NOTES ON FOREIGN INVENTIONS

Gas-burners.—No better evidence could be afford of existing defects in gas-lighting apparatus than the continual rush of patents which issue in America and Europe for improvements in devices for regulating the flow of gas, increasing its luminosity, preventing flickering, &c. Joseph Desmet Seaut, of Mons, Belgium, has lately taken out a patent for rotary gas-burners, which contains several new features. The apparatus consists of a closed cup or vessel of glass or other suitable material, within which is a recipient containing water for purifying the gas on its passage from the main through suitable openings in a supply pipe to a rotating pipe, which is partly immersed in water. This latter pipe turns on a pivot, and is caused to rotate by the pressure of the gas in its passage through it, and communicates such rotary motion to the branches or burners in connection with it, which may be arranged in a spiral or other form, to produce ornamental gas-lighting.

Gas Regulator.—J. Skertchly, of Ashby-de-la-Zouch, England, has obtained a patent for regulating the pressure of gas. The invention consists in the construction of oscillating valves for regulating the supply of gas to the burners. These valves work in mercury, and are so arranged as to release on one side of their centers a corresponding amount of mercury to the displacement on the other. By this means the balance of the valve is maintained at a fixed weight, owing to the equilibrium or mercurial displacement. One side of these oscillating valves presents a larger surface to the action of the gas than the other, and by loading to the required pressure the side least exposed, the valve will remain stationary until the gas exerts a pressure superior to this load upon the more largely exposed side, which will cause the latter to descend into the mercury and the loaded side to rise out of it in the same proportion. By this action the admission of gas from the supply pipe is regulated. The apparatus also has a vertical action valve in a small inverted cup with slits or openings in its edge. The cup is surrounded with a solid or hollow ring of larger area than the gross section of the cup. The cup and ring are connected together, but a small space is left between them. The cup and ring thus connected float on mercury, and, being loaded to the desired weight, operate as follows:—Gas, being admitted through a pipe into the cup above the surface of the mercury, escapes through the slits or openings and rises between the cup and ring, and when the pressure of the gas exceeds the initial pressure of the valve, it acts on the large surface of the ring, pressing it down and carrying the cup along with it into the mercury; and as the slits or openings gradually descend beneath the mercurial surface, the supply of gas is proportionately lessened.

Making Glue.—J. L. Julion and J. Pirie, of Aberdeen, Scotland, have taken out a patent for obtaining gelatine in a solid form by a short process, from bones and integuments of animals. They crush the bones and other substances, after they are cleaned, and place them in a large tight vessel containing hydrochloric acid, where they are steeped and kept in vacuo until the acid dissolves all the phosphate of lime and earthy matters, leaving the gelatine separated. Hydrochloric acid has been used for obtaining the gelatine from bone, but not in vacuo, we believe. Its action is claimed to be more rapid and perfect by this mode.

Speed Indicator for Ships.—J. Tyssen, of Rotterdam, Holland, has secured a patent for an apparatus which is to show the rate of speed at which a steamship or any sailing vessel is moving through the water. A three-bladed screw is placed outside of the vessel, and on its axis is secured a wheel which gears into one or more wheels on shafts, to make one revolution when the vessel is running at the rate of 10 knots per hour, which is indicated on a dial, and so on for every rate of speed. The principle of the invention consists in giving to the screw a rotary motion by the action of the water at the vessel is driven through it.

Artificial Manure.—Great efforts have been made to manufacture a manure containing all the best qualities of guano, at a much less cost. The amount of $40, $50, and $60 per tun for guano is a tempting offer to invent a cheaper substitute. Various artificial manures have been patented, but none equal to the best guano. J. M. Stark, of Norwich, England, however, has lately taken out a patent for a new fertilizer which contains all the elements of guano and which he considers equal to it. It is made by submitting bones to the action of superheated steam, for the purpose of dissolving them, after which they are incorporated with hydrochloric acid, muriate of ammonia, and some potash. The fertilizer is called "Chrondrin Bone Manure." As the ammonia is the most expensive element of manure, of course, if it could be obtained cheap, we should not be dependent on the Peruvians for our guano. This is the quarter for investigation and experiment—cheap ammonia.

AWARD OF MEDALS BY THE AMERICAN INSTITUTE.

By the favor of W. B. Leonard, Esq., the Corresponding Secretary of the American Institute—who, by the way, is the only acting officer of that body who manifests anything like a commendable degree of enterprise—we have at last received a portion of the list of exhibitors who received the higher grade of awards at the late fair. In a note accompanying the list, the secretary says: "Herewith you have a list of all the premiums which the committee have passed upon; a few other reports are still in the hands of the judges, who will send them to us as soon as the premiums are fixed by the Premium Committee.

