

Correspondence.

An Intermittent Jet.

To the Editor of the Scientific American:

As you seem never to tire of hearing suggestions on jet propulsion, and as I have not seen one yet that might be patented as having an alternating current novelty, please permit me to offer the suggestion, that possibly the thrusts from a jet pipe intermittently worked might produce greater propulsion results than the constant jet, which tends more to bore a hole in the resisting element, which also follows in, to aid this effect.

W. H. WETHERILL.

Philadelphia, Pa., June 15, 1891.

Natural Gas at Stockton, Cal.

To the Editor of the Scientific American:

It is now some twenty-five or more years since I wrote you a short letter describing the artesian well in the court house yard of this city. I mentioned the fact, and fact it was, that there came to the surface a quantity of gas—sufficient to ignite and burn, showing quite a flame. You very kindly published my letter, or rather a portion of it, cutting out the portion that referred to the natural gas. I now write for the purpose of informing you that my residence was lighted last evening for the first time with natural gas. We have no less than six wells in successful operation, furnishing gas for mechanical purposes, for cooking, heating and illumination.

The Crown mills are lighted with natural gas, and during the day time the gas is turned under the boilers for fuel. The new court house is lighted wholly, and heated, when heating is required, by natural gas furnished from a well bored for the purpose. Many of our business houses are lighted by natural gas, also a great many residences.

There are several wells now being bored, some of them indicating an abundance of gas. We do not get dry gas thus far.

I write this merely to correct an erroneous impression that you formed regarding the letter written a quarter of a century ago. You thought I told a California whopper, and it has troubled me for twenty-five years. Now I can vindicate my character. H. S. SARGENT.

Stockton, Cal., June 13, 1891.

Castronography.

To the Editor of the Scientific American:

In the SCIENTIFIC AMERICAN of May 16, there appeared an article headed "Castronography," credited to *La Nature*. Allow me, in justice to myself, to contradict the following statement given in that article: "It was devised by Mr. Mills, an American." I claim this to be false. From one end of the United States to the other, from England to Australia, and over the Continent, as well as Canada, I have exhibited myself as "The Knife Artist" for the last twenty years. My name is everywhere known in connection with this work. I first introduced the idea in the United States quite by accident, while cutting a thick piece of card board. My knife slipped and made a long shaded gash on the surface. I mechanically looked at it, and noticed the shade. An idea struck me. It was this: if a knife makes such a pretty shade with a stroke, why not combine many strokes of like nature into a design? I first executed a few pen and ink sketches, such as shaded birds in ornamental penmanship, and cut them with a knife. I gradually noticed that I could use the pen knife fully as well on the card as the pen, and practiced this new idea thoroughly; and to-day I stand the originator of the art of "Castronography" (not Castrography). I am not only the originator, but I frankly confess to being the "king" of all my imitators; for such are all that do this kind of work, as many a citizen in the United States can testify. I have been well known for years at every noted watering place. I am out of the business now, as the idea ceased to be a novelty. I invariably left my tracks behind in the shape of an imitator. To make this statement good, I will offer Mr. Mills or any one else \$100 if he can prove that he is the originator of the above art, and that I am not. Further, the specimens reproduced are very, very poor in skill as well as in design. Mr. Editor, I would not have written this letter for publication, but it is a fact that many people get the credit in newspapers (through cheek and other means) for things they have no right to lay claim to. There are hundreds of men doing this work in the world to-day, and to use the "Yankee" phrase, it is getting to be a "chestnut," and well it should, for nine out of ten of the so-called "knife artists" make such a miserable botch of a beautiful art that the public cease to take the interest in it they once did, when I could get one dollar for a card with a design upon it cut with a knife. In conclusion, I will state that any ornamental penman can do the same work with a knife as with a pen with a little practice, as it is only writing with an instrument without ink. Hoping you will give honor to another American where honor is due.

Toronto, May 23, 1891.

G. MILKMAN.

[The above letter was accompanied by several fine specimens of the art.—ED. SCI. AM.]

