The Value of Practical Knowledge.

Of the uses of practical knowledge we yesterday saw an illustration. A mammoth sexagonal crystal was shown to us by its owner, Mr. Mitchell. It is nearly a foot in diameter, and about eighteen inches long. Next to a specimen in Barnum's Museum, it is the largest we have ever seen. The base of the specimen is opaque quartz rock; the other portion is as clear as crystal. It was found by the Rev. Edmund Craig Mitchell, on the farm of Dr. Johnson, near Ellicott's Mills, Md. The young divine was on a visit to Dr. Johnson. From the house a path leads to a spring that supplies the family with water. Mr. Mitchell, walking with Dr. Johnson in the path, observed "a stone" about an inch above the ground. "There's a splendid specimen," said he. "Of what?" asked the Doctor. "Why, of crystal quartz," was the reply. The Doctor said he had passed that stone every day for thirty years, and knew it to be nothing more than a common paving stone. Mr. Mitchell asked leave to wrench it up. A pick was procured, and, to the surprise of Dr. Johnson, the "stone" was buried about eighteen inches deep, and beneath the ground was a perfect six-sided prism of crystal, almost as pellucid as French cut glass. The young man knew enough of geology to recognize it by the butt end, above the ground, though none but an expert would have seen in it anything but an ordinary boulder, on a small scale. A little learning may be a dangerous thing; but somehow or other knowledge is quite as productive as ignorance.

Benefits of Harvesting Machines.

A correspondent of the *Prairie Farmer*, says in reference to reaping machines, that "it has long since become an acknowledged fact that no nation has made such rapid progress in improvements in labor-saving machines as our own; and more especially is this true of agricultural implements. The fame of our reapers, threshers, &c., has become world wide; and the value of these and similar inventions to our own people is beyond the power of any man to estimate. It is only when we consider the immense grain crop of our country—the eight Northwestern States alone furnishing 520.000,000 bushels per annum—and realize the utter impossibility of gathering it without the aid of these machines, that we can begin to appreciate their value to us as a people. The most of these improvements have been made within the last quarter of a century, and their progress has been constantly accelerated, increasing annually in arithmetical ratio. As we are mainly an agricultural people—that being the great interest of the nation, upon which all other interests are based—it becomes highly important that our agriculturists keep themselves fully posted as to all improvements which may aid or cheapen their labors, or increase their products. Nearly or quite all these improvements or inventions are connected more or less directly with patents.

Extraordinary Endurance of a 13-inch Cast-iron Gun.

The first 13-inch Dahlgren gun made by the Builders' Iron Foundry, Providence, R. I., was subjected, during last week, by agents of the Government, to the most severe powder test ever applied to any gun in this country, if not in any country. It burst on the 26th ult., at the 178th round. The gun in its finished state weighed 36,000 pounds; and the test applied was 30 pounds of powder for the first 10 rounds, 40 pounds for the second 10 rounds, and 50 pounds for the remaining 158 rounds. The powder employed was much finer than is used in service, and of course its explosive power was proportionately greater. The 15-inch guns on board the *Monitors*, were tested with 30 pounds of powder, and have never been used with a larger charge than that; but deeming it necessary to use heavier charges behind solid shot of the great weight used in these guns, this gun was made of greater proportional weight of metal than the 15-inch gun. The ball used at each charge weighs about 350 pounds, and exactly fits the bore.

This gun was tested at the risk of the Government, and the company which made it have orders to proceed with the manufacture. They have already cast two others of the same size. No one was injured by the immense fragments which blew off when the gun burst.

MISCELLANEOUS SUMMARY.

