

ASTRONOMICAL NOTES.

BY BERLIN H. WRIGHT.

PENN YAN, N. Y., Saturday, June 1, 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.
Mercury rises.....	3 34 mo.	Jupiter in meridian.....	4 00 mo.
Venus rises.....	2 36 mo.	Saturn rises.....	1 24 mo.
Mars sets.....	10 00 eve.	Uranus sets.....	0 04 mo.
Jupiter rises.....	11 09 eve.	Neptune rises.....	8 02 mo.

FIRST MAGNITUDE STARS.

	H.M.		H.M.
Alpheratz rises.....	11 25 eve.	Regulus sets.....	0 08 mo.
Algol (var.) rises.....	1 13 mo.	Spica in meridian.....	8 37 eve.
7 stars (Pleiades) rises.....	3 33 mo.	Arcturus in meridian.....	9 28 eve.
Aldebaran rises.....	4 52 mo.	Antares in meridian.....	11 40 eve.
Capella sets.....	10 35 eve.	Vega in meridian.....	1 54 mo.
Rigel rises.....	8 54 eve.	Alfairsises.....	8 34 eve.
Betelgeuse sets.....	7 33 eve.	Deneb in meridian.....	3 55 mo.
Sirius sets.....	6 59 eve.	Fomalhaut rises.....	2 13 mo.
Procyon sets.....	9 10 eve.		

REMARKS.

Twilight begins in the morning at 2h. 32m.; ends in the evening at 9h. 23m.; duration, two hours. The day is 14h. 53m. long, being 5h. 38m. longer than the shortest, and wanting only 13m. of the greatest length.

Mercury is at greatest western elongation June 2, and is brightest June 5, though probably he cannot be seen owing to the twilight. Mars, when first seen in the evening of June 3, will be about 1° south of the moon, and with Procyon in *Canis minor*, nearly south, and Betelgeuse in *Orion*, southwest, forms an isosceles triangle, the equal sides of which are 26°, and the base 19°. Venus and Neptune are in conjunction June 11, 3h. 18m. evening, Neptune being only 39' north. At the time Venus rises (2h. 24m. morning, 12th) Neptune will be less than ½° west of her, and about the same distance north. For those who possess telescopes of sufficient-power, this will be a favorable opportunity to look for this remote planet.

The Largest Electrotype ever Produced.

The Electro-metallurgical Company, of Brussels, has lately completed a colossal statue of Jan van Eyck, in bronze, by the system of electric deposition. The galvanic process occupied several months, although a thickness of but six to eight millimeters was attained. It is probably the largest object which has been produced by this method, being over twelve feet in height, and is regarded as a much more perfect imitation of the model than could be obtained by casting.

RUSSIAN TORPEDO BOATS.

The engraving, which we copy from the London *Graphic*, represents the new model torpedo boat, one hundred of which were recently ordered by the Russian Government. Each boat is 75 feet in length by 10 in breadth, with a draught of 5 feet, and a speed of 22 miles an hour. They are built of steel, and divided into numerous watertight compartments, which serve the double purpose of increasing

their strength and preserving their buoyancy in the event of any injury resulting from the enemy's fire. The vessel is armed with three torpedo poles of hollow steel, one at the bow, and one on each side of the boat, and the torpedoes consist of steel or copper cases containing from 40 to 50 pounds of dynamite, which would be exploded by electricity, and which is considered to be sufficient to sink any vessel afloat.

THE EMPIRE DUSTLESS ASH SIFTER.

The invention herewith illustrated is a simple device for sifting ashes, the operation being easily and quickly performed without dust, leaving the coarse and fine material



THE EMPIRE DUSTLESS ASH SIFTER

well separated. In the upper part of the casing is a hopper, A, closed, as shown, by a hinged lid. Beneath the hopper is the sieve, B, which, by its handle, may be reciprocated back and forth. The upper lid, while the sifting is going on, is kept closed, and the slide, C, is folded up beside the side of the case, so that all the fine material falls down to the bottom of the latter into a receptacle placed to receive it. The slide, C, is then swung into the position shown in the illustration, and the sieve is dumped, the cinders then passing out into the scuttle, as shown.

