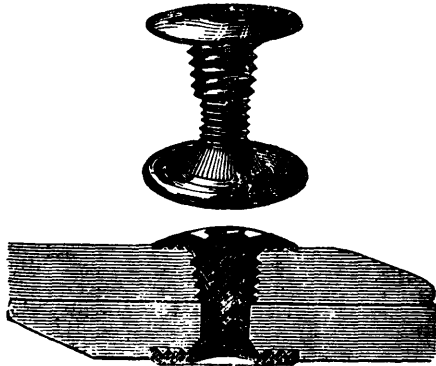


PATENT BELT SCREWS.

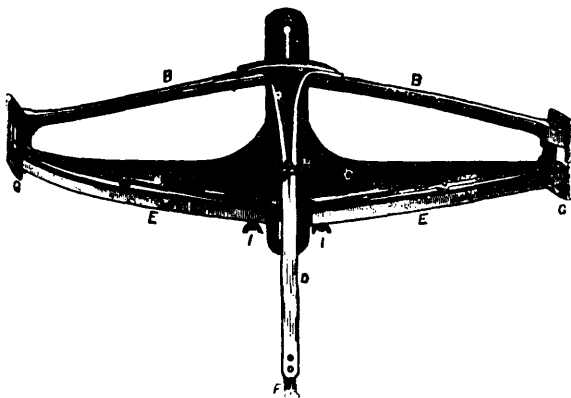
Messrs. Selig, Sonnenthall & Co., of Lambeth Hill, Queen Victoria street, E. C., have just brought out "Sonnenthall's Patent Belt Screws," in which, as will be seen, the nut part is screwed on the outside, instead of being plain. This belt screw consists of two parts, the upper being made of bronze, the lower of steel. The screw is cut with a left-hand thread, so that the tendency of the nut to turn in screwing up only is merely to tighten the screw. Both parts have comparatively large heads, which on their outer surface are slightly rounded, and are provided on their inner surface with circular grooves, thus obtaining a firm grip on the whole surface of the head, and saving the holes in the belt from being drawn out. The upper or bronze nut screw is of a coarse thread cut conically; it is bored through-



out its length and a fine thread inside forms the nut for the other steel part. This steel screw has under its head a conical enlargement, which serves both to give increased strength to the screw, and to admit of a slot being cut in the head, into which the screw-driver can be inserted. This does not divide the head, and the screw-driver is thus prevented from slipping and scraping on the surface of the belt when fixing the screw. An ordinary screw-driver is sufficient to tighten up the belt screws. They possess the great advantage that, after having screwed the bronze part into the leather belt, which is greatly facilitated by this part being conical, the belts are already united, and the screw cannot drop out or screw back, but after the other part with the left-handed thread has been screwed into it, the whole is drawn tightly together and cannot get loose.

IMPROVED SPRING FOR SCROLL SAWS.

One of the reasons why scroll saws are sometimes unexpectedly fractured is that the spring pulling them upward is not as quickly acting as it should be, caused by its having too much weight and momentum, which always retards all rapid to-and-fro



motions. In the spring represented in the adjoined engraving this defect has been successfully obviated, and the result is a spring which cannot only be applied to jig saws, but to any machine requiring a very quickly acting spring, adjustable to various degrees of tension, and adapted to any size of saw blade. The maker claims that with its use an inferior machine can be made to work well, which is an important fact, as there are many in-

ferior machines in use, which may all be improved by the substitution of this spring in place of the inferior one that renders many of these machines almost worthless, as it is impossible to run them at a great speed without danger of breaking the saw blades. It is claimed for this spring that a scroll saw can be run with it at the rate of 1,000 strokes per minute without the least risk. We therefore advise all who contemplate buying a new jig saw because they are not satisfied with what they have, to try this spring, and attach it to their machine.

In our engraving, the top A is attached to the stand above the table by means of wood screws; this part is slotted for adjustment to the height of the stoke, so as to allow for differing lengths of saws. B B are wooden arms, supporting the strap D, to which the saw is attached by means of the hook F; the top of the strap D has two hooks lapping over the arms B B, which turn on pivots at their outer ends, and rest at G G upon wooden springs E E. The latter rest on fulcrums or bridges, affording a leverage which gives an easy motion to the springs. The movements of these springs are very slight, not over $\frac{1}{4}$ of an inch to the full stroke of the saw, showing that it is quite safe to run the machine at a very high speed. The strength and stiffness of these springs are regulated by the thumb screw I I, by which they can be easily adjusted to the tension required.

This spring is manufactured by I. R. Joslin, of 91 Liberty street, New York, to whom we are indebted for this illustration

USE OF PHOTOGRAPHY IN WOOD ENGRAVING.

In the practice of the ordinary method of wood engraving the artist whitens the surface of the block and makes his drawing thereon with India ink or pencil. The engraver then cuts upon the drawing, endeavouring to keep in mind the general effect of the original; but the latter is of course gradually obliterated as the work of cutting proceeds. To this obliteration of the original drawing is probably due a part of that loss of artistic effect in the finished engraving, of which draughtsman are apt to complain.

The facilities offered by photography are now, however, being used by engravers and draughtsman to assist in the production of better engravings. Instead of drawing directly upon the wood, the artist now makes his finished picture upon paper, which is then photographed upon the wood in exact *facsimile*; the engraver then proceeds to cut the photograph, and during the whole time of cutting he has before him the original paper drawing, to which he may refer for assistance in his endeavor to maintain and reproduce the spirit and feeling of the picture.

NEW POLYGRAPH.—The latest method for the rapid reproduction of letters, drawings, etc., has been brought out in France, and is made as follows: A plastic mixture, composed of 500 parts (by weight) of white gelatine, 500 parts of glycerine, 50 parts of glucose, 50 parts of white glue, and 350 parts of water, is poured hot into a shallow tin box of suitable size. The ink used for writing or drawing is made by adding to a suitable quantity of water 20 grams of violet aniline and 300 drops of alcohol. The ink is allowed to dry on the paper, which may be of an ordinary quality, and then the written side is laid on the plastic paste and is gently pressed on with the hand. After waiting for a minute the paper is neatly raised, and the writing will be found to have been transferred to the surface of the paste. From this as many as 50 copies can be taken without the aid of the press. What is left of the ink is carefully washed off by means of a warm sponge.

RAISINS AS A RECUPERATER.—It is an old story that of the Frenchman who declined to eat raisins or grapes, because he disliked taking his wine in the form of pills; but now comes Sir William Gull, Queen Victoria's physician, who declares it better, in case of fatigue from overwork, to eat raisins than resort to alcohol. In his testimony before the Lord's Commission in London, a few months ago, he affirmed "that instead of flying to alcohol, as many people do when exhausted, they might very well drink water, or they might very well take food; and they would be very much better without the alcohol." He added, as to the form of food he himself resorts to, "in case of fatigue from overwork, I would say that if I am thus fatigued, my food is very simple; I eat the raisins instead of drinking the wine. For 30 years I have had large experience in this practice. I have recommended it to my personal friends. It is a limited experience, but I believe it is a very good and true experience."