

Scientific American.

NEW-YORK, NOVEMBER 3, 1855.

The Woodworth Patent Again.

It will be fresh in the remembrance of our readers that an attempt was made during the session of Congress for 1851-2 to procure the extension of the Woodworth Patent from Dec. 4, 1856, to Dec. 4, 1870. This attempt, like the one made at a previous session, was unsuccessful.

The Committee on Patents in the House of Representatives, made an able report on the 17th July, 1852, and, if we mistake not, it was unanimously accepted. It scorched this monster so thoroughly that not a pin feather was left on its carcase, and it was confidently believed that no attempts would again be made to foist it upon the forbearance of Congress.—The public, sensible of the monstrous injustice that would be done if this patent should be prolonged, besieged Congress with remonstrances, and the august legislatures of several States formally protested, through their representatives, against it. Another instance of the kind does not exist in the whole history of patented inventions, where legislative bodies and the public have so unanimously opposed to prevent the extension of a patent. This is enough, in itself, to satisfy any reasonable mind that scarcely a shadow of reason can be found for a prolongation of this patent, which has already existed nearly 27 years. We have lately been informed, from a source that leaves but little doubt of its truth, that efforts are in progress on the part of the owners of the patent to procure its extension at the next session of Congress. "Now or never?" is the motto under which they advance with their schemes, because when the patent expires, as it will in December, 1856, all hopes of future success will be blown into oblivion.

It does seem to us that this new attempt on the part of the assignees of this patent is marked with an audacity without parallel, and it would be a meritorious act if, when the application is presented, Congress should kick it out, and bid the schemers to be off at once with their unwarrantable intrusions. No Member of Congress who values his reputation as worth one straw, would lend his aid in perpetuating a monopoly which has been, and is now, not only severe, but outrageously oppressive upon a great number of honest and worthy patentees and manufacturers in our country. We are now told, with unblushing effrontery, that the facts embodied in the Committee's report are all gammon, and that the special opponents of the last extension, those who labored hardest to collect the strong array of facts that abound in the Committee's report, are now clamorous in its favor. Patentees of planing machines who have smarted under the galling yoke of litigation with the Woodworth assignees, are now converted, and are ready to swear that the further extension of this patent would confer untold advantages upon the country. We can believe this, in fact we know it, but it does not add much to their reputation as honorable men. If they have been crushed out or bought over to the enemy's interests, we shall not shrink from our duty in exposing their machinations, and the schemes they are assisting to carry forward to swell the calendar of litigation, and break down every inventor who shall dare to invent and operate a machine that may interfere with their interests.

We shall continue to ply the lash of opposition to this scheme until all hope of its success are "clean gone for ever," and if it fails during the next session, the public will have no occasion, we think, to be re-warned to resist it. To accomplish this result, however, strong efforts must be made throughout the whole country to procure remonstrances against it, and to aid those who have an honest desire to oppose, for the last time, a scheme so monstrous, we shall print, in our next number, a suitable remonstrance that will embody important general facts, and we request that it may be copied and circulated for signatures from one end of the country to the other, and sent in to Congress as early as possible. Let the sovereign seal of public indignation be felt

once more upon this subject, and its end will be glory enough for one day at least.

Reminiscences of the Paris Industrial Exhibition. No. 4.