Tin-lined Lead Cisterns and Pipes.—At a late meeting of the Liverpool Chemists' Association, specimens of lead pipe and sheet lead, electro-plated with tin, were exhibited by Mr. Holt; and some discussion ensued respecting the use of lead coated in this manner for water cisterns and pipes. It appeared to be the opinion of the meeting that a coating of tin, instead of preserving the lead, was far more likely to ensure its more rapid corrosion; for if the coating of tin by any means happened to be scratched off, even to the slightest extent, galvanic action would take place, and the lead would be destroyed very quickly. Dr. Nevins and Dr. Edwards stated that their experiments had proved that such would undoubtedly be the case: Dr. Edwards remarking that in one case which he had examined, a cistern made of lead, in which was an accidental admixture of tin, was eaten out by well-water in six months, the lead being rapidly precipitated in the form of sulphate, &c.

Remains of Gigantic Animals.—Russian geologists are making preparations to promote the discovery of congealed remains of mammoth animals in Siberia. It is stated that during the last two centuries, at least 20,000 mammoths, and probably twice or thrice that number, have been washed out of the ice and soil in which they were imbedded, by the action of the spring floods. The tusks only have been preserved for their commercial value in ivory. An effort is now to be made for the discovery and preservation of one of these carcases as perfect and entire as possible, as it is considered that microscopic investigation of the contents of its stomach might throw a powerful light on a host of geological and physiological problems.

Raspberry Wine.—Bruise the finest ripe raspberries with the back of a spoon; strain them through a flannel bag into a stone jar; allow one pound of fine powdered loaf sugar to one quart of juice: stir these well together, and cover the jar closely. Let it stand three days, stirring up the mixture every day; then pour off the clear liquid, and put two quarts of sherry to each quart of juice or liquid. Bottle it off, and it will be fit for use in a fortnight. By adding Cognac brandy, instead of sherry, the mixture will be raspberry brandy.

A Discovery, it is said, has been made in Russia, whereby the mercury used in the manufacture of looking-glasses may be so hardened as to bid defiance to humidity, friction, or blows. The plate-glass thus prepared may be transported without fear of damage; and, the silvering being accomplished by a cheaper process than any yet known, the glass is ten or twenty per cent cheaper than at present.

"One Word More."—A clerk in the Dead Letter Office, of an inquiring mind, was curious to find out how many letters were written without a postscript. One day last week he found that out of six thousand eight hundred and fifty letters written by females, only three hundred and seventy-five were without postscripts. Some of the other letters contained three.

A Wooden Library.—An odd work is being carried out for exhibition at the Permanent Industrial Exposition in Vienna. It is a wooden library—that is, a hundred octavo volumes, the covers of which are formed of wood; the backs of bark, inscribed with the names of the trees they are made from; and the interiors of specimens of the leaves, flowers, fruits, &c., of the trees.

Augusta, Maine, is one of the largest (not most populous) cities in the world. According to the Kennebec *Journal* it contains sixty square miles. In some of the wards they kill wild bears.

On the 4th inst. a mason fell from the top of the chimney of the Morgan Iron-works, in this city, and was instantly killed; the chimney is upwards of 160 feet high.

A member of the Connecticut legislature, who possesses the Yankee passion for whittling, and indulges extensively in that amusement, received one day last week a bundle of shingles by express.

Seven first-class locomotives were turned out from Rogers' Locomotive Works at Paterson, N. J., during the month of June.

The Philadelphia *Ledger* states that up to July 9th there have been 1,683,333 tuns of coal transported this year upon the Philadelphia and Reading Railroad, against 1,124.941 for the same period last year. By the Schuylkill Navigation Company there has been transported in the same time 333,385 tuns against 377,937 for the same period last year. The coal produced thus far exceeds that of last year for the same time by 513,840 tuns.

The French preserve grapes the year round by coating the clusters with lime. The bunches are picked just before they are thoroughly ripe, and dipped in lime-water of the consistency of thin cream. They are then hung on wires, and when dry are dipped the second time, and then hung up to remain. The lime coating keeps out air and checks any tendency to decay. When wanted for the table. dip the clusters in warm water to remove the lime.

