

us now, an inflated currency; great fortunes were made by speculative ventures, as here now. No doubt, too, there was extravagance; but there arose, at the same time, a spirit favorable to useful enterprises of many kinds—such as we wish could obtain amongst us. We have far better opportunities for such use of capital; we have mines, new manufactures, waste lands, to be developed and brought into profitable use; we have comparatively a new country to our back, in which the prudent capitalist can see a thousand opportunities to increase his store, and, at the same time, benefit his countrymen. The citizen, therefore, who wastes his gains upon ostentatious houses, extravagant furniture, dress, or food, commits a crime against his country. And especially is extravagance culpable in New York, where, though but half the island is built upon, there is scarcely a place fit for an honest workingman to bring up his family in, or where they are not exposed to the corrupting influences of squalor and vice."

Facts about Meats.

Every wife and mother owes it to herself, her husband, and her children, as well as to society at large, to prevent waste in every department of the household, whether provisions are cheap or dear, whether the husband is rich or poor; for waste is a crime against humanity, an insult to the bounteous Hand which "giveth us all things richly to enjoy." On the other hand, a true economy is one of the wisest, the best, and ennobling of domestic virtues. A hundred careful experiments were made in England in reference to roasting and boiling meats, in order to ascertain the respective losses:—

Roasted chickens lost 15 per ct.; beef ribs and sirloins, 19 per ct.; geese, 19 per ct.; boiled mutton legs, 10 per ct.; boiled beef, 15 per ct.; boiled shoulder mutton, 28 per ct.; turkeys, 20 per ct.; mutton legs and shoulders, 24 per ct.; ducks, 27 per cent

Boiling beef saves more than four per cent over roasting. If a leg of mutton is boiled it loses ten per cent; if roasted, twenty-five per cent! The fatter meat is, the greater the loss; it should be moderately fat to make it tender; but there is an unprofitable fatness. Eleven pounds of roast rib-pieces loses two pounds, and the bones one pound, so that of the eleven pounds, only seven pounds come to the table. Hence if roast rib-pieces cost in New York, in April, 1864, twenty cents a pound at the butcher's stall, it is more than thirty-one cents a pound on the dinner-table.

It is philosophically true that one pound of clear roast beef is more concentrated than one pound of boiled beef, has less matter in it, and hence may contain more nourishment; but the more concentrated food is, the more unwholesome it is, not only because it requires a greater digestive power to convert it into pure blood, but the sense of sufficiency at meals is induced to a considerable extent by the bulk of what is taken, and if we eat concentrated food until there is bulk enough to remove the feeling of hunger, there is so much nutriment in it that nature can't extract it all in a perfect manner; hence there is not only too much nutriment for the wants of the system, but all of it is imperfectly prepared, and we really get less strength and less pure blood out of it, than if much less had been eaten, or it had been taken in a more bulky, or, if you please, in a more watery condition. This is the reason why dyspeptics and others eat a great deal, but they do not get strong. But if there is too much bulk, there is not enough nutriment, although a great deal is taken into the stomach. Porter and beer, for example, fill up the stomach, and seem to make persons fleshy, but there is but little nutriment and great bulk; but great beer-drinkers are never strong, they are puffy.—*Hall's Journal of Health.*

A PLAN for picking pockets has been invented by the Rebel prisoners confined at Wheeling, Va. When a new prisoner arrives some one of the initiated starts the cry, "fresh fish," which is understood to convey the knowledge of the arrival. When the new prisoner is ushered in he is immediately seized by the occupants of the room, placed in a basket, and thrown up. They continue to toss the new comer in this manner until his pocket-book falls out, when he is released and the pocket-book is confiscated.

Anti-fouling Composition for Iron Ships.

The *Circassian* is in the dry dock at the Charleston Navy Yard, receiving another application of Mr. Davis's *anti-animalcule* composition, which has been previously used with such success on her bottom. The Navy Department having been informed of the effective character of this preparation have approved of it, and no doubt, within a few months every iron vessel in the navy will have it applied. It will be one of the most servicable things yet introduced into the navy, and by it the great defect of iron vessels—their liability to foul bottoms—will be entirely remedied.

