The roller being free to turn, relieves the metal from much of the friction, and makes the operation of the tongs easier and moother. One of the handles is furnished with a cost-piec of

A, to give additional power when required. There is no lost motion in the jaws; and it is impossible to make "spews" in making grooves when the jaws bite the same at the ends and the middle.—Plumber and Sanitary Engineer.



NEW VARNISH FOR FOUNDRY PATTERNS .- A varnish for foundry VARNISH FOR FOUNDER FAIlband. In Germany, which y patterns and machinery has been patented in Germany, which dries as soon as put on, gives the patterns a smooth surthe patterns from warping, shrinking or swelling, as it is perfectly impervious to moisture. This varnish is prepared as follows: Place in a vessel 50 pounds of shellac, 10 pounds of manille conduct of the second of the second second. and heat it by manilla copal, and 10 pounds of Zanguebar copal, and heat it by manilla copal, and 10 pounds of Zanguebar copal, and heat it by the external application of steam for four or six hours, stirring it in the number of the finest rate spirit, and heat the whole during four house to 190 deg. and can be used for painting the patterns. When used for paint-number of glazing machinery, the varnish may consist of 35 canguebar copal, and 150 pounds of spirit. Similar varnish to the above is used outle extensively by pattern-makers in this the above is used quite extensively by pattern-makers in this country, and much of the superior appearance of American castings is due to its use.

IMPROVEMENTS IN PLANES.

IMPROVEMENTS IN FIGURE. The accompanying engravings represent an improved bench plane, recently patented by Mr. Patrick Gallagher, of Eureka, the internal construction, and Fig. 2 is a detail view of the per-sect plane, fore plane, or jointer, of wood or iron. The iron or bit, B, is screwed by a clamp screw in the body of the plane, A, in position near its entting edge by the cap, C, which is pivoted in position near its cutting edge by the cap, C, which is pivoted on a pin that runs transversely through the plane. The position of the of the cap above its pivot is pressed forward by two strong springs that are supported by a cross bar, D, fitted to slots in the sides of the supported by a cross bar, D, fitted to slots in the lower of the plane. These springs keep the cover down on the lower



end of the bit or iron, holding it firmly in place. As the cutting iron lies more nearly flat than in ordinary planes it will make a moother surface, and it is more easily adjusted than irons fastened with a wedge in the usual way.



Fig. 3 shows a new adjusting device for plane bits or irons, recently patented by Mr. L. Baily, of Hartford, Conn. It is especially designed for metallic planes, and consists in a stud which supports the bit, and is adjustable in a socket that is cast which supports the oil, and is an usual and is a source that is easy with the body of the plane. A differential screw passes through this stud, and engages a nut having a pin or stud projecting from one of its sides, which may be inserted in any of the several holes in the bit. The differential screw has a jointed handle which is the bit. answers the purpose of a lever, by means of which the bit may be nicely adjusted. - Scientific American.



"VICTORIA" PATENT SPRING BED BOTTOM.

The Victoria Manufacturing Company, Wolverhampton, are now sending out a new patent spring bed bottom, the principle of which is shown in the accompanying illustrations. It is con-structed of light and fragile-looking wood laths and stretch bars upon steel coil springs, which latter suffice to impart an easy and comfortable elasticity to the bed, so essential to rest and repose. The main features of the invention are its extreme portability, cleanliness, and cheapness, and its equal adaptability to iron as to wooden bedsteads.

