ture and rub outwards toward the edges to dispel all air and paste. Be very careful not to get paste on the back of the print. Keep it damp with a sponge until the rubbing is finished, being careful not to break the surface of the paper. When perfectly dry, lay on a heavy coat of castor oil and it will soon become transparent. If too much oil, rub off the surplus with a cloth. Allow it to stand a day or two, when it may be colored.

IMPROVED APPARATUS FOR TESTING BANK CHECKS.

The device herewith illustrated is intended as a safeguard for bank checks, which will enable any alteration or raising of the figures of the same to be at once discovered. Certain perforations are made in the paper which, by their position, indicate the true amount, but it is impossible for any one to make these perforations at the right places, unless he possesses the depositor's peculiar combination, while the presence of a perforation in the wrong place immediately discredits the check.

The invention includes two separate devices—one to be in the possession of each depositor, the other to be kept by the bank. The first is represented in Fig. 2, the second in Fig. 1. Both have metal base plates, A, to which are hinged other plates, B. The plate, B, in Fig. 2, has inscribed upon it just seven concentric polygons, which are intersected by thirty-one radial lines. At each of the points of intersection (except at those on the innermost polygon, where they are spaced further apart) apertures are made. The radial lines are numbered as shown at their outer ends. These numbers are called combination numbers. The apparatus used by the bank is represented in Fig. 1. In the outer plate, B, is a circular hole around which numbers are marked. Within the circle is placed a loose polygonal plate, C, marked off and perforated in precisely the same way as the outer plate of the depositor's apparatus. This plate is held in position by lugs, D, and is provided with a handle or extension piece. E.

The mode of using the device is as follows: On the depositor's portion, Fig. 2, is inscribed the number 68. This gives 18 as the index number of that particular apparatus, 50 being taken as the starting point. We will suppose that the index being 18, the depositor's combination number is 22, and the amount of his check $1,225. After filling out the check, he places it on his plate, A, beneath the plate, B, Fig. 2. A pin at F, in the lower plate, then perforates the check, and enters a hole in the upper plate. Beginning with the units of the sum to be marked 5, is added to the combination number. The total of 27 is now found on the edge of the polygon, and through the hole in the outside polygonal line opposite that number a hole is pierced by the pin shown at G. The figure in the ten's place or 2 is next added to the combination number, and the pin is forced through the hole in the second polygonal line opposite the number 24, and so on, the hundreds being marked through the third polygonal line, the thousands through the fourth, and so on to the tens of thousands. The hundreds of thousands and the millions are marked in the two inner polygonal lines

When a check is received at the bank the index and combination numbers of the depositor are noted. The plate, C, is then adjusted to bring the zero point opposite the depositor's index number on the surrounding circle, the handle, E, furnishing a convenient means of doing this. The check is then placed so that the pin, G, on the plate B, Fig. 1, corresponding in position to the similar pin in Fig. 2, enters the hole in the check made by the latter. The perforating pin, F, is then used in the same manner as already described. The check in being removed from the apparatus is examined, and if no new punctures have been made it is genuine; but if new holes have been formed, then there is proof of the raising or forging of the check.

Patented through the Scientific American Patent Agency August 21, 1877. For further particulars address F. and A. D. Grafelmann, Middle Village, Queens county, L. I.

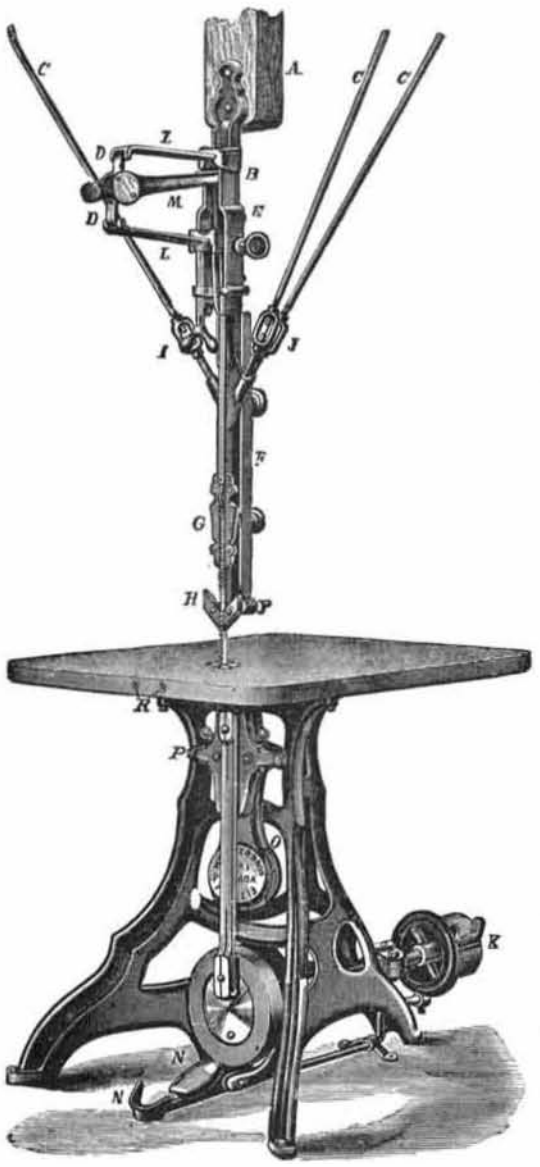
American Machinery in New South Wales.

