Scientific American.

A WEEKLY JOURNAL OF PRACTICAL INFORMATION IN ART, SCIENCE, MECHANICS, CHEMISTRY AND MANUFACTURES.

VOL. VIII.—NO. 25. (NEW SERIES.)

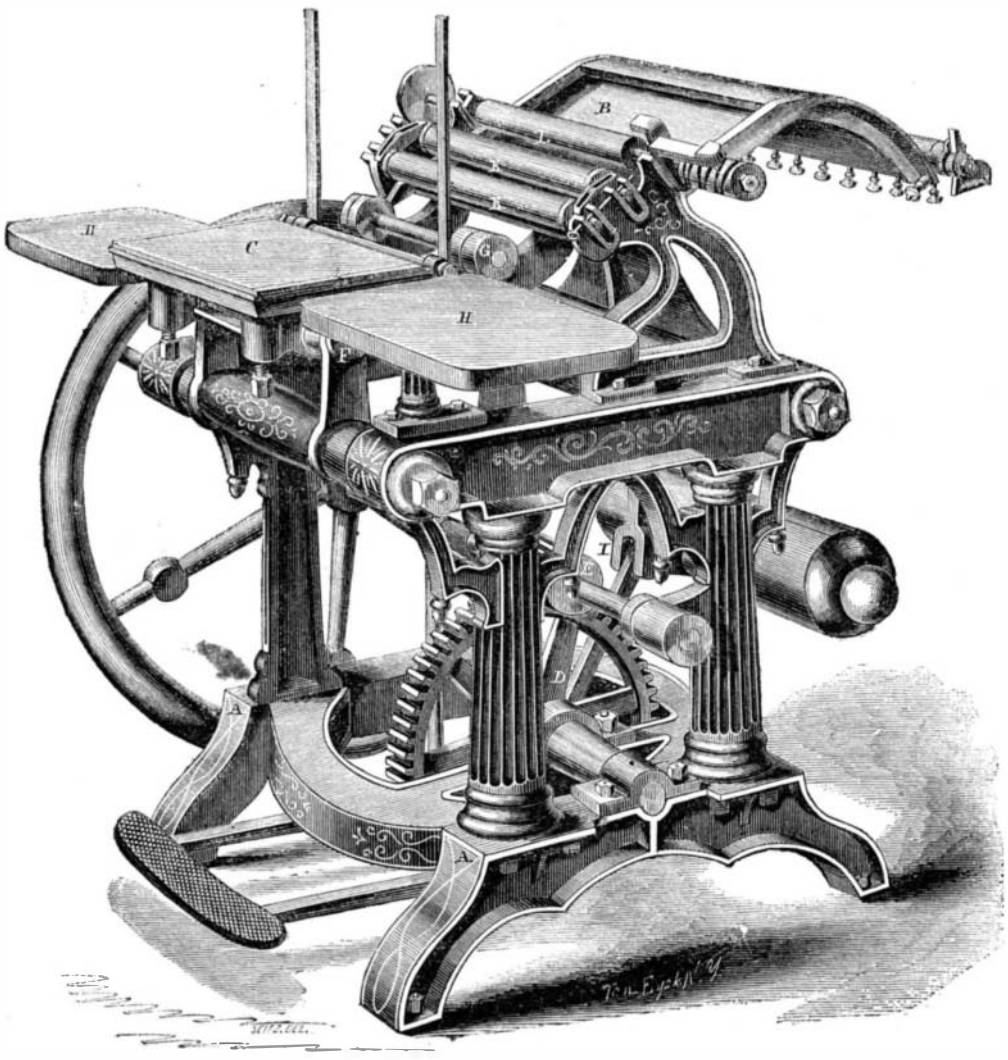
NEW YORK, JUNE 20, 1863.

SINGLE COPIES SIX CENTS. $3 PER ANNUM—IN ADVANCE.

Improved Printing Press.

