

## 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.

## DRAWING FRAMES FOR COTTON &amp;C.

This invention consists in a certain mode of applying weighted levers in combination with bars suspended from the saddles of the top rolls, whereby a single weighted lever is or may be made to apply the pressure to a complete set of top rolls at both ends thereof, instead of four as required by the common method of applying the pressure. It further consists in a certain method of relieving the saddles of the action of the weighted lever to such an extent as to permit the removal of the top rolls, without taking off the weight from the lever. The inventor of this device is N. E. Hale, of Nashua, N. H.

## PROJECTILES FOR RIFLED ORDNANCE.

Much difficulty has heretofore been experienced in the use of rifled ordnance, from the want of some effective method of making the projectiles fit the grooves of the piece in such a manner as to cause a rotary motion to be imparted to them. In the use of naked projectiles, with fins or grooves of the solid metal, or of projectiles with bands cups, or casings of iron, the grooves of the gun are rapidly worn out, and in the use of projectiles with bands or casings of lead or other soft metals, much inconvenience is experienced from the "leading" of the grooves. J. W. Cochran, of New York, has obtained two patents this week for inventions to obviate this difficulty.

The first of these inventions consist in the application to a projectile of cylindrical or partly cylindrical form, of a covering or of one or more bands, formed of a coil or coils of wire, of copper or other tough and ductile metal, wound around the whole, or around a portion or portions of the cylindrical part of the projectile. The wire thus applied being caused to stretch in the direction of its length, either by the driving of the projectile into the grooved portion of the bore of the piece, or by the expansive action upon an inner shirt of soft metal, of the gases evolved by the explosion of the charge, is caused to enter and fill or fit the grooves in such a manner as to insure the rotary motion of the ball.

The other consists, firstly, in the use, in combination with a cup or cup-like frame of wrought iron or other tough metal attached to and projecting beyond the rear of an elongated or partly cylindrical projectile, of a band formed by winding copper-wire or wire formed of other tough and ductile metal, or alloy, round the exterior of such cup or frame; such band being intended to be stretched by the expansion or spreading out of the cup or frame produced by the explosion of the charge, and so caused to fit or enter into the grooves of the gun. It consist, secondly, in furnishing the projectile with an expanding ring of copper, brass, or other suitable ductile metal or alloy, not too soft to "lead" the grooves, fitted to a conical surface formed behind a shoulder on the front part of the projectile. This ring has an external diameter not larger than the bore of the gun, and fits easily upon the smaller part of the conical surface when in its normal condition, but, after having been expanded to such a degree as to fit tightly to the bore by driving it back upon the conical surface, it is caused to derive a further expansion to make it enter the grooves, by the action of the cone within it, when the projectile is started in the discharge of the gun, and thus is made to assist in preventing windage and in securing the rotary motion of the projectile, and also to steady and prevent the vibration of the front part of the ball during its passage out of the gun,

## TRACTION ENGINE.

This invention consists in a peculiar means employed for regulating and applying the power to the driving-wheels of the engine, whereby the latter may be readily turned and guarded, and placed more fully under the control of the engineer or attendant than usual. The inventors of this device are R. Carkhuff and B. Chalfant, of Lewisburgh, Pa.

## LIGHTING RAILROAD CARS BY GAS.

This invention consists in arranging a series of gas burners in a railroad car, and supplying gas to the same from a portable gasometer set in one corner of the car. The connection is formed by a flexible tube, which allows the gasometer (which has flexible sides) to de-

scend as the gas is consumed. To supply the gasometer with gas, it is disconnected from the main pipe of the burners and carried to the gas-works. This appears to be a good plan for lighting railroad cars and traveling vehicles generally. This improvement was designed by Messrs. Albright & Miller, of Grafton, Va.

## STEAM-ENGINE.

This invention consists in making the piston-rod, piston, and cylinder of oscillating horizontal engines, square or many-sided, and by this construction the objections to cylinders with round bores are obviated. In the use of a round piston and a cylinder having a circular bore great inconvenience is experienced from the bore wearing untrue or elliptical; resulting in horizontal engines from the gravity of the piston, and in oscillating engines both from the gravity of the piston and the reciprocating action of the unguided cylinder. When a cylinder wears thus, no packing ring will compensate for the wear. By the use of the angular or square-sided sections for packing, corresponding with the square sides of the cylinder &c., the difficulty is obviated. The credit of this invention is due to James Cumming, of Boston, Mass.

## WATER METER.

We had occasion, a few weeks since, to call the attention of the public to a water meter invented by Mr. B. S. Church, of Manhattanville, N. Y. Since that time Mr. Church has made several valuable improvements on his meter, and he has now obtained a second patent on the same. The object of these improvements is to prevent the escape of the air from the air-chamber, and also to give a warning to the inmates of the house, if the correct operation of the meter is interrupted from any cause. By this meter the water is measured independent of the head or pressure to which it may be subjected, so that it never fails to give a correct result. The inventor will be happy to furnish further information about it.

## AUTOMATIC GATE.

This invention relates to that description of gates which have mechanism connected to them capable of being actuated automatically by the passing along of a vehicle, or manually by a person within the same, or on horseback, for the purpose of opening and closing the gate. The invention consists in a novel way of constructing the gate, and in the arrangement of mechanism connected therewith, whereby a very simple and efficient operating mechanism is obtained for the intended purpose. This contrivance is the invention of N. J. Waterbury, of Fond du Lac, Wis.

