

PERPETUAL MOTION.

NUMBER VII.

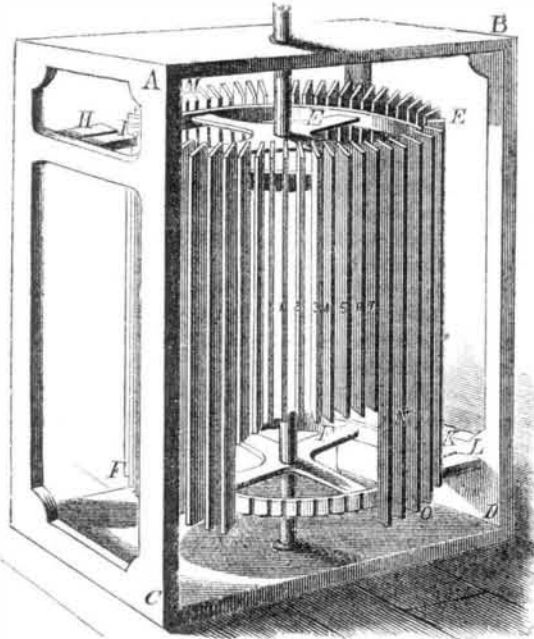
Fig. 15 illustrates a piece of folly, which, we are sorry to say, has been repeated in one form and another so many times that it ought to be considered a standing joke, but which is nevertheless constantly turning up as a serious proposal among a class of inventors who know little or nothing of electricity and magnetism. It is the device of a Dutch inventor, Hero Hicken by name.

A B C D represents a frame of brass or wood for the machine, E F, to run in.

E and F are two brass wheels, similar and equal, fixed upon a movable axis, G.

1, 2, 3, etc., are a number of artificial magnets, placed within the teeth of the wheel all round, and as near each other as is

Fig. 15.



possible, provided they do not touch; their north poles at E, and their south poles at F.

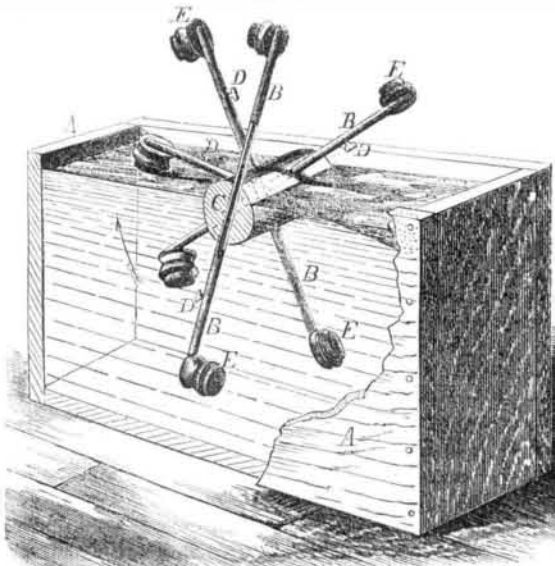
H and I are two similar and equal magnets fixed in the brass plate, A C, very near each other, but not touching.

K and L two more fixed in the brass plate, B D.

Now, as the north pole of one magnet repels the north pole of another magnet, and attracts the south; and inversely the south pole of one magnet repels the south pole of another, and attracts the north; so the south pole, I, attracts all the north ones at E; and the north pole, H, repels all the north ones at M. In like manner, K attracts at N, and L repels at O, and by this means the whole machine, E F is expected to move perpetually round.

Now this would be all lovely if magnets did not attract in more than one direction. Many American inventors have tried the same principle over and over only to find their wheel standing still, and have then sighed for some septum which, interposed between a magnet and its armature, would prevent attraction while thus interposed. The editorialsanctum of the SCIENTIFIC AMERICAN has often been compelled, in answer to correspondence, to confess its ignorance of any substance of which such a septum could be constructed. Humiliating as is the confession, we never have heard of this long-sought for desideratum, and what is more, we expect to leave this sublunary sphere before its discovery. But we do expect, judging from past experience, that about once a month

Fig. 16.



some sanguine inventor, who thinks he has discovered the perpetual motion, "all but that one single thing," will expect us to point him the way to success by supplying to him (privately, of course), the knowledge of the septum sought.

This idea of a magnetic perpetual motion is just now the most prevalent one of all, and if what we have said shall serve to open the eyes of the many who are eagerly following what must prove to be only a delusion and a snare, our purpose will be accomplished.

