LESCALE'S AUTOMATIC FIRE ESCAPE.

Among the things most required in these days of tall buildings and narrow places of entrance and exit, are means of escape in case of fire for those who occupy the upper apartments. Apparatus for this purpose should be compact, portable, and yet strong and reliable. To embody these qualities in a single device has been the aim of Mr. John M. Lescale, whose fire escape is shown in the accompanying engraving.

The iron frame, A, which supports the several parts of the machine is secured in a washstand or some other suitable piece of furniture, which is placed upon casters, and made of sufficient weight and strength to suit the purpose. A double drum, B, is journaled to the frame, A, and two ropes, rope ladders, or chains are attached thereto, one in each groove of the drum. To these ropes or chains adjustable seats are suspended by means of hooks.

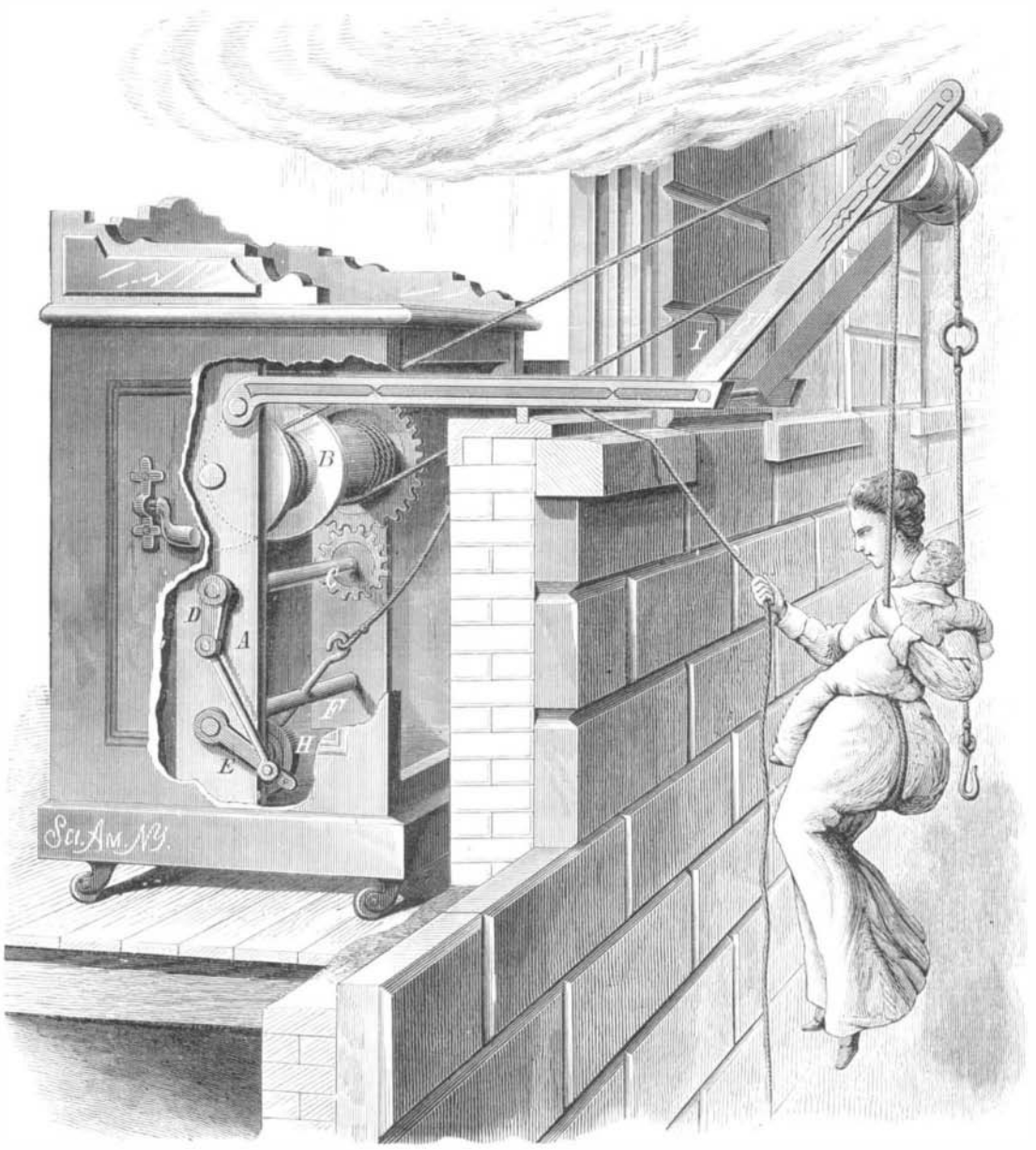
When the drum, B, is revolved it imparts through the medium of the gear wheels an increased motion to the shaft, C, which, in turn, by means of the cranks, D and E, of unequal radius, imparts a rocking motion to the shaft, F, that carries the pendulum or weight, H, which may be screwed up or down on the rod to regulate the rotary motion of the drum, D Screwing up the weight toward the shaft, F, will permit the drum, B, to run with an increased velocity; screwing the weight down produces the opposite effect. By means of this device the apparatus may be adjusted to any weight that is to be put upon the ropes or chains.

