

No. 652,112.

Patented June 19, 1900.

H. H. JACOBUS.
PRINTING ROLLER.

(Application filed Sept. 8, 1899.)

(No Model.)

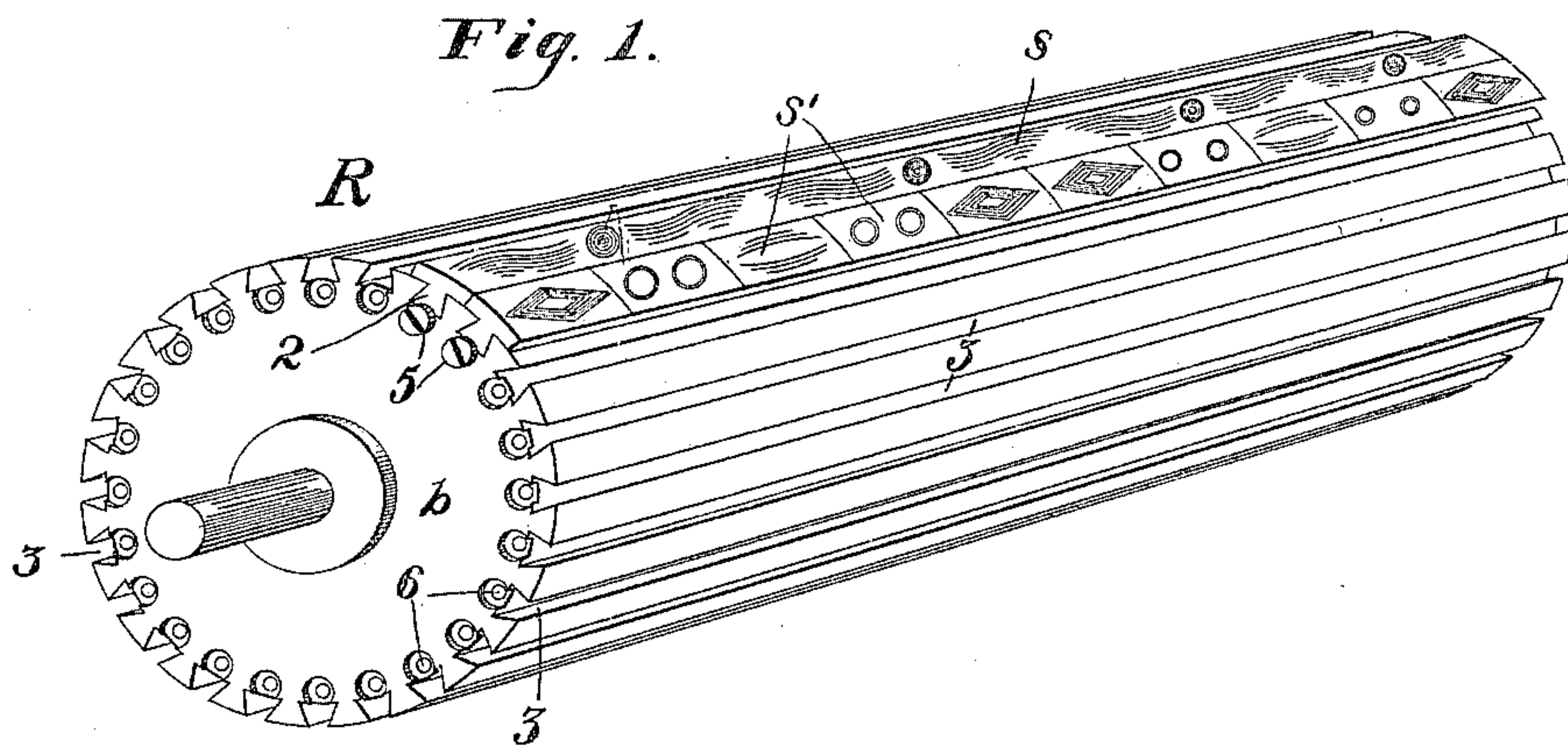


Fig. 2.