**GENERATING STEAM BY FRICTION**—It is well known that heat can be generated by friction as well as by chemical action—the combustion of coal or wood. And as the combination of heat with water produces steam, it follows that the heat of friction will generate steam as well as the heat of a fire. Acting, we suppose, upon the principle that the heat of friction costs nothing, because no fuel is consumed in the process, two French inventors, MM. Beaumont and Major, exhibited a "thermogenic apparatus," for raising steam by the friction of rubbing surfaces. It consisted of a cylindrical boiler six and a half feet long and about nineteen and a half inches in diameter. Through its whole length was placed, centrally, a large conical tube surrounded with water, and into this was fitted a long cone of wood covered with a braid of hemp rolled on it spirally. The wooden cone received a rapid rotary motion, which made it rub constantly on the inner walls of the tube, thereby generating considerable heat, which was taken up by the water, converting the latter into steam. When the cone was set in motion the heat of the boiler gradually increased until it attained to 212 degs. Fah., when steam began to form, without fire, and a sufficient quantity was produced to drive an engine of one-horse power. The pressure of steam was kept at 45 lbs on the square inch; oil was conveyed by a channel to the cone for lubrication, and the amount of water contained in the boiler was about fifteen cubic feet. The machinery to revolve the piston cone was driven by water amounting to two-horse power, and the boiler generated steam of only one-horse power; yet it appeared to us that the inventors could not be made to understand that, although they used no fire, their friction steam apparatus was decidedly an expensive machine in comparison with a genuine *fire raiser*. The plan is just as sensible as would be the employment of a steam engine to pump water to an elevation for the purpose of driving a water wheel. Those French inventors might have seen that by throwing away their friction boiler and engine they could have derived more power to propel useful machinery direct from the water they used, than from the steam generated by friction. We remember some experiments of a similar nature that were tried in New York some years since, and it is not a little amusing to see them repeated in another part of the world, with the same result.—It is evident that if a saving could be effected by generating steam from friction, perpetual motion would no longer be a problem, as the re-action would thus be greater than the action. The reason why steam is an economical power is simply because it is produced by chemical decomposition, and not mechanical labor. We were informed that the Emperor had assisted these inventors, out of his private purse, in bringing their apparatus to its present state of perfection. He is known to be a friend to inventors, but in this case his better feelings were not guided by a knowledge of mechanical philosophy.

**MAGNETIC BOILER GAUGE**—A common safety alarm used in steam boilers, consists of a float attached by a rod to a safety valve, which, when the float falls below the water line, opens the valve and lets out the steam, to act as a whistle. M. Lethuillier Pinel exhibited such a gauge, with a magnetic attachment, which indicated the height of the water in the boiler at all times. The copper float or hollow spheroid in the boiler was connected to an iron rod, in which was secured a powerful magnet; another rod—which had a knob on its lower end—was connected above to the safety valve. The float rod was guided by a fork on the valve rod to rise nearly to the top of the boiler, but when the float sunk below the water line its rod caught the knob on the end of the valve rod, and drew it down, thereby opening the valve and allowing the steam to escape. The chamber containing the rod and valve consisted of a small brass cylinder, situated on the top of the boiler, divided vertically into two compartments by a brass plate, and the front compartment was provided with a glass

window marked with figures, to indicate the depth of water in the boiler. The back compartment contained the magnet before-mentioned, and the front compartment the pointer, which consisted of a small armature having no mechanical support, but held to the surface of the brass partition plate by the attraction of the magnet acting through the brass, and sliding up and down on the plate behind the graduated window as the magnet rose and fell with the float. The magnet was therefore an indicator of the quantity of water in the boiler, while the float, as usual, operated the safety valve. We thought this invention a very neat and scientific one, although the same ends are obtained by a pointer on the float rod, when a stuffing box is used. We were assured that the heat of the steam did not destroy the power of the magnet, and that the one exhibited had been in use for three years without having its attracting force injured.

**JEWELS**—One of the greatest objects of attraction in the French Exhibition were the diamonds belonging to the crown. They were arranged in the center of the Panorama building, upon an elevated dias, and so eager were the people to see them that it was found necessary to have a strong body of police stationed to compel the visitors to pass around them in regular file, and only half a minute could be allowed to take an observation at these sparkling gems. It may be interesting to some of our readers to know something of the value of these crown appendages, and from it they can approximate to some idea of the vast expense attending an imperial government. The finest of the crown jewels is the diamond known by the name of "Regent;" it was purchased in 1718 by Philippe II. Duke of Orleans, during the minority of Louis XV.; it weighs 136 carats, and is valued at about one million dollars. According to the last inventory, made out in 1832, the precious stones of the French empire numbered about sixty-five thousand, weighing over seventeen thousand carats, and were estimated to be worth six millions of dollars. The richest article in this inventory is a crown which has not less than 5206 brilliants, 146 rose-diamonds, and 59 sappires, the whole valued at three million dollars.