A jointed folding frame, I, is hinged to the top of the frame, A, and supports two rollers at its outer end.

In case of emergency, the washstand is rolled to some convenient place, say a window or a balcony, and if time permits, the folding frame, I, is made to project over the window sill or balcony. The end of either of the ropes wound on the drum is unhooked, and the imperiled person passes the rope first over one of the loose pulleys in the jointed frame, then passes it around his body, hooks it, and lets himself down easily and safely. By this time, if there are other inmates exposed, a second one unhooks the end of the other rope and also lowers himself to the ground, and in so doing causes the drum to wind up the first rope, ready to repeat the operation in favor of a third occupant, and so on. Every person descending winds one of the ropes on the drum, and thus prepares the machine for another. Should it be required, a rope, with a weight at one end, may be provided in the apparatus, which may be attached by one end to a hook on the pendulum rod, while the end carrying the weight is let down upon the pavement. By means of this line so connected with the pendulum rod persons descending will be enabled to check their descent, but while this may be very convenient when time enough is allowed, and order and calm prevail, yet the apparatus is so constructed that in pressing emergencies no time is required but what is strictly necessary to roll the stand to some suitable place, take hold of the end of one rope, and let one's self down, that is, a few seconds at most.

In addition to the above mentioned advantages, the apparatus herein described will be found of great service to facilitate the ascension of outsiders into buildings in conflagration, for the purpose of affording assistance, putting out fires, saving valuables, etc. It will also be found a safe and convenient auxiliary to masons engaged in erecting isolated chimneys to ascend and descend.

This invention was patented May 21, 1878, by Mr. J. M. Lascale, of Paincourtville, La., from whom further information may be obtained.



LESCALE'S AUTOMATIC FIRE ESCAPE.

New Inventions.

Mr. Richard J. McGowan, of New York city, has patented an Embalming Composition, consisting of a solution of saltpeter, thymol, chloride of aluminum, salicylic acid, and glycerin in alcohol and water.

An improved Shoe Horn has been patented by Mr. Julius Klaucke, of Solingen, Germany. This improvement consists in providing the shoe horn with a pendent rigid arm, and in hinging to said arm a toothed clamp piece and a cam lever, which is operated to cause the latter to clamp the leather tightly against the body of the shoe horn.

Mr. George J. Record, of Conneaut, Ohio, has patented an improved Cover for Butter Packages and other vessels. This invention consists in a cover formed of the two parts, having their adjacent or straight edges rounded or beveled, and the lever attached to the one part and overlapping the other part, whether the said lever be made narrow, in the form of a bar, or wide, in the form of a circle.