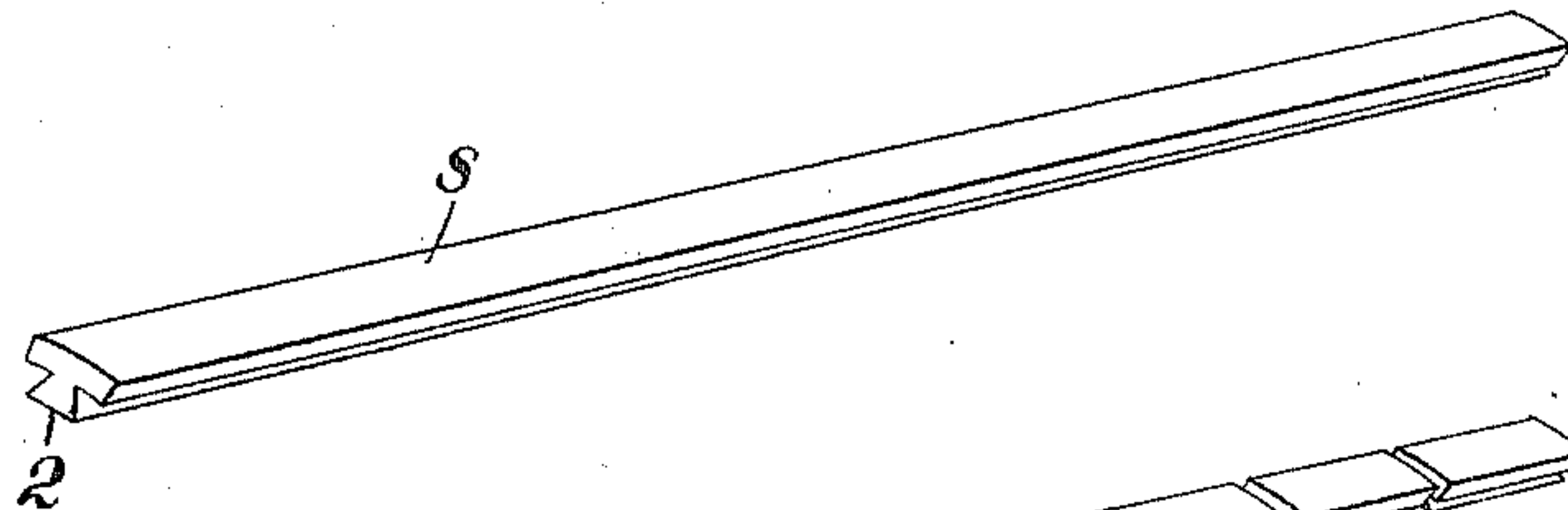


Fig. 3.