Messrs. J. A. Fay & Co., the well known manufacturers of woodworking machinery, of Cincinnati, Ohio, inform us that the Metropolitan Exhibition of New South Wales, to which they contributed quite largely, proved remarkably profitable and satisfactory to them. They received four medals in competition with other American and the English manufacturers. We have taken occasion before this to direct the attention of our readers to the extensive demand for improved American machinery in Australia, and Messrs. Fay & Co.'s statement goes further to show the ready appreciation which our industrial products there encounter.

CEMENT UPON IRON OR STONE.—A cement made of glycerin and litharge hardens rapidly, and makes a durable cement upon iron or stone. It is insoluble and is not attacked by acids.

WALKER BROTHERS' IMPROVED SCROLL SAW.

Workers in wood are generally aware that while the band saw is excellently suited for outside work, it is not so for inside cutting or perforated work. The jig saw, on the other



hand, is adapted to both, and for the latter variety especially, owing to the facility with which its blade can be detached or unhooked and passed through the holes made in the piece to be sawed. On its capabilities in this particular are based the claims of superior economy usually advanced for the jig or scroll saw

A new machine of this description is represented in the accompanying illustration. It is designed for general use on medium or fine work in hard or soft wood. It is durably constructed, and is provided with convenient means for the adjustment of all its parts.

As the straining device for the blade is one of the most important features in the construction of the scroll saw, special attention may be directed to the ingenious arrangement herein embodied. The object is to produce an even tension on the blade at all points of the stroke, and to enable the strain to be varied at pleasure. Springs, L, links, D, and lever, M, are attached to a casting that may be moved up or down the standard, B, for blades of different lengths. More or less strain may be imparted by turning the hand nut, I, so moving the lower spring, L. As the lever, M, travels on its upward or downward stroke, it throws the supports of the limbs, D D, forward and backward; in this way the lever tension of the blade is maintained. The links, D, are attached to the ends of the springs and lever so as to roll on their points of contact or bearing surfaces, thus reducing friction of the working parts. The upper and lower fastenings for the saw blade are made to fit any thickness, and the blade can be quickly changed for perforated work without raising and lowering the upper slides or hold down, F. The lower slides, P, have a parallel adjustment, and are set up for wear by simply turning one screw, P, at the sides of each slide.

