New Inventions.

New Invention—A Mechanical Calf.

The following description of a cow-sucking apparatus is too good to be lost. We would wager our ancient friend Solomon a cent or two, if he were still living, that his proverb about there being "nothing new" under the sun, is a little short of the mark in the present instance. Pumping, of all sorts, has been carried on extensively from time immemorial, and in these latter days human individuals have learned how to "pump" each other. But we believe the subjecting of cows to this interesting process is an entirely new idea. Our correspondent, we trust, will pardon us for publishing his letter; we assure him that it will do no harm, for it will save him the useful purpose of a caveat:

"MESSRS. EDITORS—I have an idea it is as yet rather a rough invention; at least, it has not as yet resolved itself into a tangible shape to the outward organs of vision. And when it does, it is possible that it will be so crude and unlike any other thing, that it will "suck the cows." Well, that's just what we want of it. "Is there anything new under the sun?" Now before you answer, just wait to hear what my new idea is. Well, are you all attention? then here it is: An arrangement by which to remove the milk from any number of dairy cows simultaneously, in the short space of say ten to fifteen minutes.

This I propose to accomplish by placing the cows all in stalls adapted for keeping them stationary during the process. Lay a pipe the whole length of the stalls under the cows, and immediately below their bags or reservoirs of milk. Connect the cows with this pipe by means of flexible tubes each tube furnished with four mouths, which will be made of india-rubber so as to bite closely upon each of the four outlets (teats.) Now the cows being thus connected with the lower or main pipe, this pipe will extend into the cream or dairy house, and is then connected with an exhaust pump, when, if my ideas are correct, one hand will, in a few minutes, extract all the milk, and it will run down into the main pipe, thence into the proper reservoirs in the dairy for creaming.

You will see my idea is to pump the milk from each cow and all by the one and same process. I base my plan upon the fact that the calf removes the milk by producing a vacuum with his tongue and organs of the mouth, and the milk at once flows from the bag to supply it. Am I right; will my plan work? if so, is it worth a fortune. I intend to carry it into practice, so far at least as one experiment will do it. G. W. S.

Broome County, N. Y."

We would inform our correspondent that he is right as to the vacuum part. How well his idea will operate in practice remains for him to try. We trust he will give an account of his experiments. This is certainly a brilliant invention. Dairy maids, like Othello, will have occasion to exclaim that their "occupation's gone."

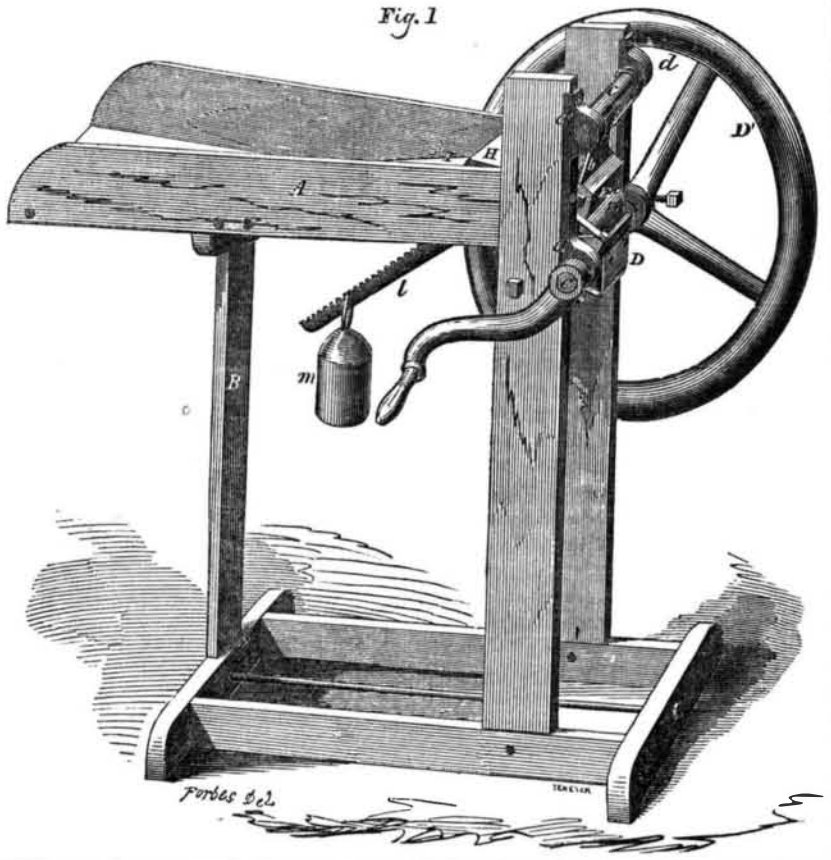
New Mode of Hanging Window Sash.