Among the many instances in which American inventive genius has caused the nimble and accurate fingers of mechanism to displace the tedious processes of hand labor, the printing of cards, circulars, and other small work, holds a prominent position. Small power presses, of fine finish and capable of better work than could be done by the old hand-press, are to be found in operation in all parts of this country, and no printing-office is supposed to be in a condition to do business without one or more of those useful machines; but abroad they are almost unknown, even in the larger cities. What formerly required the labor of an expert man and boy for a day is now rattled off in much better style by the boy alone in two hours.

The elegant-looking machine we herewith illustrate is one of the latest improvements in this class of printing presses; it is distinguished alike for its simplicity and the quality of the work which it executes. The forms are placed upon the bed, B, which receives a rocking motion on a shaft fixed in the framing, A, through the arm, I, and a wrist-pin in the large wheel, D. This wheel receives its motion through the pinion, E, and treadle in a manner obvious to the mechanical reader. As the bed, B, oscillates, carrying with it the "form" of type, it passes beneath the inking rollers, K K, which supply the proper amount of ink for an impression. The curved table shown on the bed, and the fountain thereto attached, furnish the rollers with the requisite quantity of ink, which the vibrating roller, L, causes to be evenly "distributed;" all of which is done by the simple motion of the bed.



POTTER'S IMPROVED PRINTING PRESS.

The paper to be printed is placed upon the "platen," C. This platen is hinged by strong arms to the bed, B, at the point, G, and is also jointed at the point, F, to arms extending from a shaft fitted to turn in the frame opposite the shaft of the bed. As the bed, therefore, is caused to oscillate, the platen is forced to go with it, and, by the action of the joints, to close upon the "form" thereon placed. As the joint, F, comes into line with the two centers of oscillation, a powerful increasing leverage is developed, thus giving the "impression." As the parts return to the condition shown in the drawing, he platen, C, assumes the horizontal position, so hat the printed sheet can be removed and another ne substituted, while the form receives a fresh supply of ink. An adjustable "frisket" is operated by positive mechanism, not represented in the cut, to close upon the sheet, hold it in place, and remove it from the type. H H are tables to receive the paper both before and after being printed. Among the advantages claimed for this press are great simplicity in the arrangement and number of parts, and consequent little liability to derangement or wear; a strong and fair impression equal in all parts, and no liability to "slur;" a perfect "distribution" of the ink, and ease of access to the inking rollers. The bed is never carried beyond the perpendicular, and, when in the position shown in the cut, is convenient for receiving and correcting the form. The paper, ink-rollers, and form, are, except at the moment of impression, in full view of the operator. A patent for this invention was granted to G. H. Babcock, on Dec. 23, 1856, but recent improvements have been made by the manufacturer in 1863. Further information may be obtained by addressing the manufacturer, Charles Potter, Jr., at Westerly, R. I.

EMIGRATION has been extremely active of late from Ireland, and troops of the new importations, both male and female, can be seen in our streets.

The Pistons of Portable Engines.

A form of piston early adopted in portable engines consisted of a simple ring of brass, cast-iron, or steel, cut through at one place, in such a manner that no direct joint existed parallel with the piston-rod. This ring was forced against the cylinder by its own elasticity, aided by that of a circular steel spring, coiled up within it. The body of the piston was made in two parts, which, when put together and made fast on the rod by a nut, left a suitable groove between them for the packing ring. This piston was moderately simple, and has done good service; its great defect being wear at the edges of the ring, owing to which, in a year or so, it becomes too narrow for the groove, and permits the body of the piston to slip within it at each stroke, leading not only to its gradual destruction, but early permitting an excessive leakage between the ring and the body of the piston; two rings of the same kind have been employed in the length of the pistons with no better results. This piston may be daily met with still, and being very cheap, seems likely to hold its place.

The "Swedish" piston has given much satisfaction when employed in locomotives, and would be worth a trial in portable engines. It consists of a solid body, in which two grooves, about half an inch square in section, are turned; into each groove is sprung a plain cast-iron ring, cut straight across at one place, the elasticity of the rings giving all the spring necessary to make the piston tight. It is said to wear very well, but seems to us to be open in some degree to the same objection that applies to the last.