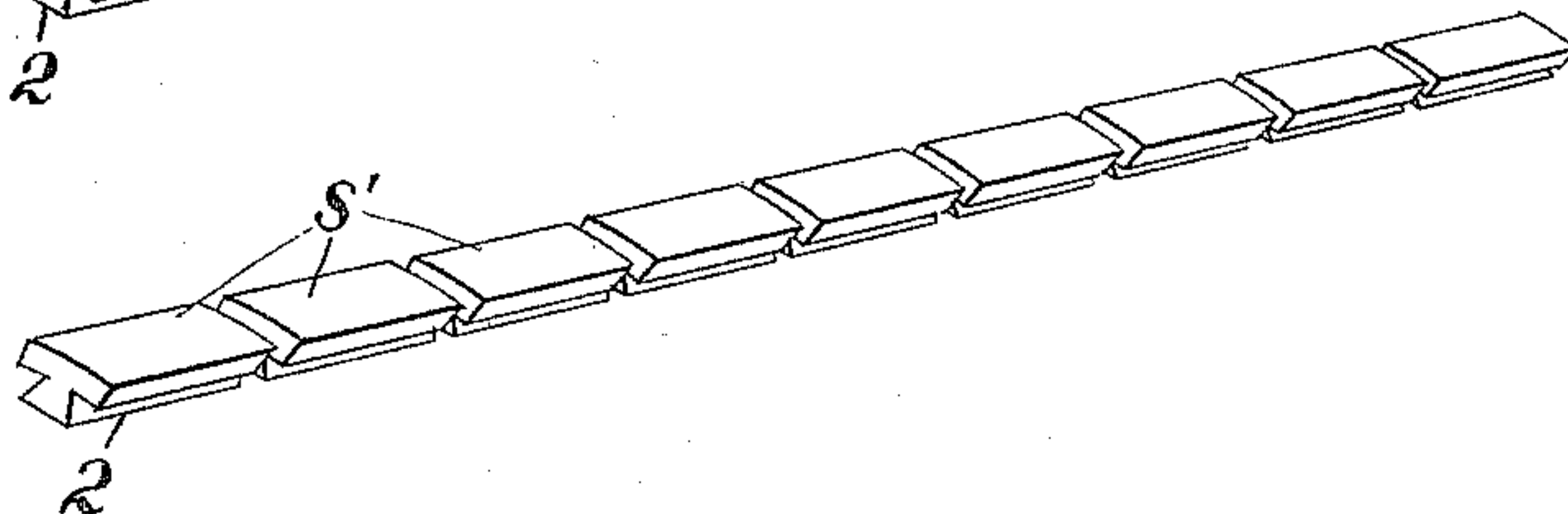
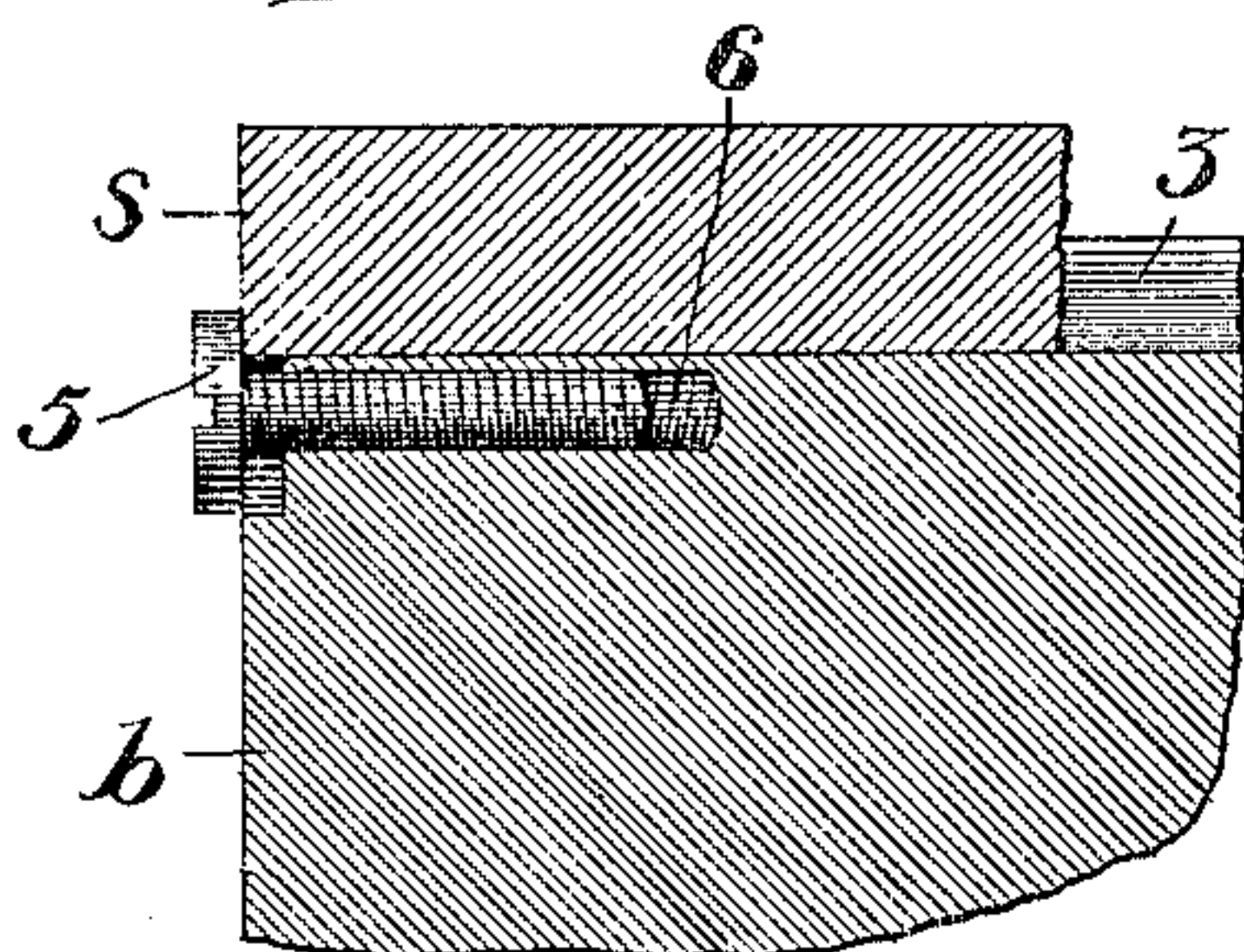