On the 26th of June last, a patent was granted to D. N. Dunzack, of Salem, Mass., for a new method of hanging window sash, to the claim of which, when published on page 338, SCIENTIFIC AMERICAN, we added a brief notice of its advantages. In addition to the remarks we then made—as the plan since then has been fairly tested—we have to name some more advantages which it possesses. First, by using hollow castings, one half the iron will suffice for a weight. Second, the sashes are more easily removed from the frame than in the common mode of hanging them, so as to allow facility for cleaning and glazing the windows. Third, the cord is not exposed to view at all, which gives them a better appearance. Fourth, there is no necessity for pockets being cut in the casings.

The window frame or casing is constructed in the usual manner for balanced sashes, viz.: having boxes on each side of the frame. Within each box there is placed one weight, which has a pulley attached to one of its ends, around which passes a cord, which also passes over two other pulleys attached to each side of the frame at the center. One end of a cord is attached to the lower side of the lower sash, and the other end of it to the bottom of the upper sash. It is thus that both sashes are connected together by one cord and one weight on each side. The weights move without any jarring or noise. By the common method of hanging sash, a window requiring weights of 18 lbs. can be operated by the new method with weights of 8 lbs., thus saving 10 lbs. of iron. This improvement deserves the attention of all house builders.

SIMONTON AND WICKS' HAY AND STRAW CUTTER.

Fig. 1

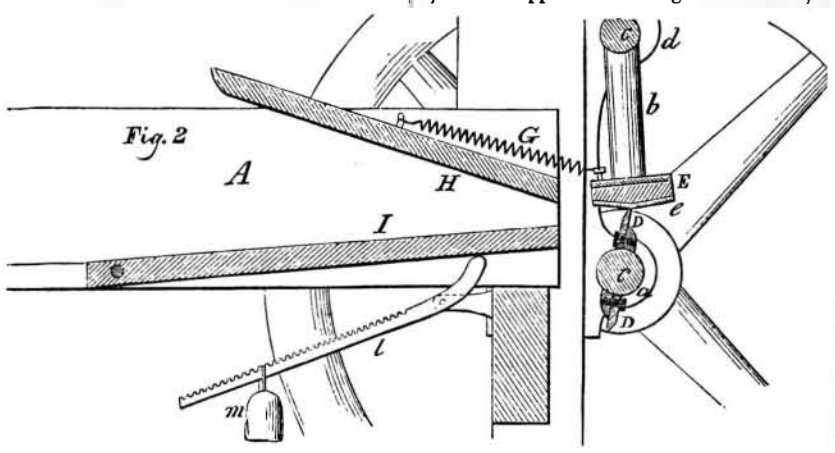


The accompanying engravings are views of an improvement in straw cutters for which a patent was granted to Thomas C. Simonton, and Loren J. Wicks, of Paterson, N. J., on the 10th of April last.

