

Wonders of Natural Gas.

The *Pittsburg Dispatch* says: Pittsburg is again a great gas city. Never since the early days of natural gas has this precious fuel been so abundant. The prediction by the *Dispatch* at the discovery of the Pinhook field that there was an abundance of gas for ten years has more than been fulfilled. With the additional discovery of the new field at Elizabeth, gas experts claim the outlook was never brighter. The Philadelphia Company, it is said, is even reaching out for contracts from manufacturers, a thing it has not done for several years.

The men best posted claim there will be more gas in Pittsburg this winter than any time since the palmy days of the Murrysville and Grapeville fields. Though gas is again plentiful, the value of it is thoroughly understood. The prices now paid are the greatest ever known in the history of the business. The famous Snee well has been purchased by the Carnegie Steel Company, Limited. The exact amount paid by the company for this territory is not known, but the price asked by Mr. Snee for his famous well and the lease of 3,500 acres of land was \$150,000.

The far-famed Hess well, which was the first discovered in the great Pinhook field, is now practically supplying all the Philadelphia Company's lines. From this one well is drawn the supply for the Brilliant and Herron Hill pumping stations and all the towns along the Allegheny River from Tarentum to Pittsburg. Notwithstanding this tremendous strain, it is claimed 20 per cent of the gas is blowing off at the well. It is like the early days of natural gas, when the pressures were so high it was impossible to hold the full volume in the lines. A remarkable fact in regard to the Pinhook wells is that they have been constantly increasing in pressure since they were first drilled. This is especially true of the Pinhook wells that have been drilled near Milltown. They now gauge double what they did when completed.

The Hess well is now acknowledged the largest gas well and greatest volume well that has ever been struck in any field. This is proved by the fact that it supplies nearly all the Philadelphia Company's lines. The well is actually doing more than any six wells the Philadelphia Company ever had in either the Murrysville or Grapeville fields were ever able to do. At six o'clock on the evening of August 5 there was a line pressure of 987 pounds at the well.

The Philadelphia Company has never had a line pressure equal to this since the days when the Murrysville and Grapeville fields were at their height.

The drill has proved the enormous extent of the Pinhook field, though it has as yet set no limit to its richness. It is from 15 to 20 miles long, and no one yet knows how wide. With this field and the one at Elizabeth at the big Snee well, it shows more gas in sight for Pittsburg from these two new fields than ever before.

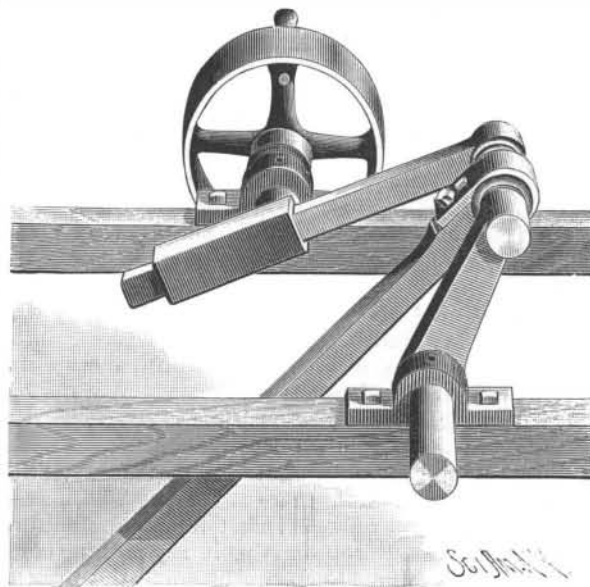
Though the Philadelphia Company was unable to come to terms with Mr. Snee, it purchased a farm in fee simple close to the Carnegie lease. One portion lies so close to the Snee well that the company is now putting up a rig within 125 feet of the great gasser. The supply already assured in Pinhook, with what is expected there, puts not only this company, but the People's Company, in as good condition as ever.

The Fastest Bicycling.