Wrought-iron Cannon.—A firm in Bridgewater, Mass., are making a gun from wrought iron, which will weigh, when completed, about seventeen tuns. It is forged solid, in an octagonal form, with the cavity bored out thirteen inches in diameter, and will be hooped with strong bands of iron put on by hydraulic pressure. The lathe on which the metal is being turned is one of the largest in the world.

Labor.—Would you be an honest man and enjoy competency with pleasure, unknown to hasty wealth orsly roguery? Work! Let your sweat-drops wash your gains from all dishonesty. You shall live to tell your children that you have observed and felt the wisdom of the royal preacher:—"Wealth gathered by vanity shall be diminished, but wealth gathered by labor will increase."

The Pearl-bearing Oyster.—The great pearl-fishery of Aripo, in Ceylon, which has been in abeyance for some years, is about to be renewed under very promising auspices. The bank producing the pearl-bearing oysters is seven miles long, and two and a-half broad, and is calculated to contain between two and three million oysters.

Remedy against Moths.—One ounce of gum camphor, and one ounce of powdered red pepper, macerated in eight ounces of strong alcohol for several days, then strained. With this tincture, the furs or cloths are sprinkled over, and then rolled up in sheets. This remedy is used in Russia under the name of the Chinese Tincture for Moths.

New Invention.—A genius down East intends applying for a patent for a machine which, he says, when wound up and set in motion, will chase a hog over a ten acre lot, catch, yoke, and ring him; or by a slight change of gearing, it will chop him into sausages, work his bristles into shoe-brushes, and manufacture his tail into a cork-screw.

The project of establishing telegraphic communication between the West India colonies, is being agitated in London. A deputation from the West India Committee, lately had an interview with the Duke of Newcastle, at the Colonial Office, when the subject was discussed.

Old St. Paul's.—The ball on top of the dome of St. Paul's, London, weighs 5,000 pounds and is 6 feet in diameter. Workmen are engaged in re-gilding it, and they are watched by crowds of people through telescopes as they work at the giddy hight.

The largest mass of rolled iron exhibited in the London Exhibition of 1851, weighed one tun and a half, and this was considered extraordinary. In the Exhibition of 1862, the heaviest specimen weighed no less than thirteen tuns.

Indian Seas and Birds.—The absence of sea-birds forms a singular trait in the character of the Indian seas; scarcely a single living thing appears in the sky above, or the sea below, betwixt Bombay and the Indus.

Omnibus Steamboats.—Some wonderfully fast little omnibus steamboats have just been put on the Seine to run between Paris and St. Cloud. It is impossible to keep pace on horseback with one of them.

A Large Tax.—A. T. Stewart, the dry-goods prince of New York, recently paid the snug little sum of $60,000, as his income-tax for the past year.

The coal-traders of Philadelphia have decided to ship no more coal for the present. This will tend to increase the price.

Importance of our Sheep Husbandry.

The United States *Economist* contains an elaborate and well-written article on the importance of sheep husbandry to the loyal States, from which we condense some interesting ideas which are worthy of the attention of all our farmers :—

"For years past the quantity of wool manufactured in the United States has averaged full 125 millions of pounds. Of this quantity not more than one half has been grown here. While we have been exporting grain and provisions to an immense amount, we have imported wool from Australia, the Cape of Good Hope, South America, China, Russia, India, and in short from every other quarter of the globe, and are doing so to-day, though it is an indisputable fact that no country on earth is better adapted to sheep husbandry than the North-west. Should the agriculturist neglect to grow a sufficient quantity of wheat and corn to supply our home demand, it would be regarded as a most surprising evidence of lack of enterprise, and yet facilities of soil and climate are no better for producing corn and wheat than they are for the growing of sheep. In Australia and the Cape of Good Hope, where sheep husbandry is carried on extensively and at a large profit, the climate is not so favorable, the soil is barren, and there is no market for mutton ; while in the West the soil is rich, the climate dry and cool, and our large cities furnish a ready market for mutton, at higher prices than in London and Paris. For years past the people of the West have seen the wool-buyer running through the country eager to contract for wool "on the sheep's back." How much more will they be in the future, when the consumption of wool has increased fifty per cent, as it is likely to be! Although the clip of wool will be larger this year than upon any former occasion, still our Western farmers do not realize the immense increase of the demand which will be created for this great staple by the cutting-short of the cotton supply. We have at present in the loyal States twenty-five millions of sheep, and we believe that this number could be doubled without producing a sufficient quantity of wool or mutton to supply the demand for the next five years. There is no mystery about sheep husbandry. All that is required to conduct the business successfully is the exercise of plain common sense, which dictates that all domestic animals (and sheep in particular), to thrive well, require to be well fed, to have plenty of room and to be protected from storms. The soil and climate of the North-western States are admirably adapted to sheep husbandry, and the farmers of that section could not possibly turn their attention to a more profitable branch of agriculture. The sheep best adapted to the production of worsted are the Leicester and Cotswold breeds, and can be obtained in Canada to any extent and at reasonable prices. The carcasses are large and the fleeces of long staple, which makes these breeds more valuable both for the clip and mutton."

