

**A NOVEL LIFE PRESERVER.**

The lower portion of the curious device which is represented in the annexed illustration resembles a life-preserving dress; the upper part is a kind of buoy or floating chamber, in which the occupant has some freedom of motion for his head and arms. The object is to provide the shipwrecked person with not only a means of flotation but with complete shelter. Inside the enlarged upper chamber, it is proposed to place provisions and a water supply; so that the wearer can stay afloat for a month, if need be, with safety and comfort.

The interior of the apparatus is shown in Fig. 1. Fig. 2 represents it closed. The upper portion is made of strong sailcloth, waterproofed and distended on a jointed cylindrical frame. Across the lowest ring a diaphragm is placed, in which are two apertures for the legs, which are incased in waterproof pants and boots, covered with metallic rings, in order to afford protection against fishes and sharp rocks. These rings are made to fit one within the other when the dress is folded so as to enable the device to be stowed in small space. The top of the upper chamber is inclosed by a hood, in which a window is made. An air pipe is provided, leading to a respirator fastened over the mouth of the occupant. An annular air chamber is provided, which keeps the upper part of the apparatus well out of the water. Mr. Traugott Beek, of Newark, N. J., is the inventor.

**How a Chinaman Caught a Ticket Agent.**

Silver coin is at a discount in California just now, and it is customary to demand gold when the amount is over \$10, which explains the following from the San Francisco *Bulletin*:

"Too muchee smartee" was what the moon-eyed child of the Orient said to the ticket seller at the wharf when gold was demanded for three tickets to Stockton, at \$3.50 each, making \$10.50.

"Too muchee smartee; you no cachee gold allee time."

"Yes, John, I must have gold for these tickets—ten dollars and a half. Come, out!"

"How muchee one ticket?"

"Three dollars and a half."

"Allee light; me takee one," and he paid his three dollars and a half in silver; then bought another one and paid three dollars and a half in silver, and bought a third in the same way, having paid out ten dollars and a half in silver without showing any gold. With a look of triumph the mild-eyed son of Confucius gathered in his last ticket, and said:

"Too muchee smartee."

**IMPROVED WATER ELEVATOR.**

We illustrate herewith an improved steam pump for raising water by the direct action of the steam, in analogous manner to steam injectors. A is a steam-conducting pipe, which is placed within an outer pipe, and surrounded by coal ashes to prevent condensation. It is bolted, by a face plate, *a*, to a flanged casting, B, so as to be readily detached therefrom, for changing without removing the casting from the seats. The casting, B, is submerged in the water, and made of two flanged sections, which are jointed together, one section supporting, in suitable bearings, the nozzle, C, that connects with the steam pipe, A. The other section supports, in similar manner, a tapering spout, D, through the contracted opening of which the water is drawn through perforations, *b*, of the nozzle section, and forced by the action of the steam into the wider discharge pipe, A'. The latter is attached, by a face ring, *d*, binding on the flanged rim of the pipe, to the opposite end of the casting, B, so as to be changed with the same facility as the steam pipe. The action of the steam produces a partial vacuum and creates a suction that draws in the water to be raised, forcing it forward and upward to any height through the water-discharge pipe. The pump, it is claimed, may be used with advantage as a bilge pump on board of steamers.

This device was patented through the Scientific American Patent Agency, February 13, 1877, by Mr. Alexander Wright, of Havana, Cuba.