John S. Johnson, of Minneapolis, on September 22, rode a mile on a kite-shaped mile track, at Independence, Mo., in 1 minute 56½ seconds. Experienced timers and judges are said to have taken the record, to avoid possibility of error. Two horses hitched to sulkies used to encourage the trotters in their work were selected to make the pace, one going to the half mile, while the other accompanied the wheelman over the latter part of the journey. Johnson set a record-breaking clip from the start, covering the first quarter in 29½ seconds. The half was reached in 58½ seconds, and here the tired horse pulled out. A fresh one came in front of the plucky rider. The three-quarter pole was reached in 1:28½. It hardly seemed possible that the wheelman could keep up such a clip, but he never faltered, and finished the mile within two feet of the runner's sulky in the wonderful time of 1:56½. This performance gives Johnson all the world's records from a quarter of a mile to a mile, and demonstrates his superiority as a short distance rider.

AN IMPROVED MECHANICAL MOVEMENT.

The form of mechanical construction shown in the illustration is more especially designed to facilitate the conversion of reciprocating into rotary motion, at the same time avoiding all dead center positions. The improvement has been patented by Mr. Peter A. Bouchet, of Merced, California. It will be seen that one of the shafts carries at its inner end a socket or sleeve in

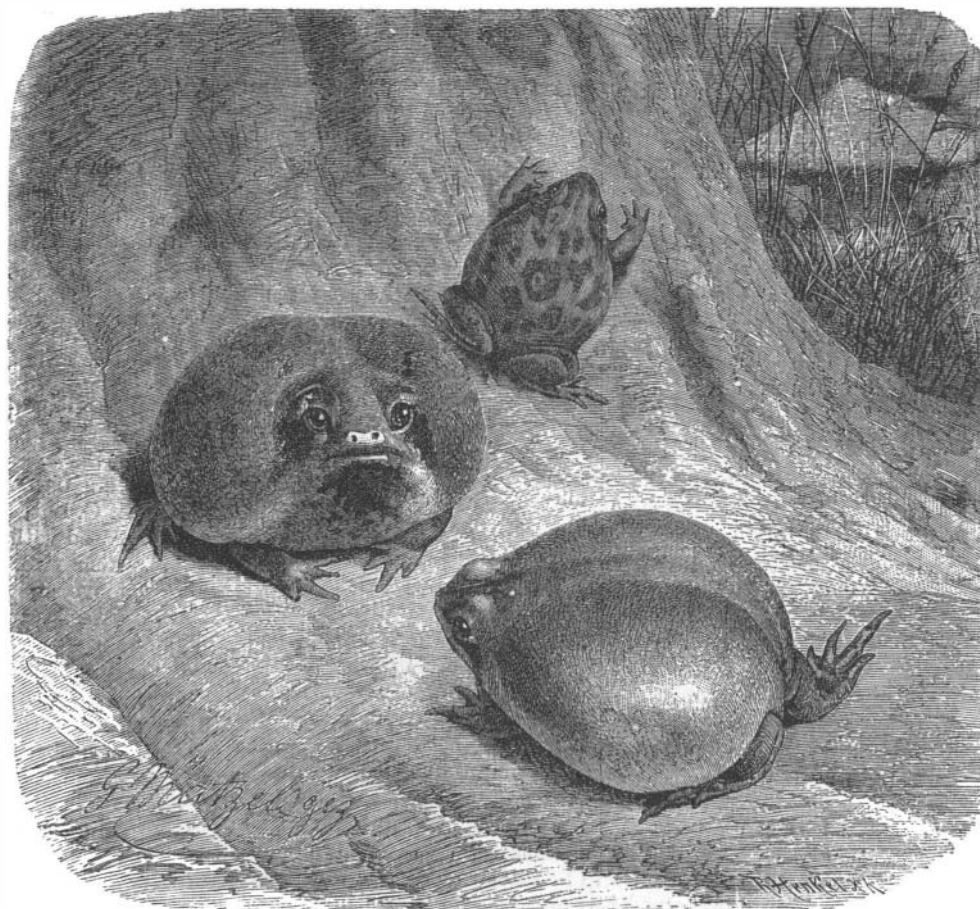


BOUCHET'S MECHANICAL MOVEMENT.

which slides a bar pivotally connected with the wrist pin of a crank arm attached to the end of another shaft turning in suitable bearings. The centers of the shafts are eccentric to each other, and the wrist pin is connected by a link or pitman with a treadle, the operating of which turns both shafts.

BREVICEPS MOSSAMBICUS.

