

TOTTEN AND TOPLIFF'S CAN OPENING KNIFE.

It is not improbable that the sale of canned fruits, vegetables, meats, etc., would be largely increased if people generally knew that a handy and efficient implement for opening the cans could be cheaply purchased. The engraving represents such an instrument which by repeated trials we have found to be the "right thing in the right place."

As seen in the engraving it is a simple knife of a peculiar form, having an edged hook at the point. In opening a sardine box or fruit can, the knife is held in a vertical position and the hook pushed through the tin. This requires but little force, a child of seven or eight years easily opening a can of common tin. The knife is then brought gradually down



to a horizontal, the blade being a lever of which the hook is the fulcrum. The knife passes as readily through the tin as an ordinary knife through paper. By repeating the operation a square piece can be cut out of a sardine box, or two cuts may be made on the end of a fruit can, crossing each other at right angles, and the corners then turned back. The knife is equally convenient and handy for paring fruit, or any other purpose for which a kitchen knife is used, as its peculiar adaptation as a can opener does not interfere with these offices.

It was patented through the Scientific American Patent Agency, January 22, 1867, by S. E. Totten and C. L. Topliff. For rights to manufacture address C. L. Topliff, Box 773, New York city.

CALIFORNIA SILK.

From the earliest settlements in this country down to the present time, public attention has at different periods been directed to the subject of silk raising. Indeed, this appears to have been one of the earliest and most successful industries practised in this country, for it is related that silk made from material grown in Virginia was worn by Charles II, at his coronation in 1651. Planting mulberry trees for rearing silkworms was frequently, in the early history of the colonies, made incumbent upon property holders by legislative action, and prior to the Revolution it was considered quite fashionable for ladies to devote their leisure moments to tending silkworms, the cocoon silk being sent to England to be manufactured. The state of Georgia was settled chiefly because its climate was deemed peculiarly suitable for raising silk, and liberal appropriations were made to the colony by Parliament for its encouragement. A rich brocade woven from Georgia silk was worn by Queen Caroline as a court dress. Nor were the Southern states the only ones interested, for each of the older states have at times been extensive silk raisers, but from various causes the industry has finally fallen into disrepute.

Although practically a failure in the Eastern states, this employment seems destined at no distant day to assume importance in the Pacific states, particularly in California. The climate of this favored region is dry, warm, and equable, having all the requisites for success. Our exchanges from that state speak quite favorably of the new adventure and anticipate its development in time into an important industry. A pioneer in this enterprise is Mr. Louis Prevost, of San José, who has had some previous experience in this line, and who, in his system of treatment has deviated somewhat from the usual manner of raising the worms, introducing improvements whereby time and labor are saved, and consequently increasing the prospects of making the business a paying one.

One of the most marked innovations on the old methods, is feeding with branches of the mulberry trees instead of leaves, a change which seems to work admirably. Sufficient food can now be gathered and distributed to 80,000 hungry worms

by only three hours labor per day; then again the trees prosper better by cutting away a portion of the shoots entire instead of partially stripping all the twigs, while the leaves themselves retain their freshness much longer in that warm climate, by remaining attached to the stalk. So dry is the air in San José that remnants of leaves and other offal are soon completely desiccated, so that in a room where 80,000 worms are feeding on trays which are never removed for cleaning, the air is at all times entirely free from smell.

