of Vessels on Registry Book in 1877.
Reports of Board of Steamboat Inspection, etc., for 1879 and 1880. Presented by the Department.
- Message of the President of the United States to Congress. Washington, 1880. Presented by Department of State.
- Meteorological Office, Quarterly Weather Report of. January—March, 1876. London. Presented by the Office.
- Millers' Journal. Vols. 11, 12 and 14. New York.
- Musical and Dramatic Courier. Vol. 1. New York, 1880. Presented by Howard Lockwood, Publisher.
- Ministerio de Fomento. Republica Mexicana-Anales. Tomo 5. 1881. Presented by the Minister.
- Mortality Statistics. Census of 1850. Washington, 1855.
- Navy of United States, Register of Officers of. Washington, 1882. Presented by the Navy Department.
- Nichols, W. R. Publications of Massachusetts Institute of Technology. Cambridge, 1882. Presented by the Author.

- Paper Trade Journal. Vols. 7 and 8, and Nos. 1—32, Vol. 9. New York. Presented by Howard Lockwood, Publisher.
- Paris Universal Exposition, 1878. Reports of United States Commissioners. 5 Vols. Washington, 1880. Presented by Department of State.
- Photographic News. Vols. 1—8. London.
- Roscoe and Schorlemmer. Chemistry. Vol. 3. New York, 1882.
- Royal Astronomical Society. Monthly Notices. Vols. 8 and 9. Index to Vols. 1—29. London. Presented by the Society.
- Stallo, J. B. Modern Physics. New York, 1882.
- State Board of Health of Michigan. Reports for 1879 and 1880. Presented by the State Board.
- Stauffer, D. McN. Shaft Sinking.
- Stewart and Tait. Unseen Universe. London.
- Strecker, A. Chemistry. New York, 1882.
- Swank, J. M. Iron and Steel Production in the United States. Tenth Census. Washington, 1881. Presented by Census Bureau.
- Treasury Department United States. Annual Report of the Secretary on the Finances, for 1881. Washington, 1881. Presented by the Department.
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- War Department. Report of Secretary. Vol. 1. Washington, 1879. Presented by the Secretary.
- Watts. Dictionary of Chemistry. Suppl. Pt. 2, Vol. 3. London, 1881.
- Wex, G. Decrease of Water in Springs, etc. Washington, 1881. Presented by Engineer Department.
- Wilson, H. A. Compressed Pellets. Philadelphia, 1881. Presented by Author.
- E. HILTEBRAND, *Librarian.*

ERRATA.—*Curves of Efficiency*, February, 1882. On page 91, for " r^{2-n} , r^{3-n} ," read r^{-n} , r^{1-n} .

On page 94, lines 12, 23, for "0.3" and " $\frac{1}{2}$," read "0.5"; in line 25, read "volume of boiler steam."