

FRictional GEARING.

The following extract was lately published in the New York Times:—

"Frictional gearing is coming into successful use in Great Britain for all purposes, from small machinery up to the driving of the screws of steamships. Instead of one wheel driving another by the intersection or 'mashing' of the 'cogs' or teeth of their rims, the adjacent surfaces or faces of the wheels are grooved lengthwise, or in the direction of their motion, like the rolls of a rolling mill. The grooves are V shaped, and the friction of the V's of one wheel against the sides of the V's of the other wheel is so great that the one drives the other, as in the case of cogs. The friction of the journals of the shafts is somewhat greater than in the case of toothed gearing, but in other respects the frictional wheels seem to work most smoothly. The 'back-lash' or rattle of teeth, especially when worn, is prevented. The chief economy is in first cost. The cutting of the teeth of gearing involves the application of abstruse mathematical principles: each side of each tooth is shaped to an epicycloidal curve, varying with the diameters of the wheels. The machines and processes required are extensive and numerous, especially in cases of beveled gearing. But the preparation of frictional gearing is the most simple and straight-forward work of the turning-lathe."

Regarding the exclusive use of this system of driving machinery in England, the accompanying letter throws some new light on the subject:—

Messrs. Editors:—In regard to an article on "Frictional Gearing" which recently appeared in the New York Times, and which has been copied into other papers, it is liable to lead many persons to suppose such gearing had never been introduced into this country. It was first used in this section, however, by Mr. William Nichols, who put it up to drive the feed works in a sawmill which he was building. He first tried flat surfaces, but they did not satisfy him, so he took the same wheels and had a V-groove turned in one and the other with a rim to fit it. I think it was entirely original with him, and he considered it an experiment at the time he tried it. The gearing answered admirably and has been in use in Messrs. Bartles & Readin's mill ever since, up to this day. For smoothness of action and the ease with which it is thrown in and out of gear, it is vastly superior to the toothed gear usually in use in sawmills; as a sawyer can, with one hand and very little effort, throw the "feed" out and the "gig-back" in, and vice versa. It would also make an excellent arrangement for "jacking" the logs into the mill; in fact, it is superior in any place in which the clutch is now employed. I think that if all your sawmill readers will only try it, they will agree with me in regard to the superiority of the frictional gearing in any situation where it can be used.

H. F. S.

Williamsport, Pa., Jan. 3, 1860.

[Our correspondent does not state when Mr. Nichols first introduced frictional gearing into the mill in question, but we suppose it was several years ago.—Eds.]

FALL OF A FACTORY--SAD AFFAIR.

One of the most heart-rending events which have ever taken place in this country occurred at Lawrence, Mass., on the 10th inst., by the falling of the Pemberton Mills, an immense cotton factory, by which 115 persons were killed and 165 wounded. The building was 280 feet long, 70 wide, and 5 stories high. It contained 2,700 spindles or spinning frames, several hundred looms, carding machines, any other machinery, and 960 operatives were employed in it. About 600 persons were in the mill when it fell, and that all were not killed appears miraculous. Some extraordinary cases of escape are related, and more persons would have been rescued from under the ruins, but a fire broke out when the walls fell, and many of the poor creatures, who were only covered up under fallen beams and the flooring, were consumed in the flames, and perished in great agony. It is said that the structure was deficient in strength from the first day it was erected. There is no country in the world where life is so insecure, from defective buildings, as the United States. We feel and acknowledge the disgrace.

TO RE-JAPAN OLD TRAYS.—First clean them thoroughly with soap and water and a little rotten-stone; then dry them by wiping and exposure at the fire. Next get some good copal varnish, mix it with some bronze powder, and apply with a brush to the denuded parts. After which set the tea-tray in an oven at a heat of 212° or 300° until the varnish is dry. Two coats will make it equal to new.

WEEKLY SUMMARY OF INVENTIONS.

The following inventions are among the most useful improvements patented this week. For the claims to these inventions the reader is referred to the official list on another page:—

BOOTS AND SHOES.

The object of this invention is to enable the manufacturer to perform the work, which is now done by hand, and to make the entire boot or shoe by any ordinary sewing mechanism for carrying waxed thread, with the exception of putting on the heel, which is a very simple and comparatively easy operation when the sole has been properly attached. This improvement enables the manufacturer of boots or shoes to put together his work with great facility and a great saving of time is accomplished, there will be less expense attending the manufacture of sewed shoes, and they may be furnished below the present market value of pegged shoes. Another great advantage in this invention is that the entire work of sewing about a boot or shoe can be performed in a neat and perfect manner by ordinary workmen, and those unskilled in the present art of making boots and shoes, therefore the expense of workmen will be much reduced, while the work can be made equal if not superior in strength and durability to those at present furnished to the market. For this purpose the invention consists in sewing the welt or strip of leather to the leather upper, which is previously fitted as near the edge of the same as may be found necessary, before the upper is lasted. The patentee of this invention is Francis D. Ballou, of Abington, Mass.

MANUFACTURE OF STEARIC ACID.