The invention is considered one of great importance and a very desirable acquisition. By it, our monitors and iron-clads will be in a better sea-going condition than ever before. When the *Circassian* was hauled into dry-dock, and her sides exposed to view, she was pronounced the cleanest ship ever before placed in the dock after a cruise. Her bottom was as clean as the day she was launched. The English and French Consuls, Capt. Moodie of the *Asia*, and a number of our principal ship-owners have visited the *Circassian*, and expressed themselves in the most favorable manner regarding the *anti-animalcule* composition.

[If this article is all that it is stated to be, it is invaluable. European chemists and inventors have labored in vain up to this time to produce a practical non-fouling coating for iron ships.—Eds.]

Increasing the Illuminating Power of Gas.

The editor of the *Sanitary Reporter* (England), in an article on testing gas, says:—"The following are distinct modes of increasing the power of an argand burner consuming ordinary coal-gas; they have all been long known to the writer:—1st. Contracting the central opening to about .45 to .5 of an inch diameter. 2d. By a perforated disk round the burner, and resting on the gallery which supports the burner. 3d. By interposing a thin piece of paper or metal to contract the passage of air through the central opening. 4th. By placing a little contracted cap on the top of the chimney. Now, every one of these contrivances will considerably increase the power of the argand burner. Moreover, all these contrivances act on the simple principle of diminishing the velocity of the current of atmospheric air, and thus allowing the minute particles of carbon, which the gas contains, to be longer suspended in the flame."

Water Meters in Philadelphia.

All large consumers of water in Philadelphia, are to be charged hereafter by the gallon. Mr. Birkinbine, the Chief Engineer, has issued a circular announcing that water meters will be introduced at the expense of the consumers, and bills collected quarterly at the following rates: From one thousand to ten thousand gallons per day, two cents per hundred gallons. For from ten thousand to twenty thousand gallons per day, one and a half cents per one hundred gallons. For from twenty thousand gallons per day and upward, one cent per hundred gallons.

PURE COFFEE.—The editor of the *Baltimore American* visited the Commissary Department of one of the large military hospitals a few days since, and noticed several barrels of dried coffee grounds, the purpose whereof excited curiosity. The polite Commissary informed him that they received twelve dollars a barrel for the grounds. But "what is it purchased for," he asked. "Well," said the Commissary, hesitatingly, "it is re-aromatized by the transforming hand of modern chemistry, and put up in pound papers, which are decorated with attractive labels and high sounding names."

EXTENSION OF THE STEEL MANUFACTURE.—The Whipple File Manufacturing Company, at Ballard Vale, Mass., have erected during the last year, a building 200 by 77 feet, for the manufacture of their own steel, and they claim to make a better article than they have ever been able to purchase. They will soon be producing 30 tons per week. Their files are cut by machinery.

IN the evidence in regard to a bridge case a few days since, an engineer testified that a measured march of men was the severest test of a bridge, and that the trotting of a horse produced double the vibrations of a twelve or fourteen-ton locomotive.



J. W. W., of N. Y.—We know of no method of sighting a gun with perfect accuracy except by actual trial in shooting it. The back-sight is generally made to slip so that it can be adjusted by fring.

J. S. B., of Ala.—An illustration of Giffard's injector was published on page 260, Vol. III, new series of the *SCIENTIFIC AMERICAN*. A steam pipe from the upper part of the boiler terminates in a conical end opposite a similar end of a pipe leading into the bottom of the boiler, a short space separating the two pipes. The feed water fills this space, and when the steam comes in contact with the water it is condensed, forming a vacuum, into which the steam flows with such velocity that its momentum not only carries itself into the boiler, but also a portion of water.

W. C., of N. Y.—If any one allows you to work a low pressure steam engine for manufacturing purposes from the exhaust steam of another engine close by, for \$10 a year, we advise you to keep your own counsel and say nothing about it. There is no work devoted to super-heated steam that we know of. If you read the *SCIENTIFIC AMERICAN* carefully, you will find all the latest intelligence respecting compound steam engines.

W. S. S., of R. I.—We have no receipts for pickling cucumbers that we can recommend at present. Your request is slightly out of our line.

H. B. W., of Conn.—Twisted drills are made at South Bridgewater, Mass., and Newark, N. J., but we do not know the name of the maker in either place.