It will be observed, from the above extract, that, although the exhibition closed two weeks ago, yet the judges have not all reported on their respective classes. This is characteristic of the enterprise with which the American Institute is conducted. We have none but the best of feeling towards the institution, and many of the managers and officers are our own personal friends; but, as public journalists, we deem it it our duty to condemn the sluggish manner in which the affairs of the association are managed. We do this, however, with no other motive than to bring the officers to their senses, hoping that a reform in the management may be the result. No one, we believe, can justly accuse the managers of the slightest dishonesty of purpose, and we would not intimate any deficiency in the management, except the one of slothfulness, and, perhaps, frequently, a lack of judgment in the selection of competent persons to act as judges in the award of premiums; but with this, at present, we have nothing to do. In future, we trust that an increased activity will be observed in conducting the affairs of the American Institute, which now has a well-merited reputation for respectability; the element which it most needs to make it the leading institution of its kind in the country, is vigor; and we sincerely hope to see this ingredient yet distilled into it. Previous to the opening of their next annual fair, we may take occasion to give the managers some hints on the best way of getting-up and conducting their exhibitions; feeling confident that if our hints are heeded, they will find their treasury enriched, instead of depleted, by their exhibitions, and, at the same time, they will render better satisfaction to the exhibitors.

In presenting the following list, we confine our report to the Mechanical Department; and in this section, we publish only the list of award of medals—gold, silver and bronze; we omit the list of awards of diplomas from want of room. It is a rule of the American Institute to grant only *one* medal of the same class for a machine, however many times it may be exhibited; this explains the fact of some new machines receiving medals while others, of equal merit, to which medals had been awarded in former years, have received only diplomas, which, of course, are not mentioned here. We wish we had space to comment on all the inventions which have received premiums at this fair; but so much other important matter is crowding upon us, now-a-days, that we have not the room to insert the half of the interesting scientific and mechanical items of intelligence which are sent to us. When we publish the remainder of the list of awards in the Mechanical Department, however, we hope to be able to elaborate somewhat, editorially, on the nature of many of the inventions for which premiums were given.

It will be observed that most of the machines adjudged worthy of the higher class of premiums have already been illustrated and described in the SCIENTIFIC AMERICAN.

RAILROAD MACHINERY.

C. A. Smith, Piermont, N. Y.: "Reclining Car Seat."—Silver medal. [A full-sized car seat can be seen at the office of the SCIENTIFIC AMERICAN.]

W. L. Childs, Piermont, N. Y.: "Reclining Car Seat."—Bronze medal. [See engraving on page 340, Vol. XIV., SCIENTIFIC AMERICAN.]

Levi Bissell, 147 Wooster-street, New York: "Locomotive Truck."—Large silver medal.

New England Car Spring Company, 61 Chambers-street, New York: "India-rubber Car Springs."—Bronze medal.

W. S. Platt, New York: "Anti-friction Journal."—Silver medal.

MACHINERY FOR WORKING IRON.

Thos. Prosser & Son, 28 Platt-street, New York: "Boiler-makers' Tools."—Silver medal.

MACHINERY FOR WORKING WOOD.

J. M. Greenwood, Rochester, N. Y. (D. R. Bowker, agent, No. 5 West Twenty-fourth-street, New York): "Head-turning Machine."—Silver medal. [See engraving in No. 20, present volume, SCIENTIFIC AMERICAN.]

S. M. Hamilton, Baltimore, Md. (Tice, Grosvenor & Brother, agents, corner of Twenty-eighth-street and First-avenue, New York): "Variety Molding-machine."—Large gold medal. [An engraving of this machine appears on the first page of this number.]

Kaefer Power Company, Harlem Railroad Building, New York: "Mortising, Boring, and Circular and Scroll-Sawing Machine."—Large silver medal. [See engraving in No. 15, present volume, SCIENTIFIC AMERICAN.]

B. E. Parkhurst, 114 Third-avenue, New York: "Portable Timber, Board, Siding and Lath-sawing Machine."—Large silver medal.

H. D. Stover, 13 Platt-street, New York: "Wood-shaping machine."—Large silver medal.

Wm. M. Cassidy, Albany, N. Y.: "Huntoon's Machine for Carving Wood."—Silver medal.

Seeley & Chism, 34½ Pine-street, New York: "Shingle Machine."—Silver medal.

Gray & Woods, Boston, Mass.: "Machine for Planing Straight and out of Wind."—Silver medal. [An engraving of this machine will appear in the SCIENTIFIC AMERICAN in a few weeks.]

STEAM PUMPS, GAGES, VALVES, LUBRICATORS, &C.

John Sutton, 114 Cannon-street, New York: "Floating Heater and Evaporator."—Bronze medal. [An engraving will be published in this journal in a few weeks.]

A. W. Tupper, Milford, Mich.: "Adjustable Union Joint for Water, Steam, Gas, &c."—Silver medal.

Charles J. Porter, 235 West Thirteenth-street, New York: "Governor to Regulate the Speed of Steam-engines."—Silver medal. [An engraving of this excellent invention will be found on page 36, Vol. XIV., of the SCIENTIFIC AMERICAN.]

W. D. Andrews, 414 Water-street, New York: "Centrifugal Pump for Wrecking, &c."—Gold medal.

PRINTING-PRESSES, &C.

Edward Burroughs, Rochester, N. Y. (S. A. Heath & Co., agents, 37 Park-row, New York): "Paper-cutting Machine."—Silver medal. [See engraving in No. 15, present volume.]

