

alarm being sounded. The invention is chiefly designed for tills in stores to prevent the abstraction of money by shoplifters and the like. This improvement was designed by William B. Card, of Sag Harbor, N. Y.

FOREIGN NEWS AND MARKETS.

The Liverpool Cotton Supply Association has recently received sundry samples of cotton and cotton yarn from Africa, forwarded by the celebrated Dr. Livingston. This cotton was grown in the valley of the Shire, which is 100 miles long by 20 broad. The natives spin and weave it for their own use; so abundant is it in this valley that a vast number of cotton trees are annually burned to the ground. The navigation of the Zambesi and the Shire is open to the center of this cotton valley during the greater portion of the year. It is evident, therefore, that a large supply of cotton may be readily obtained from this part of Africa; and the above association are earnestly bespeaking the support of the government to Dr. Livingston, in his efforts to develop what is termed "the vast productive resources of the regions now opened to commercial enterprise."

A paper was recently read before the Institution of Mechanical Engineers (London), by Mr. Benson, of Cincinnati, Ohio, who exhibited a model of the boiler used for the steam fire-engines of that city. The members seemed to consider this boiler a very great improvement for economizing space and weight, by the immense amount of heating surface which it contained. A boiler for an engine, upon this principle, is now being constructed by Messrs. Russell, tube manufacturers, of Welnesbury, England.

Several experiments have lately been made on the Oxford and Wolverhampton Railroad, to test the qualities of brakes for stopping trains. In six experiments with "Fay's brake," at an average speed of 36 miles per hour, the experimental train was stopped in a distance of 507 yards. On a second set of experiments, at the same speed, the train was only stopped within 795 yards from the place where the brake was first applied. A similar set of experiments was tried with "Chambers' brake," which stopped the train within a distance of 731 yards; and experiments were also conducted with two other brakes, namely, "Gasses'" and "Newall's," which only stopped the train within a space of 900 yards.

A new apparatus is now being exhibited in Paris, by M. Vert, to solve the problem of aerial navigation. It consists of a large bag, shaped like a fish, made of gold-beater's skin, and filled with hydrogen gas. The tail of the fish is to serve for a rudder; a small steam engine is placed in a car under it to drive four rotary fans, and these are adjusted to rise and fall on an incline. The great objection to its ultimate success is that every effort yet made to make it fly has not budged it a foot!

The manufacture of condensed artificial manures is now conducted on a very extensive scale in several places in England and Scotland. Ammonia and the phosphates of lime appear to be the principal ingredients of fertilizing value in them. The ammonia is chiefly obtained from gas-works, and the phosphates from caprolites and marl. A great deal of deception has been practiced upon farmers in England (as has also been done in this country) by manufacturers of such manures. They have advertised them as containing far more genuine fertilizing substances than they possessed. Professor C. Cameron, M. D. (editor of the *Irish Agricultural Review*, and a good chemist), has exposed the frauds in adulterated fertilizers and has been presented with a suitable testimonial contributed by a great number of farmers in reward for his exertions to prevent such adulterations. So much for the power of the press and the esteem in which it is held in Dublin.

The Cunard Steamship Company have now no less than eight screw steamers in the course of construction on the Clyde, besides the *Scotia*, which is to be the largest merchant steamer afloat (with the exception of the *Great Eastern*), and its speed is promised to exceed that of any steamship hitherto built.

The metal market is scarcely changed since last week. Scotch pig-iron has declined 1s. per ton, but there has been no other change in iron.

The advance in Banca and Straits tin, noticed in our last issue, is maintained; and perhaps there may be a still further advance, as the total amount of Banca is less this year than the last.

NEW YORK MARKETS.

CANDLES.—Sperm, city, 38c. a 40c. per lb.; sperm, patent, 50c.; wax, paraffine, 50c.; adamantine, city, 18c. a 21c.; stearic, 27 a 28c.

COAL.—Anthracite, \$4.50 a \$5; Liverpool orrel, per chaldron, \$11; cannel, \$12.

COPPER.—Refined ingots, 23½c. per lb.; sheathing, 26c.; yellow metal, 20c.