Ramsbottom's piston has lately met with much favor for locomotives. It consists of a solid cast-iron body, into which three square grooves are turned, varying in depth and width with the size of the piston. In ordinary "portables" these grooves measure about one-fourth of an inch each way; into these are sprung square wire rings, made of mild steel, of such a size that they fit the groove loosely, making a tight piston by their own elasticity. However well these pistons answer in locomotives, where the rings are much stronger, and are frequently examined and replaced by skilled hands, they are quite unsuitable for agricultural engines, being subject to rapid wear from the very small rubbing surface they offer to the cylinder. We have seen a set worn out in less than a month; they seldom last two; and in

addition, are very liable to turn round on the piston, so that one end sometimes springs into the port, invariably breaking the piston as a result. It has been urged that the nominal cost of these rings, and the ease with which they can be replaced, constitute important advantages. All this we admit, when the engine is placed in skillful hands; but we have never met with an agricultural laborer who was competent to the task; the agricultural laborer and the agricultural engine invariably go together, and as these engines frequently find their way into remote districts, the inconvenience and expense of sending for a properly qualified person is sufficiently obvious to prevent their general adoption. Besides, these rings are very apt to set fast in the piston if bad oil is admitted to the cylinder; in which case, of course, the piston becomes a mere solid block; *apropos* of which we may mention that a solid piston was introduced a few years ago, constructed on the following principles:—The inside of the cylinder is very accurately bored, and the piston turned so as to be a very accurate fit; a few shallow grooves are then turned in it, in which a little water lodges, and is said to make the piston perfectly tight. [This was tried in Lee & Larned's steam fire-engine, and discarded as useless and impracticable.—Eds. of the Scientific American.]

A very excellent piston is made thus:—A body is cast in two parts, turned, and fitted on the rod, so that when secured with a nut and lock-nut, they leave a groove between them; for a 10-inch piston, three-fourths of an inch deep, and two inches wide. A short cylinder of hard, tough, cast iron, of suitable size, is then chucked in a lathe, and has three rings successively cut from it. The external diameter of these rings is about half an inch greater than the bore of the cylinder. Two of them are turned with one straight and one sloping side, so that the cross section resembles a right-angled triangle with part of the apex cut off, the rings being about $\frac{5}{8}$ of an inch thick, $\frac{3}{4}$ of an inch wide, on the outside, and $\frac{1}{2}$ an inch wide on the inside. Our readers will understand that these rings are placed in the groove of the piston in such a way that the straight side of each comes against the top and bottom plates respectively of the piston, leaving a space between them $\frac{1}{2}$ an inch wide next the cylinder, and 1 inch wide next the body of the piston. The third packing ring is turned so as exactly to fill this space when put in position between the other two; its cross section being that of an isosceles triangle with the apex cut off, 1 inch wide next the body of the piston, $\frac{1}{2}$ inch wide next the cylinder, and $\frac{5}{8}$ of an inch thick; various other relative dimensions may be employed, but these will answer the purpose of illustration. The effect of the arrangement is that the middle ring, presenting but $\frac{1}{2}$ an inch of surface to the cylinder, wears away much faster than the other rings which present $\frac{3}{4}$ of an inch each, and consequently, pressing outwards, forces the other two rings laterally, owing to its wedge shape, against the top and bottom plates of the piston, so as to effectually provide for end as well as surface wear. We have said that the rings are made larger than the cylinder, and when finished they have just so much cut out of their circumference as will permit the ends just to meet when placed in the cylinder. Their own elasticity is found amply sufficient to press them against the cylinder, so as to be perfectly steam-tight. The middle ring is sometimes made of brass—an unnecessary refinement.

All things considered, we do not believe a better packing for pistons up to 30 inches diameter can be adopted. From the strength of the rings, it is almost impossible to set them fast; indeed, it is difficult to see how any foreign substance can force its way between them. Once ground slightly together, they always remain in steam-tight contact until completely worn out. The piston is cheap, strong, durable, and unpatented; indeed we believe it be a very old invention. It deserves far more general adoption than it has hitherto met with.