SEWING-MACHINES.

1. Shuttle or lock-stitch machines for family use and light manufacturing purposes:—

M. Finkle & Lyon, 503 Broadway, New York: "Sewing-machine."—Large silver medal.

Ladd, Webster & Co., 500 Broadway, New York: "Sewing-machine."—Silver medal.

2. Shuttle or lock-stitch machines for heavy and general manufacturing purposes:—

First & Frost, 171 Suffolk-street, New York: "Sewing-machine."—Large silver medal.

M. Finkle & Lyon, 503 Broadway, New York: "Sewing-machine."—Silver medal.

Ladd, Webster & Co., 500 Broadway, New York: "Sewing-machine."—Bronze medal.

3. Double chain-stitch machines for family use and either light or heavy work:—

Grover & Baker Sewing-machine Company, 501 Broadway, New York: "Sewing-machine."—Large silver medal. [See engraving in No. 2, present volume, SCIENTIFIC AMERICAN.]

Merrill & La Croix, 413 Broadway, New York: "Sewing-machine."—Silver medal.

L. A. Bigelow, 421 Broadway, New York: "Sewing-machine."—Bronze medal.

MISCELLANEOUS INVENTIONS.

Norman Wiard, Janesville, Wis. (also, of 69 Broadway, New York, room 35): "Steam Ice Boat."—Silver medal.

Ransom Crosby, Newark, N. J.: "Miter Machine."—Bronze medal.

Alexander & Ritchie, Williamsburgh, N. Y.: "Improvement in Making Patterns."—Silver medal.

GAS APPARATUS.

Herts, Levy & Alexander, 23 Liberty-street, New York: "Werner's Gas Apparatus for Generating Gas from Wood."—Large silver medal.

J. D. Moore, 80 West Nineteenth-street, New York: "Portable Gas-works for Making Gas from Fat, Rosin and Rosin-oil."—Silver medal.

COTTON AND WOOLEN MACHINERY.

Downes & Co., Seneca Falls, N. Y.: "Knitting-machine adapted to Various Kinds of Work."—Silver medal.

J. B. Aiken, Manchester, N. H.: "Knitting-machine for Plain Work."—Large silver medal. [An engraving of this machine may be found on page 39, Vol. XIV., of the SCIENTIFIC AMERICAN.]

STEAM-ENGINES.

J. C. Hoadley, Lawrence, Mass.: "Portable Steam-engine."—Large gold medal.

L. C. Ward, Fishkill, N. Y.: "Portable Steam-engine." (manufactured by the Fishkill Landing Machine Company)—Large silver medal.

Paynes & Olcott, Corning, N. Y.: "Portable Steam-engine."—Silver medal.

Todd & Rafferty, Paterson, N. J.: "Stationary Steam-engine."—Gold medal.

C. A. Schultz, 257 Seventh-street, New York: "Stationary Steam-engine."—Large silver medal. [An engraving of this engine may be found in No. 13, of the present volume of the SCIENTIFIC AMERICAN.]

Manhattan Steam Fire-engine Company, New York: "Steam Fire-engine."—Gold medal.

Thos. Prosser & Son, 28 Platt-street, New York: "Steam-boiler and Condenser."—Silver medal.

METAL MANUFACTURES.

Fuller, Lord & Co., 139 Greenwich-street, New York: "Hot-pressed and Punched Nuts."—Silver medal.

Damascus Steel and Iron Company, 71 John-street, New York: "Cast Steel."—Large silver medal.

D. B. & G. H. Bruen, Newark, N. J.: "Malleable Iron."—Bronze medal.

Jones & Louth, Pittsburgh, Pa.: "Rolled Shafting."—Large silver medal.

MATHEMATICAL AND PHILOSOPHICAL INSTRUMENTS.

Henry W. Trimble, Newark, N. J.: "Platform Hay Scales."—Large silver medal.

John Howe, Jr., Brandon, Vt. (office in New York, 203 Broadway): "Hay Scale."—Silver medal.

John Howe, Jr., Brandon, Vt.: "Scales."—Bronze medal.

A. Wilson, No. 4 Wall-street, New York: "Electric Gas-lighting Machine."—Gold medal.

S. Gardiner, Jr., 167 Broadway, New York: "Electric Gas-lighting Apparatus."—Silver medal. [An engraving of this invention may be found on page 320, Vol. XII., SCIENTIFIC AMERICAN.]

Ryerson & Huested, 218 West Thirty-fifth-street, New York: "Submarine-explorer."—Gold medal.

J. M. Grumman, 377 Fulton-street, Brooklyn, N. Y.: "Surveyors' Chain."—Bronze medal.

Jabez Burns, 245 West Twenty-ninth-street, New York: "Adometer."—Bronze medal.

Joseph Grice, 96 Wall-street, New York: "Marine Salinometer."—Bronze medal.

MACHINE BELTING.

1. India-rubber:—

New York Belting and Packing Company, 37 Park-row, New York: "India-rubber Machine Belting."—Silver medal.

2. Leather:—

Hoyt Brothers, 28 Spruce-street, New York: "Leather Machine Belting."—Silver medal.