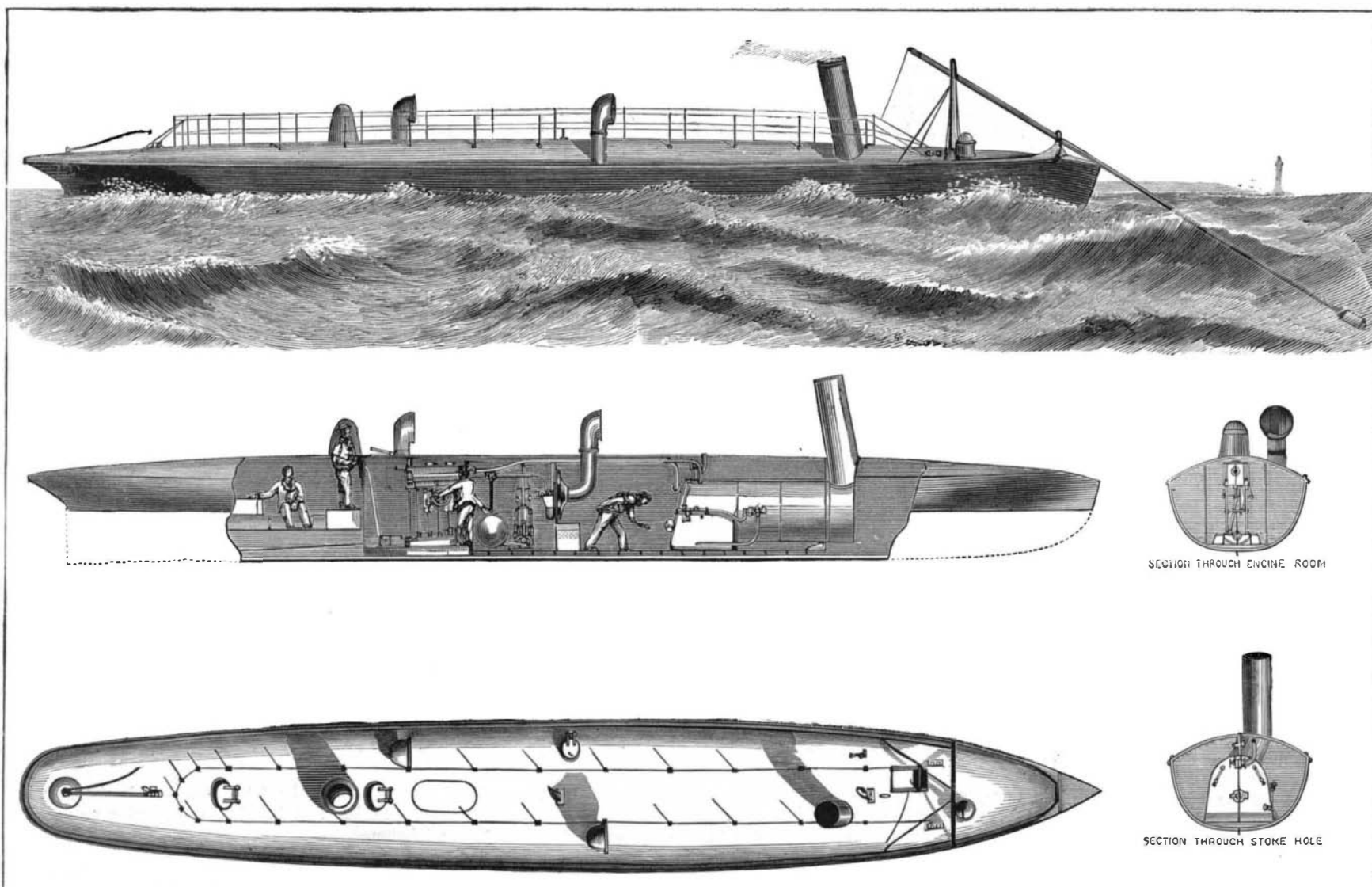
Patented through the Scientific American Patent Agency March 28, 1878. For further information address the inventor, Mr. J. E. Cumings, 7 Seymour Ave., Utica, N. Y.