Next comes two swords, with 1500 rose diamonds each, valued at one hundred thousand dollars. A clasp with 217 brilliants, valued at fifty-four thousand dollars. A clasp for a cloak ornamented with an opal, valued at eight thousand dollars, and 197 brilliants, worth six thousand dollars; and a button for the hat worth sixty thousand dollars. Among the articles for ladies were four head dresses, estimated in value at three million seven hundred thousand dollars; and some wheat ears valued at forty thousand dollars.

There were several valuable pearl necklaces, besides minor objects of *bijouterie* that appeared insignificant alongside the grander ones. In the grand transept there was on exhibition a Brazilian diamond, valued at about two million dollars.

The whole amount of precious stones on exhibition could not have been valued at less than twelve millions of dollars, to say nothing of the immense display of costly jewelry—all to adorn the person and tickle the vanity of the vain.

SPLENDID CASH PRIZES!

The proprietors of the SCIENTIFIC AMERICAN will pay in cash the following splendid prizes for the fourteen largest list of subscribers sent in between the present time and the 1st of January, 1856; to wit:

For the largest List	\$100
For the 2d largest List	75
For the 3d largest List	65
For the 4th largest List	55
For the 5th largest List	50
For the 6th largest List	45
For the 7th largest List	40
For the 8th largest List	35
For the 9th largest List	30
For the 10th largest List	25
For the 11th largest List	20
For the 12th largest List	15
For the 13th largest List	10
For the 14th largest List	5

Names can be sent in at different times, and from different Post Offices. The cash will be paid to the order of the successful competitor immediately after the 1st of January, 1856.—

MUNN & CO., 128 Fulton st., New York.

See prospectus on the last page.

GREAT FAIR OF THE AMERICAN INSTITUTE

Third Week.

Public interest in this excellent Exhibition continues, we are happy to say, unabated. The attendance of visitors has been large during the past week,—the average number of persons admitted averaging, we understand, ten thousand per diem.

The Fair will not close, we are informed, till about the second week in November.

The Mechanical Department.—[Continued.]

The various Committees paid special visits, last week, to examine the operating machines prior to rendering their awards. If we mistake not, there will be a pretty general sprinkling of high prizes, for there are but very few similar or mediocre inventions. The prizes will consist, as usual, of gold medals, silver medals, and diplomas.

The Gas Engine.

We regret to say that Dr. Drake has not yet succeeded in putting his new gas engine into successful operation. We saw it make some twenty or thirty revolutions the other day, and then come to a halt. Something is wrong, and every fresh attempt to start it seems to reveal some new defect. Unless the inventor succeeds in setting it a-going pretty soon, we fear he will lose a prize. Why does not our friend Secretary Meigs step in and help brother Drake? In this connection we are reminded that we have received a communication asking for light on the gas propeller, here it is:

Messrs. Editors—I see in your issue of the 20th a description of a Gas Engine, invented by a Mr. Drake,—but evidently described by a *duck*. It is stated that the ignition of the gaseous compound is effected by means of a hot iron. Now, any one that ever heard of Davy's Safety Lamp ought to know that hot iron is no more capable of igniting a gaseous mixture than cold iron. Will any one give me a correct account of how it is fired?

C. W. McCord.

Hackensack, N. J., Oct. 24, 1855.

[It will be a long time, we reckon, before the services of the above writer will be required to correct any errors of statement in the SCIENTIFIC AMERICAN. No one but a *goose* would have penned such remarks as the above. If he will take a poker, heat one end in his stove to a cherry-red, and apply it to the burner of an open gas pipe, his understanding will be suddenly illuminated. Sir Davy's lamp appears to have obscured rather than assisted his vision—the first bad result from that useful invention which has come under our notice.]

The Cloud Engine.

From some unexplained reason this machine has come to a stand still. It has been operated but very little during the week past, and has not been tested as we were informed it would be. We hope to give a better account of it next week.

