Pierre Audoye, of Bordeaux, France, has a series of circular bushes for cleaning, applying blacking, and polishing, and a treadle for imparting rotary motion to the same. The improvement relates particularly to the means for applying blacking to one of the brushes.

An improved horse collar has recently been patented by Mr. Fletcher C. Scott, of Fincastle, Va. This invention is an improvement in the class of horse collars in which the hames and collar proper are permanently attached to each other. The inventor forms the collar proper of a soft stuffed inner portion and an outer leather plate, which is comparatively stiff and forms the ornamental face of the collar, and also covers and protects said inner part. The collar is divided at top and bottom, and to each of the two parts thus formed is attached an iron hame, the same being inserted and secured between the outer covering plate and the inner or stuffed portion. Both the hames and the parts of the divided collar proper are connected at top and bottom by means of straps, so that they may be adjusted together to adapt the collar as a whole to necks of animals of different sizes.

A car coupling so constructed as to couple the cars automatically as they are run together, couple cars of different heights, and connect the cars securely, while giving them the necessary play for passing around the curves, has been patented by Messrs. Franklin A. Morand, of Cheyenne, and Joseph Edwards, of Hays city, Kan.

An improvement in fastenings for two handled fans, so constructed as to fasten the handles when the fans are opened and when they are closed, and which, while fastening the handles, will have a projecting loop to allow the fan to be hung, has been patented by Mr. Max Rubin, of New York city.

Messrs. Minard M. Smith and John Hassall, of New York, N. Y., have patented an improved fastener to be secured to the sides of the front opening of a glove for the purpose of keeping said opening closed, and the glove thereby close about the wrist of the wearer. The invention consists of two narrow flat strips of steel or other metal curved flatwise to conform with the hollow of the hand, and pivoted together at their enlarged circular ends, which are so fashioned that they lock together at the closed or fully open point.

Mr. Andrew McLean, of Jersey City, N. J., has patented an improved loom for weaving gauze fabrics. The invention consists in a novel combination of devices which cannot be fully described without engravings.

An improved bottle stopper, patented by Mr. James J. Allison, of Nelson, Ill., consists of a piece of spring wire that is bent double in the middle, forming an eye, and has its ends bent outward and down again to form two open side loops with free ends, whereby a double spring is obtained.

An improved snap hook, which does not require a spring to operate it and is simple and effective, has been patented by Mr. William Grassick, of Lucknow, Ontario, Canada. The invention consists of a curved U-shaped hook having an inner second hook at the bottom, and having a latch arm pivoted to the end for preventing the ring or staple from slipping out of the hook.

THE STEAMER ANTHRACITE.

Just at present steam and naval engineers in this vicinity are deeply interested in the application of high pressure steam to marine engines, an exhibition of the practicability of the system as developed by Mr. Perkins, of England, having been given by the Anthracite, the smallest steamer that ever crossed the ocean; and what seems anomalous is the fact that her boilers carry a larger pressure than any other steamer, while the engine power is developed by the smallest consumption of coal per horse power.

By invitation of Major George Deane, who represents Mr. Perkins in this country, we recently took a trip down the Bay and up the East River on this little steamer. She is not built for speed, but for economy. Her average speed is 7½ knots per hour. The engines are compound, having three cylinders, respectively 8, 16, and 23 inches in diameter, the stroke being 15 inches.

The small cylinder cuts off at ⅝ of the stroke when working normally, the intermediate cylinder at ¾, the larger one at ½.

The smaller and intermediate cylinders are arranged one above the other, and their pistons are attached to a common rod. The piston of the larger cylinder is connected with a separate crank.

The several pistons are provided with packing rings made of a metal invented by Mr. Perkins. The cylinders are never lubricated, yet the rings wear smoothly and are said to be very durable.

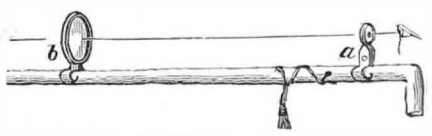
The engines are of 86 indicated H. P., and the boiler, which has only about 5 by 6 feet base, and a height of 8 feet, contains but 80 gallons of water, and consumes but 100 lb. of coal per hour. The screw is about 5 feet in diameter, and makes from 120 to 140 revolutions per minute.

The water, which must be pure, is used over and over again, and the waste, which is very slight, is supplied from fresh water carried on board. The steam pressure ranges from 350 to 500 lb. per square inch. The whistle is blown by a small supplementary boiler using salt water and receiving its heat from a coil connected with the main boiler.