The Importance of our Internal Commerce.

In a speech in defence of the system of protection, at Philadelphia, the other day, Senator Blaine paid a fitting tribute to our domestic commerce, the magnitude of which few appreciate. He said that while we have enjoyed the full benefit of protection to American industry against injurious competition from abroad, we have also enjoyed among ourselves the blessings of absolute free trade beyond that ever realized elsewhere by a population so large, over so vast an extent of country. With a broad land inhabited by a population that will soon be 50,000,000; with 15,000 miles of ocean front on the Atlantic, the Gulf, the Pacific, and the Arctic ocean; with five great interior seas, each more valuable than those waters for whose mastery European empires wage bloody and wasteful wars; with rivers connecting our States in a network of inland navigation greater than all the rivers of Europe combined; with railroads joining lake to Gulf and ocean to ocean—on all our ocean coast, on all our interior seas, on all our rivers, over all our railroads, between all our States, and with all our Territories, trade is absolutely free for all American products and fabrics, without fetter, or charge, or fee, or any governmental tax whatever, national, State, or municipal. And the great organic law of the land declares that it shall always remain so. The vast importance of our foreign commerce is now exciting the attention of the whole country. It has grown so large that its total for a single year amounts to nearly \$1,200,000,000; but compared with our domestic commerce it is absolutely insignificant in extent. The traffic by railroad alone, in this country, is estimated to be sixteen times as large as our foreign commerce. And when we add to that the commerce of lake, and river, and canal, we have an aggregate which amounts to twenty-five times as much as our foreign commerce, including both exports and imports.

Silk Industry at Home and Abroad.

The annual report of the American Silk Association gives the total silk products of the country for 1877 as 1,177,504 lbs., the value of which was \$21,411,436. The value of reeled silk consumed was \$8,456,341, and of spun silk \$850,000, making a total of silk threads to the value of \$9,306,341. The silk consumed in sewings and twist, and in weaving, was worth \$12,105,095. The imports of raw silk were 9,377 bales of 100 lbs. each, against 9,887 bales in 1875, and 1,249 bales in 1876. The production of raw silk throughout the world partially recovered last year from its great decline in 1876, but has not yet reached its previous average. According to the *Bulletin des Soies et des Soieries*, the total silk production for 1874 was 22,363,098 lbs.; in 1875 it was 21,161,313 lbs.; in 1876 it fell to 17,660,495 lbs.; rising again in 1877 to 18,791,855 lbs. The falling off took place almost wholly in France and Italy. In 1876, under the stimulus of high prices, the exports of Japan rose from an average of 14,000 bales to 20,000 bales. There was a marked increase last year in the number of bales exported from Japan direct to this country.



RUSSIAN STEEL TORPEDO BOAT.

New Agricultural Inventions.

A combined Cultivator and Corn Planter, patented by Mr. J. Hamelback, of Hopewell, Ohio, is arranged to be used independently of the seed boxes as a simple cultivator or to act as a furrow opener for the seed. The seed boxes are placed in the rear of the cultivator teeth, are made detachable, and are applied to the rear slotted bar of the cultivator by supporting arms in connection with connecting rods and an operating crank shaft and lever.

Mr. B. F. Price, of Moine, Ill., has patented an improved Stump Extractor, which possesses among other advantages means for rapidly removing the stump after it is once started; an additional section to be applied to the end of the lever to increase its leverage when the power is not sufficient; and devices which adapt the chain to be fastened around a tree or object which will not allow the chain to be thrown over its top.

An improved Bale Tie has been invented by Mr. C. Battle, of Warrenton, Ga. The buckle is flat and T-shaped. Its broad end is provided with a slot having sharp or angular edges, to adapt it to receive and bite one end of the bale band, and the other end is bent upward and has lugs or projections for locking with the slotted free end of the band.