Mr. Samuel P. Groocock, of New York city, has patented an improved Clamp for Gluing Parquetry. This invention relates to the manufacture of sections of tessellated wood flooring; and it consists in an iron frame which is truly rectangular, and into which the several blocks composing the floor section are fitted prior to gluing, the blocks being then removed and coated upon the edges with glue, and replaced in the frame, there to remain until dry. The object of the invention is to confine the blocks so as to prevent the opening of the joints and the distortion of the section by the swelling of the wood by the absorption of moisture from the glue.

An improved Temporary Binder has been patented by John Lockhart, of Philadelphia, Pa. It consists of a cover section connected by strings with the opposite cover section, the strings being passed through holes of the same, and through centrally perforated exterior clamps of annular shape, that are notched or recessed at one point of the circumference. The strings are then wound around the clamps and passed to the inside of the cover section, where they are again wound around and retained by inner annular clamps.

Mr. James S. Mercer, of New York city, has patented an improved Sponge Holder for Mucilage, French dressing, and other bottles, by which the sponge or other porous material is held firmly in the neck of the bottle, while it may also be readily removed therefrom, if desired, either for refilling the bottle or replacing the sponge.

Mr. John P. Spiss, of Fairview, Ill., has patented an improved Hanger for Supporting the Eaves troughs or gutters of roofs of all kinds in a simple, cheap, and durable manner; and the invention consists in the connection of the supporting hangers with a cornice attached below the eaves of the roof, and riveted to encircling bands of the trough or gutter proper.

An improved Bung has been patented by Anton Schneider, of New York city. This invention consists in a thimble provided with vertical inside grooves, and inclines and stops on its lower end surface, in combination with a cap provided with a turnable central bolt having a crosshead, and with suitable packing rings; and in the combination, with the thimble and cap, of a packing ring provided at intervals with bosses or raised portions.

Mr. John Q. Adams, of Brooklyn, N. Y., has patented an improved Waste Pipe Valve. The object of this invention is to furnish an improved means for preventing sewer gas from passing into the room through the waste pipes of washbasins, bath tubs, privy basins, etc.

Mr. Louis S. Flatau, of Pittsburg, Texas, has patented an improved Hame Fastening, which is easily attachable to the hames and not liable to be detached by accident. The invention consists in the combination, with the slotted metallic hame straps, of a double recessed lever hook of peculiar construction.

Mr. Richard D. Ryerson, of Clinton, Me., has patented an improved Stove Leg, which is so constructed that it may be conveniently lengthened and shortened, to level the stove, to raise or lower it, to enable a carpet to be put under or removed from under the stove. It may be provided with casters to enable the stove to be readily moved from place to place.

Mr. James S. Morel, of Savannah, Ga., has patented an improved Glove Electrode, which is particularly intended for use in the healing art; and it consists essentially in a novel mode of connecting a magneto-electric current with a glove to be worn on the hand, and in certain details of construction and arrangement of devices employed in forming the connection, whereby provision is made for applying such current to any portion of the body of a patient which can be reached by the hand of either the patient individually or the medical or other attendant.

Mr. William Manley, of Rochester, N. Y., is the inventor of an improved Machine by which the Seam of Boots and Shoes may be divided and rubbed down evenly and smoothly in a very short time with a small amount of labor.

Mr. Marciene H. Whitcomb and John Bliss, of Holyoke, Mass, have patented an improved Stripping Attachment to Wool-carding Machines, by which a positive and perfectly sure stripping of the sliver is obtained in such a manner that it does away with the rattling, noisy combs, and the liability of damage which always attends their use.

Mr. Stephen W. Cornell, of Pleasantville, N. Y., has patented an improved Portable Screen for coal, sand, gravel, and other purposes, that is capable of being adjusted to any desired inclination, and also of being conveniently moved to any place in the yard; and the invention consists of a wire screen that is supported at any inclination on a forked rod, which is connected by a clamp and pivot joint to the screen, so as to be folded below the same when it is desired to be moved on its side wheels.