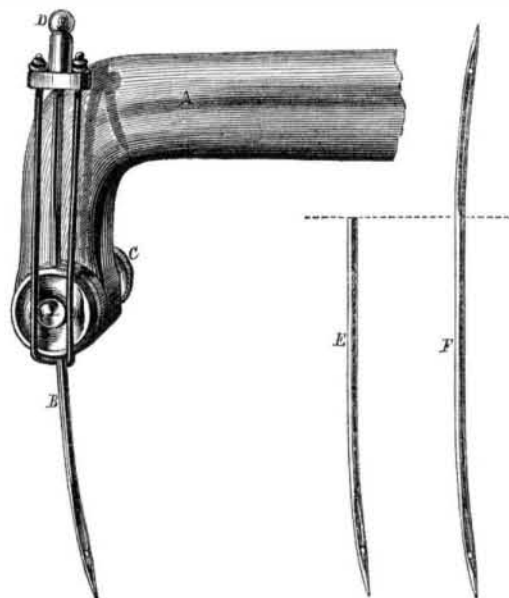
The demand for the worm eggs, both for home use and exportation, is so great that Mr. Prevost decided this year to save no cocoons for silk, but has allowed all the larvæ to undergo the full metamorphosis and pass through the chrysalis into the moth state. He estimates his crop as from 12,000,000 to 15,000,000 eggs, and three crops may be raised a season. The French and Italian silk masters do not preserve any larvæ that are not hatched by the fourth day of incubation. Mr. Prevost hatched out all his eggs this year and kept each day's production separate. The first day's crop of worms and the twelfth day's as shown by the results, are equally valuable, the worms last hatched growing to as large a size, and the cocoons being as fine as from those that first left the shell. All these experiments go to show the superior vitality and the healthy condition of California worms over European.

HARRIS' DOUBLE NEEDLE FOR SEWING MACHINES.

Since the advent of sewing machines, and especially since the principles of their construction and operation have been recognized and adopted, much time has been devoted to the perfection of details, generally with beneficial results. The engraving illustrates one of these. It is a double needle, or two needles in one, and was patented by H. A. M. Harris, of Philadelphia, Pa., Aug. 6, 1867.

Its advantages are, economy in stock, by which there is a saving of about one-fourth, and a saving of time in handling, and diminished cost of production. The ordinary manner of making needles is to make two in one piece, and then cut them in half, thus producing single needles. If the length of a single needle is two inches, it requires four inches of steel to make two, while with this improvement it takes only three inches to make a double needle. Of course, so made, there is no need of cutting them in two, and that labor saved, which with the less handling required, it is believed, will pay for the grinding, drilling, and polishing of the extra point. The inventor claims that if a single needle can be bought for seven cents, one double needle can be sold for ten cents, being a great saving.

The engraving shows the free end of a vibrating arm or needle bar, A, to which the needle, B, is secured on its side by means of a bolt which is set up by a thumb nut, C. A hole for the reception of the needle is made through this bolt behind the head, and the inner face of the head has a semicircular groove as a seat for the needle. To prevent pricking the arm of the operator and to guard the upper point of the needle from injury, a cap, D, of soft metal, as type metal, is



placed over it, and held by a piece of elastic cord as seen in the engraving. E and F show respectively the ordinary single needle and the improved double needle with their relative lengths.

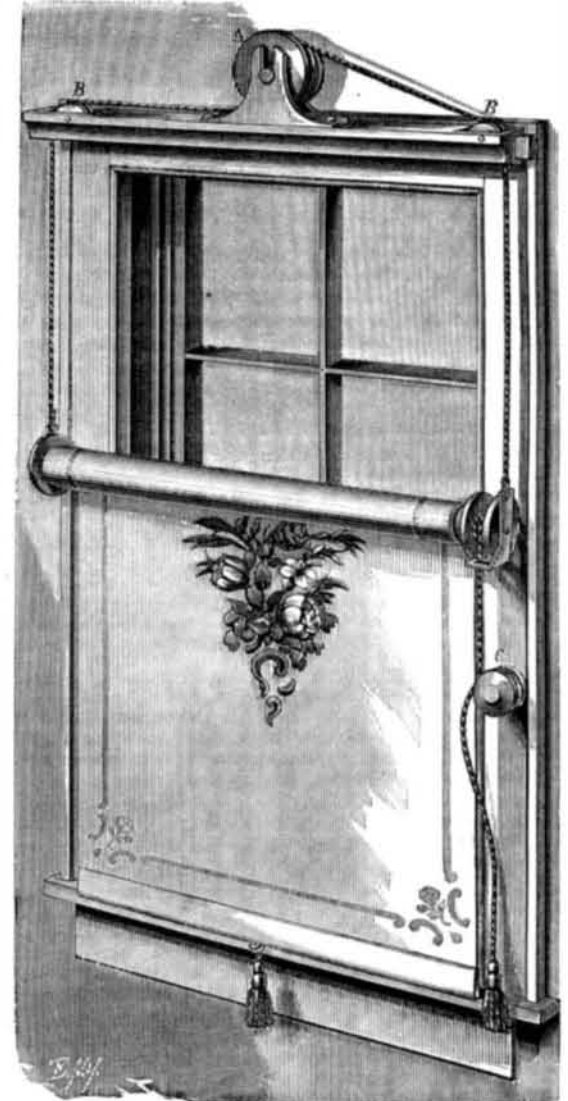
This style of needle can be applied to all machines. It is easily adapted to all which use the curved needle, and those which use the straight needles can be built to use the double needle. The full right is for sale by the patentee, who may be addressed at King's Hotel, West Philadelphia, Pa.