An improved Harrow, invented by Mr. G. Watt, Sr., of Richmond, Va., is formed of two flexible sections, which are connected and held apart by bars which allow independent motion. Each section is composed of toothed transverse bars connected by chains, the tension upon which, when the harrow is in use, serves to hold the teeth of the several bars at the proper angle. A heavy drag chain is attached to the rear toothed bars of the harrow sections for the double purpose of increasing the tension on the draught chains that connect the several bars, and pulverizing and smoothing the surface of the soil.

In a Plow invented by Mr. C. Koppenheffer, of Halifax, Pa., the improvement consists chiefly in constructing the beam of iron, and pivoting the same to an upward extension of the mould board, while its rear end is reduced in size, screw threaded, and bent around into a vertical position so as to be secured between two lips on the mould board by a nut screwed upon its end. The invention also consists in the peculiar means for adjusting the beam to the right or left.

Mr. H. Satterwhite, of Martinsville, Ind., has made an improvement in Toe Weights for regulating the gait of trotting horses. It consists in a metallic band having hooks at its extremities, which enter holes in the horse's hoof upon the sides, combined with a toe weight having two spurs at the bottom, which enter the horse's hoof at the front, the same being connected with said band, and the latter adjusted and tightened to hold the toe weight firmly to the hoof, independently of any connection with the shoe and without the use of an encompassing band encircling the rear and tender portion of the horse's hoof.

Mr. W. L. Freese, of Mohawk Village, Ohio, has invented a Grading Machine for making roads, banks, levees, etc. It consists of a series of scrapers actuated by ropes and working between side frames and a central frame or truck. Power is supplied by a steam engine on the middle truck, and communicated by means of ropes and pulleys.

An improved Seed Planter for corn, cotton, and other seed, has been invented by Mr. B. F. Adams, of Burton, Texas. It is a frame with central front and side rear plows, carrying in slotted uprights a flanged seed box which moves vertically, and which may be raised, to interrupt the dropping of the seed, by means of a hand lever.

In a new Grain Separator, the invention of Mr. S. E. Adams, of Plain View, Minn., the object is to operate the shoe frame, which contains the grain sieves and screens, with minimum friction and less expenditure of power than heretofore. This is accomplished practically by means of a slotted arm or bracket attached to the side of the shoe, and a reciprocating bar operated by the fan shaft and having a stud.

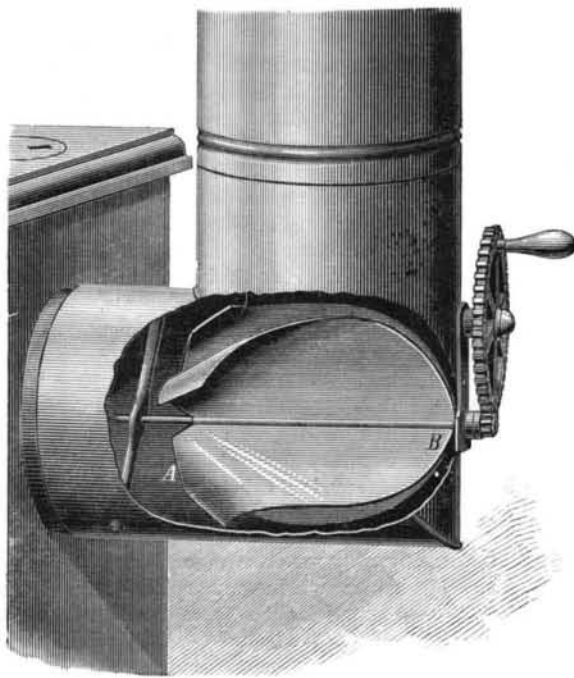
Mr. M. V. Dadisman, of Luray, Va., has invented a combined Grain Drill and Fertilizer, in which the arrangement is such as to secure the seeding of the grain, the fertilizing of the same, and the sowing of the grass seed, all in a single operation, or the performance of said processes singly, as may be desired. A number of improvements in the details of the machine are provided, to render it complete and efficient.

Mr. W. F. Senter, of Marshall, Mo., has invented a Marking and Dropping Attachment for Corn Planters which is claimed to insure planting in accurate check row, the seed dropper and the shaft of the marker wheel being connected by suitable mechanism, so that each time an arm of the latter comes into vertical position upon the ground the dropping slide is operated.