Sewing Machines.

Four different kinds are on exhibition, and their operations attract much attention—from the ladies, especially.

*Howe's Machine*—the original of the shuttle sewing machines, is exhibited by J. B. Nichols & Co., No. 411 Broadway, N. Y. This invention is well known. It does good strong work; sews leather equally as well as cloth, with or without waxed threads. Price, \$125.

*Wheeler, Wilson & Co's. Machines*—Office 343 Broadway, N. Y., is more especially adapted to fine work. In stitching shirt bosoms and the like it has no equal. The rapidity of its movement surprises everybody. Illustrations of this machine will be found in Vol. 6 of the SCIENTIFIC AMERICAN.

*Musical Sewing Machines*—Messrs. Wheeler & Wilson also exhibit some samples of a new article of furniture, in which their sewing machines are combined with a melodeon. The apparatus has the appearance, externally, of a small parlor side-board or *eseritoir*. You lift the front and find a handsome set of piano keys. Close it, and turn back a hood on the top, and you have a complete sewing machine, conveniently arranged; concealed below, within side doors, are two pedals, one for the music, the other for the sewing machine. When the lady becomes tired of playing at sewing, she may change her foot to the other pedal, open the melodeon part, and discourse sweet music. The price of these contrivances is \$200. They form very ornamental articles of furniture. Now exhibited for the first time. This combi-

nation is the invention of Mr. S. H. Peck, No. 13 Charles st., New Orleans. The musical portions are made by Messrs. Carhart & Needham, N. Y., the celebrated melodeon manufacturers of this city.

**Wax Thread Sewing Machine.**—Some of the best work on leather that we have seen, was done by the recently patented machines of William Wickersham, exhibited by Horace Herrick, of No. 60 Hanover st., Boston. These machines might properly be styled "mechanical shoemakers." For boot and shoe making, and many portions of harness work they appear to be well adapted. Waxed thread of any size desired is used with perfect facility. There is an awl that first pierces the leather, and then the needle follows. Almost any number of thicknesses of the stoutest leather may be firmly sewed at once. It is said that a girl using one of these machines can side from eight to twelve cases of boots per diem. Price of machines \$125.

**Robinson's Hand Sewing Machines, with Roper's Improvements.**—This is a very singular looking and acting apparatus. It puts us in mind of a hand printing press, more than anything else. Two needles are employed, carried by two long arms, one above, the other below the table. One thread, only, is used. There are notches near the points of the needles, answering to eyes, which catch the thread and alternately carry it through and out of the cloth, forming the same kind of stitches that are made by hand, to wit: back stitches, half and quarter back, side, sail, quilting, hemming, running, &c. The work which it performs is strong and beautiful. Price of machines \$150. Now exhibited for the first time in N. Y. by W. H. Wilson, No. 348 Broadway.

#### Lubricators for Machinery.

Messrs. Sutton & Gregory, of Nos. 114 and 116 Cannon street, N. Y., exhibit, for the first time, a variety of their improved Lubricators made under the two patents granted to Mr. John Sutton, Jan. 16th and 23rd, 1855; illustrated in the last volume of the SCIENTIFIC AMERICAN. These lubricators are of peculiar construction, being furnished with pistons so arranged that steam valves and cylinders of engines may be thoroughly oiled, at all times, under all pressures, without stopping or slacking the machinery. Used on the cylinders of high pressure engines, such as locomotives, they are said to effect a saving of seventy-five per cent. in grease, besides rendering the lubrication much more certain and perfect. The invention is very highly spoken of by many of the prominent engineers in this city.

Mr. A. W. Metcalf, No. 140 Center street, N. Y., exhibits a handsome case of steam whistles and lubricators of the ordinary construction. They present evident tokens of good workmanship.

#### Harvesters.

Nine different inventions are exhibited, comprising some quite recent patents, and others, we may say, that have been through the wars and gained great triumphs. In making our observations we were unable to find a single attendant to explain the advantages and peculiarities of the machines, prices, &c., neither were there any circulars to be had. If exhibitors expect to profit from a large exhibition like the present, they should have some person always present to give information.