Fig. 1 is a perspective view, and fig. 2 is a longitudinal vertical section through the center of the machine. Similar letters refer to like parts The nature of the improvement consists in the employment of a knife cylinder operating in connection with a vibratory bed, whereby economy of power and superior cutting action are obtained. A represents the feed box of the machine of the usual form, and supported in the usual manner by a frame work, B. At the front end of the frame, B, and about in line with the bottom of the feed box, there is a cylinder, C, having two knives, D D, attached to it, said knives extending the whole length of the cylinder, and parallel with it.—The knives are attached to the cylinder at opposite points on its periphery.

The axis of the cylinder runs in suitable bearings, *a a*, attached to the frame, B, the ends of the axis extending a short distance beyond the bearings, one end having a fly wheel, D, upon it, and on the opposite end a crank.

Directly above the cylinder, C, there is a bed, E, which has two uprights or arms, *b b*, attached to its upper surface. The upper ends of these uprights or arms are connected with a shaft, *c*, which works in bearings, *d d*, attached to the frame. The under surface of the bed, E, is slightly convex, and just touches the edges of the knives, D D, when in a vertical position. G is a spiral spring, one end of which is secured to the inner side of the bed, F, and the opposite end to a guide board. H, at



the front end of the feed box, A. The under surface of the bed, E, is provided with a layer of raw-hide, *e*, or other suitable material in order to prevent the edges of the knives from being injured by coming in contact with the bed. I is an adjustable throat piece, the inner end being secured to the sides of the feed box by pivots so as to allow the outer end to be raised or lowered to govern the length of the cut.

OPERATION—The straw to be cut is placed in the feed box, A, and a rotary motion is given the cylinder, C, by turning the crank, and the knives, D D, as they rotate cut the straw which passes between their edges and the under surface of the bed, E, which vibrates or moves forward by the pressure of the knives as they bear against it while cutting through the straw—the bed returning backwards as the knives pass it by the action of the spiral spring, G, the knives and bed, by their operation, giving the proper feed motion to the straw. The feed motion may be modified, however, so that the straw may be cut longer or shorter by adjusting the throat piece, I, and therefore enlarging or contracting the orifice or mouth of the feed box through which the straw passes by the lever and weight, *l m*, so that the straw cannot pass too freely through the orifice or mouth.

The patentees state that it cuts straw, hay, and corn stalks, wet or dry, equally well, and that it is durable, simple, cheap, and adapted to horse or hand power.

More information may be obtained by letter addressed to them at Paterson, N. J.

Electro Magnetic Engine.

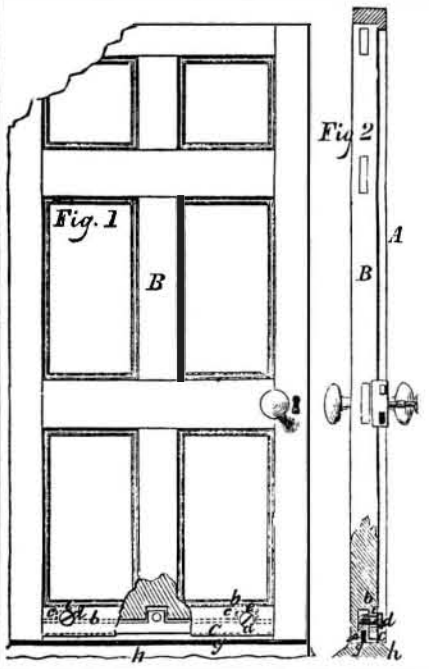
The Superintendent—John S. Gustin—of the Quinsigamond Iron and Wire Works, near Worcester, Mass., has put an electro magnetic engine into an old boat, and has tried it, but not with any thing like the shadow of success to supersede steam. The principle of it appears to be the same as Prof. Page's, illustrated in Vol. 7, SCIENTIFIC AMERICAN.

Patent Door Weather Strip.

The accompanying figures represent an improved weather strip for doors, for which a patent was granted to Martin Croke, of this city (New York,) on the 26th of June last.