Proprietors of portable engines would do well to remove the back lid, and thoroughly coat the inside of the cylinder with good tallow while it is yet warm, if there is any chance of the engine standing idle for a few months. The increased durability of the piston will well repay the extra trouble. Where the engine-driver is intelligent, he might soon learn to remove the piston and clean and oil it from time to time, thus preventing much of the mischief and expense too often incurred by want of care and attention on his part.—*London Mechanics' Magazine.*

The Turkish Industrial Exhibition.

The example set by most of the civilized nations on the globe, of originating industrial exhibitions has been at last emulated by the Turks; and the Ottomans, awakening from their lethargy, have plunged headlong into an inspection of the wonders of their own country; the various products having been gathered into a large building for the purpose of exhibition. The collection was not greatly varied, if we may judge from the following account, furnished by a correspondent of the New York *Observer*:—

"We have 'done' the Exhibition. We spent several hours in the examination of all the accumulated wealth and wonders of the empire, from the crown jewels of the Mahomets, Selims, and Abdul Azizs, down to the extraordinary bread and cheese, pickles and wax of the nearest *charsheh* or market.

"The building appropriated to the Fair is a large square edifice of wood with a glass dome; it is gaily decorated with flags and streamers, and guarded from without by white-turbaned and scarlet-trowsered soldiers. Three piastres a head to the man at the door, and we are inside, fairly overpowered for the moment by the beauty and novelty of a scene which we had not considered it possible to find in Turkeydom. Which way shall we turn?—for we are so bewildered by the brilliant *coup d' œil* produced by the endless number of pillars wreathed round or festooned with the rich, bright carpets of the Orient; the pretty fountain and gay parterre in the center of the building; the piles of showy silks of Damascus and Persia, and the delicate gauzes of Broosa; the resplendent embroidery of the harems; the huge bear-skins and waving ostrich plumes; the pearl-wrought slippers and the burnished armor—that we know not how or where to commence our investigations. A few minutes, however, suffice to restore us to our senses, and we are about going systematically to work, beginning at our right hand, when a gay voice summons us to the upper end of the building. We remonstrate to no purpose. We 'must go and see the jewels first.' Everybody is eagerly examining them, and they are splendid, certainly, but as we are staunch republicans, you cannot expect us to go into raptures over such insane ensigns of royalty. Suffice it to say that there were immense diamonds of the first water, by the handfuls, and pearls of incomparable purity and size, all these with turquoises, rubies and emeralds, set in magnificent brooches, coronets, necklaces, bracelets, and aigrettes; one of the latter being the identical ornament worn by Mahomet II. at his triumphal entry into Constantinople. Then there were superb diamond-inlaid amber mouthpieces, and richly-jeweled scimetars; exquisitely chaste and be-gemmed *zaruffs* for holding the *fingans* or tiny Turkish coffee cups; and monstrous unset emeralds, some of the shape and size of an egg, and an uncut one—a large, flat, oblong stone—weighing 1,090 drachms! It was a fortune in itself.

"Of those paintings which attracted principal attention were two portraits of Mahmoud, the one taken in his Oriental turban and flowing robes, in which he is represented as standing in his palace, with his foot on the armor of a headless janissary, pointing to it as if saying—'In this lies my history.' In the other, a life-sized portrait, the victorious monarch is riding forth, sword in hand, mounted on a powerful and fiery charger, and attended by a brilliant suite. His costume is scarlet and white, a military dress, half European, with the distinctive fez and Spanish mantle peculiar to himself and his son Abdul Aziz, the present Sultan. The pose of both horse and rider is most spirited, magnificently real. You see the impetuous yet lofty ardor that flashes in the eye and animates the whole figure of the monarch; you hear the snort of defiance of the high-mettled Arabian, as he arches his proud neck and rears to the tightening of the bit. In the same corner, called by courtesy the 'picture gallery' of the Exhibition, were many fine photographic views of the city and Bosphorus, taken by native artists, principally Armenians, among whom the Abdullah Freres are first. There was also quite a collection of fancy paintings and etchings, mostly of a very inferior class, however, but we were greatly surprised to see among them a picture representing the first celebration of the 'Lord's Supper.' The fact of its hanging up there to the gaze of Mussulmans was a significant comment on the liberal spirit of the times.