**Gale's Combined Mower and Reaper.**—In this machine the driver and counter wheels are both of the same size, so that there is no side draft. The frame of the machine is made narrower than usual, being only three and a half feet, but the width of the swath cut is five feet. There is a contrivance in front called the track clearer, which pushes the grass one side, so that the wheels run on the stubble and not on the cut grass. On the rear of the frame there is a handle, by which the cutters may be instantly raised to pass stones or other obstructions. Spur gearing is used throughout, which makes easy running. Altogether the machine is light, compact, simple, and substantial. We are much pleased with its construction. We have been informed that its success during the present season, has been great. It is a new invention. Now exhibited for the first time by Gale & Mills, Poughkeepsie, N. Y.

Messrs. Dietz & Dunham, of Raritan, N. J., exhibit a very simple mower, one of the peculiarities of which is in the mode of operating

the cutters. One side of the rim of the driving wheel is scolloped, and against the undulations or cams, thus formed, a friction roller, attached to a vibrating arm, is pressed. The required horizontal movement of the cutters is thus obtained at trifling cost.

Messrs. Wm. B. Hovey & Co., of Springfield, Mass., have one of their new mowers on exhibition. Patented July 3rd, 1855. The motion of the cutters in this machine is produced by undulating cams placed on the inside of the rim of the driving wheel. The invention is one of great simplicity, and the machine is apparently very light, effective and easy of management.

Mr. John Smalley, of Bound Brook, N. J., exhibits one of Whitnack's late improved mowers and reapers—a good and strong machine.

Mr. Henry Waterman of Williamsburgh, L. I., exhibits a simple looking mower. Spur gearing is employed to move the cutters.—Looks as if it would work easy.

Atkin's self-raking reaper, exhibited by J. S. Wright, Chicago, Ill., Ketchum's mower, price \$110, exhibited by Howard & Co., Buffalo, N. Y., Manny's mower and reaper, exhibited by Adriance & Co., Worcester, Mass., Allen's mower, price \$120, exhibited by R. L. Allen, 189 Water street, N. Y., are all good inventions, and well established in favor with the public.

#### Improvements in Window Sashes.

A very simple plan of balancing window sashes, without the use of weights, is that patented by Mr. Alfred T. Clark, 1854. It consists in connecting both sashes together by cords and pulleys, the latter sunk in the window frame alone. When one sash goes up the other comes down; they balance each other perfectly. Exhibited by Williams & Smith, 84 Nassau street, N. Y.

Ford's American Window opens in two parts, like a French window; it is also balanced with weights, and slides up and down. These peculiarities, we are informed, permit better ventilation, are more convenient in fastening, tighter, and much cheaper, than the common French sashes. It is a good invention. Patented June 12, 1855.

Ramsay's Model Balcony Window.—This invention is not patented. It is for the same purpose, the same advantages are claimed, and its mode of operation is the same as Ford's invention, above noticed.

#### Boiler Feeders.

The large steam boiler at the Palace is furnished with one of Clark's Patent Feeders and Indicators. It consists of a short horizontal metallic tube of say three feet in length and two inches diameter, suitably attached to the outside of the boiler, or to a wall near by. The height at which the tube is placed should be the same as that at which it is desired to maintain the water level in the boiler. One end of the tube communicates with the upper or steam part of the boiler, the other end with the water part; when the water in the boiler is at the proper level the tube will be one half filled with water and one half with steam. A small cold water pipe passes lengthwise through the tube; one end of this water pipe is plugged tight, the other end is furnished with a metallic cup, covered with rubber, forming a diaphragm. On this diaphragm rests a plunger rod attached to a lever, the latter connected with the pump throttle. When the water in the boiler falls below the level of the tube, the latter will become wholly filled with steam and heat up the water pipe, forming steam in it also; the pressure thus produced in the water pipe will extend the diaphragm, raise the throttle lever and permit the pump to inject water into the boiler; when the water level is restored the tube again fills, in part, with water, the pressure on the diaphragm ceases, and the pump throttle shuts. This feeder is constructed on scientific principles. It works well, is strong, simple, and apparently very sure. Price from \$25 to \$100. It can be rigged to strike an alarm if desirable. Exhibited by Shiverick Malcolm & Co., owners of the patent, No. 134 Greenwich Avenue, N. Y. Illustrated in the SCIENTIFIC AMERICAN.

