

ing wheat and other grain preparatory to grinding, and it consists of a drum having a double head in its upper end, and a head and discharge funnel at its lower end, and containing a number of vertical tubes, which run through both of the upper heads and also through the lower head.

George R. Stetson, of New Bedford, Mass., is the inventor of an improved Screw-cutting Die, which consists in a holder formed of a solid piece of metal, having a central aperture for receiving the article to be threaded, and slots for receiving the chasers or thread cutters, and having recesses for containing fastening plates, which engage grooves formed in the sides of the chasers.

Jordan Woods, of Glasgow, Mo., has patented an improved Tobacco Germer, which consists of a cap or shield provided with a projecting metallic nail or cutter, and jointed to a split ring. The device is to be worn on the thumb, and the artificial nail is to be used in the same manner as the natural thumb nail is used in removing germs or suckers from tobacco plants.

Benjamin M. Thomas, of Brooklyn, N. Y., has devised an improved Wrapper, by which needles are inclosed in a neat and convenient manner, the wrapper being readily opened for inspecting the needles without removing them therefrom, and quickly closed again, so that the needles may be conveniently shipped and handled.

An improved Bird Cage has been patented by Edward Weissenborn, of Hoboken, N. J. In this bird cage the upright bars are connected with each other and secured in their proper relative positions without the use of solder, and in such a way that they will be held firmly and securely in place, while at the same time having a neat and substantial appearance.

Wm. S. Hull, of Jackson, Miss., has patented a Flying Toy, which is an improvement upon the aerostat or flying toy for which letters patent were granted him May 8, 1877. The improvement consists in fastening one of the propellers to a tube, and the other to a stem revolving in bearings in said tube, connecting the stem and the tube by a torsional spring to give reverse motion to the propeller, and providing a spring catch mechanism for holding the device in check when wound up, until it is to be given to its flight.

William A. Abbott, of Westfield, Mass., has patented an improved Apparatus for Bundling Cigars, which will enable the work to be done much quicker than when done in the usual way, and produce neater and more uniform bundles. It will enable the bundles to be put up in solid metallic bands, and will give a taper to the ends of the bundles when desired.

Narcisse Pigeon, of Brooklyn, N. Y., has invented a new Process for Manufacturing Glucose, which consists in the following steps: First, slowly heating the corn mash to 185° Fah. or thereabout; second, adding a per cent of malt in the first stage of the process, before the temperature of the mash has reached 125°; third, adding another per cent of malt in the second or last stage of the process, that is to say, after the mash has cooled to 152° or thereabout; fourth, filtering the mash and concentrating the product by evaporation.

John J. Vincent and George B. McMillan, of Poy Sippi, Wis., has patented an improved Music Leaf Turner for pianos and organs, which consists of vertical jointed arms that are turned by separate pinion and sliding rack bar, and connected by spring clamps at the bottom and top of the sheet of music. Each upright arm is locked at the joint by means of a sliding sleeve of the lower clamp, for being retained in upright position or folded down for closing the piano or organ.

An improvement in Drive Well Point Filters has been patented by Martin J. Eich, of Plymouth, Ind. This filter is so constructed as not to interfere with or be injured by driving and turning the points. The filter consists of plates bent longitudinally into triangular form, placed side by side, and having their edges notched and soldered to the perforated tube.

Charles J. Schurheck and Charles A. Stevenson, of New York city, have invented an improved Loom Shuttle, which is provided with tension devices arranged to give a uniform tightness to the thread whatever part of the bobbin it may be unwinding form, and which is easily adjusted to give any desired strain to the thread.

A New Disinfectant.

Under this title, says the *British Medical Journal*, Dr. John Day, of Geelong, Australia, recommends for use in civil and military hospitals, and also for the purpose of destroying the poison germs of small pox, scarlet fever, and other infectious diseases, a disinfectant ingeniously composed of one part of rectified oil of turpentine and seven parts of benzine, with the addition of five drops of oil of verbena to each ounce. Its purifying and disinfecting properties are due to the power which is possessed by each of its ingredients, of absorbing atmospheric oxygen, and converting it into peroxide of hydrogen—a highly active oxidizing agent, and very similar in its nature to ozone. Articles of clothing, furniture, wall paper, carpeting, books, newspapers, letters, etc., may be perfectly saturated with it without receiving the slightest injury; and when it has been once freely applied to any rough or porous surface, its action will be persistent for an almost indefinite period. This may, at any time, be readily shown by pouring a few drops of a solution of iodide of potassium over the material which has been disinfected, when the peroxide of hydrogen which is being continually generated within it will quickly liberate the

iodine from its combination with the potassium, and give rise to dark brown stains.