A. B. M., of Mich.—We know nothing about an instrument for "graining;" you should address some wholesale paint dealers on the subject. Messrs. Reynolds, Devos & Pratt, 100 Fulton street, can probably tell you.

Reader, of Mass.—E. V. Haughwout & Co., of this city, are manufacturers of china ware, and can give you the information you ask for.

A. L. L., of U. S. A.—Prof. Henry first ascertained that electricity could be passed through wires more than three miles in length. He made the important discovery that the resistance of long wires might be overcome by increasing the intensity of the current, that is by increasing the number of cups or pairs in the battery.

U. C., of Ohio.—There is some defect in your Leyden jar that you do not point out.

Money Received.

At the Scientific American Office, on account of Patent Office business, from Wednesday, May 4, 1864, to Wednesday, May 10, 1864:—

W. & S., of N. Y., \$25; T. & W., of N. Y., \$25; S. W. K., of Vt., \$45; J. P. E., of N. Y., \$16; J. S., of N. Y., \$16; J. S., of N. Y., \$42; H. H., of Ill., \$45; J. F., of Conn., \$20; F. J. N., of Maine, \$20; A. R. A., of England, \$16; S. & K., of Prussia, \$20; A. H. B., of N. Y., \$41; J. B. R., of N. Y., \$20; H. B. W., of N. Y., \$24; P. B. P., of N. Y., \$16; S. D. E., of Pa., \$20; I. T. G., of Iowa, \$20; P. H., of N. Y., \$41; R. D., of N. Y., \$16; H. A. A., of N. Y., \$41; H. C., of N. Y., \$16; P. C., of N. Y., \$20; J. W., of Mass., \$46; F. M. M., of Ind., \$20; E. W., of Mich., \$45; J. P. W., of Mass., \$54; T. P., of N. Y., \$65; M. B., of Ky., \$20; G. S. & H. C., of N. Y., \$20; W. D. M., of N. Y., \$36; J. Van D., of N. Y., \$20; M. C., of R. I., \$10; E. St. J., of N. Y., \$45; F. A. J., of Prussia, \$20; T. R., of N. Y., \$40; O. E. W., of Pa., \$20; J. B. W., of N. J., \$20; J. W. S., of Col. Ter., \$16; N. S. W., of Conn., \$20; S. R. B., of Wis., \$70; M. N., of N. Y., \$20; H. M., of N. Y., \$16; M. S., of Kansas, \$20; J. McF., of N. Y., \$45; J. O. S., of N. Y., \$45; L. G. K., of Mass., \$30; J. T., of Wis., \$16; F. J. G., of N. Y., \$18; S. R. H., of Mich., \$25; L. D. C., of Mich., \$21; W. S. N., of Conn., \$25; I. W. B., of Mich., \$16; D. H. H., of Ohio, \$15; J. A. D., of Ill., \$25; F. L. T., of Wis., \$11; S. M., of England, \$16; P. & T., of Pa., \$26; J. M. G., of Ill., \$25; F. C. L., of Iowa, \$15; T. & F., of Mass., \$15; P. P. P., of Mass., \$20; A. & S., of N. Y., \$25; D. L., of Vt., \$15; W. F., of Mass., \$16; McI. & R., of Col. Ter., \$100; H. J. M., of Ohio, \$25; A. K. J., of N. Y., \$16; J. G., of R. I., \$16; S. & P., of Ill., \$17; L. S. M., of N. Y., \$25; J. & J. N. P., of Mass., \$16; F. & B., of Ill., \$21; S. L. O., of Conn., \$30; R. W. J., of N. Y., \$56; L. G., of Cal., \$15; W. F., of Cal., \$20; T. D., of N. Y., \$25; P. C. R., of Mass., \$25; R. W. J., of N. Y., \$25; W. G. R., of Mo., \$19; J. McK., of Ohio, \$25; J. P., of Canada, \$20; J. M. A., of Mass., \$25; W. D. B., of Mich., \$25; G. W. J., of Cal., \$20; A. D., of La., \$41; C. M., of N. Y., \$16; C. M. M., of N. J., \$29; D. & B., of N. T., \$15; J. P., of Ill., \$16; G. F. B., of D. C., \$16; J. A. N., of Mass., \$16; W. D., of Cal., \$25; J. M. H., of Oregon, \$45; W. P. W., of N. Y., \$16; F. J. R., of Ill., \$26; E. K., of N. Y., \$25; W. B., of Iowa, \$25; H. H. II., of Iowa, \$25; J. C. P., of Ill., \$25; J. L. R., of Ohio, \$25; W. H. R., of Ky., \$28; J. F. L., of Ill., \$15; W. B. T., of Mass., \$16; W. C., of Cal., \$20; O. P. F., of N. Y., \$16; J. P. E., of N. Y., \$25.