We expect to give an engraving of the anthracite, together with some further particulars in our next issue.

NOVEL SPY-GLASS.

The spy-glass shown in the annexed cut is an invention of Mr. Theo. Geiger, of Stuttgart. Its construction is based upon the principles of Galileo's telescope, and it consists of a concave eye-lens and a convex object-glass, arranged so that the optical axis of both lenses are in a right line. In view of the increased focus of the object-glass, necessitating



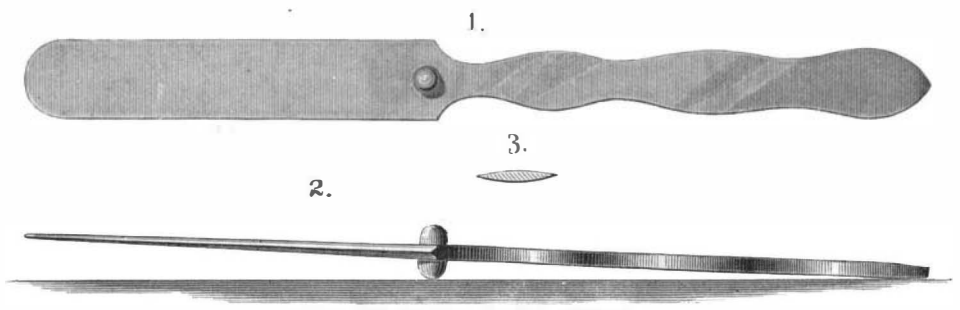
A NOVEL SPY-GLASS.

a greater space between the two lenses, the magnifying power is much greater than that of ordinary field-glasses. The eye lens, *a*, is attached to a cane near the handle of the cane by means of spring clamps, and the object glass is fastened to the cane in a like manner at *b*. The two lenses are 18 to 28 inches apart. The object-glass is focused by moving it backward or forward. The lenses may be used without a cane by simply holding them in the hands a suitable distance apart. In the latter form it is especially adapted for military purposes.

NEW TABLE KNIFE.

The table knife shown in the annexed engraving is a decided improvement over the knife now in general use. It is not only more shapely and more convenient to use, but in its manufacture little if any forging is done, it being made from thin metal, from which it is merely stamped into form. The grinding, polishing, and burnishing are easily and quickly done, as the knife has a smooth, flat surface from one end to the other, which makes it possible to do this part of the work by fixed machinery, thus saving a great deal of hand labor. The stud is put in after the knife is polished. It has two cutting edges instead of one, so that the user always finds his knife right side up; and, of course, two cutting edges will wear twice as long as one. It is lighter by one half than any of the other solid knives.

It is symmetrical and well balanced, and is more readily



COX'S IMPROVED TABLE KNIFE.

and agreeably handled than other forms of table knife. It is grasped by the hand and finger, and all of the pressure is exerted upon the handle, and never upon the blade.

Fig. 1 in the engraving is a side view of the knife; Fig. 2, a transverse section through the middle of the blade, showing the two cutting edges; and Fig. 3 is an edge view, showing the position the knife assumes when resting on the table.

This novel and useful invention was patented July 13, 1880. For further information, apply to the patentee, Mr. Arthur W. Cox, Auburn, Androscoggin Co., Maine.

The Concord School of Philosophy.

The second year's term of the Concord Summer School of Philosophy began July 12. Nearly fifty adult pupils and lecturers were present, among them many notable scholars, authors, and teachers. This is one of the most remarkable educational institutions of the day, a revival of the ancient Greek academy modified by the peculiar conditions, needs, and developments of the nineteenth century as displayed in the higher levels of American speculative thought.

In our issue of July 10, in describing a novel corn sled we gave the inventor's name incorrectly. It should have been William H. Woods, Elizabeth, Pa.

THE MAN WHO RAN THE FIRST LOCOMOTIVE IN AMERICA.

At the recent commencement exercises of Stevens Institute, Hoboken, N. J., one of the interesting features was the extempore remarks made by Horatio Allen, who was introduced to the audience by Prof. Morton as the Nestor of American engineers.

Among other things, he said that the first locomotive brought to this country was purchased by himself for the Delaware and Hudson Canal Company. This engine, the first to draw a railway train on this continent, was run for the first time on the road connecting the Lackawanna coal fields with tide water by way of the Delaware and Hudson Canal. It was the first road of any consequence to adopt locomotive power.