**Poisonous Silk Dresses.**

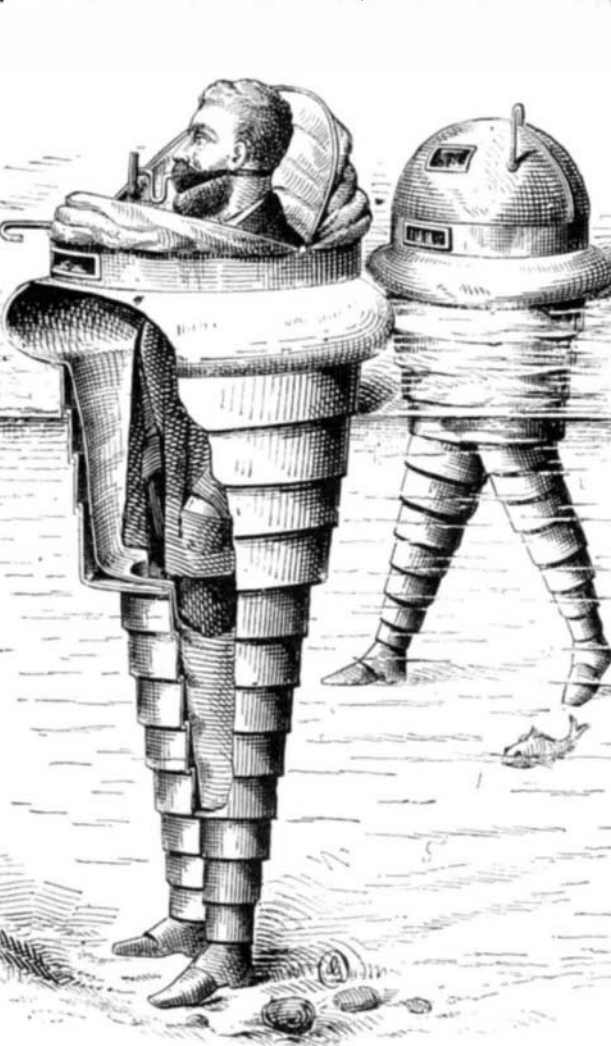
In purchasing silk, many require that the material shall possess both weight and stiffness, these qualities adding to its rich appearance and allowing it to be draped more gracefully. Heavy silk is also commonly believed to be of better manufacture and to wear better, as the extra weight is supposed to be due to a thicker and closer fabric. While all heavy silks are not necessarily weighted, a large proportion of them are.

The weighting of black silks with a compound of tannic acid and oxide of iron, far exceeding in quantity what is really needful for the production of a black color, has now been known for a considerable time, and has been carried so far as to deprive the material of its non-conducting power

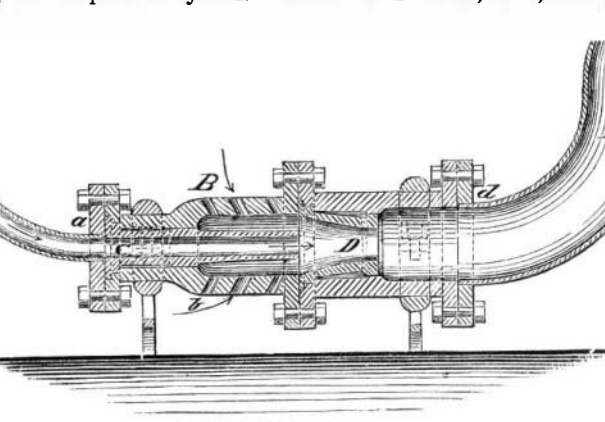
for heat and electricity, greatly to impair its strength and durability, and even to render it liable to spontaneous combustion. Consumers, however, till lately "laid the flattering unction to their souls" that white and light-colored silks must be genuine. Alas! the depraved ingenuity of the age has introduced sophistication in this department also, and it is possible to buy white silks—white goods, rather—consisting of about one third to one half the genuine product of the silkworm, the remainder being made up with oxide or carbonate of lead. This stratagem is not merely a fraud upon the purchaser—who asks and pays for one thing, and receives another very inferior in its properties—but it is a direct attack upon public health, and (we learn from the *Chem-*

ical Review) in that capacity has already brought forth evil fruits. Persons who are continually handling such weighted silks are liable to lead poisoning. Still greater is the risk for milliners and dressmakers who sew with silk, and who are in the habit of biting off the end of the thread, or of putting it in the mouth to make it the better enter the eye of the needle. A minute quantity of lead is taken into the system each time; it remains and accumulates, and, at last, colic, palsy, and other alarming symptoms make their appearance. These are soon traced to lead poisoning, but not one medical man in a hundred will suspect how the lead is introduced into the patient's system. He will blame water, wine, vine-

gar, food cooked in leaden vessels, etc. In the last guess he may often be right, for the tin with which saucepans are "tinned" is no longer tin, but an alloy containing a large proportion of lead. The so-called tins in which meat, butter, fruits, etc., are now imported and sold are also no longer "tins," save in a "Pickwickian sense," but "leads."

**BEEK'S LIFE PRESERVER.**

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**WRIGHT'S WATER ELEVATOR.**

But, to return, so long as the silk is not recognized as the source of the lead, the patient will go on using it, and recovery will therefore be impossible. This, it must be understood, is no mere matter of conjecture or probability, but of actual fact. Poisoning cases of the kind described have already occurred, and will certainly become more and more frequent if the evil practice is allowed to continue.

