

ASTRONOMICAL NOTES.

OBSERVATORY OF VASSAR COLLEGE.

The computations and some of the observations in the following notes are from students in the astronomical department. The times of risings and settings of planets are approximate, but sufficiently accurate to enable an ordinary observer to find the objects mentioned. M. M.

Position of the Planets for April, 1875.

Mercury.

On the 1st of April Mercury rises at 5h. 14m. A. M., setting at 4h. 39m. P. M. On the 30th, Mercury rises at 5h. 23m. A. M., setting at 7h. 44m. P. M. Mercury is very unfavorably situated all through the month, as it is far from the earth, and its time of meridian passage is nearly the same as that of the sun.

Venus.

On the 1st of April Venus sets at 10h. 07m. in the evening, and on the 30th at 10h. 52m. The motions of Venus can be very easily followed during the month, as its course lies among the bright stars of *Taurus*. Its change of position at setting should be watched from night to night; it is farther and farther north all through the month.

Mars.

Mars rises on the 1st at 7h. 29m. A. M., and sets at 9h. 54m. P. M. On the 30th, Mars rises at 6h. 40m. A. M., and sets at 9h. 40m. P. M. Mars is small, but can be known by its ruddy light, and on the 1st of April it is very near Venus, and sets earlier than Venus.

Jupiter.

Jupiter rises on the 1st at 10h. 28m. P. M., and rises earlier and earlier every night, coming up on the 30th at about 8h. 21m. P. M., the star  $\beta$  *Scorpii* rising at nearly the same time. On the 4th, this star and Jupiter are almost nearly together, but at any time during the first week of April the planet, its moons, and the star can all be seen at once in the field of a telescope of low power.

Saturn.

Saturn rises on the 1st of April at 4h. 25m. A. M., and sets at 3h. 01m. P. M. On the 30th, Saturn rises at 2h. 37m. A. M., and sets at 1h. 20m. P. M. It will be seen that Saturn is above the horizon mostly in the daytime, and therefore is not well situated for observation.

Uranus.

Uranus rises on the 1st at 1h. 30m. P. M., and sets at 3h. 34m. the next morning. On the 30th, Uranus rises at 11h. 35m. A. M., and sets at 1h. 39m. the next morning.

Neptune.

Neptune, which can never be seen without the aid of a telescope, is at present very unfavorably situated, even for the best instruments.

Sun Spots.

The report is from February 22 to March 18, inclusive. In the photograph of February 22 was seen, on the edge, the last of the chain of spots mentioned in the last report. The pictures of February 25 and February 18 showed two small spots coming on. From February 26 to March 7 photographing and observations were interrupted by clouds; but the picture of March 7 showed faculae, without any visible spot, on the edge, going off. On March 9 a small spot appeared on the eastern limb, and it was still visible, March 18, on the western limb. The picture of this date shows also a small group coming on, surrounded by faculae, and two small groups near the center of the disk.

FIRE APPARATUS FOG ALARMS AND CORK MACHINERY.

Mechanisms of the above named descriptions constitute our extracts from Knight's "New Mechanical Dictionary" for the present week.

There are perhaps sixty patents for various forms of the fire annihilator. The devices particularly refer to the modes of construction, the acid and alkali chamber, and the method of mingling the gas-generating chemicals.

THE PHILLIPS FIRE ANNIHILATOR.

This invention was introduced into this country by P. T.

Fig. 2.

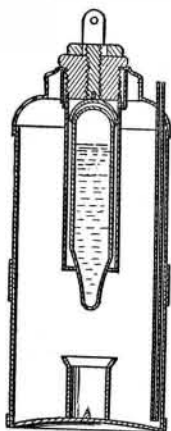
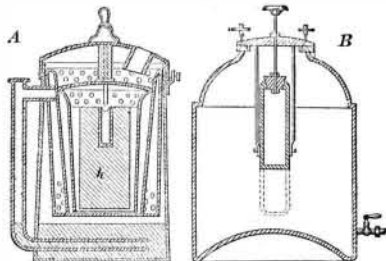


Fig. 1.



Fire-Extinguishers.

Fire-Extinguisher.