Fig. 4.



Witnesses.

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PRINTING-ROLLER.

SPECIFICATION forming part of Letters Patent No. 652,112, dated June 19, 1900.

Application filed September 8, 1899. Serial No. 729,797. (No model.)

To all whom it may concern:

Be it known that I, HERBERT H. JACOBUS, a citizen of the United States, residing in Cedar Grove, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Printing-Rollers, of which the following is a specification.

This invention relates to improvements in impression members, such as printing-rollers, for use in printing and analogous machines; and it has for its main object the production of a multi-element impression member or printing-roller in which the whole printing-surface is divided into a plurality of removable or separate elements any one or more of which may be removed from the group and a different element substituted for each one so removed. Two objects are obtained by dividing up the printing-surface in this manner—first, by the use of the same or different elements in different positions or combinations different forms or patterns may be used and impressions taken therefrom having different characteristics, and, second, when any one or more of the elements of the impression member are damaged or unduly worn they may be removed and new ones substituted without going to the expense of forming a whole new impression member, as has been done heretofore. Hence an impression member or printing-roller of this type is of very great value in the printing art, as by its use many different patterns or forms may be assembled by interchanging a comparatively small number of printing segments or elements, all of which may be of substantially the same construction, but will of course bear upon their printing-surfaces different symbols or devices for reproduction, while if any one or more of the assembled elements are damaged it is only necessary to substitute for any such damaged segment a similar perfect one instead of discarding the whole printing surface or roller and having a whole new one made, as has had to be done up to this time.

In the drawings accompanying and forming part of this specification, Figure 1 is a perspective view of an impression member or printing-roller, illustrating two different types of printing-segment which may be used in accordance with my invention. Fig. 2 is a similar view of one such type of printing-

segment and illustrates a section in the form of a continuous bar or rod. Fig. 3 is a similar view of a series or row of similar printing-segments of smaller size, each being just large enough to carry a single element or unit-symbol of the whole printing-form. Fig. 4 is an enlarged sectional detail illustrating the preferred means for holding the printing-segments in place.

Similar characters designate like parts in all the figures of the drawings.

I deem it preferable to so construct the printing-segments and the body portion of the impression member or roller that the segments and the body will interlock, and thus render it unnecessary to make use of extraneous holding devices for preventing movement of these segments. Of course when the impression member is a printing-roller which when in operation is rotated at a high rate of speed movement of the printing-segments in a direction transverse to the axis of the roller will be the principal one that it will be necessary to prevent. Hence the interlocking engagement between the segments and their carrier will be such as will prevent any transverse movement of the segments with respect to the axis of the roller and may permit movement of such segments longitudinally of the roller for the purpose of removing them and changing the positions of the segments or substituting different ones.