ASTRONOMICAL NOTES.

BY BERLIN H. WRIGHT.

PENN YAN, N. Y., Saturday, July 27, 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.

Venus rises.....	H.M.	2 27 mo.	Saturn rises.....	H.M.	9 53 eve.
Mars sets.....		8 11 eve.	Saturn in meridian.....		3 54 mo.
Jupiter rises.....		7 09 eve.	Uranus sets.....		8 26 eve.
Jupiter in meridian.....		11 45 eve.	Neptune rises.....		11 22 eve.

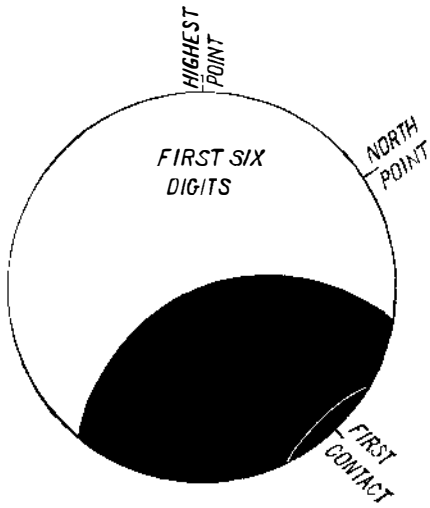
FIRST MAGNITUDE STARS.

Alpheratz rises.....	H.M.	7 49 eve.	Regulus sets.....	H.M.	8 24 eve.
Algol (var.) rises.....		9 29 eve.	Spica in meridian.....		4 57 eve.
7 stars (Pleiades) rise.....		11 48 eve.	Arcturus in meridian.....		5 48 eve.
Aldebaran rises.....		1 12 mo.	Antares in meridian.....		8 00 eve.
Capella rises.....		10 35 eve.	Vega in meridian.....		10 10 eve.
Rigel rises.....		3 18 mo.	Altair in meridian.....		11 22 eve.
Betelgeuse rises.....		3 04 mo.	Deneb in meridian.....		0 18 mo.
Sirius.....		invisible.	Fomalhaut rises.....		10 29 eve.
Procyon.....		invisible.			

REMARKS.

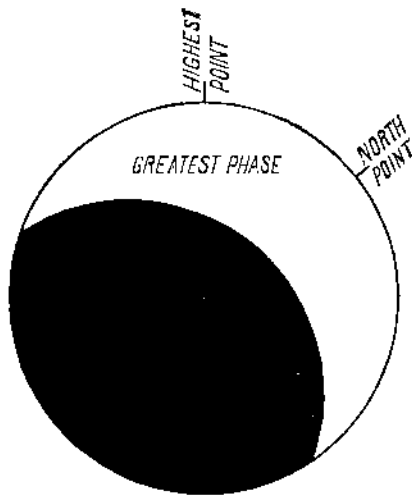
Venus is near the moon this date at 4h. 9m. A.M., being about 5° south. Mars is near the moon July 30, being about 2° north. Jupiter is in opposition, that is, 180° east or west of the sun, July 25.

The following engravings of the phases of the eclipse,

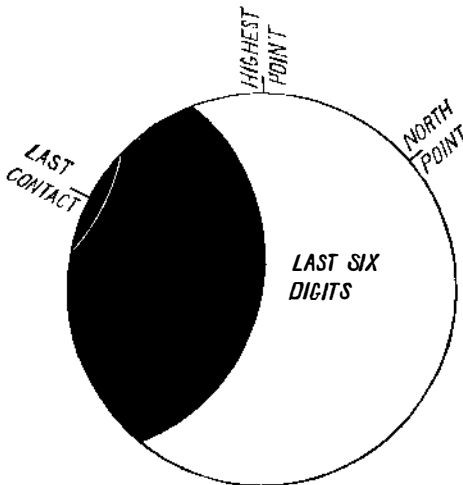


July 29, represent the general appearance in the Middle and Northern States.

The sun will be totally eclipsed July 29, in the afternoon, and will be visible generally throughout the United States as a partial eclipse. The line of central eclipse—the region



over which the center of the shadow passes—begins in central Asia, Lat. 55° N., Long. 165° W. of Washington, and crosses Behring Strait into Alaska at 65° N. Lat., taking a southeasterly course through British America and the United States. The total phase will be observed from various points along the route of the Union Pacific Railroad. Sherman



station and Ogden have been selected as points of observation because of their great elevation, thus avoiding the denser portion of the atmosphere. By this means the distinguishing properties of instruments is increased, and con-

sequently a much higher power can be used than would otherwise be possible and give good results. Near Denver the total occurs at 3h. 27m. P.M., local mean time, with a magnitude of 12.1 digits. The line of totality leaves the United States near Galveston, where a total phase occurs at 4h. 30m. P.M., local mean time, passing across the Gulf of Mexico and the western extremity of Cuba, giving a total phase at Havana at 5h. 34m. P.M., ending in the Caribbean Sea just off the southeast shore of the island of St. Domingo, where the total occurs at sunset. At New York city the eclipse begins at 4h. 42m. P.M.; middle, 5h. 35m. P.M.; end, 6h. 28m. P.M. Size 7.8 digits upon the sun's southern limb.