Mr. Andrew Johnson, of Kewanee, Ill., is the inventor of an improved Device by which Wall Paper may be Hung by unskilled persons quickly and easily, and with less trouble of wrinkling than it is done by hand, while also saving the trouble of getting on chairs or step ladders.

Mr. Harry C. Mann, of Philadelphia, Pa., has patented an Egg Beater, which is so constructed as to beat the eggs rapidly and thoroughly, and without throwing them out of the dish.

An improved Trunk has been patented by Mr. J. W. Henry, of Jamestown, Ind. The object of this invention is to improve the construction of trunks in such a way that the tray can be swung out to give convenient access to the interior of the trunk body with the greatest ease, even when filled, and without changing it from a level, and without disturbing its contents in the least.

Mr. Jacob M. Baum, of Selin's Grove, Pa., has patented an improved Tobacco Pipe, which consists of a cover or lid being attached to the rim of the pipe by a rear and front hook entering a rear socket hole and front groove below the rim. The lid is perforated, and has a central top slot, with hinged inner friction plate and outer auxiliary lid.

Mr. Daniel Fisher, of Cairo, Pa., is the inventor of an improved Fishway, which consists in a trunk or chute provided with dams or ledges, placed alternately at the sides of the chute, to check the current and form a sinuous passage for the water, whereby a channel is made for the fish to pass up or down; and the shape of the ledges is such that a wider channel is allowed in proportion to the depth of water.

Professor Sumner on the Times.

A refreshing change came over the work of the Congressional Labor Committee when Professor Sumner, of Yale College, was called to give his views with regard to the financial and industrial condition of the country. Up to that time the witnesses had chiefly been men of very limited knowledge, backed by limitless assurance. Professor Sumner did not pretend to know everything, nor to have an infallible specific for all labor troubles, real or imaginary. On the contrary, the years of candid study he had given to the relations of capital and labor in this country had taught him how very meager and unsatisfactory are the means for forming decided conclusions in regard to the matter. He must be a very bold man, the Professor said, who would claim that he had solved this problem. Great industrial revolutions have taken place all over the world during the past ten or fifteen years, and this country has had its share. And local causes have intensified the effects produced by general causes the world over. The professional political economist would be very timid about his own conclusions in regard to either causes or cures. The Suez Canal, the Pacific railroads, the cable telegraphs, and other agencies of speedy communication have revolutionized commerce. Stocks of goods are now telegraphed for, where formerly orders were given by ship communication. In former times the merchant had to carry a large stock of goods, enough to meet several months' demand. Now he can replenish his stock, by telegraph and steam, promptly and surely, and is thus enabled to get along with a minimum supply. The immediate and temporary effect has been an oversupply of goods, and consequently a glut of capital. But this derangement of trade could not last long; people would soon get accustomed to the new order of things, and the ultimate effect would be a great improvement in the condition of the laboring classes.

Thus, when the Suez Canal was completed, it was thought to be a failure, because the immense stock of goods which was immediately accumulated caused a glut, this glut a crisis, and then a reaction set in naturally, which checked business through the canal. But as soon as the goods that had accumulated were worked off, things adjusted themselves, and the Suez Canal business soon recovered. The increased movement of productions brought about by the opening of the canal must result in a very great improvement, and in a great development of the well being of all classes.