CORBAGE.—Manilla, American made, 8½c. per lb.; Rope, Russian hemp, 12c.

COTTON.—Ordinary, 8½c. a 8¾c.; good ordinary, 9½c. a 10c.; middling, 11½c. a 11¾c.; good middling, 11¾c. a 12½c.; middling fair, 11¾c. a 12¾c.

DOMESTIC GOODS.—Shirtings, brown, 30-inch, per yard, 6c. a 7½c.; shirtings, bleached, 26 a 32-inch, per yard, 6c. a 8c.; shirtings, bleached, 30 a 34-inch, per yard, 7c. a 8½c.; sheetings, brown, 36 a 37-inch, per yard, 5½c. a 6½c.; sheetings, bleached, 26-inch, per yard, 7½c. a 15c.; calicoes, 6c. a 11c.; drillings, bleached, 20-inch, per yard, 8½c. a 10c.; cloths, all wool, \$1.50 a \$2.50; cloths, cotton warp, 85c. a \$1.37; cassimeres, 85c. a \$1.27½; satinetts, 26c. a 60c.; flannels, 15c. a 20c.; Canton flannels, brown, 8½c. a 15c.

DYEWOODS.—Barwood, per ton, \$18 a \$20; Camwood, \$130; Fustic, Cuba, \$35 a \$30; Fustic, Tampico, \$22; Fustic, Savanilla, \$19 a \$20; Fustic, Maracibo, \$18.50 a \$19; Logwood, Laguna, \$22 a 23; Logwood, Tabasco, \$21; Logwood, St. Domingo, \$13 a \$13.50; Logwood, Honduras, \$16 a \$17; Logwood, Jamaica, \$12.50 a \$12; Lima wood, \$5 a \$7.5; Sapan wood, \$45.

FLOUR.—State, superfine brands, \$5.20 a \$5.25; Ohio, common brands, \$5.20 a \$5.35; Ohio, good and choice extra brands, \$5.85 a \$6.70; Michigan, Indiana, Wisconsin, &c., \$5.35 a \$5.50; Genesee, extra brands, \$5.50 a \$7.45; Missouri, \$3.35 a \$7.45; Canada, \$3.45 a \$6.70; Virginia, \$6.20 a \$7.20; Rye flour, fine, \$3.75 a \$3.90; corn meal, \$2.75 a \$3.80.

HEMP.—American undressed, \$120 a \$150; dressed, from \$100 a \$200. Jute, \$87 a \$99. Italian, \$275. Russian clean, \$190 a \$200 per ton. Manilla, 6½c. per lb. Sisal, 5½c.

INDIA-RUBBER.—Para, fine, 55c. per lb.; East India, 47c.

INDIGO.—Bengal, \$1 a \$1.55 per lb.; Madras, 70c. a 95c.; Manilla 60c. a \$1.15; Guatemala, \$1 a \$1.25.

IRON.—Pig, Scotch, per ton, \$24 a \$25; Bar, Swedes, ordinary sizes, \$25 \$26; Bar, English, common, \$42.50 a \$43; Refined, \$3 a \$4; Sheet, Russian, 1st quality, per lb., 11½c. a 11¾c.; Sheet, English, single, double and treble, 3½c. a 3¾c.; Anthracite pig, \$23 per ton.

IVORY.—Per lb., \$1.25 a \$1.50.

LATHS.—Eastern, per M., \$2.12½.

LEAD.—Galena, \$5.80 per 100 lbs.; German and English refined, \$5.65 a \$5.70; bar, sheet and pipe, 5½c. a 6c. per lb.

LEATHER.—Oak slaughter, light, 29c. a 31c. per lb.; Oak, medium, 30c. a 32c.; Oak, heavy, 28c. a 31c.; Oak, Ohio 29c. a 30c.; Hemlock, heavy, California, 19c. a 2c.; Hemlock, buff, 15c. a 18c.; Cordovan, 50c. a 60c.; Morocco, per dozen, \$18 to \$20; Patent caulked, 16c. a 17c. per foot, light Sheep, morocco finish, \$7.50 a \$8.50 per dozen; Calf-skins, oak, 57c. a 60c.; Hemlock, 56c. a 60c.; Belting, oak, 32c. a 34c.; Hemlock, 28c. a 31c.

