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THE END OF ANOTHER VOLUME.

The present issue of this paper closes the first half of the year. Next week we shall commence a new volume.

Some persons to whom the SCIENTIFIC AMERICAN was not previously known concluded six months ago to try it, and to them we say: Now, after receiving 26 numbers costing \$1.60, how do you like it? We hope that none are disappointed. We hope that every one feels that he has had a full equivalent for his money. And we hope that all who are satisfied that they have had their money's worth will evince their satisfaction by remitting \$3.20 for the coming year, or \$1.60 for the next six months.

Clubs may be formed on the usual terms, and the same reduction will be made on a number of names as offered in last January. To all persons who wish to keep pace with the progress of the age, the SCIENTIFIC AMERICAN is indispensable. No other publication contains the variety of valuable reading, and instead of forty-five thousand—our present actual weekly circulation—we think the publication deserves the subscription of one hundred thousand. What say our friends? Shall we have it? It is for them to answer.

Remit, by registered letter, draft, or postal order, to

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THE KEELY MOTOR DECEPTION.

During the past year and a half, we have had occasion, several times, to allude to this latest contrivance, the chief purpose of which appears to be the wriggling of money out of silly people, numbers of whom are found to invest in it—just as they do in lottery tickets—expecting or hoping to win a prize.

The thing was started over two years ago, when it was given out that one Keely, of Philadelphia, Pa., had made a marvelous discovery, namely, a new motive power, in which an enormous force was generated without expense, without the employment of fuel, fire, electricity, chemicals, or other agency; in short, a veritable perpetual motion. The only apparatus involved was a few strong metallic cylinders, containing air, into which water was admitted, when, presto, a cold vapor was instantly produced, having a force of 80,000 lbs. per square inch, more or less, capable of useful application in the driving of all kinds of mechanism. Thus were the days of steam and its costly fuels numbered, and the value of coal property diminished; while settled principles of Science, demonstrated by Joule, Faraday, and other eminent worthies, were toppled over as by an earthquake.

In one of our comments we designated the Keely Motor as

one of the perpetual motion deceptions, by which the owners claim to generate a great force out of nothing. We stated that "once in a while they have a juggling exhibition of the thing for the purpose of selling stock. Keely or one of his confederates is the operating juggler. The power 'generator' is a combination of small tubes or cylinders, communicating by pipes. First they run water through, then air, to prove that there is nothing within, and that the show is 'honest.' Then Keely turns a faucet, and 'now you see it.' The pressure gage goes up. He turns again, and 'now you don't see it.' The gage falls."

Transparent as this deception is, it is a serious fact that it has been indirectly countenanced by numbers of intelligent persons; and the implied sanction they have given to it has led many less informed individuals to stake money for its shares.

In the SCIENTIFIC AMERICAN for May 2, 1874, we devoted two columns to an account of one of the Keely performances like that above described, and mentioned the names of C. H. Haswell, W. W. Wood, U. S. N., S. Parish, Joseph Patten, and other engineers and mechanics who were present, and lent their names to its support. Professor Haswell wrote quite an ingenious report in its favor. A force of 10,400 lbs. to the inch was by him certified to have been developed on that occasion. It was then given out that a new apparatus, of still greater power, was in course of construction, to be finished within a few weeks, which would be still more conclusive and satisfactory in its results; that until this new apparatus was ready, and the patents, then in progress, were secured, the matter was not to be fully explained.

Since that time the new apparatus has been completed, several private exhibitions have been given, and the interested parties are now, it seems, desirous of bringing the "great discovery" fully before the public. We judge that this is the case, because they have lately communicated much information to various members of the press.

We take the following, as a sample, from the New York Times of June 11, 1875:

(From our own Correspondent.)

Philadelphia, Thursday, June 10, 1875.

"The mechanical and scientific world has been greatly excited of late by the discovery of a new motive power by a Mr. John W. Keely, of this city. The lately discovered motor is generated, as the gentleman claims, from cold water and air, and evolves into a vapor more powerful than steam, and considerably more economical. It is proposed by this new invention to revolutionize the world, and turn machinery topsyturvy. Steam will be a thing of the past, and the wonderful power of this new creation will supply all the needs of man, for the uses to which steam is now applied. Just what this vapor is, and how it is made, the discoverer refuses to make plain, or divulge his hidden secret, until he has letters patent taken out in all the countries of the world which issue patent rights. This service alone will cost about \$30,000, and will not be completed until three or four months hence. Mr. Keely is very reticent on the subject of his discovery, and referred your correspondent to his attorney, Charles B. Collier, Esq. The latter gentleman said that a private view of the working of the motor had been made on the 10th of November, 1874, before a number of capitalists, and that only three weeks since another exhibition had been given before a number of gentlemen from the New England States. These latter were so well pleased with the *modus operandi*, and believed so firmly in the ultimate superseding of steam by the new power, that they formed a stock company, purchased the patent right for the six New England States, and paid \$80,000 cash immediately for their share in the invention, and are ready to forward \$200,000 more as soon as called upon. They will organize a company with a capital of \$3,000,000, and be ready to manufacture the engines and necessary apparatus as soon as the proper patents are secured.

HISTORY OF THE DISCOVERY.