Fig. 16 is an engraving of a supposed self-moving machine sent us by S. H. Davis & Co., of Detroit, Mich. They state that it is the invention of the late William Davis of that city

who spent a great portion of his time in the attempt to make a self-moving machine.

A, in the engraving, is a tank containing water, as shown. The hollow arms, B, communicate with a hollow shaft, C, and the bellows, E—screw valves, D, being employed to increase or diminish the area of the passages in the hollow arms, B. Each of the bellows, E, carries a weight, which, during a portion of the revolution, compresses the bellows and forces the air out of it through the hollow arms, B, and shaft, C, into bellows upon the opposite side of the wheel, which, being inverted, are expanded by the action of the weights, and their buoyancy being thus increased on one side of the wheel, the latter is expected to turn constantly by virtue of the effort of the expanded bellows to rise to the surface. This is one of the most plausible devices we have ever seen, and it will puzzle many to conceive the real reason why it will not move as it is expected to do. The fallacy will be, however, apparent to those who are familiar with the laws which govern the pressure of fluids, and who know that whatever buoyant power a body will exert in rising out of a liquid in which it has been immersed, is precisely that which was expended in forcing it below the surface to the point from which it begins to rise.

Says M. De la Hire:

"There is not any of those who pretend to have found out perpetual motion, who do not agree that two weights placed in a position to move, following their natural direction in equal time, or in any way reciprocal to their weight, remain in equilibrium. Yet there is no perpetual motion scheme where one cannot draw a conclusion quite opposed to this principle; for, whatever may be pretended, perpetual motion is nothing more or less than the elevation of one weight to a certain height by the descent of another weight at the same time; and reciprocally the restitution of the first to the place where it was before its movement, by the descent of the one that had been raised, and so on *ad infinitum*; sometimes by means of weights, which, being raised, in their fall agitate other weights; sometimes, by means of liquid bodies, which, being raised, can run, and move other parts far separated from the center of motion; from which no advantage can be derived, and which is entirely contrary to the preceding principle.

"Those who occupy themselves with this chimera, find nothing but embarrassment, for generally their machines have so many weights, etc., to move them, that their inventors forget always to be on their guard against the many hindrances that arise—the height, etc., of the powers employed, their natural direction, etc.—all these are sometimes so strangely jumbled together that it requires very hard work to be able rightly to distinguish them. This is one great reason that leads such persons to a false demonstration of perpetual motion; and when they propose their beautiful inventions to those who are versed in science, and who cannot immediately make them see or understand in what way their reasoning is false, they then publish to the world that the very cleverest men have been convinced of the truth of their perpetual motion."

ANTI-SNORING DEVICE.

Many persons during sleep breathe through open mouth, a practice which, in miasmatic regions, is held to render them much more liable to miasmatic poisoning than if they breathed



entirely through the nose, the hairs on the inside of the nostrils acting in some measure as a filter to prevent the entrance of miasmatic exhalations.

To prevent sleeping with the mouth open, M. F. Pinckard, of New Orleans, La., patented, through the Scientific American Patent Agency, Dec. 15, 1868, the "Sanitary Brace," illustrated in the annexed engraving. Its operation is sufficiently plain without further description, and it effectually prevents the dropping of the jaw and the opening of the mouth during sleep. It has also been suggested that the device would be a preventive of snoring, as it is asserted from the same source, that people do not snore when the mouth is closed.

The Hartford Steam Boiler Inspection and Insurance Company.

The Hartford Steam Boiler Inspection and Insurance Company makes the following report of its inspections for November, 1870:

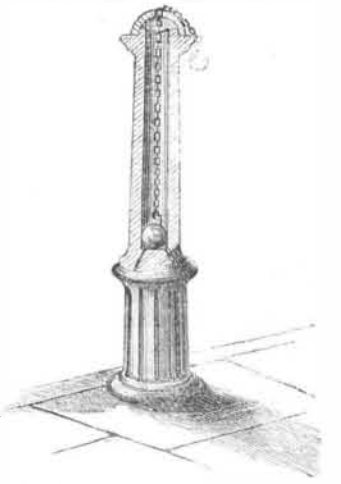
During the month 457 visits of inspection have been made, and 885 boilers examined—787 externally and 271 internally, while 126 have been tested by hydraulic pressure. Number of defects in all discovered, 566, of which 64 were regarded as dangerous. Defects in detail: Furnaces out of shape, 18; fractures, 54—8 dangerous; burned plates, 30—8 dangerous; blistered plates, 36—3 dangerous; cases of sediment and deposit, 109—6 dangerous; cases of incrustation and scale, 114—2 dangerous; cases of external corrosion, 34; cases of in-