Persons having remitted money to this office will please to examine the above list to see that their initials appear in it and if they have not received an acknowledgment by mail, and their initials are not to be found in this list, they will please notify us immediately, stating the amount and how it was sent, whether by mail or express.

Specifications and drawings and models belonging to parties with the following initials have been forwarded to the Patent Office, from Wednesday, May 4, 1864, to Wednesday, May 11, 1864:— S. & W., of N. Y.; A. H. B., of N. Y.; F. J. G., of N. Y.; C. M. M., of N. J.; L. S. M., of N. Y.; T. D., of N. Y.; J. M. G., of Ill.; S. L., of Mo.; H. J. M., of Ohio; G. & P., of Cal.; A. J., of Md.; E. C., of Iowa; J. L. R., of Ohio; T. & W., of N. Y.; P. H., of N. Y.; R. W. J., of N. Y.; W. D. B., of Mich.; J. C., of Mass.; J. M. A., of Mass.; L. G. K., of Mass.; J. McK., of Ohio; P. J. R., of Mass.; W. A. J., of Cal.; J. C. P., of Ill.; F. J. R., of Ill.; E. B., of Conn.; J. S., of N. Y.; H. A. A., of N. Y.; W. D., of Cal.; P. & T., of Pa.; S. L. O., of Conn.; L. D. C., of Mich.; W. S. N., of Conn.; S. R. H., of Mich.; W. & F., of Pa.; A. & S., of N. Y.; W. B., of Iowa; W. H. R., of Ky.; J. P. E., of N. Y.

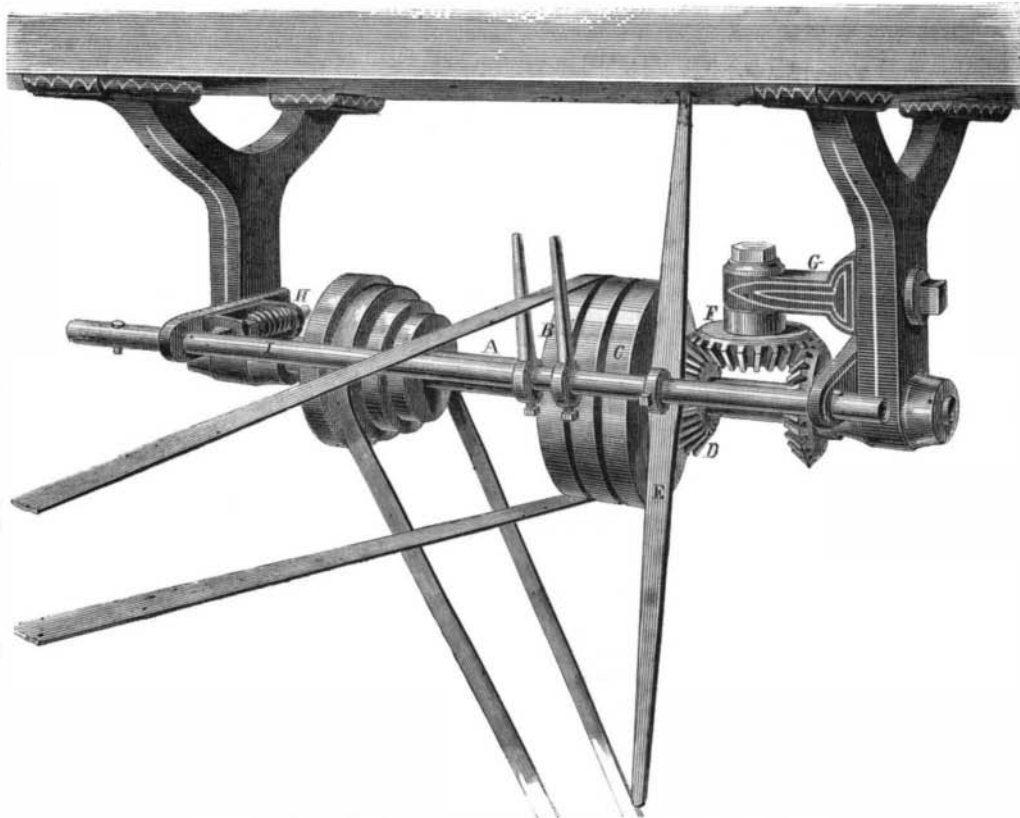
Reversing Gear for Counter-shafts.