ANDREWS' DRAUGHT APPARATUS FOR STOVES.

The object of the invention herewith illustrated is to produce an artificial current of air to induce draught through the grate and fire pot of a stove, especially while a fire is being started. It is claimed to cure smoky stoves, and to aid combustion so rapidly that it is unnecessary to maintain a bright fire, except when the same is absolutely required for cooking or heating purposes.

The engraving exhibits the device in the stove pipe elbow, a portion of which is broken away to allow of its being seen. It consists of a suction fan at A, and blower fan at B, combined on a shaft, which has its bearing in a bar arranged across the pipe, and which is rapidly rotated by the



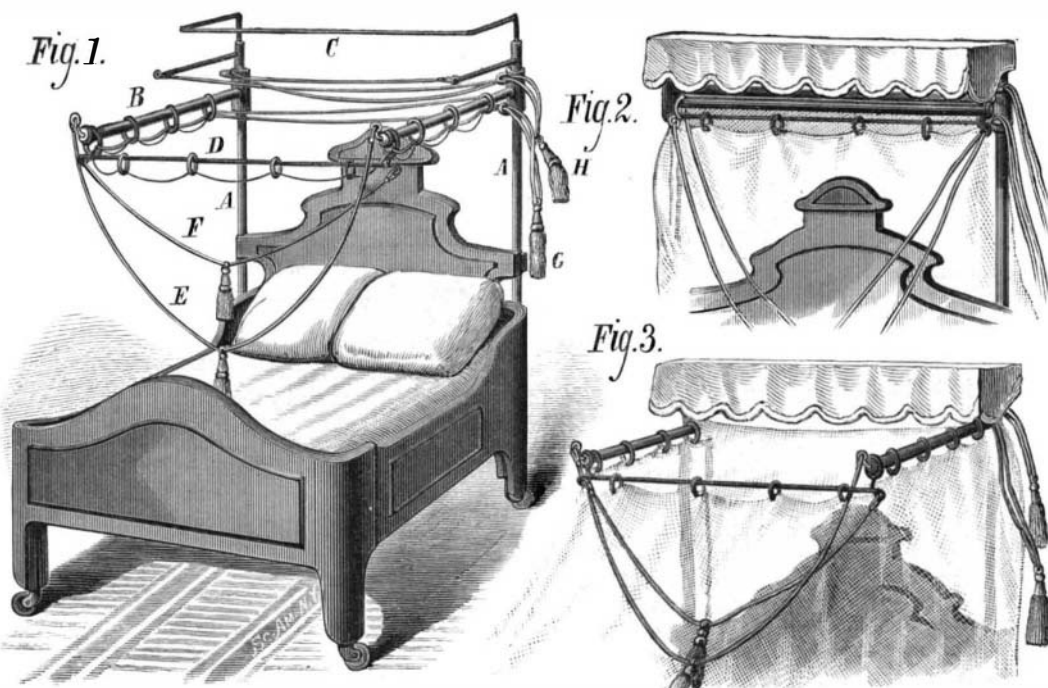
ANDREWS' DRAUGHT APPARATUS FOR STOVES.

crank and gearing shown outside the pipe. The suction fan draws in the air, and the blower portion forces it up the chimney. The apparatus may be applied either to the pipe, as shown, or to any other portion of the stove.

Patented January 22, 1878. For further information address the patentee and manufacturer, Mr. J. B. Andrews, 33 Broadway, New York.

Laryngostroboscopy.

Under this astonishing title, Dr. Oertel, of Munich, describes a method of observing the vibrations of the vocal



VOLLE'S MOSQUITO NET FRAME.

cords during the production of sounds, from which considerable interesting and valuable information in regard to the physiology of the voice has resulted. The apparatus consists of a laryngoscope mirror, a strong light, and an arrangement by which the light shall be rapidly interrupted. The effect of the interruption of the light is to prevent the impressions made by the vibrations upon the retina from being modified before they can be perceived. The interruption may be conveniently produced by means of a perforated diaphragm revolving rapidly, and at a rate proportioned to the rapidity of the vibrations of the sounding cord; or it may be by a tuning fork of the proper note. The interrupting apparatus must be placed between the light and the mirror, or behind the mirror between it and the observer.