In the manufacture of stearic acid, by what is known as the distilling process, the oil, tallow or other crude fatty matter after being washed or otherwise purified, is put into what is called the acidifying pan and therein subjected to the action of sulphuric acid and heat, and when thoroughly acidified, as it is termed, the fat is drawn off from the pan to be distilled, leaving therein the black residuum known as "acid bottoms." This residuum has been known to contain a considerable quantity of fatty matter, and attempts have been made to extract it by various means, but none have been found to pay. Attempts have been made to convert the said residuum to various useful purposes but it has never been successfully used otherwise than as a fuel. This invention consists in subjecting the said residuum to a distilling process in which it is exposed to the action of the superheated steam, by which means fatty matter (stearic acid &c.) to the amount of from 20 to 25 per cent by weight of the whole of the residuum may be obtained from it. This invention has been patented to David Thain and William Jackson, of Philadelphia, Pa.

COTTON GIN.

This invention relates to an improved feeding device by which the cotton is presented to the rollers in such a way as to permit of the free escape or discharge of the seed as they are detached and ripped from the staple without permitting any valuable portion of the staple to escape with the seed, and also presented in a layer or bat equal in width to the length of the rollers, whereby the latter are enabled to operate in the most efficient manner. It consists firstly in combining a guard with a feed board substantially as hereafter shown, whereby the feeding device is simplified and rendered more efficacious than hitherto. It consists secondly in the employment or use of a corrugated roller in connection with an auxiliary smooth roller in addition to a roller furnished with a smooth yielding surface, against which the two first mentioned rollers bear, whereby the process of ginning by rollers is greatly expedited without in the least deteriorating the staple. It consists thirdly in the employment or use of a discharging device composed of rollers so arranged that the ginned cotton is discharged in a loose light and untangled state. This improvement was designed by Lewis S. Chichester, of this city.

SEWING MACHINES.

This invention consists in a novel mode of applying two dogs, the one to move, and the other to prevent the backward movement of the feed wheel, whereby the necessity of the application of a friction brake to the said wheel is dispensed with, and the said wheel, though secured against any tendency to turn it the wrong way, is permitted to turn in the right direction with very little friction. It also consists in certain novel and very convenient means of regulating the feed movement, whereby

it may be adjusted before commencing to operate the machine, to produce any lengths of stitch that may be desired. The inventor of this improvement is John Dick, of this city.

CANDLES.

This invention consists in providing a candle with a tubular wick which forms an air channel right through it for the admission of air through the center of the flame, such wick having a lining of sized, starched or glazed paper or other substance sufficiently impervious to the material of which the candle is composed, applied within it, for the purpose of excluding the melted material from its air channel during the burning of the candle and preserving a free passage for the air to the center of the flame till the candle is all burned. The credit of this contrivance is due to Halvor Halvorson, of Cambridge, Mass.

SPINNING FRAMES.

This invention consists in constructing the ring employed in the spinning frame with a narrow upwardly projecting rim arranged midway or thereabout between the inner and outer margins of the face of the ring. The object of this construction of the ring is to provide a better bearing for the traveler to keep it in a horizontal or nearly horizontal position than the ordinary flat topped ring, and thereby to cause a more uniform draft upon the yarn in the spinning process. The patentee of this invention is M. P. Wilmarth, of Pawtucket, R. I.

COTTON-SCRAPER.

Among the various implements for the purpose of scraping and weeding young crops, such as cotton, sugar cane, corn, &c., the cotton-scraper of Messrs. Newcomb & Bird is one of the most novel and effective tools which has lately come to our notice. It consists in the employment of a vibrating double acting hoc, that is operated by a vertical rockshaft in such a manner that it cuts both ways in a direction across the row of cotton, corn, or other drill plant, in which the machine runs forward, leaving the weed in bunches the size of which may be varied according to the size of the box. The inventors of this device reside at Smith's Fork, Tenn., and it was patented last week.

HOP FRAMES.

This invention relates to a device for lowering the vines and bringing them within reach, for the facility of gathering the hops, and then for elevating them again to their original position, keeping the horizontal cords or wires, upon which the vines are entwined, under tension all the time. This invention consists in attaching to the posts a vertical strip with a small grooved pulley in its top over which passes a cord, which is attached to a sliding box for elevating and depressing this box, and to this sliding box is connected a yoke provided with a hook which hooks into an eye or loop on the end of the wires forming the frame upon which wires the vines are entwined; the object being to tighten up these wires, and to keep them under tension while raising and lowering them. L. A. Beardsley, of Edmeston, N. Y., is the patentee.

ARTIFICIAL LEGS

D. De Forrest Douglas, of Springfield, Mass., has what appears to be a very excellent improvement in Artificial legs, the principal object of which is to enable the knee and ankle to be made with mortise and tenon joints. These joints have been generally admitted to be the best for the purpose, but some practical difficulties which have been overcome by Mr. D. have prevented their being hitherto generally used. This invention is one that cannot well be explained without illustrations, which we hope soon to give.

BORING BRUSH BLOCKS.

This invention consists in the use of a polygonal drum having the brush blocks attached to it, and so arranged as to have an intermittent longitudinal sliding movement, an intermittent rotary movement, and a reciprocating feed movement, said drum being used in connection with drills whereby the blocks may be bored very expeditiously, and a considerable number operated upon simultaneously. The credit of this contrivance is due to Thos. Mitchell, of Lansingburgh, N. Y.

ALARM LOCK.

This invention consists in a novel arrangement of levers and stops with the knob-arbor and an alarm placed within a suitable case and applied to a drawer or till, whereby the drawer or till cannot be illegitimately opened, or an effort made to thus open it, without an

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 Wednesbury, 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, 35c. 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.

CORDBAGE.—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, 30c. 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 \$300. 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, 30c. 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.; Belt- ing, 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 \$1.35; 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.