It very often happens, in running machines, that a shaft requires to be so arranged that it can be revolved either way, forward or back. This is generally effected by having four pulleys and two belts, one of which is crossed, and turns the pulley it runs on in a contrary direction to its fellow. This plan is costly and troublesome, for many reasons, and the machine illustrated in the engraving published herewith is intended to accomplish the object with but one belt and three pulleys, thus saving the expense of the extra belt and pulley used in the old plan, besides being much more convenient and less liable to get out of order. From the following description the reader will be able to understand it clearly. The shaft, A, has three pulleys on it; the center one is a loose pulley, B, and the other one, C, is keyed fast to the shaft. The pulley, C, has a bevel gear, D, cut on one side, but the pulley itself is not fastened on the shaft, A. It will be seen, then, that by moving the shipper-bar, E, over from the pulley, B, on to the pulley, C, the intermediate gear, F, suspended from the hanger, G, causes the main shaft, A, to revolve in an opposite direction. When the bar is reversed again the pulley, C, revolves freely on the shaft, A, the same as a loose pulley, and does not interfere in any way with the action of the fast pulley, B. The shaft, A, has a spring stop at H, which catches in recesses in the shaft, I, so that the shaft will be arrested when it has gone far enough to throw the wheels into gear with each other. This is a very simple and efficient arrangement for the counter-shafts of all machines, and is particularly useful in screw-cutting, where the motion has to be instantly changed sometimes. It was patented on the 27th of June, 1863, by C. G. Shaw, of Florence, Mass. For further information address the inventor at that place.

Improved Lock.

The above engraving represents an improved door lock, whereby the ordinary method of opening a door by turning the knob is dispensed with, and the apartment can be entered by pulling the handle, as hereafter described. Similarly constructed locks are very much in use in New York and other cities at the present time, and are much liked. This plan furnishes a means of security in addition to the lock and bolt, which may be used in connection with it the same as with other fastenings. In the engraving the plate is broken away to show the interior. The arrangement is merely an oscillating shaft, A, which constitutes the catch; this shaft or bolt is cut out square, as at B, for a quarter of its circumference, so that it rests fairly on the spring stop, C. The shaft has two arms, D, upon it, between which the square part of the handle, E, passes; the small pin this handle strikes against the arms. Thus it will be seen that by pushing or pulling, according to the direction in which the person approaches, the oscillating shaft is partially turned so as to clear the

spring-stop, and the door can be opened. When it is to be closed the bolt strikes on the inclined part, F, of the spring-stop and depresses it so that it is out of the way. The case containing this bolt is screwed to the door jamb, and the other part to the door itself. After each operation the shaft is returned to the



SHAW'S REVERSING GEAR FOR COUNTER-SHAFTS.