The detection of lead is not difficult. If a piece of the silk, or a little of the thread or yarn suspected of being weighted with lead, is moistened with pure water and then

**Marvelous Jugglery.**

The jugglers of India have for centuries been noted for their remarkable skill in the mysteries of the "black art." The editor of the *Commercial Bulletin*, traveling in the East, has contributed to that paper some very interesting letters on the customs of the strange people he has visited. Under the above heading he tells, in the last issue, his readers that "convalescence is a capital time for mild amusements which will not tire the languid brain, and we had some jugglers up almost every day. We never could find out their tricks, which are very marvelous. Of course, everybody has heard of the basket trick, where a small boy gets inside a basket, and the juggler plunges a sword through and through it, bringing it out reeking with blood, then holds up the basket, shows there's nothing there, and calls the boy, who calmly appears from outside the circle of spectators. And also of the mango trick, where a seed is placed in the ground, is covered with a cloth, and appears as a shrub, growing visibly before one's very eyes, and then bears fruit, which ripens and is edible in five minutes from first planting. These fellows have very scanty clothing, and apparently no apparatus whatever. There are some wiseacres who profess to know all about these tricks. I never saw the disemboweling and immediate healing of fakirs, in India, nor men sitting in the air, 'levitated,' as Madame Blavatsky calls it. But I have seen other tricks as surprising, and equally unaccountable by any art or science with which Europeans or Americans appear to be acquainted nowadays. I have seen a man throw up into the air a number of balls numbered in succession from one upwards. As each went up, and there was no deception about their going up, the ball was seen clearly in the air, getting smaller and smaller till it disappeared altogether out of sight. When they were all up, twenty or more, the operator would politely ask which ball you wanted to see, and then would shout out 'No. 1,' 'No. 15,' and so on, as instructed by the spectators, when the ball demanded would bound to his feet, violently from some remote distance.

"Then I've seen them swallow three different colored powders, and then, throwing back the head, wash them down with water, drunk in the native fashion in a continuous stream from a *lotah*, or brass pot, held at arm's length from the lips, and keep on drinking till the swollen body could not hold another drop, and water overflowed from the lips. Then those fellows, after squirting out the water in their mouths, have spat out the three powders on to a clean piece of paper, dry and unmixed. As to the thimble-riggery of their minor tricks, they are exceedingly expert, but are probably equalled by many of our distinguished *prestidigitateurs*; and whatever may be said of the basket and mango tricks, or the sitting in the air, I don't think any of our people are up to the sending of balls into space and recalling them in an unpremeditated order. This reminds me of the trick Marco Polo, the great Venetian traveler of earlier times, speaks of having seen at the Court of Prester John, in Central Asia, when a bean was planted and sprung up rapidly toward the heavens, its summit being lost in the clouds. Up this, one juggler traveled, and then another after him, with a drawn sword. In a few minutes, down dropped ears, a nose, a head, and limbs of No. 1; No. 2 leisurely descends, wiping a bloody sword, shovels up the fragments of his victim into a box, and goes on with other performances, presently calling out for his defunct companion, who thereupon presents himself, as large as life, all alive and kicking, from the throng. This is not a modern trick, but those I have seen are certainly not less marvelous. Then, too, it is a well authenticated fact that some of these jugglers, on more than one occasion in recent years, have suffered themselves to be buried alive, and have been dug out alive after the lapse of a year."

**Treatment of Hydrophobia.**

The following treatment of hydrophobia is suggested in the *Medical Journal*. The patient is to be undressed, seated on a cane chair, and the whole body up to the neck enveloped in blankets. Under the chair a spirit lamp is placed. This lamp is protected in a cage, on the top of which is a receptacle for the calomel (twenty or thirty grains), and a saucer for water. The flame beneath boils the water, and volatilizes the calomel. Moderate salivation, which is all that is required, says the writer, may be induced in a quarter of an hour, and judiciously repeated if the symptoms seem benefited by the treatment. This treatment is said to have been successful in a case of hydrophobia in India during 1867.

