J. WITZIG.

ROLL.

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1,414,449. Patented May 2, 1922.

Fig. 1

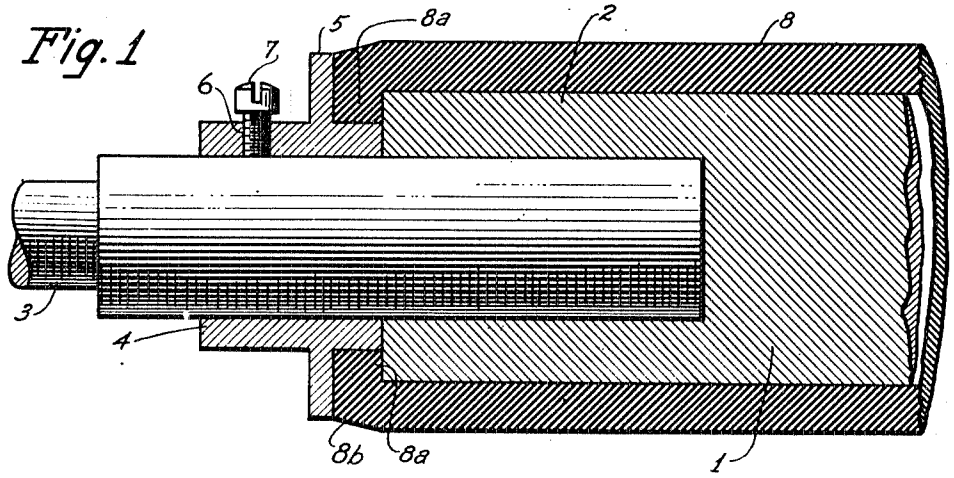
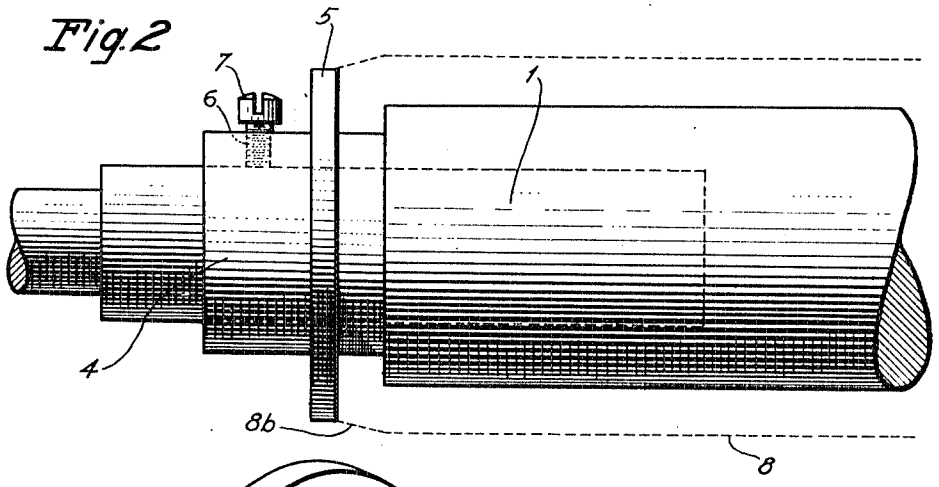


Fig. 2



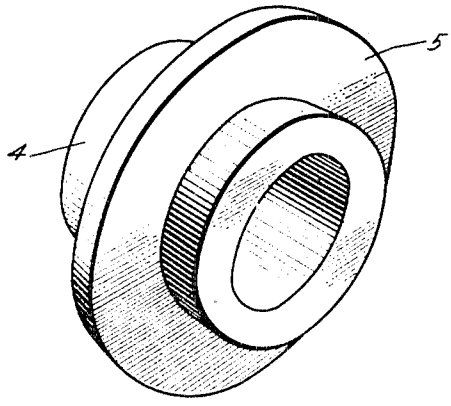


Fig. 3.

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JOHN WITZIG, OF ASTORIA, NEW YORK.

ROLL.

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To all whom it may concern:

Be it known that I, JOHN WITZIG, a citizen of the United States, residing at Astoria, Long Island, in the county of Queens and State of New York, have invented a certain new and useful Improved Roll, of which the following is a specification.

This invention relates to rolls for use, more particularly, in printing presses and lithographing machines, and is especially directed to improvements in the so-called composition or rubber faced rolls, employed as pressure rolls, impression rolls, damping rolls, or form rolls in such machines, although, not necessarily restricted to these specific uses.

Such rolls, as now usually manufactured embody a metal core provided at its opposite end with sockets into which are adapted to fit stub shafts or spindles on which the roll is journalled for rotation. Such rolls are covered with a sleeve of rubber or composition material, which extends from end to end of the roll and is usually cast directly thereon. Rolls of this character, when new, are found very efficient for the purposes stated, but in a comparatively short time, the rubber or composition facing adjacent the ends of the rolls become worn off and in many instances pieces of the facing are broken away or torn out rendering the end portions of the rolls inefficient and unserviceable.