The picture of these strange creatures reminds one at first glance of rubber balls or stuffed pancakes. Their greatest length is 1½ inches, and their color is a dirty brown on top—sometimes spotted with black—and white underneath, a black band running down from each eye, and the center of the throat being black. On the tarsi of the hind legs there is a hard, sharp-edged callus, an instrument which is probably used by this slow creature, whose only means of locomotion is crawling, to dig up termites, on which it is supposed to live. The smallness of its mouth, the shape and length of its tongue, the lack of teeth, etc., also seem to indicate that this is the nature of its food.



BREVICEPS MOSSAMBICUS.—(Natural size.)

The home of this frog, of whose habits we know nothing, is the island of Mozambique and the adjacent mainland.

The accompanying engraving is taken by the *Illustrirte Zeitung* from the seventh volume of Brehm's "Thierleben," which has lately been completely revised by Dr. Boettger.

Brown or White Sugar.

A question that will certainly open up considerable discussion in the future in the manufacture of beet sugar in the United States is, to know if all processes for the manufacture of white crystallized sugar at the factory are to be abandoned in face of the well organized syndicate of the American Sugar Refining Company, which evidently has greater facility for the refining of sugar than would be possible in an ordinary beet-sugar factory.

Even in the present early stages of the industry opinions appear to be very much divided. Some of the factories make a white crystallized sugar testing 99°, while others prefer confining their efforts to raw sugar manufacture and to sell their product to refiners who are willing to contract in advance for all sugar made. From want of space we are not able to enter into the question in detail. It is interesting, however, to call attention to a successful process of manufacturing white crystallized sugar at a low cost, and for which the machinery required costs but a few thousand dollars. A *cleare* is made with the sirup from multiple effect. This is concentrated to 36° B. at a temperature of 104° F. The *cleare* thus obtained is, in reality, a supersaturated sirup. The green sirup from *masse cuite* is swung out in centrifugals; 10 per cent of the *cleare* above described is then added, during which time the outer surface of the centrifugal drum is heated with exhaust steam. The sirups running from centrifugals during this operation are subsequently mixed with sirups entering vacuum pan. Special steam injectors complete the sugar washing, and it is said that about 64 pounds white crystals, testing 99°, may be extracted from 100 pounds *masse cuite*.*

It is interesting to compare this process with that of raw sugar extraction, considered on a basis of dollars and cents. For example, we may suppose that beets worked averaged 13 per cent sugar. By American processes there may be extracted per ton of beets 150 pounds brown sugar, testing at least 88°, and worth 26 cents per pound, and 50 pounds of a second grade brown, which would have a ready market in New York at 23 cents per pound. The total value of these raw sugars would be about \$5.05. On the other hand, by the process above described, from one ton of beets there could be extracted 129 pounds of high grade white crystallized sugar, testing 99°. At present market prices this would bring over 4 cents per pound, to which must be added 21 pounds of a lower grade sugar that would have a steady market at 23 cents per pound. In this case the total value would not be less than \$5.60 per pound. Thus there remains a difference of 55 cents in favor of the process under consideration. For a campaign of 20,000 tons there would be a profit of \$11,000. Just within what limits this figure is correct remains to be determined by practical experience.

Whatever may be the results obtained, the experiment is worth trying. We shall be pleased to publish any practical data on this point that may be sent to us.

By adopting above method of manufacture there need be no cause for Northern sugar makers to envy Southern sugar manufacturers, who get a bounty upon sugar of 80 per cent test and of quality that may enter into immediate consumption.—ED.—*Sugar Beet.*

Reports from the Great Fair.

The list of British exhibitors in the industrial section, according to advices from Great Britain, already numbers fully 5,000. The best exhibits will be those of pottery and dry goods.

The bonds bear 6 per cent interest, dated November 1, 1892, payable on or before January 1, 1894. They will be issued in denominations of \$100, \$500, \$1,000, and \$5,000. An estimate in the prospectus set forth that the probable receipts of the exposition would be \$34,500,000 and the disbursements \$21,250,000.

The attendance of visitors is increasing. On a recent Sunday 15,000 persons passed through the turnstile. During the week the average daily attendance was 3,000. The officials regard these figures as a convincing argument in favor of keeping the exposition open Sunday. Most of the visitors to the park on Sunday are laboring men and their families.

* *Masse cuite* is 8 to 10 per cent the weight of beets worked, which corresponds to 200 pounds per ton.