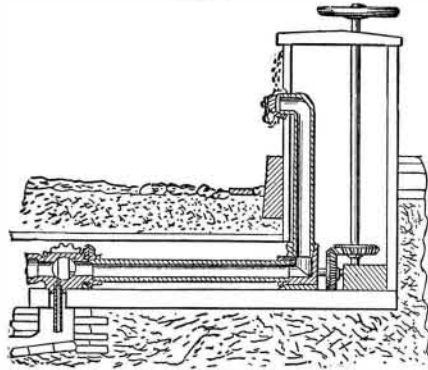
Barnum, the enterprising showman, some twenty years ago. At that time the newspapers of the day were full of its praise. A number of experimental exhibitions were given in this and other cities, and for a time, through Barnum's management, the Phillips fire annihilator was the great sensation of the day. But we believe the great showman, after expending considerably more than his receipts in this venture, concluded that the introducing of new inventions from abroad into our country, which is so much in advance of all

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others in respect of novel devices, was not his forte; and he finally abandoned the annihilator enterprise and returned to the exhibition business, in which he has acquired both renown and profit.

The annihilator is shown at A, Fig. 1; it was one of the earliest of these inventions. A compound of sugar and chlorate of potash is so placed as to receive the contents of a bottle of sulphuric acid, which is broken by striking a plug, on the top of the can, when a fire occurs. Around the perforate case which contains the mixture of sugar and chlorate is another case, and this is in a third envelope, between

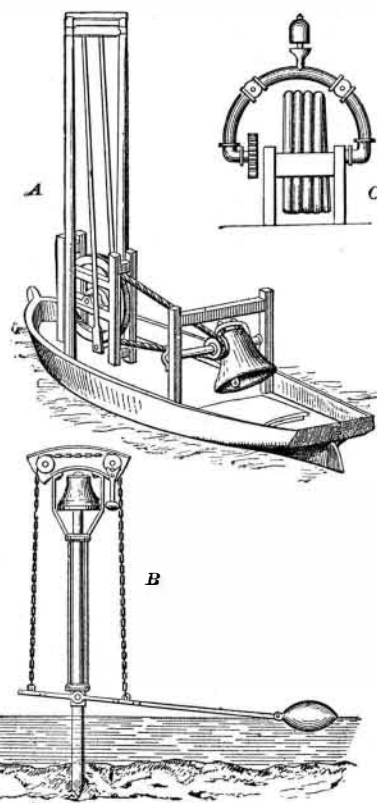
Fig. 3.



Fire-Plug.

which last and the outer shell is a water space. The carbonic acid produced by combustion passes out of the top of the machine, meeting on its passage out the water, which is raised in the side pipe by the pressure and heat of the chemical action, and which thus becomes saturated with the gas. A well known apparatus, now in the market, is represented at B. In this the sulphuric acid is in a leaden bucket hung upon trunnions below its center, so that, if set free, the bucket immediately turns upside down. It is kept rigidly upright, however, by a stopper attached to a rod passing through the cap of the apparatus. When the extinguisher is to be used, the stopper is pulled up by an exterior handle, when the bucket turns over and the acid and alkali are mingled, the reaction generating carbonic acid gas. The machine shown in Fig. 2 contains acid in a glass bottle, which

Fig. 4.



Fog-Alarms.

is shattered by dropping upon a stud, when forced below the flanges of the tin cylinder which holds it. An improved form of

FIRE PLUG

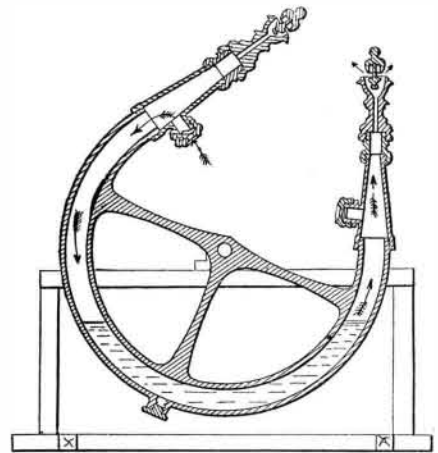
is represented in Fig. 3. At the point where the branch pipe is coupled to the main, the stopcock is placed, and it is operated by gearing and connecting shafts from a hand wheel in the vicinity of the plug.