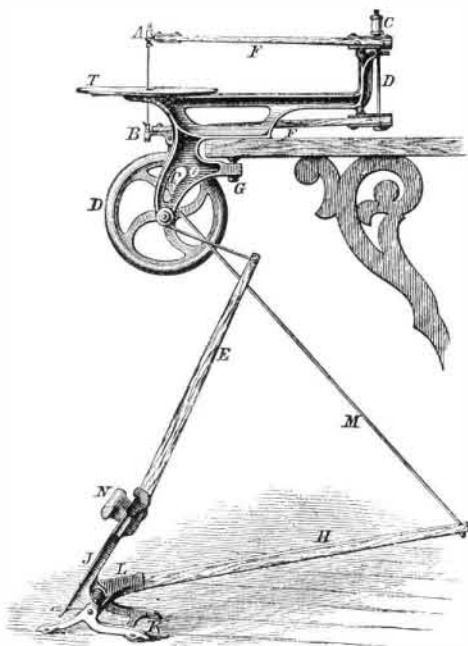
**Potassic Xanthoxate.**

This salt, the remarkable antiseptic properties of which were noted in a recent issue of the SCIENTIFIC AMERICAN, may be prepared by adding carbonic disulphide to an alcoholic solution of potash, or by the action of potassic sulphhydrate on neutral ethylic disulphocarbonate. If fused hydrate of potassium is dissolved in half its weight of absolute alcohol, and carbonic disulphide is added slowly till the liquid no longer exhibits an alkaline reaction, and the mixture is cooled to 32° Fah., the xanthate of potassium separates in colorless needles; and an additional quantity may be obtained by evaporating the mother liquor in a vacuum, after the excess of carbonic disulphide has been separated by water. But the salt is most easily prepared by adding to absolute alcohol an excess of very pure caustic potash, and then an excess of carbonic disulphide. The mixture immediately solidifies to a mass of interlaced silky needles, which must be washed on a filter with ether to free them from bisulphide of carbon, then pressed between fibulous paper, and dried over oil of vitriol. The salt crystallizes in shining, colorless prisms, which turn slightly yellow on exposure to the air. It is very soluble in water, and dissolves readily in 5 or 6 parts of absolute alcohol. It is insoluble, or nearly so, in ether. Its solution in absolute alcohol is not affected by boiling, but its aqueous solution decomposes when heated above 122° Fah., yielding potassic trisulphocarbonate, alcohol, sulphuretted hydrogen, and carbonic acid, thus:  $2C_2H_5KOS_2 + 2H_2O = K_2CS_3 + 2C_2H_5O + H_2S + CO_2$ . In the dry state, it may be heated to 200° without alteration; but at higher temperatures it gives off ethylic sulphhydrate, sulphuretted hydrogen, water, and carbonic oxide, leaving a residue of potassic sulphide, mixed with charcoal. The solution heated with potash is resolved into mercaptan and potassic ethylmonosulphocarbonate. Strong nitric acid decomposes it with violence. Xanthate of sodium forms yellow needle-like crystals, resembling those of the potash salt, but of a darker color. The solutions of these salts form a yellow precipitate with salts of lead; yellow with copper salts (hence the name of the acid); light yellow with silver nitrate and mercurous salts; the last mentioned, however, quickly becomes brown and black.

**THE DEXTER SCROLL SAW, EMERY GRINDER, AND POLISHER.**

We illustrate herewith a scroll saw which has an entirely new treadle mechanism, and which is excellently adapted for amateur use. The frame, Fig. 1, is a solid casting, provided with a clamp, G, to secure it to a table or bench. The bows, F F, of hard ash, are fitted with iron plates on the back end. These plates have knife edges, carefully made, upon which the bows rock with little or no friction. The front ends of the bows are fitted with pivoted steel screw clamps, A B, for holding all sizes of saws. The plates on which these swing are adjustable, so that the pitch of the saw can be altered if desired, or corrected if it does not run straight.

Fig. 1.



The straining rod, D, is provided with a cupped nut, C, containing a spiral spring. This and the stop in the back end of the frame hold the upper saw arm still, and the lower one in place, when from any cause the saw is disconnected.

