

H. HADWIN.
 SCRIMP RAIL FOR CALICO PRINTING MACHINES.
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935,654.

Patented Oct. 5, 1909.

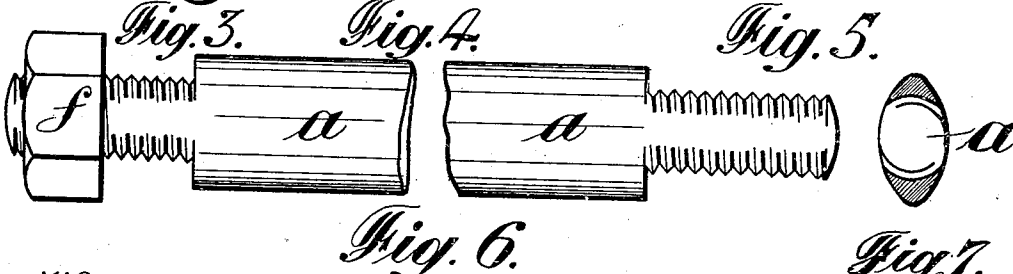
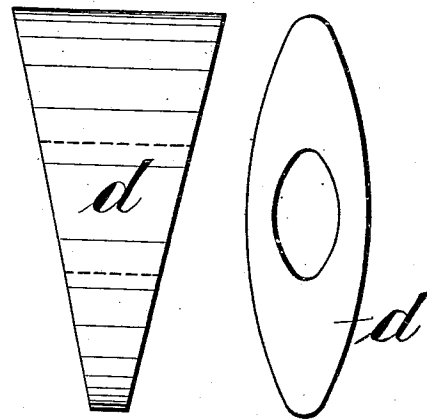
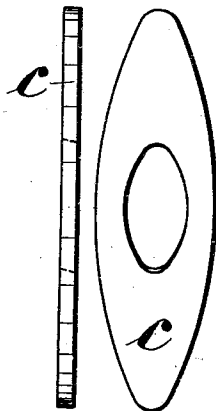
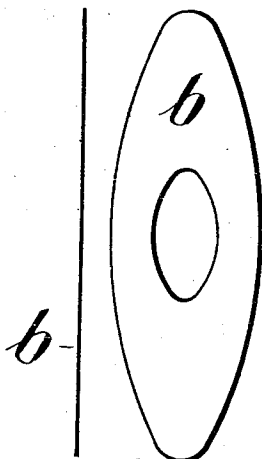
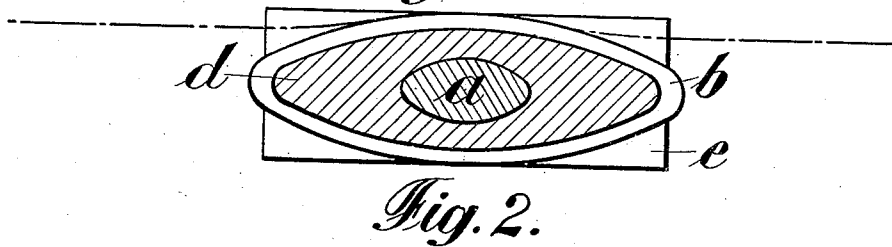
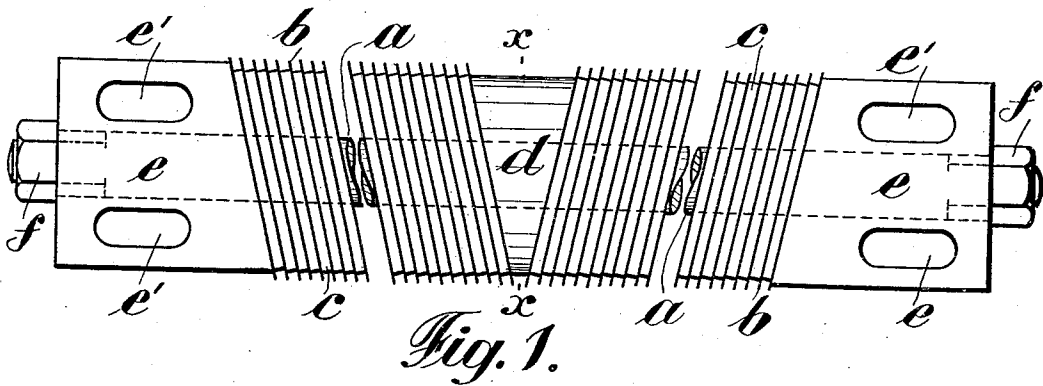


Fig. 7.
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Witnesses:-
 T. W. Bailey
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By his Attorney:-

UNITED STATES PATENT OFFICE.

HARRY HADWIN, OF DINTING, ENGLAND.

SCRIMP-RAIL FOR CALICO-PRINTING MACHINES.

935,654.

Specification of Letters Patent.

Patented Oct. 5, 1909.

Application filed March 23, 1908. Serial No. 422,807.

To all whom it may concern:

Be it known that I, HARRY HADWIN, a subject of the King of Great Britain and Ireland, and resident of Dinting, in the county of Derby, England, have invented certain new and useful Improvements in Scrimp-Rails for Calico-Printing Machines and the Like, of which the following is a specification.

This invention refers to and consists of a new or improved construction of "scrimp" rail for use with calico printing machines and the like, the object of the invention being to provide a form of "scrimp" rail which maintains its sharpness or efficiency for a longer period than the ordinary cast metal, solid scroll form of rail, and one which when worn down on one side can be easily reversed and used on the opposite side.