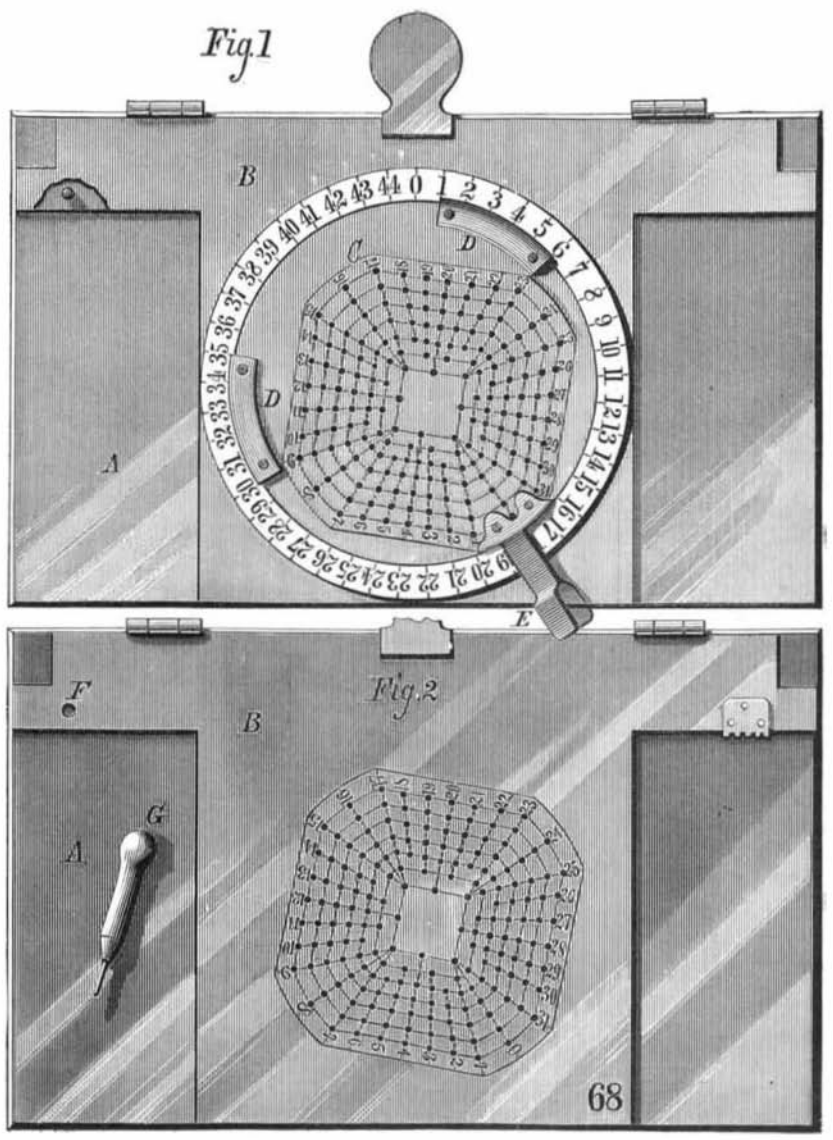
A small rotary blower, O, attached to the frame under the table and driven by a pulley on the balance wheel shaft, forces a blast of air against the sawdust as it comes from the blade, keeping the slides free from dust, preventing absorption of the oil in the lower slide and guides, and preventing the noise and heat so common in slides when running loose and dry. A rubber tube, not shown in the engraving, is attached to the blower and conducts the air above, keeping the sawdust from the working lines of the sawyer.

The table is made of wood or iron, as preferred, and the filling around the saw blade may be of wood or of hardened steel. The latter is kept in place and adjusted by the screws, R, in front of the table. The hold down, F, and the slides, G, may be adjusted independent of each other for thickness of stuff or length of blade, and the back and side guide, H, removed, when not in use, for long or narrow blades. The lower slides, P, may also be set up for wear and kept parallel without trouble and loss of time. The saw is started and stopped by the foot of the operator on the rod and brake, N, and the belt shifter, K—another important improvement—may be set for the belt in any direction. All the parts are well made and fitted, and guaranteed in every respect. The pulleys are 6 inches diameter by 3 inches face, and should make from 900 to 1,050 revolutions per minute. Patented May 27, 1873. For further information address the manufacturers, Messrs. Walker Bros., 73 and 75 Laurel street, Philadelphia, Pa.

Egg Raising.

The egg traffic of this country has risen to an importance which few comprehend. The aggregate transactions in New York city alone must amount to fully $8,000,000 per annum, and in the United States to $18,000,000. A single firm in that line of business east handled $1,000,000 worth of eggs during the year. In Cincinnati, too, the traffic must be proportionally large. In truth, the great gallinaceous tribe of our country barnyard contributes in no small degree to human subsistence, eggs being rich in nutritive properties, equal to one half their entire weight. Goose, duck, hen, pullet, and partridge eggs are the principal kinds produced in America. We have nothing, however, like what we are told used to be found in Madagascar, or have been found there, the gigantic woa egg, measuring thirteen and a half inches in extreme length, and holding eight and a half quarts. One of these birds, with a single effort, might supply a modern boarding house with omelettes for a day.

The perishable nature of eggs has naturally detracted from their value as a standard article of diet. The peculiar excellence of eggs depends upon their freshness. But lately the process of crystalizing has been resorted to, and by this process the natural egg is converted into a vitreous substance of a delicate amber tint, in which form it is reduced seven eighths in bulk compared with barreled eggs, and retains its properties for years unimpaired in any climate. This is indeed an achievement of science and mechanical ingenuity, and has a most important bearing on the question of cheaper food, by preventing waste, equalizing prices throughout the year, and regulating consumption. In this form eggs may be transported without injury, either to the equator or the poles, and at any time can be restored to their original condition simply by adding the water which has been artificially taken away. The chief egg-desiccating companies are in St. Louis and New York. No salts or other extraneous matters are introduced in the process of crystalizing, the product being simply a consolidated mix-



APPARATUS FOR TESTING BANK CHECKS.