The Culture of Water-cress.

The water-cress is cultivated upon an extensive scale in the adjacent districts of country for the London market. The following description of its cultivation is from the "Cottage Gardener's Dictionary :"—The trenches in which water-cresses are grown are so prepared that, as nearly as possible, a regular depth of 3 or 4 inches can be kept up. These trenches are 3 yards broad, and 87 yards long, and whenever one is to be planted the bottom is made quite firm and slightly sloping, so that the water which flows in at one end may run out at the other. If the bottom of the trench is not sufficiently moist, a small body of water is allowed to enter to soften it. The cresses are then divided into small sets or cuttings, with roots attached to them, and these are placed at a distance of 3 or 4 inches from each other. At the end of five or six days a slight dressing of well-decomposed cowdung is spread over all the plants, and this is pressed down by means of a heavy board, to which a long handle is obliquely fixed. The water is then raised to the depth of 2 or 3 inches, but never higher. Each trench is thus planted annually, and furnishes twelve crops during the season. In the summer the cresses are gathered every fifteen or twenty days, but less frequently during winter ; care is taken that at each gathering at least a third part of the bed is left untouched, so that neither the roots may be exhausted nor the succeeding gathering delayed. After every cutting, a little decayed cowdung, in the proportion of two large barrowfuls to each trench, is spread over the naked plants, and this is beaten down by means of the rammer above-mentioned. After the cresses have been thus treated for a twelvemonth, the manure forms a tolerably thick layer at the bottom of the trench, and tends to raise its level. To restore it to its original level, all the refuse should be thrown out upon the borders which separate the trenches from each other. These borders may be planted with artichokes, cabbages, or cauliflowers."

The Effects of Congelation upon Water.

Dr. Robinet, a member of the Academy of Medicine, Paris, has published an account of experiments conducted by him to test the effects of congelation upon drinking-water. It is well known that the ice which is formed in the sea yields nothing but fresh water, all the salt having been eliminated by congelation. In the Northern parts of Europe this property is turned to account for the extraction of salt from sea water ; for a large sheet of the latter having been left to freeze, the ice is afterwards cut away, and the unfrozen water left below is so rich in salt as to require very little evaporation to yield it in a solid state. This property will also serve to analyze wine. Suppose it was required to determine the quantity of water fraudulently added to a certain wine ; by exposing it to the action of artificial refrigeration, all the water would be alone, and the wine left in its purity. By a similar process, ships at sea, being short of water, might be supplied with this necessary article. We will suppose the temperature of sea water under the tropics to be 30° centigrade. If a quantity be exposed in a vessel to the action of a mixture of sulphate of soda and hydrochloric acid, two very cheap commodities, the temperature of the water will fall to 10° below freezing point. Let it then be exposed to a second mixture of the same kind, generally eight parts of sulphate to five of the acid, and the temperature may be lowered to 17° below freezing point. Congealed water is then obtained free from salt, and may be used with impunity. Dr. Robinet has added a new fact to this theory by showing that the water of springs and rivers loses all its salts by congelation. These salts are chiefly those of lime and magnesia. The water subjected to experiment was that of the lakes of the Bois de Boulogne, the ice of which was found to be entirely free from the above-mentioned salts. Such, indeed, is the chemical purity of the water thus obtained, that it may in most instances be substituted for distilled water.