Some means will of course be necessary for the purpose of preventing endwise movement of the printing-segments when the roller is in use and any suitable means may be employed for the purpose.

In Fig. 1 I have illustrated in detail a printing-roller of the improved type hereinbefore referred to; but while this roller may be employed for many different purposes and in different kinds of printing-machines the roller illustrated is especially adapted for use in a machine for printing wall-papers and similar materials on which large patterns or figures are impressed. This roller (designated in a general way by R) illustrates two different ways in which my invention may be carried into effect, it having one printing-segment, such as s, in the form of a bar extending from end to end of the cylinder, and also having a row or series of printing-seg-

ments each representing a unit-symbol, such as s' , which when assembled are of the same length as and are an equivalent for the single section s .

5 It will be observed, of course, that while the long printing-section or bar s may be removed and a new one substituted therefor it does not possess the same adaptability for different purposes as the smaller segments
10 s' and that the latter are more useful in cases where the impression to be taken from the roll is of a more or less geometrical character as regards the minor elements or unit-symbols of the pattern, in which case of course
15 these small elements may be interchanged at will to produce new combinations, and hence new patterns or designs for reproduction.

I prefer to assemble the printing-segments and the body of the impression member or
20 roll in such a manner that the segments interlock with such body portion, and for this reason I deem it desirable to make use of segments having locking-ribs projecting therefrom, preferably at the inner sides thereof,
25 these locking-ribs of course being received in corresponding grooves formed in the integral roller, or the ribs may be on the roller and the grooves in the segments, if desired. Here both the long printing-section s and the
30 short segment s' have dovetailed tongues or ribs 2 projecting from the inner sides thereof, and the roller has corresponding dovetailed channels or grooves 3 in the periphery thereof parallel with one another and extending longitudinally of the roller, from end
35 to end thereof, for the purpose of receiving the segments and by reason of the interlocking engagement preventing transverse movement of the segments with respect to the
40 axis of the roller. This positive interlocking engagement between the segments and the body b of the roller is had at all times without resorting to the use of any other means for holding the segments in place in a direction
45 transverse to the axis of the roller, the integral locking members being ample for the purpose.

When the long printing-sections or the rows of smaller segments are in their interlocking
50 positions, they should be fastened in place, so that they cannot move endwise, and any simple means may be employed for this purpose. In Fig. 4 I have illustrated at 5 a short screw threaded into a proper opening 6 in the
55 end wall of a body b of the roller and having

its head in position to engage and locate one end of the printing-section or row of printing-segments, it being understood, of course, that at the opposite ends of said sections or rows of segments the parts will be properly
60 positioned. The roll-body is counterbored in alinement with the axes of the screws 5 to permit the heads thereof to bind the segments of the several rows firmly together. While these segments are in place, all the parts are
65 firmly bound and locked together and constitute in their assembled condition a solid and practical unitary roller none of the parts of which can be jarred out of place while the roller is in operation, while when these screws
70 are removed the segments may be slid out of their channels and rearranged to form another pattern or other segments containing an entirely different pattern substituted instead.

75 It will be apparent from the foregoing description of my improved impression member or roller that the main objects to be attained by subdividing the printing-surface are interchangeability of the printing-segments or
80 unit-symbols for the purpose of producing different patterns from the same or substantially the same set of printing-segments and the substitution of new printing-segments for those which may become worn or damaged,
85 this substitution in itself resulting in a great saving, as only a small part of the roller has to be thrown away instead of the whole roller, as formerly, while with these great advantages, which it is not possible to attain with
90 a solid roller having its printing-surface made in one piece, are retained all the features of solidity and strength characteristic of the old type of printing-rollers.

Having described my invention, I claim— 95

An integral printing-roll having a series of channels with dovetail walls disposed at intervals and formed in its periphery, and also having a series of printing-segments with dovetailed ribs fitting in said channels, each
100 of said segments representing a unit-symbol, in combination with means for forcing said segments endwise into contact with each other, thereby to lock said segments in the channels.

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Witnesses:

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