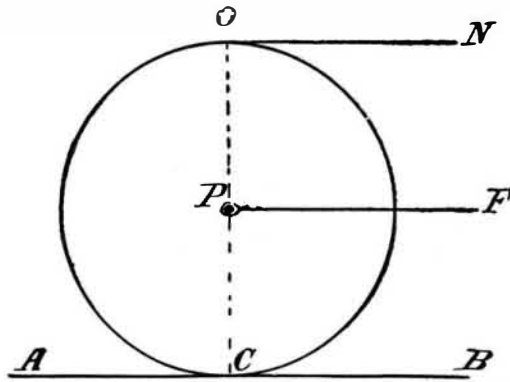
THE ROLLING WHEEL.

To the Editor of the Scientific American:

In *Popular Science News* of November, 1890, in answering the question, "Does the top of a rolling wheel move faster than the bottom?" the editor says: "The top of a carriage wheel moves *faster*, with reference to the observer, than the bottom, because, in addition to its movement of rotation, it has the direct forward movement of the carriage as a whole. The *bottom* of the wheel moves in an opposite direction to that of the wheel itself, and, as the two motions partially neutralize each other, the bottom part *appears* to move past the observer more slowly than the top."

"Faster," in the sense in which it is here used, implies that the bottom of the wheel moves, but not so fast as the top.

There is no point in a rolling wheel which moves in an opposite direction to that of the wheel itself. The top of a rolling wheel moves twice as fast as the center, while the *bottom* of the wheel is as stationary and motionless as is the cornerstone of Bunker Hill monument.



That the top of a rolling wheel moves twice as fast as the center may be easily demonstrated by taking a round block, such as merchants' ribbons are wound on, stick a pin in the center, on one end. Around this pin tie a thread loosely, so that the pin can revolve in the knot without winding the thread, then fasten the end of another thread to the circumference of the roller and wind *this* thread several times around the roller. Let the upper thread lead off from O toward N, and let the center thread lead off from P toward F. Roll the wheel toward the right hand, and you will discover that the upper thread "pays out" just twice as fast as does the center thread.

Now, in the vertical line, C P O, the distance from C to O being twice as great as the distance from C to P, if the point O moves twice as fast as the point P, it is a simple mathematical proposition that the point C is without motion, being merely a center around which the line, C P O, revolves.

In the case of a cogged wheel rolling on a cogged rail, the space between two adjacent cogs in the rail being stationary, a cog in the wheel, which fits that space, must necessarily remain stationary so long as it is in the stationary space.

If we take a carriage wheel containing 14 spokes and remove the tire and felly and cause the wheel to roll at the rate of one revolution in 14 minutes, it must be plain that when spoke No. 1 comes in contact with the ground—i. e., becomes the bottom of the wheel—the lower end of the spoke remains stationary, and is merely the point on which the whole wheel rocks for the space of one minute, or until spoke No. 2 strikes the ground.

If there were 14 million spokes in the wheel, and if it made 14 million revolutions in a second, the lower end of each spoke would come to a full stop as it struck the ground; but would tarry for the space of only 1-196,000,000,000,000 of a second.

Theoretically a circle is a polygon. The distance from any point in the circumference of a circle to the very nearest next point must be *something*, though in finitely small. So long as any point in the circumference of a rolling wheel is the *bottom*, it acts as a pivot, and is at a dead rest until the next point becomes the bottom, when the point that *was* the bottom begins to rise.

Inclosed is a diagram showing the lines described by different points in a rolling wheel.

A B represents the ground on which the wheel, C E O, rolls.

The curve described by a point in the circumference of a rolling wheel is termed a cycloid, and its properties are discussed in the calculus. A. J. KNESELY.

A Remedy against the Teredo.