"But passing on from here, we must not forget to mention the large, handsome brass *mangals*, of which there were a great number and variety; said *mangals* being used, as everybody knows, to contain live coals for heating the apartments in native houses. There were elegant specimens of ornamental chirography, in which the Turks excel; the 'Tomb of Napoleon at St. Helena,' cenotaph and acacia trees, made of hair, the whole evidently an ambitious advertisement of some enterprising *peruquier* in Pera; models of bridges and dock-yards; enormous sponges, still clinging to pieces of their native rock; coal and other minerals, of which there might be a much more valuable collection; and last, but not least, an American sewing machine! 'Wheeler & Wilson' was not in operation the day we visited the Exhibition, but it is worked three times a week to the admiring gaze of the Mussulman ladies, who throng the building by thousands. Mondays, Thursdays and Saturdays are now specially devoted to them, as it is found that the expenses of the Exhibition are not likely to be defrayed by depending too much on the curiosity of the Giaours.

"Most of the articles in the Fair have already found purchasers, particularly the carpets, which were in great demand. The largest of those contained forty-five square yards, and was a whole year in process of making.

"The *Annexe* is a new wing added to the building, and contains only machinery, principally of English and French invention. The United States, I learn, is represented by 'Armsby's patent, small, Yankee corn-sheller, exhibited by Nourse, Mason & Co., of Boston;' also a variety of spades, hoes, shovels, hay forks, &c."

Military Clothing.

The question of uniform is one of great importance, not only in a hygienical but also in a strategical point of view. The uniform ought to protect the soldier against atmospherical changes, at the same time that it should not interfere with freedom of movement, or interpose any obstacle to marching, running, leaping, and the free handling of his arms. The fate of a battle, the character of a retreat, the death list of an army, may, to a certain extent, depend on the cut of a coat or of a head gear. The soldier's clothing ought, like that of other citizens, to be modified according to season, climate, localities, &c. His equipment deserves particular attention. A soldier in the infantry, when on a march, in time of war, carries a weight equal to or within a few ounces of 60 pounds, to which must be added, under certain circumstances, nearly $4\frac{1}{2}$ pounds of provisions. All of this is borne chiefly on the shoulders and chest, whence follow impeded movements in expansion of the chest and in the function of respiration generally, profuse sweating, muscular fatigue, and rapid exhaustion. The infantry being that arm of the service which has to endure the greatest fatigue, ought to be composed of strong and robust men. In selecting men for infantry service less attention should be paid to the height than to the fullness of the chest and of the muscular system; experience having shown that individuals of short stature, but well formed and endowed with a certain degree of muscular strength, are the least liable to suffer from fatigue and disease.

Wool in England.

As the quantity of wool in England greatly controls prices in America, it is interesting to know the amount which has arrived in that country this year. During the first three months of the year 19,644,964 pounds arrived in England from colonial possessions, against 14,224,823 pounds for the corresponding period in 1862. Of this amount 7,228,887 pounds had been sold and exported, against 8,780,157 for the corresponding period of the previous year. The great amount thus left on hand has led to a decline of about three cents on the pound, and it is supposed that there will be a further fall. The total amount of colonial and British wool exported to the United States in those months amounted to 1,858,506 pounds.

New Form of Dry Per-sulphate of Iron.

The following is from the *American Journal of Pharmacy*, communicated by Dr. J. Lawrence Smith, of the Louisville (Ky.) Chemical Works :—