LIME.—Rockland, 75c. a 80c. per bbl.

LUMBER.—Timber, white pine, per M. feet, \$17.75; yellow pine, \$35 a \$36; oak, \$13 a \$23; eastern pine and spruce, \$14 a \$15; White Pine, clear, \$5 a \$10; White Pine, select, \$25 a \$30; White Pine, box, \$14 a \$18; White Pine, flooring, 1½ inch dressed, tongued and grooved, \$24.50 a \$25; Yellow Pine, flooring, 1½ inch, dressed, tongued and grooved, \$29 a \$32; White Pine, Albany boards, dressed, tongued and grooved, \$20 a \$21; Black Walnut, good, \$45; Black Walnut, 2d quality, \$30; Cherry, good, \$45; White Wood, chair plank, \$42; White Wood, 1 inch, \$23 a \$25; Spruce Flooring, 1½ inch, dressed, tongued and grooved, each, 22c. a 24c.; Spruce Boards, 15c. a 17c.; Hemlock Boards, 12½c. a 14c.; Hemlock wall strips, 10c. a 11c.; Shingles, cedar, per M. \$28 a \$35; Shingles, cypress, \$12 a \$25; Staves, W. O. pipe, light, \$55 a \$5; Staves, white oak, pipe, heavy, \$75 a \$80; Staves, white oak, pipe, culls, \$30 a \$35; Staves, do. hhd., heavy, \$70; Staves, do. bbl. light, \$30 a \$35; Staves, do. bbl. culls, \$20; Mahogany—St. Domingo, fine crotches, per foot, 35c. a 45c.; St. Domingo, ordinary do., 20c. a 25c.; Honduras, fine, 12½c. a 15c.; Mexican, 15c. a 15c.

NAILS.—Cut, 3½c. a 3¾c. per lb.; American clinch, 5c. a 5½c.; American horse-shoe, 14½c.

OILS.—Olive, Marsailles, baskets and boxes, \$3.30 a \$3.40; Olive, in casks, per gallon, \$1.12 a \$1.25; Palm, per pound, 9c. a 9½c.; Linseed, city made, 57c. a 58c. per gallon; Linseed, English, 57c. a 58c.; whale, fair to prime, 49c. a 52c.; whale, bleached 50c. a 60c.; sperm, crude, \$1.40 a \$1.45; sperm, unbleached winter, \$1.47; lard oil, No. 1, winter, 87½c. a 92½c.; red oil, city distilled, 55c.; Wadsworth's refined rosin, 30c. a 40c.; Wadsworth's boiled oil for painting, 35c. a 40c.; Wadsworth's tanner's improved and extra, 30c. a 40c.; Wadsworth's machinery, 50c. a \$1; camphene, 41c. a 40c.; fluid, 50c. a 53c.

PLASTER-OF-PARIS.—Blue Nova Scotia, \$2.75 per ton; white, \$3.50; calcined, \$1.20 per bbl.

RESIN.—Common, \$1.65, per 310 lbs., strained, No. 2, &c., \$1.65 a \$2; No. 1, per 280 lbs. \$3 a \$2.75; white, \$3 a \$4; pale, \$4.50 a \$5.50.

SOAP.—Brown, per pound, 5c. a 8c.; Castile, 8½c. a 9c.; Chemical olive, 7c. a 7½c.

SPELTER plates, 5½c. a 5¾c. per lb.

STEEL.—English cast, 14c. a 16c. per lb.; German, 7c. a 10c.; American spring, 5c. a 5½c.; American blister, 4½c. a 5½c.

SUMAC.—Sicily, \$60 a \$90 per ton.

TALLOW.—American prime, 10½c. a 10¾c. per lb.

TIN.—Banca, 32c.; Straits, 30c.; plates, \$5.50 a \$9.37½, per box.

WOOL.—American, Saxony fleece, per lb., 55c. a 60c.; American full blood merino, 48c. a 52c.; extra, pulled, 45c. a 50c.; superfine, pulled, 39c. a 43c.; California, fine, unwashed, 24c. a 32c.; California, common, unwashed, 10c. a 18c.; Mexican, unwashed, 11c. a 14c.