FOG ALARMS

are various in their kinds, their operation, and their construction. As shown at A, Fig. 4, the apparatus is erected on the deck of a moored boat, and a pendulous frame is arranged to be swung to and fro by the motion of the vessel. A bar on this frame actuates a wheel, which, by means of a pulley and belt, rings the bell. In B, the clapper is moved by a cam wheel actuated by chains, which run over pulleys as the float arm rises and falls on the waves. C has a spiral coil

of tubing oscillating with the vessel. Each end of the spiral has a whistle and valve opening inward. The coil contains a quantity of water, which, in changing its position, forces the air out through the whistles, with a prolonged sound. In D the air is mechanically condensed and stored in a reservoir. The cam on the rotary shaft actuates the valve for the purpose of varying the sounds, to give a series of signals, more intelligible than single sounds repeated. A trumpet and whistle are attached to connecting pipes proceeding from the reservoir. The valve governs the air aperture in the

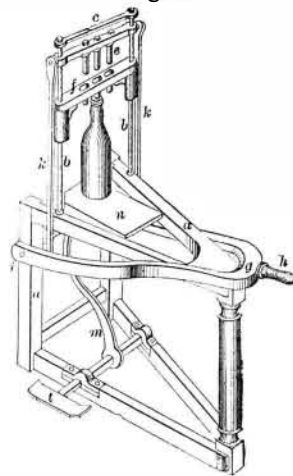
Fig. 5.



Fog-Whistle.

pipe leading to the trumpet. The fog whistle, Fig. 5, is similar in operation to the device, C, above. The vessel is tubular and semicircular; and as it is oscillated, air is forced out by whistles at its ends.

Fig. 6.



Masterman's Corking-Machine.

Fig. 6 is a

CORKING MACHINE,

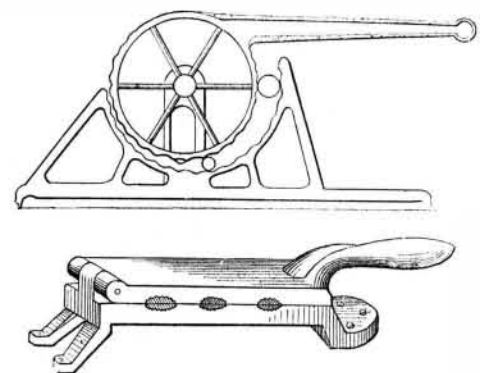
for inserting corks in bottles. The workman seats himself with one foot on the treadle, and the handle, *h*, in his right hand. He places a bottle on the wedge, *n*, with its neck beneath such one of the three tubes as will contain a cork of suitable size. Such a cork being placed in the tube, a motion of the treadle raises the bottle, and the depression of the lever, *h g*, drives the cork into the neck. Reverse motions of lever and treadle release the bottle. Two forms of

CORK PRESSES

are exhibited in Fig. 7. In the first, the cork is placed between the serrated surfaces of the concave and eccentric cam, and pressed to a less or greater extent by a partial rota-

Fig. 8.

Fig. 7.



Cork-Presses.

tion of the latter. The second form is simply a lever press with jaws. Fig. 8 is a

CORK PULL.

The jaws, while collapsed by the slide, are passed through the neck of the bottle, and, being opened, are then clasped around the cork, which is then easily withdrawn.

DECISIONS OF THE COURTS.

United States Circuit Court--Northern District of Illinois.

TRADE MARK CASE.—THE TUCKER MANUFACTURING COMPANY vs. LEVI C. BOYINGTON. [In equity.—Before Blodgett, J.—Decided October, 1875.]

BLODGETT, J.:

This is an application for an injunction to restrain the defendant from the use of the trade mark which has been registered by the complainant in the manner required by the Act of Congress. As the record now stands, I don't think this injunction ought to issue. It is a matter of discretion always with the court to issue an injunction or not, upon a case made in a trade mark suit. I cannot say but that the complainant may make a case upon final hearing that would entitle the complainant to an injunction; but it seems to me that it is not made as the record now stands. I have serious doubts whether the defendant infringes the complainant's trade mark. The words "Tucker spring-bed" were certainly common property from the date of the expiration of the Tucker patent in 1869. In January, 1875, the complainant, being the Tucker Manufacturing Company, and the party who had owned the patent during the lifetime of the patent, obtained the trade mark, which consists of a perspective of the Tucker bed bottom, with the letters "T. M. Co." in monogram, in the center of the picture, and over it are the words "Tucker spring-bed." It strikes me very forcibly that this trade mark is for the combination, and the defendant does not infringe unless he uses the whole combination. The defendant, Boyington, had the right to use a diagram of the spring-bed as common property, and it has been such since the expiration of the Tucker patent. It seems to me that while this may be a valid trade mark, when all used together, yet, when the defendant manufactures the spring-bed, he has the right to designate it as the "Tucker spring-bed," indicating that it is manufactured under the Tucker patent, and that he has, also, the right to