ternal corrosion, 30—4 dangerous; cases of internal grooving, 4; water gages out of order, 51—11 dangerous; blow-out apparatus out of order, 7—3 dangerous; safety valves overloaded, 11—5 dangerous; pressure gages out of order, 64—3 dangerous, varying from—7 to +15; cases of deficiency of water, 4—3 dangerous; broken braces and stays, 26—3 dangerous; insufficient bracing, 8—5 dangerous; boilers condemned, 2.

We have no room for comment, but the record shows that there is great neglect in the management of steam boilers. We hope every engineer under whose eye this record may come, will see that none of the defects enumerated above can be found in, or on, the boilers and connections under his care. There were 13 explosions during the month, attended with fearful loss of life and property. Twenty-five persons were killed and 29 wounded.

IMPROVED HITCHING POST.

Our engraving shows a recently patented neat, handy, and tasty iron hitching post for horses, designed to prevent them from breaking halters, and to give free play to their heads, while, at the same time, they are prevented from entangling their fore feet with the strap, etc. The ring to which the halter strap is tied is attached to the end of a chain, which chain is attached to a ball or weight in the hollow of the post. A pull on the strap hoists the weight a short distance, and when the strain is lessened, the weight takes up the slack again, and so keeps the strap drawn tight within certain limits.



Threaded Envelopes.

A new form of envelope has recently become quite popular in Germany, and possesses the convenience of enabling one to open a letter when completely sealed up without the ordinary difficulty of finding an entrance. The arrangement consists in introducing a thread, which projects from one of the corners, by pulling which the lower edge of the envelope is cut through without injury to the inclosure, the address, or the stamp.—Exchange.

That is not new to us. Some three or four years ago it occurred to us that a device for opening envelopes would be welcomed by the public, and we prepared one with thread inserted as above described, and sent it to Munn & Co., of the SCIENTIFIC AMERICAN for examination. They wrote to us that a similar invention had been patented and we prosecuted the matter no further. Now it comes out as something new.—Monmouth (Ill.) Atlas.

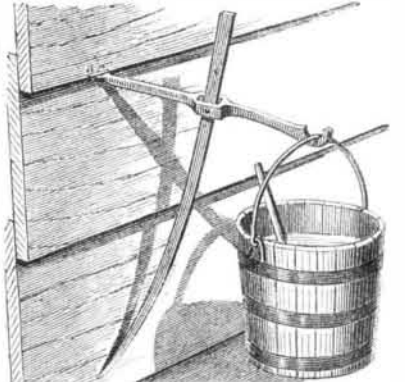
[The above contrivance is very old, and has been many times re-invented. During the past year it has been sent to us perhaps twice a week on an average by inventors residing in different parts of the country, each of whom has solicited our aid to obtain a patent. We have been obliged to inform them that the attempt would be useless, and have advised them to save their money. We think that the statement that the thread envelope is popular in Germany is a mistake. Ordinary envelopes are opened easily enough, and there is no demand for the threads.—EDS. SCI. AM.]

PAINT-POT HOLDER.

In painting the exterior of buildings, the paint pots are usually suspended from the rungs of ladders set up against the side of the building or suspended horizontally to form a scaffold. When, however, the ladder is set up against the side of the building, and the application of the paint requires reaching away to a considerable distance, the suspending of the pot near the brush saves loss by dropping, and time and labor in reaching from the pot to the point of application.

The device illustrated in the accompanying engraving provides for this. The pot is hung to a horizontal bar whose inner end has studs to engage the lower side of a weather-board, and this bar has pivoted to it a forked lever whose lower pointed ends engage the wall.

This device was patented January 8, 1867.



REPRODUCING FADED PHOTOGRAPHS.—The faded print is carefully removed from the cardboard on which it was mounted; and after the removal of all the paste it is rendered translucent by being charged with wax. It is now used as a *cliché* for printing its image upon a glass coated with collodio-chloride of silver, the action of which is intensified by a previous subjection to the fumes of ammonia. After the exposure, further density is conferred by a development with gallic acid and silver. The negative thus obtained is varnished and employed for printing in the usual way.