Punctuality.

Among mechanics, punctuality is a great desideratum. Show us a mechanic who will get our work done by the time specified, and we will cherish him as the apple of our eye. But to the mechanic who makes us call twice (fire and sickness excepted), we bid farewell—"a long farewell"—he is not the man for our money. The mechanic gains nothing by false promises except a bad name. In order to grasp at all the work in the neighborhood many a mechanic will promise, when he knows it is not in his power to *perform*. What is such a man but a liar? To say nothing of the vice of lying, than which there is nothing more low and contemptible, the mechanic, in the end, gets far less work by false promises than he would by a strict adherence to the truth. *Punctuality* in a mechanic is the soul of business, the foundation of prosperity, and the security of a good reputation.—*Exchange*.

THE CONSUMPTION OF WOOL.—The consumption of wool in the United States during the past year has been unusually large, amounting in the aggregate to some 126,000,000 pounds. The quantity of raw material required for army supplies alone, during the past year, is estimated at 50,000,000, for the navy 1,000,000, for civilians' wear 65,000,000, and the amount required to replace cotton, formerly incorporated to a much greater extent in mixed fabrics, 10,000,000 pounds.

A WESTERN editor says of a hail storm on the lakes in his vicinity, that it came so suddenly that the pilot looked round to see which one of the passengers was throwing stones at him.

Dialysis.

The term dialysis is applied to a method of separating different substances in solution by membraneous tissues, and was discovered a few years ago by Professor Graham of the British Mint. He noticed that certain substances possess the power of diffusing themselves with great facility through water in comparison with others, and that they could be separated mechanically in solutions by proper appliances. Take four deep glass vessels, such as long phials, and place in the one a few grains of common salt ; in the second an equal quantity of sugar ; in the third some gum ; in the fourth dried albumen. Let each of the glasses now be filled up cautiously with water, and their contents allowed to stand until they are dissolved by the water. These substances gradually diffuse themselves through the water, but not all in the same period of time. The salt diffuses most quickly, then the sugar in about twice the length of time ; the gum takes four times longer, while the albumen takes about twenty times longer. So different is the diffusive power of common salt and albumen in water that, if the two substances in equal quantities are mixed together in water, the salt will completely diffuse itself through the water before the other is dissolved. Substances which are crystalline are the most diffusible ; those least so which resemble gum, glue and albumen. The names *crystalloid* and *colloid* have been given to these two classes of substances. The crystalloids also possess the remarkable property of diffusing themselves through solutions of the colloids almost as rapidly as through pure water ; while the latter do not possess this property.

A colloid and crystalloid in solution may be separated as follows:—Take a hoop, like that of a common wire sieve, and cover its bottom with parchment paper, and float this vessel on clean water contained in another vessel, then pour into it a solution of common salt and albumen. In a short period afterward, the salt will diffuse itself through the parchment, and leave the colloid or albumen behind. In this way compound crystalloid and colloid solutions may be separated. The parchment vessel is called a dializer. Dialysis may be usefully employed in a great number of cases of chemical analysis to facilitate operations. Flint, which is one of the most insoluble of substances, has been obtained dissolved in pure water by the aid of the dializer. It cannot be dissolved in its natural state, but is first rendered soluble by a chemical process, then boiled in water, and afterward separated by the dializer. Thus the flint is first fused with an excess of soda (or potash) which converts it into soluble water glass, or silicate of soda. It is now treated with hydrochloric acid, which unites with the soda and forms common salt. The latter is a crystalloid, the former a colloid. When placed in a dializer the salt solution passes through, while the silica is left behind, and when it is allowed to stand for some days it solidifies.