So in like manner it has been with machinery. Its first effect naturally is to destroy wealth, displace labor, and lock up capital. For example, the building of railroads had, as a matter of necessity, displaced stage coaches, etc., and thrown the men employed in that business out of work. It was the same with the introduction of the loom, and, indeed, wherever machinery has been employed. This, undoubtedly, caused a temporary irksome distress, but it is the penalty society has to pay for its gains. Ultimately society, which includes everybody, is benefited by the use of machinery. A century ago an agricultural laborer, or one of the operative class, lived in one or two rooms, with no sanitary comforts, no good means of lighting, cooking, etc. To-day he has more rooms, perhaps a whole house, with carpets, furniture, reading matter, good clothes for himself and wife, and good light for his dwelling. This is the effect of machinery, which has cheapened luxuries and brought them within the reach of those who a century ago could not aspire to them. There are people to-day in the United States whose fathers were displaced in the old country by machinery. Their fathers suffered poverty and were forced to emigrate. They came here and prospered, and their children must look upon the distress which drove them to this country as a family blessing. The temporary distress due to progress is unavoidable. What we call civilization has come to us through the struggles of generations of men. Machinery is only the modern form of its development.

Our own war and the consequent public debt; the Franco-German war, and the extravagance and speculation engendered in Germany by the receipt of the French indemnity, were mentioned as among the general causes of the recent commercial and industrial depression.

As for a remedy, the Professor had none to suggest, certainly none that legislation could furnish. We must each work through the period and do the best he can. A part of the cure would come through the redistribution of labor; but that could not be undertaken by Congress without doing a great deal of mischief. To attempt a redistribution of wealth by legislation would be infinitely worse. Each man gets just what comes to him by industry, ability, education, energy, and self-denial. Society owes no man a living. The fact that he is here does not prove that society must support him. Every man must fight his own battle with nature. Were government to interfere to see that every man gets a living, except by his own industry and thrift, it would end by making us a nation of paupers.

In this hasty summary we have barely touched upon the salient points of Professor Sumner's testimony. Possibly we may have failed to do him full justice. If so it must be charged to lack of space, not to any lack of sympathy with his views, broadly considered.

American Diamond Cutting.

In an article on the diamonds of South Africa in *Scribner's Magazine*, Dr. Morton says that the cleaning, cutting, and polishing of the rough stone can now be done as well here as abroad, or (as I believe, judging by results and from the testimony of experts) better. Stones cut in Europe are frequently remodeled and repolished in this country, thereby gaining much in value, and others abandoned in the rough as not worth cutting are here converted into excellent brilliants. The credit for introducing this industry is due to Mr. Henry Morse, of Boston, and Mr. Hermann, of New York, who yet remain the only competitors.

THE MICRO-TELEPHONE.

BY GEO. M. HOPKINS.

The Edison carbon telephone and the instrument known as Hughes' microphone, which according to general belief

Fig. 1.

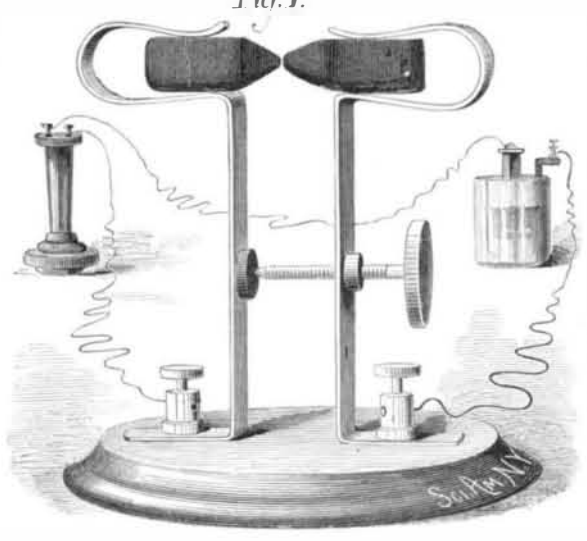


Fig. 1.—A NEW MICRO-TELEPHONE.

are identical as to principle, depend, according to the inventor's theory, upon the changing conductivity of carbon under a varying pressure. It has been generally admitted that no instrument that would make and break the electric current could transmit articulate sounds. Nor has such an instrument to my knowledge been produced prior to the one shown in the accompanying engravings. My instrument, so far as I know, differs materially from the multitude of other forms of telephone or microphone, which are all based upon the principle discovered by Edison.