To the Editor of the Scientific American:

• We have just read some articles in your paper on the loss on the Pacific coast from the destruction of lumber by the teredo pest, a remedy for which we have discovered, and successfully tested, on the Pacific coast. For some years we have prepared a wood preservative which has prevented all wood treated with it from decaying. In June, 1888, we steeped a piece of wood in an extra solution of our preservative and sent

it to H. Abbott, Esq., General Superintendent of the Canadian Pacific Railway, at Vancouver, B. C., asking him to have it tested in the worst place for the teredo on the coast, attaching to it a like piece of wood unpreserved. Mr. Abbott writes me that in twelve months the piece of wood not preserved was completely riddled by teredoes; our treated piece was untouched by them. He continued the test, and after an exposure to their attacks for two years the teredoes made no impression on it. He recommended its use to the company, for whom we have recently filled a large order and sent to Vancouver. It is not costly, and can be prepared wherever needed, in any quantity, and so strong that the teredo or any other animal or insect will not touch it. Before preparing this remedy we studied the habits of the teredo, and find that we have succeeded in providing against so destructive a pest. The cost of preserving ordinary lumber by our process is from \$2 to \$3 per 1,000 feet B. M. Teredo proof for wharf piles would of course be higher. It is as sanitary as concrete, not easily ignited, and not dangerous to manufacture or use.

THE FINCH WOOD PRESERVATIVE COMPANY.
Toronto, Canada, June 9, 1891.

Growth of Hair after Death.

To the Editor of the Scientific American:

An unusual event was chronicled in the SCIENTIFIC AMERICAN of June 13, that of a man adding a full hirsute appendage to his face after death. The SCIENTIFIC AMERICAN spoke as follows:

"The body of E. M. Haskell, who has been dead for over twenty years, was recently removed from his grave at Northfield, Minn., it being purposed to put the body in another lot. When the body was exposed it was found that he had a beard over twenty-three inches long. His wife said that before he died he had been shaven, and all his hair must have grown after burial."

This is substantially the report that was telegraphed from Northfield to the Chicago *Tribune* and other leading papers over the United States, no details having yet been published of this most remarkable occurrence.

There are perhaps two or three well authenticated precedents of this phenomenal post mortem happening, but it is probable that none has borne the unflinching scrutiny to which this case has been subjected. Savants and press representatives, idlers and people filled with morbid curiosity, have thronged the city, and well nigh harassed the life out of the relatives of the deceased. The writer was one of the first on the field, and on that account was given more complete information than has yet been made public.

E. M. Haskell died on the 13th day of November, 1868, aged forty-one years. For the last ten years of his life he had worn only a mustache, which was unusually heavy. The disease that caused his death was pronounced brain fever by the attending physicians, and he died after an illness lasting barely two days. He was a short, dark-hued man, of great vitality. He was buried in a stone vault placed about seven feet beneath the surface of the ground, and enjoyed an unbroken repose until the 7th day of June, this year, when, the tombstone crumbling, and the ground beginning to become uneven, his wife, an old but still healthy lady, decided to remove the body to a new lot which she had recently purchased.

Accordingly two men were instructed to effect the removal, and the corpse would probably never have been seen, and an interesting natural phenomenon thus be lost to the world, had not one of the straps used to raise the body out of the vault broken when the coffin was near the top, and thus precipitated it to the hard stone bottom of the grave. The result of this shock was that the lid of the coffin, which had rotted considerably, became removed, and the face of the corpse thus exposed.

One of the men, who had been in the employ of Haskell at the time of his death, started back in surprise, and exclaimed, "That ain't him!" On being questioned by his fellow laborer, he said that his old master had had no such long beard as "that feller there."

He hurried to his old mistress, and with some reluctance she was persuaded to go and view the remains. She also gave vent to an exclamation of surprise on seeing the long black beard and hair, nearly two feet in length, and at first emphatically denied that the body was that of her late husband. But closer examination brought facts to light that could not be mistaken, and the identity was firmly established.

The body had partially decomposed, but the face, though lean and almost entirely devoid of flesh, still retained its perfect covering of epidermis, and the beard as well as the hair was of a deep glossy black. The tomb had been cemented, both top and bottom, and air thus excluded to a certain extent.

Here is a well verified case of the activity of certain functions of the body after apparent cessation of the life current.

A. R. FEDERMANN.

Northfield, Minn., June, 1891.