THE CURIOSITIES OF TOBACCO.

The passion for rare collections is curiously exemplified in the instance of a gentleman residing in Birmingham, England, who has traveled extensively, and has for years devoted much time and money in obtaining from every part of the world all kinds of tobacco and preparations of tobacco, pipes of every nation and tribe, snuff boxes and bottles, and a large library—shelves and floors piled up with books—containing all that has been written and published in favor of or against the use of the weed, from King James' "Counterblast" to Trask's pamphlets, and whatever else there may be. The variety of his acquisitions is constantly increasing, until now his collection is not only of great intrinsic value, but a wonder and delight to those possessing taste for rare and exquisite work and curious designs. There is scarcely a tribe in Africa or America or a solitary island of the ocean that has not contributed something of its handiwork to this collection in the shape of pipes—demonstrating the temporal consolation and refuge of men—some of them of strange, uncouth shapes and workmanship, and others giving evidence of good advance in artistic taste and skill.

Those from China and Japan, however (including opium pipes), with their profuse and exquisite ornamentation in gold, silver, and enamel, are the gems of this part of the collection; while of every style of earthen pipe, from the first rude clay to the finest and most beautifully decorated porcelain, his cabinet contains one or more specimens, by which is indicated, as well perhaps as by a collection of old china and porcelain, the progress of the ceramic art.

But the most beautiful and costly of his treasures are the superb antique snuff bottles, numbering several hundreds, mostly of Chinese and Japanese manufacture, and in form generally a flattened oval of from 1½ to 2 inches across, and from 2½ to 3½ inches long, with caps or stoppers having a small spoon attached with which to withdraw the snuff and apply it to the nostrils.

Those of gold and silver, though in many instances wrought with all the fancy and skill imaginable, are of less intrinsic or artistic value than are many of the others. Here are some of carved jadestone, others of carnelian, others of beautiful agates, and next one of the larger size fashioned from a single sapphire; and here are several of the purest rock crystal, cut and polished as clearly on the inside as on the outside; but the jewels of the collection are those of opaque glass, made apparently by the imposition of a layer of one brilliant color over another—in some cases there are three or more layers—and ornamented with designs cut through to the innermost one, after the manner of cameo cutting.

In most instances these bottles bear dates and monograms, which enable one who has thoroughly studied them, as has this gentleman, to trace the progress of the art through centuries.

It is impossible in this article to give more than an idea of this collection, but its owner is preparing a descriptive and illustrated catalogue of it, the drawings and coloring being done by students of the Sheffield School of Design, of which he was founder and president, which will be in itself a work of art and a valuable addition to any library.

PRESERVING FISH BY HYDRAULIC PRESSURE.

According to the *Fishing Gazette*, Mr. Johannes Eckart, of Munich, claims to have discovered a method of keeping fish perfectly fresh for many days after capture. His plan of procedure consists in impregnating them, by means of hydraulic pressure, with a weak solution of salicylic acid, packing them in casks or cases, and pouring gelatine over them. The latter serves to prevent them from becoming stiff and dry. Prepared and packed in this manner they may, it is said, remain from ten to fifteen days, and even longer, en route, without detriment to their flavor or appearance. Mr. Roosen, of Hamburg, who is turning this new system of preservation to practical account, has received the most satisfactory reports respecting his consignments of fresh and salt water fish to distant countries. Trout caught near Munich, and treated according to Eckart's plan, arrived, it appears, at Bergen, in Norway, and in New York in a perfectly fresh state; and sea fish dispatched from Ring kjöbing, in Denmark, to Dresden, Leipsic, and other inland German towns, have found such favor as to encourage several Consumvereine to give orders for weekly deliveries. Sample consignments have also been made to England, and Mr. Roosen proposes to arrange for regularly supplying the London market. As one of Eckart's patent impregnating machines, large enough to hold 400 pounds of fish, will prepare some 8,000 pounds a day, a considerable amount of piscine produce can thus be quickly preserved for dispatch to any destination; and, since ice is altogether dispensed with, and no necessity exists for sending the fish by fast trains, the cost of transport is of course greatly reduced.