#### Water Level Indicator.

The main boiler is furnished with two glass indicators. One of them is of the ordinary construction, consisting simply of a round glass tube, steam being admitted at one end, water from the boiler at the other. The height

of the water in the tube exhibits the water line in the boiler. These glass tubes are objectionable because they frequently crack and become useless.

The other indicator, invented by Mr. Joseph Echols, of Ga., is intended to stand a much greater pressure, and to be serviceable even if it should crack. Take a short tube of glass, divide it lengthwise into two parts, place the pieces back to back, set them in a metallic frame, and you have Echols' indicator. Steam is admitted at each end of the frame, as in the other apparatus. The pressure being against the convex or arched backs of the glass, the latter offer great resistance, and if cracked they press together so tightly as to prevent leakage. This is a good invention. An engraving of this apparatus appeared in No. 3, Vol. 9, SCIENTIFIC AMERICAN.

#### Dovetailing Machines.

Mr. F. A. Gleason, of Rome, Oneida Co., N. Y., exhibits a remarkable improvement of his own invention, for dovetailing. The machine is quite small and simple, but without drawings we could hardly convey a correct idea of its construction. Two very small circular saws are employed, moved by a treddle, the whole concern occupying but little more space than a man's hat, and does the labor of 8 or 10 persons. It is applicable to cabinet making, carpentry, and every species of wood-work, with great effect. Packing boxes, and the like, may be put together more strongly and in quicker time than when nails are used. The saving of hardware is obvious. Price of machines \$60 and \$75, according to the size. Now first exhibited. Patented 1855.

Burley's Dovetailing Machine.—This invention executes the common dovetailing work in a very rapid and excellent manner. All the mortises or tenons, on one end of the stuff, are cut simultaneously. The work done is very strong, neat, and accurate. We are told that one machine will do the labor of 30 persons working with mallets and chisels in the ordinary manner. The improvement is adapted to all kinds of work, fine or coarse, and to every variety of stuff, hard or soft, thick or thin. Price of machines \$300. Patented Jan. 2nd, 1855. Exhibited for the first time in the Palace, by S. P. Putnam, No. 2 Maiden Lane, N. Y.

#### Blind Slat Tenoning Machines.

Mr. E. W. Roff exhibits an excellent machine, of his own invention, for cutting tenons on the ends of blind slats. Cutters are arranged on a small disk, against which the ends of the slats are pressed and clipped in an instant, leaving a smooth edge and round tenon. A very simple gauge apparatus serves to reduce all the slats to the same exact length. D. S. Condit, agent, 74 Spring street, N. Y.

Mr. C. B. Rogers, of Norwich, Ct., also exhibits a machine for cutting blind slat tenons. It seems to be a good invention, simple and easily managed.

#### Artificial Stone.

Several fine samples of artificial stone, comprising lintels, statues, busts, moldings, &c., are exhibited by the American Artificial Stone Co. They are made under the process patented by Mr. Thomas Hodgson, June 19, 1855. The composition consists of sand, plaster of Paris and blood, reduced with water to such a consistency as will permit pouring into molds of any required form. The composition hardens in a very short time and, it is said, increases in firmness the longer it remains combined, till at last it turns into solid stone. We are informed that the ornamental portions of stone buildings, columns, &c., are furnished on much lower terms than the same when cut in stone. Office of the Company 340 Broadway, New York.