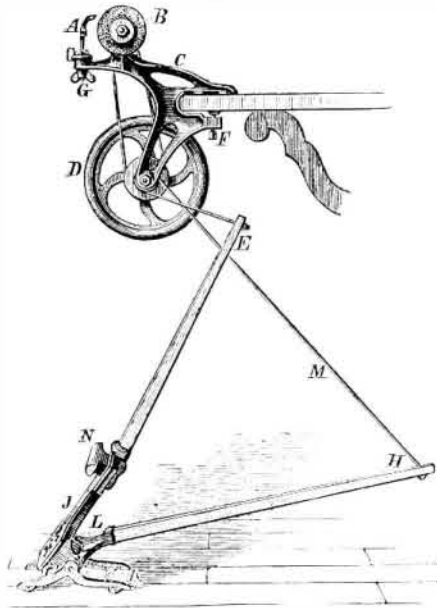
The treadle arrangement is a floor piece or frame, K, upon which is pivoted the foot piece and rod, J E, and the counter-rod, L H. The former is forced up and the latter down, or in opposite directions, by springs. A single cord or strap, M, the ends of which are fastened to the ends of the treadle rods, is passed over the hub of the driving wheel, D, in which is cut a V groove. Pressure on the foot piece forces the cord into the groove and causes a rapid rotary motion of the wheel; as soon as released the foot piece returns to its original position, throwing the cord out of the groove, the wheel continuing its forward movement; the slack cord is instantly taken up by the counter rod; the treadle is then ready for another propelling movement.

We are informed that with ordinary treading 1,600 revo-

lutions of the wheel and strokes of the saw are made per minute; and as 800 to 1,000 strokes are ample for sawing, it will be seen that work may be rapidly executed with this machine with but little labor.

The same treadle motion has also been applied to an emery grinder and polisher, which is represented in Fig. 2. This is well suited for the uses of jewelers and dentists as well as for general employment. Wheels under 4 inches diameter and 3/4 inch thick, of any grade or make, can be used.

Fig. 2.



Each end of the spindle is furnished with plate hubs for wheels with 1/2 inch holes and fitted for a small chuck which will carry drills, burrs, and small-shanked dental wheels. An adjustable rest for work to be ground is attached. With ordinary treading, a speed of 3,500 revolutions per minute is obtained. Patented October 24 and December 12, 1876. For further information, address Trump Bros., Wilmington, Del., inventors and manufacturers of the Fleetwood and Dexter machines.

**Artistic Dentistry.**

Dr. J. Allen, a well known dentist of this city, has recently shown us some very fine results of his process of enameling plates for artificial teeth, on which he has experimented the past thirty years. The plates are of platinum, and the enamel is so artistically and continuously applied that every characteristic of color and form of the natural parts is accurately reproduced. At the same time, by carefully disposing the teeth in their support and by the addition of ingenious arrangements for sustaining the muscles, Dr. Allen has succeeded in restoring to the face the natural expression and fullness, usually lost by the change of the features caused by the absence of teeth. The artificial sets exhibited to us deserve high rank as a product of art; and the process has already won the commendation of the dental profession as well as awards at the three last International Expositions.

**Bee-Keeping in the Himalayas.**

A correspondent gives, in the London *Agriculture Gazette*, an interesting account of bee culture in India. He writes:

"Some of the villages make the keeping of bees their chief business; and although their method would perhaps hardly answer either with Englishmen or English bees, it is at any rate curious, and it is certainly very successful and exceedingly profitable.

"The houses are built of a framework of wood, which it would not be easy to describe without a sketch, but which leaves everywhere in the walls, both in their whole length and height, open spaces of about 2 feet high and from 10 to 12 feet long, which are subsequently filled up with stones and clay, after which the whole is plastered inside and out with a preparation of gypsum, which is found in abundance in the hills. The roofs are flat, of beaten clay, and the eaves project about 3 feet beyond the walls. As the whole weight of the roof rests entirely on the wooden framework, the stones and clay, with which any one of the spaces I have mentioned is filled, can at any time be removed and replaced without at all interfering with the stability. In each of these spaces, particularly in the walls facing the south, is placed one or more round earthenware waterpots, the height of which ought to be equal exactly to the thickness of the wall; these are built into the wall lying on their sides, with the round bottom outside, and its extreme convexity flush with the outside of the wall; whilst the mouth of the vessel, which is 6 or 8 inches in diameter, is flush with the wall in the inside of a room; in some houses there are as many as 40 of these waterpots (called ghurrahs in India) thus imbedded. All that is now wanted is to make a small hole on the outside convex bottom of each waterpot for the bees to enter—stick on a small patch of clay below it for them to alight on—put in a swarm and close the mouth of the pot with an earthenware lid made to fit. When honey is to be removed, all that is required is for the operator to enter the house, close the door, tap on the lid of the ghurrah to drive out the bees, or, if that is not sufficient, open the lid a little and blow in two or three puffs of smoke from a lighted rag, then open the lid fully and remove as much of the honey as may be deemed

expedient, after which the mouth of the pot is reclosed, and the bees soon return and go to work again; enough of the honey always seems to be left to support the stock through the winter, and I could not ascertain that artificial feeding is ever resorted to. As the houses are occupied by the family as well as the cattle of the owners, and in winter pretty constant fires are kept up, the bees, no doubt, benefit by the heat.