Fig. 1 is a view of the inner side of a door, and fig. 2 is a transverse vertical section. The same letters on both figures indicate similar parts. The nature of the improvement consists in placing a strip or strips of india rubber within a slotted metallic bar, which is fitted in a groove in the lower end of the door. The bar is adjusted in the groove by screws. The object of a weather strip is to keep the space between the edge or foot of the door and the sill or saddle perfectly close, to exclude dust, wind, and rain.

B represents a door attached to one side of the casing by hinges, *a*, in the ordinary way. The lower edge of the door, B, has a groove, *b*, cut in it, which extends the whole width of the door, and within this groove there is fitted a metallic bar, C, the upper edge of which has projections, *c*, attached to it, through which set screws, *d*, pass, said set screws passing through oblong slots, *e*, in the door on its inner side. In the under surface of the bar, C, there is a longitudinal groove or recess, *f*, fig. 2, in which a strip or strips of india rubber, *g*, are fitted, and secured therein in any proper manner. The lower end of the strip or strips, *g*, of india rubber bear against the upper surface of the sill or saddle, *h*, of the door, when the door is closed, as shown in fig. 2, and keeps the lower end of the door or space between the lower end of the door and the sill or saddle, *h*, perfectly weather tight. And in case the india rubber becomes worn, in consequence of use,



the bar, C, may be lowered by adjusting the set screws, *d*, which secure the bar in the groove, *b*, in the lower edge of the door. The heads of the set screws may be of any proper form so as to be rather ornamental than otherwise.

The weather strip as described, effectually prevents rain, and also the cold, from entering the house underneath the door. The bar, C, may be adjusted with the greatest facility by loosening the screws, *d*, and the india rubber will not wear the sill or saddle like the ordinary wooden weather strips.

Elastic weather strips have been arranged with springs, so that a wooden strip may be pressed against the sill or saddle. In these the springs soon rust, become worthless, and besides wear the carpet or floor cloth within the house, and the sill or saddle soon becomes worn in consequence of the friction of the weather strips in passing over them. This one is superior to those in every respect.

For more information address W. Messer, Agent, 68 Wall street, this city.

Lactic acid, in doses of 20 drops, to be taken in half an ounce of water, is reported to be highly useful in those forms of dyspepsia which resist alkalies. It deserves trial.

Scientific American.

NEW-YORK, AUGUST, 18, 1855.

Important to American Inventors.

A most important patent case, in which an American inventor was concerned was decided in the Court of Queen's Bench, Guildhall, London, on the eighth of last month, by a special jury, Chief Justice Campbell presiding. It was a proceeding by *scire facia* to repeal a patent granted to Thomas Hancock, in 1843, for improvements in the manufacture of india rubber goods. The alleged ground for the repeal of the patent was,that at its date, Hancock, the patentee, was not in possession of the invention. Last year,—as stated on page 373 vol. 9 SCIENTIFIC AMERICAN—the defendant, Hancock in this case, sued R. Ross for infringement of his patent, but the Jury did not agree in the issue, and they were discharged. Since that time, Charles Goodyear being in England, the parties interested with him have become the pursuers of Hancock, and the issue was nothing less than the repeal of his patent on the one hand,or those selling American vulcanized india rubber goods being held liable for damages to him, on the other. Goodyear and Hancock were examined at great length, before the Jury, who decided after a few minutes' consultation, in favor of the latter, thereby establishing his right to recover damages against all who have sold the American vulcanized rubber goods in England. The claim of Hancock was, that he by long study and experiment had discovered, that when rubber combined with sulphur was submitted to the action of a high degree of heat, in certain ways pointed out, it could be made to resist thereafter the action of heat and cold, and become permanently elastic, which process he called "vulcanizing." Mr. Goodyear claimed the same thing. This controversy has been occupying the English courts for many years, and the result is another and an exceedingly important lesson to every American inventor, not to procrastinate in securing patents abroad—especially in England. If Charles Goodyear had not exhibited unwonted delay in securing a patent for his invention in England, he would have swayed the whole trade, (and a great one it now is) of vulcanized india rubber goods in that country; but instead of doing so, he is now reduced to the necessity of paying another—Thomas Hancock—for the use of his own invention.