#### Fire Alarm Telegraph.

Dr. Augustus Eckert, of Middletown, Butler Co., Ohio, exhibits an ingenious electrical apparatus for the ringing of alarm bells in cities, in cases of fire. It is altogether the simplest invention for the purpose that we have seen. A common telegraph key is to be placed in each engine house and at as many other different points in the city as may be desirable. To sound an alarm it is only necessary to press the key. All the bells in the city, great or small, will strike once for every touch of the key. Only one battery is needed to operate the whole series of bells; near each bell, however, a clock-work apparatus is re-

quired. This invention is much more simple and easily managed than the alarm apparatuses now used in New York. Telegraph engineers will do well to give it a careful examination. Patented 1855.

#### Measuring Instrument.

A pocket contrivance, intended to take the place of tape lines, measuring rules, &c., is exhibited by Mr. L. Young, No. 1 Whitehall street, N. Y. It consists of a small roller placed in gear with a disk marked off into a scale. In using it you run the roller along over the space to be measured, and find the result by looking at the pointer on the scale.

#### Time-Keepers.

Mr. John Sherry, of Sag Harbor, N. Y., exhibits a working model of the great clock now in use on the tower of the City Hall, N. Y.—The elegant finish, and perfection of the works, and their steady movements, notwithstanding the continued jarring of the gallery floor where they stand, are worthy items of observation. Mr. Sherry has obtained a wide reputation for the excellence of his clocks; it is generally conceded, we believe, that corporations, when they apply to him for assistance, fall into good hands.

The time-piece on the City Hall is seen by more people, and regulates more of their watches and clocks than any other similar machine of the kind in the United States. During the three years that it has occupied its high position it has generally been found correct and reliable; it has really been a public benefit. Of Mr. Sherry's office clocks we can also speak from experience, for we have had one in our establishment for a number of years. Like its great prototype on the City Hall, its motions are unerring.

Several splendid specimens of thirty-day clocks are exhibited by the Atkin's Clock Co., of Bristol, Ct. They are made under Ives' patent. The spring is a flat one, like the half of an elliptical wagon spring. It is secured to the bottom of the clock case; this spring is not, in itself, a new invention, as applied to clocks: it is the equalizing arrangement, which insures perfect evenness of draught, that forms the important feature. The Atkin's clocks, if our information is correct, are superior time-keepers. Charles Root, Agent, No. 2 Courtland st., N. Y.

Chronometers.—Messrs. Eggert & Son, 239 Pearl street, N. Y., Morey Gray, 222 Water st., and Kline & Co., N. Y., exhibit fine assortments of American made chronometers.

Calendar Clocks.—Mr. Joseph S. Curtis, of Hartford, Ct., exhibits a large and beautiful calendar clock, which shows the hours and minutes, as well as the days of the week, month, &c. Patented last year.

Mr. F. Kiddle's traveling calendar clock is a splendid piece of workmanship. No. 3 John street, N. Y.

Iron Frame Clocks, ordinary construction, of very ornamental appearance externally, are exhibited by W. B. Lorton, No. 15 Dutch street, N. Y.

#### Paper Box Cutting Machine.

Rectangular paper boxes such as the small neat kind used for containing jewelry, &c., are made out of white and ornamented card paper. The material is first cut into rectangular pieces, of such a size that, when a square piece is cut out of each corner and a score cut along the two sides and ends, they can be lapped up into the form of a box, only requiring a band pasted around them to hold them together. The lids are made in the same manner.

Mr. Andrew Dennison, of Brunswick, Maine, exhibits a machine for doing the above work, the first of its kind, we believe. It consists of a small frame, with a die, guard, and a sliding knife, in a spring gate. Each piece of paper for a box or lid, is held against a guard plate to allow the proper depth of side and corner to be scored and cut out. The knife handle is then moved to the one side, when a corner is cut out and one side scored. The paper is then shifted, and another corner is cut out and a side scored by another stroke, and so on successively; the four corners are thus cut out and the sides and ends scored ready to be lapped up and tied with a band, and formed into a box. These operations are performed with great rapidity; a boy of 12 years of age being able to cut out 60 gross of pieces per day—30 gross of complete boxes. This invention has been illustrated in the SCIENTIFIC AMERICAN.