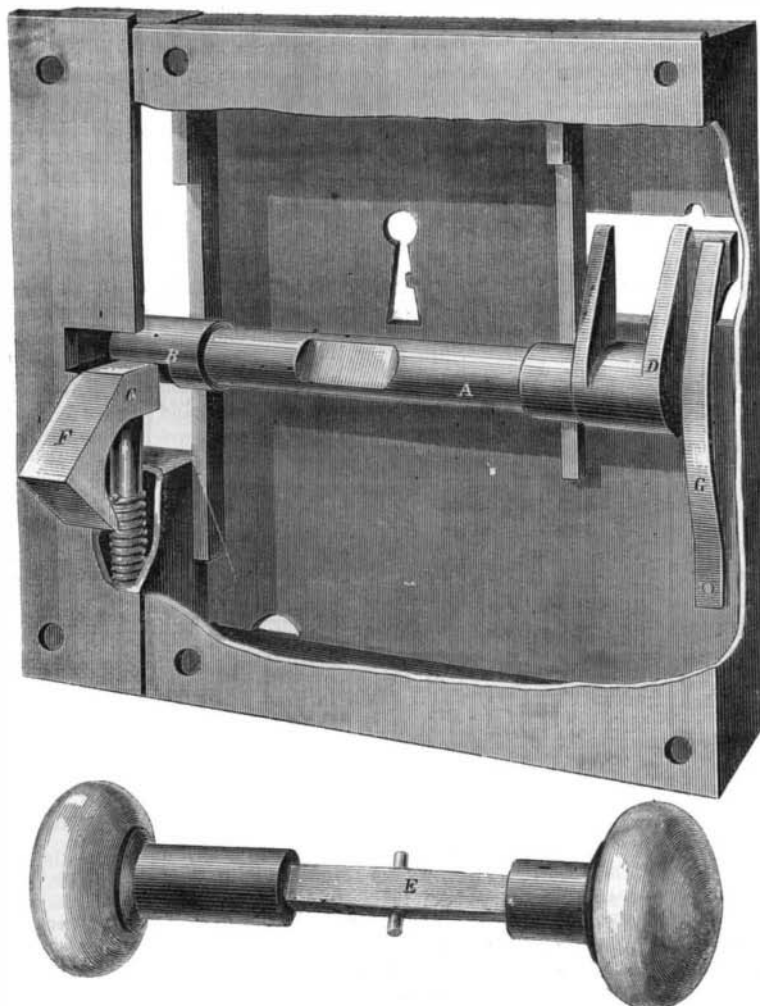
proper position by the spring, G, on one of the arms. This is a convenient arrangement for the object in

Influence of Smoke on Vegetation.

In a paper read before the Royal Society, London, partly on the above subject, Professor Voelcker states that he has had many opportunities of becoming practically conversant with the injurious effects which a smoky atmosphere produces on cereal crops, and that he regards a strong deposition of soot on wheat and other corn crops quite a sufficient evidence of the more or less complete injury which the crops must have suffered from the sulphurous acid always present in the air when such sooty deposits are seen on plants. The disadvantages of carrying on agricultural pursuits in the Potteries, or in districts where volumes of black smoke discharge enormous quantities of sulphurous acid into the air, are well known among the more intelligent and enterprising farmers. The injury done to vegetation by the smoke from copper-works has been traced beyond a distance of four miles. Of course it might be asserted that the mischief was caused by the arsenical vapors; but the latter are present in almost inappreciable small quantities, whilst as small an atmospheric percentage of sulphurous acid as the 1-800,000th is injurious to vegetation in wet weather

Entozoa in the Stomach of the Alligator.

Dr. A. Wynne Foot gives, in the *Dublin Quarterly Journal of Science*, the following interesting account of the condition of an alligator's stomach which had been attacked by nematoid worms. The animal was reported to have been in the habit of vomiting its food before death. The stomach, of a globular shape, was the size of an orange and distended with air; it contained 115 worms of the genus *Ascaris*, averaging in length from three to four inches; about one-half of them had spirally-convoluted tails; it also contained ten small pebbles and sharp-pointed flints (one of which was seven lines long); three pieces of charcoal (one of which was thirteen lines in length), and a soft pale coagulum with some yellowish viscid mucus which had an acid reaction. The surface of the stomach was covered with a series of irregular deposits of a fine yellowish matter, which were slightly raised and varied in extent from the size of a pea to that of a sixpence. These gave a sensation to the finger such as that produced by rubbing it against firm sand-paper, and even so adherent that they could not be removed without tearing away the subjacent stratum of tissue. The nature of these incrustations is not mentioned by Dr. Foot, so we presume the material composing them was not submitted to chemical analysis. The facts are, however, of some interest.



HACKMAN'S "PUSH-AND-PULL" LOCK.

view, and has been patented by Henry Hackman, Jr. For further information address the inventor at Wil-low-street, Taque P. O., Lancaster Co., Pa.

seen except during its transit across the sun's disk. Its next transit will be early the morning of June 18, 1864.