ZINC.—Sheets, 7c. a 7½c. per lb.

The foregoing rates indicate the state of the New York markets up to January 11th.

There has been very little change in prices since last week; a slight fall in flour is noticed, and a rise in resin. It is remarkable that the lowest and highest priced resins come from the same stock. Some new discovery, whereby the dark-colored resin could be converted into

white resin, would be of incalculable importance, and would be a vast fortune to the inventor.

The quality of Bengal indigo lately introduced into market is said to be very superior; it was difficult to obtain the best qualities a few years ago. Most of the indigo which comes to our country arrives at Boston; the stock on hand at present is sufficient to maintain stationary prices for some time.

Brazil supplies us with the greatest part of our coffee, and New Orleans, Baltimore and New York are the chief ports of this trade. The estimated sales of coffee for consumption in the United States, in 1859, were 1,110,000 bags (a decrease of 900,000 bags from last year), all of which came from Rio.

The receipts of Cumberland coal into Baltimore, during 1859, were 352,821 tons, an increase of 35,000 over last year. Many of our steam ferry boats, which once burned anthracite, now use the Cumberland coal, which is semi-bituminous, and not so destructive on grate bars and fire-boxes.

Baltimore is our principal copper mart. The quantity of cake and refined ingot copper made in that city, during 1859, was over 8,000,000 pounds, valued at \$2,000,000.

GOLD AT THE MINT IN PHILADELPHIA IN 1859.—

Gold from California.....	\$43,751.00
" " Kansas.....	53,919.21
" " other sources.....	75,829.24

Total.....\$173,499.45

During last year 12,275 pieces of gold have been coined, valued at \$173,459.68. Of silver there were coined 293,000 pieces, valued at \$72,650. Of copper cents there were 2,200,000 pieces, valued at \$22,000. A very small amount of the gold received from our mines is converted into coin. Most of it is used in ingots, especially that which is exported. It saves a considerable expense to its owners in paying it out in this form.

INFORMATION IN REGARD TO THE MAILS.—Messrs. Conner & Holbrook, No. 37 Park-row, have commenced the publication of a monthly sheet, giving the following important information in relation to the foreign and domestic mails connected with the New York Post Office:—1st, The rates of letter and newspaper postage of the various weights, to all the countries of the world with which we have mail communication. 2nd, The routes of transmission, and plain directions for superscribing letters for these several routes. 3d, Directions for the registration of letters. 4th, The times of departure of the European, California and Havana mails. 5th, The times of closing the domestic mails—North, South, East and West. 6th, The times at which the domestic mails arrive. 7th, The time occupied in the transmission of mails from distant points to New York city. The work is to be officially reviewed each month at the New York Post-office.

NOT A COUNTERFEIT.—The *Bank Note Register and Counterfeit Detector*, published by T. S. Hawks, of Buffalo, N. Y., in speaking of the *SCIENTIFIC AMERICAN*, says:—"This truly valuable scientific and mechanical paper commences the second volume of the new series with its next issue. It is one of the most useful publications of this country, and should be carefully and attentively read by every class of our citizens, as, in the great variety of subjects presented in its columns, none can read it without profit. But the mechanic and artisan cannot afford to be without it, it treats upon every branch of mechanics, and the information conveyed may be relied upon as sound and correct; there is nothing counterfeit about it; it is entirely genuine, bearing the true stamp."

HOW TO ELEVATE MECHANICS.—The enterprising proprietors of Blandy's Steam Engine Works, at Zanesville, Ohio, send us \$42, to pay for 30 subscriptions to the *SCIENTIFIC AMERICAN* for one year. They inform us that they employ about 140 hands in their establishment, and that all the subscribers are from among their machinists. They also add—"We expect to be able to create a better interest among them for this class of reading, instead of the 'blood-and-thunder' literature so common in this day." This is the right spirit, and is a sure guarantee that good engines and machinery will be turned out of that establishment. There are many other proprietors of machine-shops who might profit by this example and aid us in the bargain.