In 1842 Mr. Moulton, an Englishman, resident in America, went over to England with some specimens of Goodyear's vulcanized india rubber and exhibited them to Charles Macintosh & Co., of Manchester, and endeavored to make a bargain, by the sale of the secret. When asked what Mr. Goodyear expected for it, they were told £50,000—a quarter of a million dollars—and no bargain was concluded. Messrs. Macintosh however, acted somewhat honorably, for they advised Mr. Moulton to secure a patent, but this he did not then do, and as Hancock was a partner of the firm, by the specimens of the vulcanized india rubber left with him, (the very manufacture he had long been in search of,) he was incited to make numerous experiments, until he discovered the secret for himself. When he did so he secured a patent, and was just two months ahead of Mr. Goodyear in enrolling his specification—the latter having delayed until Jany., 1844, in taking out his English patent.

Hancock admitted that the specimens of Goodyear's india rubber cloth left with him, suggested the experiments which led to his discovery; and Lord Campbell in summing up the evidence, said "it was not handsome in him (Hancock) to look at the specimens and try and find out the secret, and it was to be regretted that Goodyear should not have the benefit of the invention; but the question for the Jury was, whether before Goodyear secured his English patent, Hancock had invented the process, for if he had he was entitled to their verdict." As stated, the Jury found a verdict for him in a few minutes.

We present the substance of this case as one of peculiar interest to all inventors of improvements, which may be useful in Britain. The near relationship which the telegraph, the railroad and steamship, have established between kindred and civilized nations, has excited, and is exciting the human mind to wonderful activity, in the field of invention, and he who first originates a new and useful improvement of any kind, unless he hastes to secure it by patent, may expect to find himself, so far as foreign security is concerned, in the same predicament as Charles Goodyear.

American inventors should bear in mind that, as a general rule, any invention which is valuable to the patentee in this country, is worth equally as much in England, and some other foreign countries. Three patents,—American, English and French,—will secure to an inventor exclusive monopoly to his discovery among seventy-five millions of the most intelligent people in the world.

Locomotion—Resistance of the Atmosphere.

Two weeks ago (in No. 47) we reviewed an article which appeared in the N. Y. *Tribune* on Locomotion, wherein it was stated that the resistance of the atmosphere was the only hindrance to railway trains running at the rate of several hundred miles per hour. We exposed the fallacy of such ideas; but the *Tribune* has found a defender in the Rail Road *Advocate*. It says "the *Tribune* had not said that the atmospheric resistance was the principal resistance, at the present attained railroad speed, but *substantially* that it *would become* the principal resistance at unattained high speeds, referring we presume to speed of 100, 200, or 500 miles per hour. When the SCIENTIFIC had *proved* the resistance of the atmosphere to be such a mere trifle, at 50 miles per hour, why did it not show how trifling it would be at 100, or even 500."

The *Advocate* is wrong The *Tribune's* language is as follows: "Huge worlds move through space with motions swifter than any which the belligerents at Sebastopol can give to their missiles they hurl at each other. *What hinders a proportionate velocity in vehicles on the surface of our planet, is the resistance of the air.* Were it not for *this, railroad trains* could be *very economically* moved at the rate of *several hundred* miles per hour." We never twist or quote a cotemporary wrong to garble its main idea for any purpose whatever. The language of the *Tribune* says it as plain as A B C, that but for the resistance of the atmosphere, railroad trains could be moved *very economically* at any speed above the present rate, to several hundred miles per hour; in short that the resistance of the air is the only resistance to rail road trains moving as fast as the planets,—68,000 miles per hour is the velocity at which our planet moves through space. We exposed the fallacy of such ideas, by showing the amount of resistance of the atmosphere on a train with 50 superficial feet frontage, and moving at the rate of 50 miles per hour. Our data were derived from Charles Haswell's (M. E.) established tables of atmospheric resistance, and which are to be found in all good works on phneumatics; and rail road trains are subject to the same laws as all other bodies moving through the atmosphere. The *Advocate* supposes the existence of such laws, and lays down propositions based upon *probabilities*, and yet it asks why we did not show the atmospheric resistance on trains running at 100 or 500 miles per hour. What an unreasonable question; we took 50 miles per hour as a high speed. Talk about the resistance of the atmosphere on rail road trains, running at the rate of 100 and 500 miles per hour, when our fast trains only run at the average speed in motion of 36 miles. Our rail road Superintendents and Engineers must laugh at the idea of atmospheric resistance being the cause of this low speed of their trains; and that if it were but removed they would whisk along *very economically* at the rate of 100, or 500 miles per hour.