By this means it is possible not merely to observe accurately the vibrations of one of the vocal cords, but also to compare the vibrations of one with those of the other.

How Kaga Ware is Made.

The decoration of Kaga ware is peculiar and easily recognized, being marked by a free and sometimes gaudy use of red and gold, and a lavish introduction of figures. A white stone porcelain is commonly used as a ground, though imitated Satsuma is in favor also. The products of the famous Kaga region have seldom undergone the dangers of transportation to the coast; consequently the name should be understood to apply to a style of ornamentation rather than to any geographical origin or distinguishing character of material. In this ware the red is first baked in, then the gold is added, and the porcelain again subjected to the fire. Finally the gold is burnished by a round metallic instrument, which brings out the luster wonderfully. A correspondent of the *Evening Post* found the appliances in the shop of a leading maker in Tokio to be curiously limited and rude. The painting is done in a small apartment, which, however, constitutes pretty much the whole house. The furnaces consist of two circular mud ovens, double, so as to allow a free circulation of hot air around the inner chamber, and of a size to admit but a very few pieces at once. During the baking, which takes several hours, an attendant feeds the fire with wood, the smoke of which, after considerable searching, finds a small hole in the roof through which to escape. It is a very simple family affair; the head of the house busying himself in what, if not the parlor, is the drawing room, while the wife and her kettles and the boy and ovens divide the kitchen between them. Yet in this quiet house of art some of the choicest Kaga ware to-day in Paris was made.

California vs. Australian Wool.

Formerly the greater part of the wool used in the knitting factories at Cohoes came from Australia. A few years ago samples of California wool were tried and found to be of superior quality, though so dirty that half the freight charges were paid for dirt. To remedy this defect large wool scouring establishments were opened in California, and ever since then they have been sending clean wool, saving not only half the cost of freight, but placing the Cohoes manufacturer in possession of a better article than Australia could furnish. As a natural consequence the Australian wool is now entirely discarded. Sheep raising is wonderfully increasing in Oregon, and the prospect is good that in a few years the Pacific coast will have a monopoly of the wool trade.

IMPROVED MOSQUITO NET FRAME.

The improved mosquito net frame herewith illustrated is so constructed that it may be extended over the bed or folded compactly as desired. It consists of two L shaped parts, composed of a vertical post, A, and horizontal arm, B. The posts are swiveled to the head of the bedstead, and their upper ends are connected by a rod, C. The arms are connected by the rod, D, which is attached by swiveled rings. To this rod and to the arms a mosquito net is attached by sliding rings which are connected by a rod. The cord, E, is secured to the ends of arms, B, for the purpose of swinging them forward and thus extending them parallel over the bed. When thus adjusted the rod, D, is drawn forward by the cord, F. The cord, G, serves to draw the rod, D, back, and by pulling the cord, H, which is attached to short lever arms projecting from the tops of posts, A, the arms, B, may be swung or folded inward. The net, which is supported on the frame, may thus be extended, as shown in Fig. 3, or retracted, as in Fig. 2, either by the person occupying the bed or by one standing beside it. When folded it will be seen that the device occupies but very small space.

Patented through the Scientific American Patent Agency April 3, 1877. For further information relative to sale of rights, etc., address the inventor, Mr. Johann F. Volle, Houston, Texas.

A Mint for Honduras.

A complete mint, with all its appurtenances, will soon be shipped to Honduras from Philadelphia. The machinery, made by Howard, is of the finest description. In addition are sets of dies made at the United States mint. The order to American manufacturers was given agreeably to a resolution of the Government of Honduras providing for a national mint and assay office, the capacity of which will be at least \$1,000,000 a year, or sufficient for all present requirements. A skilled assayer and machinist from the United States will go out to superintend the smelting of ores and the coinage, which conforms to the standard of this country.