Fig. 2.

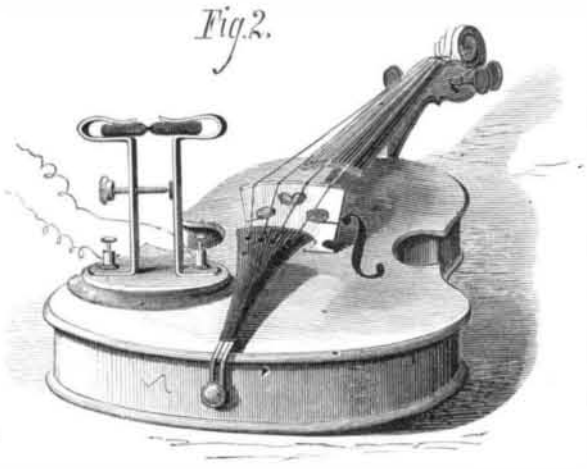


Fig. 2.—MICRO-TELEPHONE ON A VIOLIN.

The instrument which is the subject of this article consists essentially of two springs secured to a small base piece, and each supporting at their upper end a piece of ordinary battery carbon. These two pieces of carbon are placed in light contact, and the two springs are put in an electrical circuit in which there is also a receiving telephone of the Bell form.

Fig. 3.

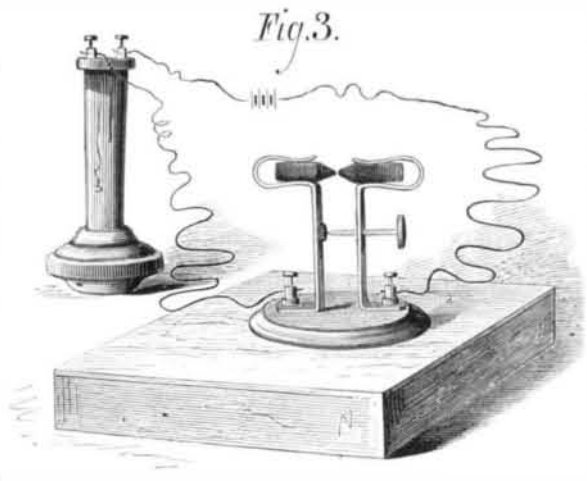


Fig. 3.—MICRO-TELEPHONE ON A PLAIN SOUNDING BOARD.

This instrument is represented full size, in detail, in Fig. 1. In Fig. 2 the micro-telephone is placed upon a violin. In Figs. 3 and 4 it is secured to a small sounding board. The two carbon supporting springs are fastened to a single base by the binding posts which receive the battery wires. An adjusting screw passes through one of the springs at or near its center, and bears against a rubber button projecting from the other spring. This simple device when placed on a table indicates in the receiving telephone the slightest touch of the finger on the table or on the instrument. Blowing on it makes in the receiving instrument a deafening roar; drawing a hair or a bit of cotton across the carbon is distinctly audible in the receiving instrument.

When the device is placed on a small sounding board every sound in the room is received and transmitted. An ant running across the sounding board can be plainly heard. And a touch upon the instrument or the table which supports it, which without the micro-telephone would be entirely inaudible, can be distinctly heard in the receiving telephone by aid of the instrument, even though miles intervene.

When it is placed on a violin, as in Fig. 2, blowing lightly upon the strings produces Æolian harp tones in the receiver, and a song sung to the violin is rendered in the receiving instrument with an Æolian harp accompaniment. When mounted on a violin or sounding board it will transmit articulate speech uttered in any portion of a room of ordinary size; it will receive and transmit the music of a piano, and even the turning of the music may be heard. Whistling, flute music, and other sounds are transmitted with their characteristics of volume, pitch, and timbre.

Fig. 4.