A SUBSTITUTE FOR LEATHER.—Leather, to a great degree, is to be superseded. The London *Times* endorses the claims of an invention, owned by a Mr. Szerelmy, of England, which, according to the description of the article, possesses every quality of the real leather, and is vastly superior to it on many accounts. It will not crack, is tougher, will wear longer and will resist water as effectually as rubber. The leather-cloth can be of any color, and a pair of boot tops which cost of calf-skin, $1 50, will cost, of this material, only 25 cents. The invention is of immense value.—*Exchange*.

[A very full and complete account of this invention can be found on page 354, Vol. VIII. (new series) of the SCIENTIFIC AMERICAN.—EDS.

THE ram *Dunderberg* is well under way, and hopes are entertained that she will be launched on or about the middle of September. The plan of the ship, externally, is very well outlined in her present condition, and she is certainly the largest mass of solid wood, in ship form, that we have ever seen.

A FEW nights since, a large section of the rock on the north or Canada side of Niagara Falls fell into the yawning abyss below, giving the Falls on that side a more decided horseshoe appearance than they had before.

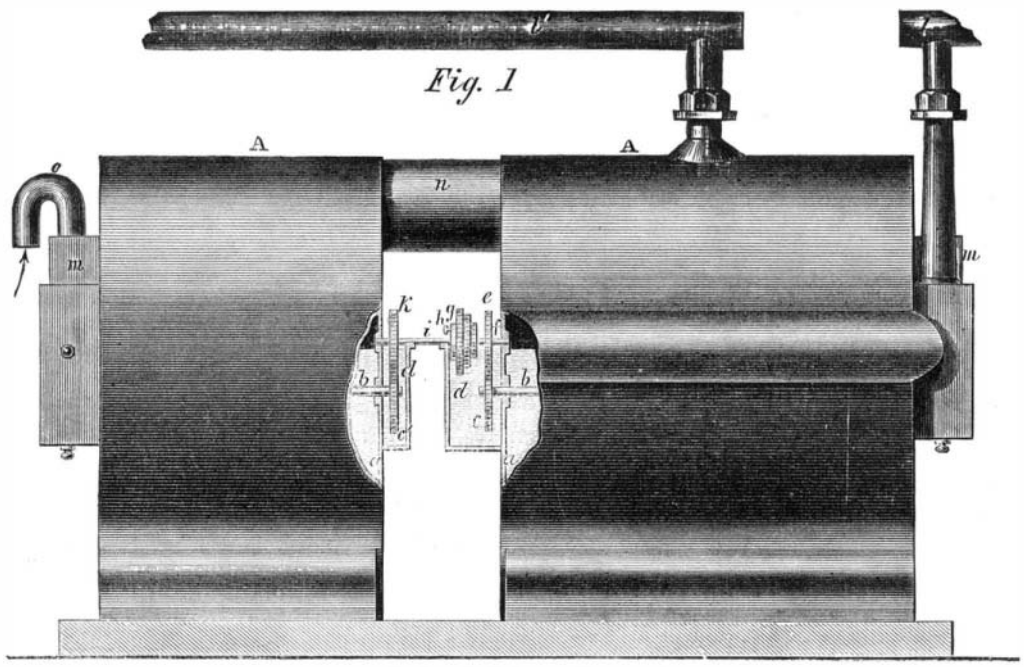
Improvement in Gas made from Petroleum or other Hydro-carbons.