Moreover, if such rolls were applied to considerable pressure, there is a tendency for the facing to grip on the core, so that the facing either draws away from the ends of the roll, or protrudes beyond the ends of the core.

The object of the present invention is to so construct a rubber or composition faced roll that the ends of the facing are efficiently anchored to the end of the core and, moreover, to provide such a roll wherein the ends of the facing will be protected against checking or tearing.

A roll made in accordance with this invention is far more durable than rolls as previously constructed, stand up better under wear, and may be handled with much less care than has heretofore been required.

Features of the invention, other than those adverted to, will be apparent from the hereinafter detailed description and claims, when read in conjunction with the accompanying drawings.

The accompanying drawings illustrate one practical embodiment of the present invention, but the construction therein shown is to be understood as illustrative, only, and not as defining the limits of the invention.

Figure 1 is a longitudinal central section through one end of a roll embodying the present invention.

Figure 2 is an elevation of the end of the roll shown in Figure 1, as it appears before the facing is applied; and,

Figure 3 is a collar member employed in the construction.

Since both ends of a roll are constructed the same, I have, in the interest of clearness, shown only one end in the drawings, and in this showing 1 designates a core of a roll, which is provided at each end with a socket 2 adapted to receive one end of a spindle 3. This construction is the one usually employed. In adopting my invention to this type of a roll, I employ the fitting shown in Figure 3 of the drawings. This fitting embodies a sleeve or collar 4 provided intermediate its ends with a flange 5 and tapped at 6 to receive a set screw 7. The inner diameter of the sleeve 4 is made of a size to readily slip over the spindle 3 and into the position shown in Figure 2, and locked in place by the set screw 7 with one end of the sleeve resting against the respective end of the core, and the flange 5 spaced from the end of the core as clearly shown. The outer diameter of the sleeve is preferably less than the diameter of the core 1, while the outer diameter of the flange 5 is preferably less than the diameter of the finished roll.

After the parts have been assembled as described with a fitting at each end of the core, a rubber or composition facing 8 is formed on the core. This facing may be applied in any well known manner and when finished appears as shown in Figure 1.

The application of the facing is so accomplished, as by casting, that its opposite ends will be butted against the inner faces of the flanges 5 at the ends of the roll and will extend over the ends of the core 1 inwardly and closely embrace the sleeve 4. This will effect the formation of a facing of tubular form throughout, but provided at its opposite ends with inwardly turned flanges 8^a, which embrace the end of the core and will properly hold the facing in position on the core against the longitudinal movement relative thereto.

The flanges 5 will also assist in the holding of the facing against the longitudinal movement relative to the core, but has the further and very important function of protecting the ends of the facing. As heretofore stated, the flanges are made of lesser diameter than the outer diameter of the facing and the facing is, accordingly, tapered adjacent its ends at 8^b, so that the ends will conform in size with the flange 5, as clearly shown in Figure 1.

A roll thus constructed is preferably of a uniform diameter from one end of the core to the other, but beyond the ends of the core is tapered down to the protecting flange 5, which so protects the ends of the facing that they will not check off or become broken or torn away.

Having thus fully described the invention, what I claim as new and desire to secure by Letters Patent is:

1. An improved roll embodying a core, a spindle projecting beyond each end thereof, a collar fitted over each spindle and secured in place thereon, each collar being of lesser diameter than the diameter of the core, and provided intermediate its ends with an integral flange of lesser diameter than the finished roll, and a facing of tubular form encircling the core and provided at its opposite ends with inturned flanges which extend over the opposite ends of the core, and abut the inner faces of the flanges of the collars, the opposite ends of said facing being tapered beyond the ends of the core to conform with the flanges.

2. An improved roll embodying a core, a spindle extending from each end thereof, a flange mounted on each spindle in spaced relation from each end of the core and of lesser diameter than the finished roll, and a cast tubular sleeve encircling the core and provided at its opposite ends with an inturned flange extending over the edge of the roll and abutting the inner faces of the flanges of the spindle, the tubular sleeve being tapered beyond the ends of the core to conform to the diameter of the flanges of the spindle.

3. An improved roller embodying a core, spindles projecting beyond each end thereof, a tubular facing encircling the core and extending longitudinally thereof, said facing being provided with inwardly extending flanges at its opposite ends which extend radially inward over the ends of the core, and protecting members encircling the spindles and projecting into the end of the facing, said member being provided with flanges adapted to overlie the outer faces of the flanges of the facing so as to protect the opposite ends of said facing from checking.

In testimony whereof, I have signed my name to this specification.

JOHN WITZIG.