The *Advocate* furnishes a demonstration of the pressure of steam required to overcome a frontage resistance of 500 lbs., (a mere trifle) on a train running at 50 miles per hour. It presents a higher steam pressure than we did, but the result is the same, inasmuch as less steam at the high pressure is required; it is the quantity of steam that overcomes the resistance, no matter what may be the length of stroke, or diameter of driver. The atmospheric resistance would not prevent our rail road trains running at the rate of 100 miles another day, if that were the only hindrance to running them economically. Friction, concussions, and the attraction of gravitation, are the great obstacles to the high speed of rail road trains,—concussions from bad tracks being perhaps the greatest. Our State Engineer, J. T. Clark, in his report for last year, says, (page 15,) "the better condition of the track has prevented the expense of repairs for machinery from increasing, with the increased rates of speed." Not a word of increased difficulties from atmospheric resistance.

We asserted years ago, that trains could be run with ease at the rate of 100 miles per hour; and although some weak-minded and unreflecting persons may see a huge and unsurmountable difficulty in the way, from atmospheric resistance, and may be waiting for some plan to remove the air from the track, we are glad to know that men capable of forming safe opinions are becoming awake to this very question; and as a finish to our remarks, we quote the following from the London Railway *Gazette*, July 14, received by us two weeks after we penned the review of the *Tribune's* article: "The statistics of railways abundantly prove the urgent need of more substantial, safe, and efficient permanent ways than those hitherto in use, adequate to the increase of weight, speed, and power in the locomotives. Engines that were formerly 12 tuns in weight, and working at a steam pressure of 45 lbs. on the square inch, now weigh 40 tuns, and work at 120 lbs. pressure; and the rate of speed, formerly 25 miles per hour, is now 60 miles; while railways that formerly run 60 trains per day, now run 300, with a proportionate increase in the weight of goods and passenger trains. Notwithstanding this enormous increase in speed, power, weight, and number of trains, no corresponding improvement in railways, to render them capable of sustaining the necessary wear and tear, has yet been effected; and seeing the mischievous effects of this desideratum in our railway economy, Mr. Thomas Wright, C. E., has designed a bedplate, sleeper, and iron roadway, expressly adapted for sustaining the highest speeds and heaviest traffic, with the greatest durability and lowest cost for maintenance, combining the advantages of the longitudinal and transverse systems, and upon which 100 miles per hour may be performed with perfect ease and safety."

Page's Portable Circular Saw Patent.

By special application to the Acting Commissioner of Patents we learn that George Page's patent for Portable Circular Saw Mills was extended on the 14th of July last, for a period of seven years from July 16, 1855.

There seems to have been something a little curious about the grant of this extension, and if any of our hundred thousand readers can throw light upon the matter, we trust they will do so.

Page's invention occupies almost as important a position in the preparation of lumber as Woodworth's machine does in the planing of the same. The patent is in very extensive use all over the country.