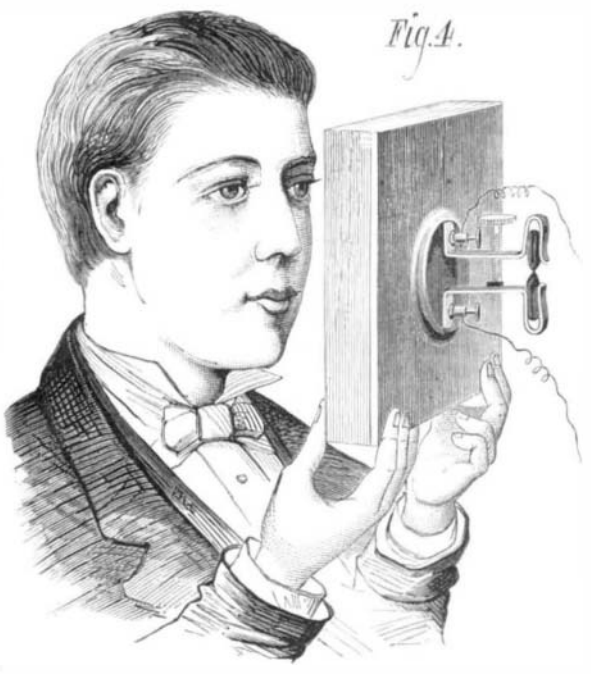


Fig. 4.—MICRO-TELEPHONE USED AS A TELEPHONE.

This instrument, although so very simple, is capable of doing all that has been done by other instruments of an analogous character, and it will be determined by further experiment whether it will do more.

Although carbon contact points are preferable, they are not absolutely essential to the operation of the instrument, as metallic points will do the same things, but not so satisfactorily.

ASTRONOMICAL NOTES

BY BERLIN H. WRIGHT.

PENN YAN, N. Y., Saturday, September 14, 1878.

The following calculations are adapted to the latitude of New York city, and are expressed in true or clock time, being for the date given in the caption when not otherwise stated.

PLANETS

	H.M.		H.M.
Venus rises	3 57 mo.	Uranus rises	3 59 mo.
Jupiter in meridian	8 23 eve.	Neptune rises	8 08 eve.
Saturn in meridian	0 32 mo.	Neptune in meridian	2 58 mo.

FIRST MAGNITUDE STARS, ETC.

	H.M.		H.M.
Alpheratz in meridian	0 30 mo.	Procyon rises	1 41 mo.
Mira (var.) rises	8 50 eve.	Regulus rises	3 45 mo.
Algol (var.) in meridian	3 27 mo.	Spica	invisible
7 stars (Pleiades) rise	836 eve.	Arcturus sets	9 47 eve.
Aldebaran rises	9 55 eve.	Antares sets	9 06 eve.
Capella rises	7 22 eve.	Vega in meridian	6 58 eve.
Rigel rises	0 05 mo.	Altair in meridian	8 09 eve.
Betelgeuse rises	11 47 eve.	Deneb in meridian	9 02 eve.
Sirius rises	2 07 mo.	Fomalhaut in meridian	11 15 eve.

REMARKS.

Venus arrives at perihelion September 19. Mars will be in conjunction with the sun September 18, and after that date will be a morning star, rising before the sun. Algol will be at minimum brilliancy September 20, 4h. 42m.

The zodiacal constellations now visible in the early evening are Libra, the scales, Scorpio, the scorpion, Sagittarius, the archer, Capricornus, the goat, and Aquarius, the water-bearer, mentioned in their order of succession from west to east. The moon is nearest Aldebaran September 17, being about 10° north.

The Speed of Rarus.

At Charter Oak Park, Hartford, Conn., Aug. 23, the fast trotter Rarus made the three best consecutive mile heats on record. Time: First mile, 2:15; second, 2:13½; third, 2:13¾. His fastest gait for a single quarter was at the rate of 2:10. The best time made by the same horse at Buffalo was 2:13¼.