Mr. Allen gave a graphic description of the scene; how he mounted the engine alone, placed his hand boldly upon the lever of the throttle, and pulled the valve wide open, resolved, if he went down, to go manfully. He took an honest pride in being able to present to the audience the man who owned the hand that opened the valve of the first locomotive on the continent, and who took the first ride on the first railroad. This experimental trip was made at Honesdale, Pa., August 8, 1829.

BRICK TEA.

In a recent report on the trade of Kin Kiang, China, some interesting facts are given in regard to the manufacture of and traffic in a product known as "brick tea." The quantity of this kind of tea exported from Kin Kiang during one year has amounted to 681,333 pounds. There are three kinds of brick tea made. The first, or largest kind, is a cake of coarse green tea, which weighs, when thoroughly dried, about three and a half pounds, and is about one foot long by seven inches wide. These cakes are made in a wooden mould while wet, and compressed by a lever press and afterward dried. This is all done by hand labor, and affords employment to a large number of coolies. When dried, each cake is wrapped in paper and packed in strong baskets, each containing thirty-six cakes. The cost of this tea per basket is about $6.75, and the annual exportation amounts to from 15,000 to 20,000 baskets. The tea is sent from Kin Kiang to Tientsin, from whence it goes overland through Mongolia for consumption among the inhabitants of West and Northwest Siberia, in the province of Kazan, on the Volga, and by the Kirghis and other Seutas tribes. A cake of tea of the same form, but of a much commoner quality, costing about $5.25, made by the Chinese at Yang-lon-tung, in Hupeh, is largely consumed in Mongolia. There being no copper currency in that country the Chinese bankers in Mongolia keep stores of this brick tea and issue it as a monetary medium.

The second kind of brick tea is of a finer quality, each cake weighing 1⅛ pound, and being 8¼ inches long by 5¼ inches wide. It is packed in baskets, each containing 80 or 90, and costs about $8.25 per basket. This kind is consumed in West and Southwest Siberia, at Kazan, and on the Amoor.

The third kind of brick tea is made of black tea dust, each cake weighing 2¼ pounds, and being 8½ inches long by 6 inches wide. It is packed in baskets containing 64 cakes each, and costs about $8 per basket. It is consumed throughout Siberia and in Eastern European Russia by the peasantry. It is made into cakes at Foochow, Kin Kang, and Hangkow. The yearly exportation from the three places is about 100,000 baskets. It is stated that at Hangkow there are now four brick tea factories, two of which employ steam power. The employment of steam instead of hand presses will ultimately cheapen the cost of production, and at the same time a more satisfactory article will be placed on the market. Brick tea made in the old manner was not pressed sufficiently hard to enable it to successfully resist the rough treatment it received *en route*, and frequently reached its destination in a broken and crumbling condition, which detracted from its value, buyers laying considerable stress on its hardness and perfection.

American Philological Association.

The Twelfth Annual Convention of the American Philological Association was held in Philadelphia, July 13–15. The attendance was fair, and a number of valuable papers were read. Professor L. R. Packard, of Yale, was elected President for the ensuing year. The other officers chosen were: Vice-presidents: Prof. Fred. D. Allen, of Harvard, and Prof. M. W. Humphries, of Vanderbilt University, Nashville, Tenn. Secretary and Curator: Prof. Chas. B. Lanman, of Harvard. Treasurer: Chas. J. Buckingham, Poughkeepsie, N. Y. Executive Committee: Dr. W. C. Cattell, President of Lafayette College, Easton, Pa.; Basil C. Gildersleeve, Professor of Greek, Johns Hopkins University, Baltimore; William W. Goodman, Professor of Greek, Yale College; Dr. J. Hammond, of Hartford, Conn., and Wm. D. Whitney, Professor of Comparative Philology, Yale College. Next year's meeting will be at Cleveland, O.

California Vineyards.

The average of vines in California is officially rated at about 60,000 acres, and it is thought that from six to eight thousand acres more will be planted to vines this year. If the entire grape crop were made into wine the yield in ordinary years would exceed 25,000,000 gallons. The actual wine product during the past five years has ranged between 4,000,000 and 6,000,000 gallons, the smallest yield falling in 1878. The possible yield in wine is lessened by the large distillation into brandies (about 250,000 gallons a year) the production of sweet wines, the consumption of grapes for table use and export to the Eastern States, and finally by the manufacture of raisins. The wine yield this coming year is expected to be very large, perhaps 10,000,000 gallons.