"The use of the per-sulphate of iron has been very much extended in the last few years, and various formulæ have been proposed for making it, all of which are very good. But it is not in forming the solution that there is any thing needed, but it is the transformation of it into a solid that is most desired. Some have dried it on plates in a hot-chamber, and others have dried it by the direct application of heat, giving it a porous structure not unlike tannic acid when first dried. I have given to it these forms successively, but they all have objections. Heated on plates, if the temperature be too light or continued too great a length of time, a portion becomes insoluble, other forms are deliquescent and soon become moist in contact with the air. Having succeeeded in drying it into an almost impalpable powder unalterable in contact with the air and very soluble in water, I propose describing, as near as possible, the method by which this is arrived at. As regards the solution of per-sulphate I am not very particular about the the formula, preferring, however, one proposed for Monsel's per-sulphate (sulphate of iron, 100 troy ounces; distilled water, 2 gallons; sulphuric acid, 5 troy ounces; nitric acid, 5 troy ounces or q. s.), for per-oxidizing the iron, when the whole is brought to the boiling temperature. The manner of doing this is familiar to all operators. The solution is allowed to cool somewhat, then filtered and concentrated to a density of 1.60. It is now allowed to cool and poured into shallow plates to the depth of one-sixteenth or one-fourth of an inch, and a little of the dry powder obtained from a previous desiccation is scattered on the surface of the liquid in each plate. The plates are then placed on shelves in a part of the laboratory where a little steam is escaping and the temperature is from 75° to 100° Fah., according to the season.

"In my works shelves are constructed two or three feet above a series of steam jackets in which live steam is used, and always more or less escaping from the sides of the jackets. In from twenty-four to forty-eight hours the contents of each plate begin to rise in cauliflower excrescences that after a little longer exposure become dry, and rub down between the fingers to an impalpable powder; and when rubbed down and passed through a tolerably fine iron sieve, it has very much the appearance of mustard. It can be exposed to the air without its absorbing moisture or undergoing any alteration. When thrown into water the water becomes turbid, but in a few moments clears up, affording a red solution. It is soluble in a very small quantity of water. When it is desired to use it in the solid form as a styptic, it can be taken in the fingers and scattered on the wound or other surface as any other powder may be applied. This manner of drying a substance considered deliquescent doubtless appears a very singular one, and it certainly was not suggested by any train of reasoning, but discovered altogether by accident, and I have tried to bring about the result by other arrangements; but the solution placed on shelves in the same room not more than ten feet off, but not exactly under the same condition of vapor and temperature, acts entirely differently; the solution, instead of drying, becomes more dilute from absorption of moisture. In the drying-room proper it solidifies into a hard mass."

The Western Iron-clads under Fire.

Chief Engineer John W. Hartupee, of the iron-clad *Tuscumbia*, is responsible for the following statement of the manner in which his vessel stood fire at Grand Gulf, Miss.:—

"The engagement lasted five and a half hours. The *Tuscumbia* received eighty-two solid shots, and it is impossible to count the shells that exploded in her. The upper work is a perfect wreck. No man could have lived on her deck for a minute. It is believed here that we were under the heaviest fire ever known in naval warfare. The rebels concentrated all their fire on us for at least two hours. More than one-half the time during the fight we were not more than fifty yards from the muzzles of thirty guns, and some of these guns were 100-pounder Parrotts—a gun which throws projectiles with greater force than any gun now in use. But all would not do. They could not penetrate the iron sides of the *Tuscumbia*. We received more shots than all the other vessels combined; but our plating proved perfectly invulnerable against all efforts to penetrate it. There was one great blunder committed in building the *Tuscumbia*, and that is in the location of her magazine. To give you an idea of this, I will just say that in action the hatches of the magazine are necessarily left open. When the shell exploded in her turret the fire from it badly burnt the face of the boy who was stationed at the door of the magazine to pass powder up. This will be altered before the vessel is pronounced fit for action again. You must not think that the *Tuscumbia* is disabled beyond repair. She will soon be ready to 'go in' again. We took 490 prisoners. Since the fight we have buried three men, who died from the wounds received, making, in all, eight killed."

Autograph Letter of Benjamin West.

We find the following in the San Francisco *Bulletin*:—"An interesting memento of the celebrated American painter, Benjamin West, in the form of an autograph letter, is now in this city. This letter is dated Newman street, London, March 20, 1813, and is addressed to Joshua Shaw, an eminent painter, then residing in Philadelphia. In this letter Mr. West mentions that his great painting of 'Death on the Pale Horse' was then on successful exhibition in London; also, the pleasure which the reception of his gift to the Philadelphia Hospital—his painting of 'Christ in the Temple''—had given him. As a remembrance of Benjamin West, who has been often called the 'father of American painters,' this letter is very valuable; and its possession has been much desired by various literary institutions in the Eastern States; but the descendants of Mr. Shaw (of whom there are several in this city) value it greatly as a family heirloom. Joshua Shaw was quite a notable painter in Philadelphia. He was the inventor of many improvements in gun-locks, and also the inventor of the percussion lock and cap, and a water primer for cannon. These inventions were adopted by the United States Government, from which a large amount is now due to the heirs of Mr. Shaw, who died in 1860."