For some time past it has been the practice of the Commissioner of Patents to publish the official notices of all extensions in the SCIENTIFIC AMERICAN. Our readers will at once perceive the propriety of this procedure, for it is well known that no publication in the country comes in such immediate contact with those persons who are likely to be interested, one way or the other, in patent extensions, as this journal. Indeed, if all other papers were omitted, and the notices of extension published only in the SCIENTIFIC AMERICAN, we believe that the purposes of the law, viz.: to notify parties interested adversely to the grant of an extention, would be fully answered. If proper public notice be not given of applications for extensions, no objections to the grant will be presented. And where no reasons appear to the contrary, of course the Commissioner can justify himself in granting the prayer of the applicant.

Now we would respectfully inquire *how it happened* that the usual custom of the Patent Office was set aside in the present instance, and why it was that no notice of Page's application for extension was sent to the SCIENTIFIC AMERICAN? Can any of the clerks at the Patent Office inform us? Do any of them remember whether there was a sort of one-sided request made that the notice should *not appear* in this journal. There is another inquiry that we should like to make:—"Has the patentee, or his assignees, failed to obtain a reasonable remuneration for the time, ingenuity, and expense bestowed upon his invention, and the introduction thereof into use?"

If we are to judge from reports coming from all parts of the country, the owners or assigeens of this monopoly have enjoyed a princely revenue from the patent for many years; therefore no extension should have been granted. But perhaps they became suddenly poor when they applied for the extension. Can any body tell us all about the matter? The public are as anxious to know as ourselves. "Any information will be thankfully received."

The Mason Testimonial.

We were informed a few days since, by a gentleman from Philadelphia, who has a very extensive acquaintance among inventors and manufacturers, that the proposition to present a testimonial to Judge Mason gives much satisfaction in that locality, and will doubtless meet with a proper response. Similar reports have reached us from other sections. This is as it should be.

A Washington correspondent says there is a rumored probability of Judge Mason's return to office this fall, and thinks there ought not to be any hasty action in the matter, for if he should conclude to come back, he might feel embarrassed by such a compliment. We think we detect a little of envy in the above suggestion—a sort of indirect fear lest the ex-Commissioner should too soon be thought too well of. As to the rumor of his return, we have once before stated that it was without foundation—our information having been derived from Mr. Mason himself—and we again repeat the denial.

But whether he returns or whether he does not return, can certainly make no difference as to the propriety of presenting him with this testimonial. The compliment is for services already rendered—not for the future. Besides, those who are at all acquainted with Judge Mason's character, well know that he is not the man to be "embarrassed" from such a cause. Whoever entertains this impression is too sentimental, by half. Judge M. would undoubtedly receive the gift—if he accepted it at all—in the spirit in which it is to be presented, viz.: as a token of the high satisfaction entertained by his countrymen for the manner in which his official duties have been discharged.

The voluntary offering of such a testimonial, whether he was in or out of office, or contemplated a return, would probably be very gratifying to him as a man; for it would be to him an evidence that the effects of his labors had been sensibly felt, and undoubtingly approved. So far as his future action is concerned, such a demonstration, if it had any influence with him at all, would cause him to continue the same bold, independent, and vigorous policy which has always marked his official career. That he would be "embarrassed" is simply absurd.

Let the friends of Judge Mason, then, come forward and give him a hearty testimonial of their esteem and appreciation.

Fair of the American Institute.

The managers of this Institute deserve great credit for the spirit they have exhibited this year by hiring the Crystal Palace, with its immense accommodations, for the display of articles and machinery. They seem to be determined to make a grand flourish. It is our opinion that it will be the best fair ever held under the auspices of the American Institute, as the Crystal Palace far surpasses Castle Garden for accommodations, especially for displaying machinery. Exhibitors of machines will be afforded ample space and power to show them off to the best advantage.

The Price of Gas.

The Liverpool *Events*—one of the new English penny papers—says:—"The cost of gas is excessive, and we state emphatically, as large consumers, that our bills show no decrease whatever since the reduction from 4s. 6d. to 4s. the 1000 feet, has taken place.

We wonder how the proprietors of the *Events* would feel to pay three times more for their gas ($3 per 1000 cubic feet,) as we have to do in New York.