Mr. Keely alleges that the discovery of this power was purely accidental. Up to within a short time he was a poor man, but, having a wonderful degree of natural mechanical skill, he devoted all his time for the past fourteen years to experiments with water with the view of procuring a motive power from it. He was engaged upon an idea of his own regarding the force of columns of water one day, when he accidentally discovered the vapor he has harnessed. He studied the subject, ascertained how it was generated, learned its power, and thenceforth applied himself solely to the perfection of this idea, working night and day, for a number of years, until his efforts were crowned with success. The apparatus by which this power is made is termed a "generator" or "multiplier," and the vapor is then passed into a "receiver," and from thence to a cylinder box of the engine, where it drives the pistons and sets the engine in motion. The "generator" is about three feet high, made of Austrian gun metal, in one solid piece, and will hold about ten or twelve gallons of water. It is four or five inches thick, and made to stand the very heavy pressure of 20,000 to 30,000 pounds of vapor to the square inch. The inside is composed of a number of cylindrical chambers, connected by pipes, and furnished with cocks and valves. The "reservoir" is about six inches in diameter and forty inches long, and is connected with the "generator" by a pipe which is about one inch in circumference on the outside, with a bore of about one eighth of an inch. Connected with both "generator" and "receiver" is a "standpipe" of brass, about two and a half inches in diameter and three feet high, having a spherical chamber at the bottom, made in two parts, by flanges, and connected to the pipe uniting the "generator" and "reservoir." The vapor generated in the multiplier is conveyed to the reservoir, which contains numer-

ous pipes, and from there, by a "feedpipe," to the engine. The engine is of peculiar construction; but the inventor claims that the vapor can be attached to any ordinary engine now in use, with very slight alteration. Steam could not pass through the connecting pipes which are used on this apparatus, since the bore is only about the dimensions of a knitting needle. "In five seconds," said Mr. Keely, "I can supply 2,000 pounds of vapor to the square inch, and enough to run a train of ten cars from Philadelphia to New York and return."

With a Keely "motor" attached to a steamer, the voyage of the world can be made without coal.

Mr. Keely says that the first public exhibition will be upon the Pennsylvania Railroad, when he purposes to take a train from this city to New York and return. The cost of the apparatus will range from \$500 to \$2,500, according to the size and finish desired.

It is evident, from the character of the gentlemen who are interested in the "Keely Motor Company," and the amount of money they have advanced, that they regard this invention as the wonder of the nineteenth century. About four millions of dollars are already involved in the success of this new invention.

The gentlemen interested in the scheme in New York are Messrs. E. T. Throop, Charles G. Franklyn, Charles Lamson, Sergeant & Cuttingworth, W. D. Hatch, William W. Wright, W. B. Meeker, J. J. Smith, A. H. Elliott, John M. Williams, and J. S. Andrews.

The foregoing presents the most recent statements concerning the new motor, as derived from the parties themselves. We will now add a brief "official account" of the actual working of the device, at the great trial mentioned above, made November 10, 1874, as certified by Mr. Collier, the company's counsel and reporter, and published by him in pamphlet form at that time, for the information of the stockholders.

"A short tube, carrying upon its end a reaction wheel or 'Barker's mill,' having two arms of about two and a half inches long each, was screwed upon the reservoir, and, at 9:03 P. M., was put into rotation at a very high velocity, by the manipulation of two cocks. At 9:05 P. M., the reaction wheel was removed, and connection applied to a small beam engine, which was rotated at 400 revolutions. At 9:08 P. M., the reaction wheel was again rotated until 9:09 P. M." The machinery was then stopped, and the gaseous fluid allowed to escape against a candle flame and blow it out. At 9:15, the engine was run again for a few turns. "At 9:17 P. M., the reaction wheel was run again, and at 9:20, the experiments being concluded, the multiplier was taken apart and inspected by those present. There was no heat perceptible in any part of the apparatus."

The dimensions of the "small beam engine" are not given. It is stated by the learned counsel to have been of "peculiar construction, not susceptible of brief description." Judging from the Barker wheel, with 2½ inch arms this "beam engine" was probably about the size of a dollar toy engine. These remarkable pieces of machinery were, according to this report, run for a minute or two at a time, at various intervals, extending over an entire period of 15 minutes. There was no heat and no noise save that of running water when the ear was placed against the multiplier.

The report, after giving the foregoing facts in regard to actual performances, summarizes the results, which we condense as follows: 1. The invention produced a series of gaseous expulsions of 2,000 lbs. per square inch. 2. The force was almost instantly produced. 3. It moved instantly through a distance of 12 feet. 4. It was attended with no noise. 5. 6. Nothing was nor could have been introduced into the apparatus to produce the force. 7. No heat, electricity, or galvanic action was discernible, except that electric sparks were observed in the spur gearing of the engine, caused by friction. 8. Hydrant water, 26 lbs. to the inch, was admitted. 9. The water was drawn off unchanged after the performance. 10. The vapor had no smell or taste, and did not burn. 11. The interior of the apparatus was found to contain no residuum or substance other than air and water. 12, 13. The operations were conducted by gas light. Every facility for the closest investigation was offered to the persons present.

The counsel then adds that the object of his report is not to make known the precise nature of Mr. Keely's invention, "nor will this be done until the specifications, drawings, models, etc., now in progress, necessary for the procurement abroad and in this country of letters patent, are completed and deposited."

Following the counsel's signature to this report is a certificate by Wm. Boekel, Mechanician, Wm. H. Rutherford, Chief Engineer, U. S. N., and J. Snowdon Bell, to the effect that they were present, that the report of the facts is correct; and the conclusions of Mr. Collier, given in the summary, they say "we fully endorse, as being, in our judgment, the correct conclusions." A certificate from B. Howard Rand, M. D., Professor of Chemistry in Jefferson Medical College, is then given; the Professor says he has read Collier's report, and certifies that the "absence of heat, electricity, or galvanic action as resultants, together with the negative qualities of the produced gas or vapor, lead me to the conclusion that the result, alleged to have been produced, was by some agency or power not known at present to chemists."

The opportunities for the acquisition of knowledge by this Jefferson College Professor seem to have been very limited.

We have given above the latest accounts of this latest attempt to impose upon the credulity of the public, as written by the parties themselves and backed by their willing as