How to Make Good Cement Walks.

Having previously graded and rolled the ground, heat your tar very hot, and with a long-handled dipper begin at one end of a pile of quite coarse gravel, pouring on the tar, quickly shoveling over and over so as to mix thoroughly. Cover the ground two and a half or three inches deep with the tarred gravel and then roll. Clean the roller with a broom as you proceed. Then put on a layer of finer tarred gravel one and a half inches thick, and roll. Then sprinkle the surface with hot tar, spreading the tar with a broom; finally, cover the surface with a light coat of fine sand, and your walk is complete, ready for use. It will improve in hardness by age. Provide portable tar kettles, screens, a roller not very heavy, and tools for systematic work, and you can hardly fail to derive satisfaction.

COX AND HILL'S WINDOW SHADE ATTACHMENT.

The engraving to which this description refers presents a novel method of attaching shades or curtains to windows by which the shades are capable of being rolled or raised either from the bottom, as is the usual way, from the top, or thrown off sideways, so as to uncover any portion of the window, as



may be desired. With these advantages it may be made as ornamental and elegant as any other, and entails but little labor in its construction or fitting up.

Across the top of the window frame there is nailed or screwed a cleat or strip having a dovetail rib; this is a fixture. The whole machinery for moving the shade in any direction belongs and is attached to a bar, of a length corresponding to the width of the window or window frame, which has a groove to receive the dovetail rib. This bar may be an elegant molding in front, and has, on a support on its top at the center a deeply grooved pulley, A, attached to which is a coiled spring, which, when other tension, as that of the hand, is withdrawn, rotates it. Wound in the groove or score of this central pulley are two cords, which lead from the pulley to the ends of the bar, and over pulleys, B, placed therein. Thence they extend to metallic supports of the roller of the shade suspending the curtain. A separate cord is wound about the axis of a pulley, on one end of the roller bar, to be used to actuate the shade, as in ordinary window fixtures. A button or knob, C, may be attached to any convenient portion of the window frame for the purpose of "belaying" or securing the actuating cord.

The operation of this simple device is easily seen. If it is required merely to raise the shade, as is ordinarily done, the hand pulls on the depending cord and the shade is wound up. If the shade is lowered, and it may be desirable to admit the light from the upper portion of the window only, the loop of the tassel at the bottom of the shade is fastened to a hook or button on the window sill, and by pulling on the cord at the side, the upper part of the shade with its roller comes down, as seen in the engraving, when it may be secured in position by winding the actuating cord around the button or knob, C. When the cord is released the coiled spring attached to the pulley, A, will bring the shade up to place. The lateral movement of the shade is easily effected by simply sliding the bar at the window top.

This device was patented through the Scientific American Patent Agency July 30, 1867, by H. J. Cox and Wallace Hill, who may be addressed relative thereto at Long Eddy, Sullivan county, N. Y.

SWISS CARRIAGE ROADS.—There is not in the whole of Switzerland a toll gate. The government forbids by law any thing which may tend to interrupt or interfere with travel in or between the different cantons. The magnificent public roads which one finds everywhere throughout the country are kept in order at the expense of the cantons through which they run, the federal authorities having each paid, however, at the construction, one half of the expense.

THE GREAT CANADA CHEESE manufactured about one year ago at a factory near Ingersoll, is still in a good state of preservation, and is suspended on pivots in the factory, so as to be easily swung over for the gratification of visitors. Thirty-five tons of milk were used in manufacturing this cheese, which weighs 7,000 pounds.