A further object is to provide a construction of rail which is built up of standard parts, and which can be readily lengthened or shortened, and the angularity of its working edges be readily varied to suit requirements.

According to the invention, the improved rail consists of a rod or bar equal in length approximately to the length of the intended rail and its end supports. Upon such rod or bar is mounted a wedge-shaped block, and also threaded upon such bar, from each end and upon both sides of the said block, are a number of thin, washer-like plates and packing rings or sleeves. When the bar is fully charged with the plates and rings, and the wedge block is central, the ends of the bar, which are screw-threaded, are fitted with blocks and tightening-up nuts by which the several plates and rings are tightly clamped against each other and by which the complete rail is held to the supports on which it requires to be secured. The plates are of larger diameter than the packing rings and thus when the plates and rings are grouped together the plates present a series of blade-like edges lying at a distance from each other equal to the width of the ring.

Upon the accompanying drawing Figure 1 illustrates a plan (partly broken away) of a scrimp rail constructed in accordance with this invention. Fig. 2 illustrates a cross-section of the improved rail on line $x-x$. Fig. 3 illustrates edge and side views of one of the blades, while Fig. 4 illustrates edge and side views of one of the packing rings. Fig. 5 illustrates face and side views of the

central wedge shaped block. Fig. 6 illustrates a plan (partly broken away), and Fig. 7 an end view of the rail bar.

a is the bar, which is of a length suited say to the width of machine to which the rail is to be applied.

b, b are the metal plates, c, c the packing rings, d the wedge block and e, e the end blocks. As shown, the metal plates are preferably about a quarter of an inch larger in diameter than the rings. The plates b, b and the packing rings c, c , likewise the blocks d and e are each of oval shape. The bar a is of oval cross-section, see Figs. 2 and 7. The opening in each plate and packing ring is also of oval shape and such as to allow the plate and ring when on the bar to lie at the desired angle. At each end the bar is shouldered down and screw-threaded, see Figs. 6 and 7. The bore of each end block e, e is such as to allow the bar a to pass through it, and receive a nut f by which the plates, rings, wedge and end blocks may be firmly clamped side by side. In each end block are slots e', e' by which the rail, when made up to the required length, may be adjustably bolted down, by bolts passing through the slots, to the machine frame or other object designed to receive it. Each end block on that end nearest the plates is beveled, see Fig. 1.

In proceeding to build up the improved rail, the wedge block d is first passed on to the bar and placed centrally thereon. A series of plates b and rings c arranged alternately, are then threaded on to the bar from one end, and a like series of plates and rings, also alternately arranged, are threaded on to the bar from the other end. The end blocks e, e are then threaded on to the bar, after which the nuts f are screwed on to the bar and tightened up until the blocks, rings and plates are firmly clamped together. The rail thus made up is then bolted to the machine with which it is to be used, with the wedge block d central to the width of the fabric designed to pass over it, and the narrower part of the block lying toward the direction from whence the fabric travels. Owing to the wedge block, the several plates and rings when in position lie at divergent angles to right and left of the block, therefore, when a fabric is passed over the rail and bears against the edges of the plates, it is spread out and all folds or creases removed. In the example shown the packing

rings are parallel sided and thus all the plates lie at the same angle relatively to the block *d*. They are also all of the same thickness, and therefore lie at equal distances apart. It will be understood however that they may be of slightly tapered formation and be of uneven thickness and thereby be caused to lie at varying angles relatively to the block *d*, or lie at varying distances from each other. In such connection the action of the rail may be graduated *i. e.* afford a gradually increasing bite from the center outward. Usually the plates will be arranged at a distance of about $\frac{3}{16}$ th of an inch apart.

For wet fabrics the plates *b* will preferably be made of a non-corrosive material, say German silver, and for dry fabrics they will be of steel or any suitable material. The packing rings will preferably be made of fiber, both plates and rings being stamped to the shape and size required.

By being oval the improved rail affords the maximum of surface for acting on a fabric which merely passes over it. Furthermore it permits of the rail being reversed and used either way up without any nicety of adjustment and by being reversible it enables first one side or face to be worn and then the other. The chief merit of the invention however is the provision of a scrimp rail having a multiplicity of blade-like edges which do not require to be periodically sharpened but which remain sharp until fully worn down.

By the improved rail being formed of standard parts it will be seen that scrimp rails of various lengths may be readily built up, and further that by using packing rings of varying thicknesses or taper the action

of the rail may be varied to suit the work it has to do. Instead of being oval the plates and rings may be flat or rectangular with say rounded corners, or they may be circular, semi-circular or **D** shape, but in this last named case the rail will not usually be reversible.

What I claim is:—

1. A "scrimp" rail consisting of a bar screw-threaded at each end, a wedge shaped block mounted centrally on such bar, a number of thin sheet metal plates and a number of intermediate packing rings mounted upon the said bar, each plate and packing ring having an aperture which allows them to lie at an angle of less than a right angle to the longitudinal axis of the bar, and clamping blocks with inner beveled ends also mounted on the bar one at each end, and nuts for clamping the blocks, plates and rings together, substantially as herein set forth.

2. A "scrimp" rail consisting of a bar of oval cross-section and shouldered down and screw threaded at each end, a number of thin oval shaped plates and slightly smaller oval shaped packing rings, each with an oval shaped central opening and the rings arranged between the plates, a central wedge shaped block and end clamping blocks with beveled inner ends and means for clamping the blocks, plates and rings end to end, substantially as herein set forth.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

HARRY HADWIN.

Witnesses:

F. C. PENNINGTON,
P. D. BAILEY.