Hints on Bread-making.

Good bread cannot be made by merely mixing flour and water and yeast. The mass must be kneaded so as to be sure and bring every grain of flour in contact with its equivalent grain of water, and so as to diffuse the yeast uniformly throughout the mass, or else the resulting gas will be liberated in excess in one spot and not at all in another. This is seen in badly-kneaded loaves—in the holes they contain and in a crust that easily detaches from the crumb, as though it had been lifted up by internal force. The air cells in a well-kneaded loaf are fine and uniform throughout the mass and all will be formed at the same time. If the flour and yeast are decidedly good and the kneading decidedly bad, the bread will not give satisfaction. On the other hand, good kneading, good molding and good baking, will make a second or third-rate quality of flour almost equal to the best.

MISCELLANEOUS SUMMARY.

Axle-boxes and pistons are stamped out, in Germany, from solid heated blocks of iron; and in England the driving wheels of locomotives are stamped out from solid plates. Hydraulic pressure is employed for operating the punching machines.

To give Ham a Smoky Taste.—Ham that is deficient in the smoky flavor may be improved by dipping it in tar vinegar before broiling it. Tar vinegar is made by taking equal parts of both substances and pouring the vinegar on to the tar. After a few minutes of contact pour the vinegar off and use as above.

Some idea may be formed of the tremendous consumption of the munitions of war, which the rebellion has occasioned, by the fact that the Waterbury Cap and Flask Company alone made, during the past year, over 100 tuns, or 200,000 lbs., of copper into percussion caps.

The head of a carrot, if cut off a little below the top and put into a basin of water, will send out leaves, and make a handsome ornament.

Mr. L. A. Edgell, of Burlington, Vt., is now engaged in the manufacture of tar and turpentine from pitch pine stumps—an enterprise which was started last fall. He expects shortly to be able to turn out over 300 gallons of tar and 100 gallons of turpentine per week. The distillation also produces, in considerable quantity, pyroligneous acid, a substance used in print mills for setting colors.

Great Benefits of Labor-saving Machinery.—By the aid of improved machinery, one man can now spin four hundred times more cotton yarn than the best cotton-spinner could in 1769, when Arkwright took out his first patent. In grinding grain and making flour, one man can now do one hundred and fifty times more work than he could a century ago. One woman can now manufacture as much lace in a day as a hundred women could a hundred years ago. It now requires as many days to refine sugar as it did months thirty years ago. Only forty minutes are now required to fix an amalgam of mercury and tin on a large looking-glass, which once occupied six weeks. The engines of a first-class iron-clad frigate perform as much work in twenty-four hours as 42,000 horses.

NEW YORK MARKETS.

The following is a statement of the wholesale prices of certain articles of commerce in New York on the 10th inst.:—

Coal.—The price of anthracite coal ranges from $7 to $8 per tun of 2,000 lbs.

Coffee.—Coffee costs from 20½ cents per lb. for inferior St. Domingo to 37 cents for Java; the retail price of the latter is 40 cents.

Copper.—Sheathing is 42c. per lb.; ingot 30½c.

Cordage.—American tarred cordage is 16c. per lb.

Cotton.—The price of cotton varies from 38c. to 61c. per b. for "middling fair."