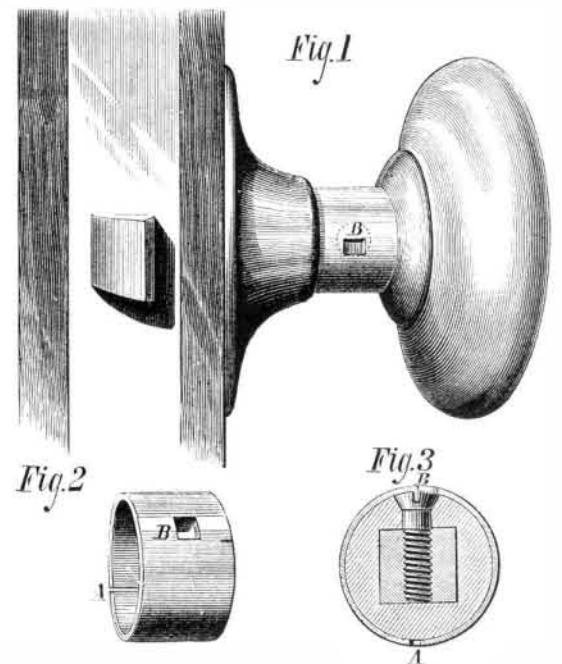
"Besides these hives, which are never killed off, each house generally has a large number of others, the result of swarming, which are managed in a different way. For these a hive is prepared thus: A piece of the trunk of a pine or cedar tree, of about 18 inches in diameter, is cut to a length of 2 1/2 feet; this is split down the middle, and each half hollowed out in the center, so that when rejoined there is a considerable space inside. A hole is made in one of the halves for the bees to enter; and a swarm having been secured, it is lodged in the hollow log, the two parts of which, having been securely tied together, are then hung up close under the projecting eaves of the house and well out of the reach of bears, which are numerous in the district, and are very partial to honey. To get the honey from these swarms, I believe it is usual to destroy the bees; but I have heard, although I do not know exactly how it is done, that, instead of destroying all the bees, the queen only is sometimes killed, and the workers added to one of the stocks in the house wall, which may have become weak."

**Dried Eggs.**

A large establishment has been opened in St. Louis for drying eggs. It is in full operation, and hundreds of thousands of dozens are going into its insatiable maw. The eggs are carefully "candled" by hand—that is, examined by light to ascertain whether good or not—and are then thrown into an immense receptacle, where they are broken, and by a centrifugal operation the white and yolk are separated from the shell very much as liquid honey is separated from the comb. The liquid is then dried by heat, by patent process, and the dried article is left, resembling sugar; and it is put in barrels and is ready for transportation anywhere. This dried article has been taken twice across the equator in ships, and then made into omelet, and compared with omelet made from fresh eggs in the same manner, and the best judges could not detect the difference between the two. Is this not an age of wonders? Milk made solid, cider made solid, apple butter made into bricks! What next?—*Philadelphia Trade Journal*.

**DEVICE FOR HOLDING DOOR KNOB SCREWS.**

One of the commonest defects of the ordinary door knob is that the screws work loose, and thereupon the whole arrangement becomes shaky and liable to rupture. In the invention herewith illustrated, a simple little device effectually overcomes the difficulty. It consists of an elastic band, Fig. 3, of metal (steel or brass), of a proper width to suit the shank of the knob. A slit is made through the band, at A, and a small tongue, B, is also provided, which enters the



nick in the screw. The band is placed in position by springing it open and passing it over the shank. The tongue is then introduced in the screw slot, and the band allowed to spring shut. The parts then appear as in Figs. 1 and 2, the latter being a section through band and shank. Once in position, neither the band nor the screw can turn.

Patented through the Scientific American Patent Agency, April 3, 1877. For further information, address De C. May, 42 Mount Vernon Place, Baltimore, Md.

**Patents at Auction.**

A novel mode of disposing of patents is announced in our advertising columns. Mr. George W. Keeler, an auctioneer of experience, proposes to receive letters patents on consignment, which he will offer at public auction at stated intervals, in the same way as coal is disposed of monthly in this city.