## APPARATUS FOR PRINTING ADDRESSES ON NEWS-PAPERS.

With this machine the names and post-offices of subscribers to a newspaper are printed on the wrapper of papers, successively, by means of a traveling chain of lettered links or stencil plates. The chain unwind from one roller on to another in scroll manner; and as it unwinds, each link is furnished, by a peculiar device, with ink. The papers are fed into a hopper and carried under an impression stamp and over the inked links, singly, by means of an ingenious feeding-contrivance; and at proper time the stamp descends and causes the wrapper of the paper to be superscribed. An ingenious arrangement of bands, with all the post-offices of certain States and the names of the several States, marked on them, is combined with the superscribing-device; thus, by the aid of an assorting mailbox all the papers of subscribers belonging to a certain post-office are discharged into separate piles. The whole operation of inking the chain, feeding the papers, producing the impression, and assorting the papers of different post-offices, is automatic. This is certainly a very ingenious machine, and if, on trial, it should work satisfactorily, it is destined to create a revolution in the mailing department of large printing-offices. The inventor of this device is Rev. C. K. Marshall, of Vicksburgh, Miss., and his claims were published in the last number of the SCIENTIFIC AMERICAN.

LIQUID QUARTZ.—We have received an interesting letter from Henry O'Rielly, Esq., in reference to the discoveries made by Dr. Benjamin Haringe, of this city, in the "liquefaction of quartz rock;" but in consequence of a great press of other matter, we are obliged to defer its publication till next week.

## FILE-CUTTING MACHINE.

MESSRS. EDITORS:—In the SCIENTIFIC AMERICAN of Oct. 29th, I saw a favorable notice of a file-cutting machine, said to be the invention of one M. Bernot, of Paris. Whoever will be at the pains to look into the Patent Office Report, for 1855, page 310, will find the claim and an abstract of the specification of a machine possessing essentially the same elements as the one exhibited by M. Bernot. On page 39 of the illustrations will be seen an engraving of the machine, as constructed by Horace Hotchkiss, and by him patented. All that is really distinctive, new, and useful in the machine was originated by me in 1852-53, and named by me "The Non-recoil Lightning File-cutter." It performed admirably. After vainly trying in the great New England metropolis for means to make a business of file-cutting, I sold the machine to Mr. Hotchkiss for a nominal sum. He made, to the order of an extensive steel-manufacturing firm, several machines which were sent to England and gave such satisfaction that the same firm subsequently engaged him and several American operatives to proceed to England and construct machines for an extensive establishment. Such machines are in operation at this time and pay largely. Some of the very intelligent gentlemen who could not find time to examine the merits of the invention, and did not wish their repose broken in upon by a *patent adventurer*, have since purchased great quantities of files cut by these machines, a fact they are as innocently ignorant of as Messrs. Greenwood and Bernot are to-day. Of late years I have become somewhat accustomed to hear the echo of my humble thunder from abroad, without serious disturbance. I can afford to be generous, though poor, but there are reminiscences connected with this matter of more than usual interest to me, which have prompted this communication. If our Patent Office reports and the SCIENTIFIC AMERICAN were more extensively circulated and read in the European countries, it would change their opinion in regard to the *originality* of many inventions, though it might tend to reduce the number of patents; and it would add wonderfully to the stock of knowledge already acquired. D. H. C.

West Roxbury, Mass., Oct. 31, 1859.

PATENT CURTAIN ROLLERS.—A somewhat long trial was concluded before Judge Sprague of the U. S., Circuit Court, Boston, on the 18th inst. The plaintiff was Benjamin Bray, of Salem, Mass.; the defendant Jacob Hartshorn, of Boston. The suit was instituted to recover damages for the infringement of plaintiff's patent for an improvement in curtain-fixtures, consisting of a hollow roller, a long spiral spring adapted to it, and a weight, for the purpose of balancing the curtain in any position in which it might be placed. The defendant had made and sold 5,000 of the fixtures complained of; but it was contended that they were different from those of the plaintiff and were an improvement upon his. The plaintiff, through his counsel, stated to the jury, that he did not seek to recover damages adequate to the injury complained of, but only a small sum for the purpose of establishing the validity of the patent. The jury found their verdict in favor of the plaintiff, and assessed damages in the sum of \$500.

THE LARGEST GATE IN THE WORLD.—A monster gate for the Sault St. Maria Canal has just been completed at Newport, Mich. It is 82 feet wide (that being the width of the canal), 21½ feet deep, and 32 inches thick. The timber used for its construction, cut into inch boards, would measure about 120,000 feet. It is believed to be the largest gate in the world. Its weight from the immense quantity of iron attached to it, will throw all competitors in the shade, their being about 40 tons used in binding it. The master-builder of the wood work (which is oak) is Stewart McDonald.

A SINGULAR ACCIDENT.—An accident occurred on board the steamer *Mt. Vernon*, running between Baltimore and this city, whereby one of the crew, Andrew Colt, came near losing the front half of each foot. He leaped from the deck into the hold, in order to assist in unloading, and alighted upon a roller of a Woodworth planing-machine, a part of the freight, which had been shipped without a casing, when the roller turned and brought a cutting-bit upon both his feet, passing through his boots and taking one foot nearly off behind the great toe joint, and cutting the other seriously, but not quite so deep.