Since the blockade of the Southern ports has been enforced, the use of rosin for gas-making purposes has been necessarily dispensed with, and most of the small private works, through the country, that depended on it, now use petroleum-tar or other hydro-carbon oils as a substitute. One of the principal difficulties experienced in the use of petroleum has been that the gas made has such an excess of carbon that it will not burn through an ordinary coal-gas burner without smoke, thus rendering its use offensive and deleterious to health and furniture. By reducing the burner to a very small size, this has been partially overcome, but other practical difficulties have arisen; the flame is very weak, liable to be affected by draughts of air, and is not of a clear white color. To obviate this many attempts have been made to decompose water, and mix its hydrogen with the rich hydro-carbon petroleum gas; thus forming what has been known as "water gas." These experiments have been unsuccessful in most instances, owing to practical difficulties; one of which has been the want of uniformity in the quality and quantity of the hydrogen gas, thus producing a variable and inconstant light. The device herewith illustrated (the inventor claims) has entirely overcome these difficulties, as proved after the experience of many months practical working under the most severe tests, in several places. It is now in successful operation at the St. Nicholas hotel, in the city of New York, supplying about 3,000 burners.

The object accomplished by this invention is to reduce the heavy rich gas obtained from the tar of petroleum with atmospheric air, after it passes from the gas-holder, and before it reaches the burners. The air is mixed in variable proportions to suit the quality of the gas made, giving the light the greatest illuminating power. It burns with a white flame, free from smoke, through any ordinary burner. Gas mixed with air is not explosive, until the proportion of air is from 80 to 90 per cent., so that this process is entirely free from danger, 50 per cent. of air being the maximum. Although air is about uniform in quality, the gas made from petroleum is not uniform, varying with the quality of the oil, the temperature of the retorts, and the manner in which the oil is supplied to them. Consequently the same per-centage of air will not always produce the same economical result in lighting, or prevent the gas from smoking. These difficulties have been removed by this simple contrivance, which may be attached to the delivery pipe of any oil gas-works, between the gas-holder and the burners, without other alteration of the works. The nature of the invention consists in combining two ordinary gas meters, or other apparatus for measuring gas, in such a manner that the operation of one, by the pressure of gas, will transmit a positive motion to the other, which acts as an air meter; the devices employed for transmitting this motion being so arranged that the relative speeds of the two instruments, and the quantity of gas and air measured by either of them, may be instantly varied and adjusted to the desired proportion, making the mixture required to give the most perfect light through an ordinary gas-burner; the relative proportions used are recorded on the index of each meter. In order that the invention may be fully understood a reference to the accompanying engraving will show the arrangement of the machine.

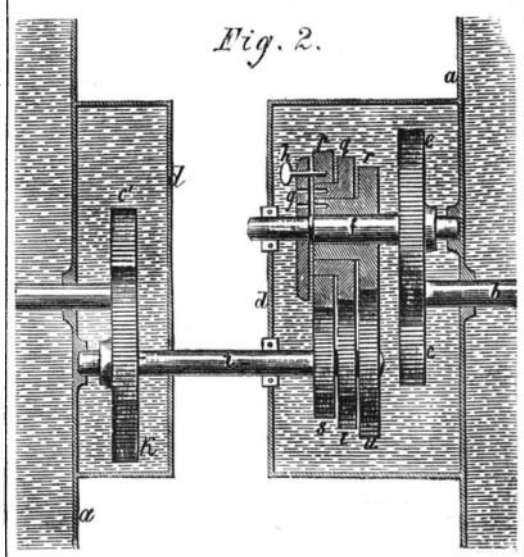
Fig. 1 is an elevation of the two meters, with the mechanism for the improved mode of adjusting the relative quantities measured by the instruments, and Fig. 2 is a sectional plan of the connecting machinery. A A, are meters of the class termed "wet meters," of the ordinary construction; they are placed back to back with sufficient space between them for the introduction and management of the connecting machinery. The axles or shafts, *b b*, of the inside drums of the meters, pass through the outer casings, *a a*, of the meters, and are provided with spur wheels, *c c'*. In order to avoid the friction of stuffing-box journals, both meters have cases, *d d*, attached to them, surrounding the said wheels, and extending above the water level of the meters. The wheels are thus made to revolve in the water contained in these casings, which communicates and remains on a common level with the water in the interior of the meters, preventing any leakage of gas through the bearings of the shafts. A spur wheel, *e*, gearing with the wheel, *c*, revolves a shaft, *f*, and has at the outer end of its long sleeve bearing a disk, *g*, attached: (see Fig. 2), the intervening space being occupied by three wheels, *p q r*, of various diameters; these wheels are so fitted that each is independent of the others in its movements, and that either one may be attached to the disk, *g*, by means of apin, *h*, while the others re-

Fig. 1



PARRISH'S PATENT GAS-MIXER.