Domestic Goods.—Brown shirting costs from 20c. to 25c. per yard; bleached heavy shirtings, 24c. to 28c.; brown sheetings, 24c. to 25c.; bleached sheetings, 24c. to 25c.; bleached drillings, 25c. to 30c.; narrow cloth, all wool, $1 50 to $2 75; cassimers, $1 06 to $1 50; satinets, 75c. to 85c.; cotton flannel, 25c. to 30c.; woolen flannel, 75c. to 85c.; printingcloth—narrow and wide, 9c. to 11c. The variety of cotton and woolen cloths is so great that we do not specify each sort. At present the prices of cotton goods are lower than they were a month ago. Several of our large cotton factories that were engaged in the manufacture of fine goods have been closed for several months. It is expected that prices will rise, unless cotton falls.

Flax.—The price of flax ranges from 16c. to 22c. per lb.

Flour.—Flour ranges from $5 25 to $9 25 per barrel; rye, $4 to $5 25; corn meal, $4 to $4 58. Considering the great rise in the price of most articles, flour is comparatively cheap.

Grain.—Wheat is selling at from $1 22 to $1 75 per bushel; the lowest is Western spring wheat; the highest Missouri winter.

Hay.—Hay is selling at 90c. per 100 lbs.

Hides.—Green salted sells for 13c. per lb.; slaughter, 9½c.; dry Rio Grande, from 20c. to 25½c. The prices for foreign hides have a very great range.

Hops.—Hops of last year's crop are sold at from 18c. to 22c. per lb.

Iron.—American pig iron is selling at from $33 to $34 per tun; Scotch pig iron, $33 to $34; English bar iron, $76 to 87 50; sheet-iron ranges from 5½c. to 6¼c. per lb.

Lead.—"Galena" costs $8 50 per 100 lbs; English refined, $8 50; pipe and sheet, 12c. per lb.

Leather.—Oak-tanned sole-leather ranges from 25 to 40 cents per lb.; hemlock tanned leather ranges from 23c. to 27c.; rough upper leather at 40c., and fine as high as $1.

Molasses.—This article is selling at from 42c. to 50c. per gallon.

Nails.—Cut nails cost from $5 to $5 25 per 100 lbs.; horseshoe nails, 26c. to 30c. per lb.

Naval Stores.—The price of turpentine spirits is $3 40 per gallon; rosin costs from $22 to $32 50 per barrel of 280 lbs.

Oils.—Linseed oil is selling at $1 18 to $1 20 per gallon; whale at 88c. to $2; refined petroleum, 50c.; lard, 85c.

Paints.—White lead, pure, ground in oil, costs 11c. per lb.; dry, 10c.; zinc white, in oil, 8c.; red lead, 11c.

Provisions.—Some mess beef is selling as low as $4 50 per barrel; the best India as high as $28; Pork costs from $10 to $15 50 per barrel; hams from 4½c. to 10c. per lb.; butter, from 16c to 30c.; cheese, from 8c. to 11c.

Rice.—East India, dressed, sells at from $5 25 to $6 25 per 100 lbs.

Steel.—The price of English fine steel ranges from 20c. to 29c. per lb.; German, 10c. to 17c.; English spring, 8c. to 15c.; American blister, 5½c. to 6½c.

Sugar.—Sugar ranges from 7¾c. to 15c., per lb., for "Stuart's loaf."

Tea.—The price of tea varies from 35c. to $1 35 per lb. The names of all the teas at present offered for sale in the New York markets would fill a column of the Scientific American.

Tin.—Tin costs from 50c. to 55c. per lb.: charcoal plates from $8 50 to $12 50 per box.

Tobacco.—Tobacco is selling at from 12c. to 90c. per lb. for plugs; cigar tobacco from 45c. to $2 per lb.

Wool.—American "Saxony" fleece can be bought at from 80c. to 82c. per lb.; Merino, 65c. to 80c.; California (washed and unwashed), 25c. to 50c. Foreign wools range from 18c. to 60c. per lb. There has been and there is still a great demand for wool. All the woolen cloth and flannel factories are driven to their utmost speed, and several of them are running day and night.

From the 1st of June up to the 10th inst. 4,095 bales of cotton arrived in New York. The increased receipts have been from the Department of Gen. Banks in Louisiana.

The "longshoremen" of New York are on a strike for wages. The wharves at which the California vessels lie are crowded with freight; but the longshoremen seem to rule that department, as they will not permit any one to put freight on board.