Fig. 2.



main idle; *i*, is a shaft extending across the whole space between the meters, and having its bearings attached to the water boxes, *d*, or the exterior of the meter. This shaft is at one end provided with the wheel, *k*, gearing with the wheel, *c'*, and has upon its other end the wheels, *s t* and *u*, of such relative diameters as to bring them in gear with the wheels, *p q r*. It will at once be evident that with the above combination of wheels the proportion of speed of the two meters may be subjected to three variations, by simply changing the position of the pin, *h*, so as to throw either one of the wheels, *p q r*, into action, and by the introduction of more wheels, the number of variations in the relative capacities of the two meters may be increased to any desired extent. *l*, is the ordinary delivery pipe from the gas holder, connected with the inlet pipe of the mixer for conveying the pure gas; and *l'* is the outlet pipe for the mixed gases. The register indices, *m m*, show the amount of air and gas, separately, that passes through the instrument. The pipe, *n*, connects the two meters through which the air passes to the outlet pipe for the mixed gases. The pipe, *o*, admits the atmospheric air into the meter.

This invention was patented on May 12, 1863, by William D. Parrish, of Philadelphia, Pa.; for further information apply at the Gas-works of the St. Nicholas Hotel, No. 63 Mercer street, New York, where the machine can be seen in operation; or address D. Parrish, Jr., Gas Engineer, St. Nicholas Hotel, New York; or Wm. D. Parrish, 1,416 Arch street, Philadelphia.

The "Monitor" Torpedo.

It has been claimed for the rebels that they set us a lesson in the use of torpedoes attached to iron-clad vessels to blow up any vessel with which they may come in contact. This is a mistake. The *Monitors* were the first to have these torpedoes attached, though our naval officers seemed afraid to use them. The New York *Herald* says:—

"The Monitor torpedo consists of a monster shell, thirty feet long, weighing upwards of 6,000 pounds, with a charge of 700 pounds of powder. By means of a raft—the 'devil'—these shells are pushed some fifty feet ahead of the monitor, suspended at any desirable depth. We shall know in good time how the rebels succeed in obstructing the passage of the *Monitors* when armed with these terrible shells, the explosion of which will resemble an earthquake under water. It appears that the naval officers were afraid of employing the potent means placed at their disposal for clearing Charleston harbor of obstructions, for fear the explosion of the shells would act backwards on their vessels. As might be supposed, the constructor has guarded against such an occurrence. The Secretary of the Navy, with a view of removing all doubts on this point, ordered a trial to be made last winter with one of the rafts, the very 'devil' afterwards towed to Port Royal. The trial proved eminently satisfactory; for, although the shell pushed up a mountain of water fifty feet high above the surface of the Hudson, near the head of the raft, not the slightest injury was sustained by the latter. The perfect preservation of slender pieces of wood attached under the raft, proved beyond a doubt that the effect of the explosion was, as had been designed, in the forward direction only. This singular feature of the Monitor torpedo we are not at liberty to describe. What we have stated on the subject can do no harm, as it is known at Richmond as well as at Washington. So also is the fact that a couple of shiploads of these under-water pioneers are now at hand where their good services are most needed. We therefore acquit Mr. Welles on the charge of want of enterprise as regards the torpedoes. But is it not time to order Admiral Dahlgren to put steam on the *Monitors* and push the torpedoes past Sumter up against those rebel obstructions?"

The large coffee speculators have not all made a good thing out of their "little enterprises." The price has become so enormous since last year, that thousands of families have entirely discontinued the use of coffee, and immense lots of the article remain on the speculators' hands in New York and elsewhere; they losing the interest.