

No. 773,808.

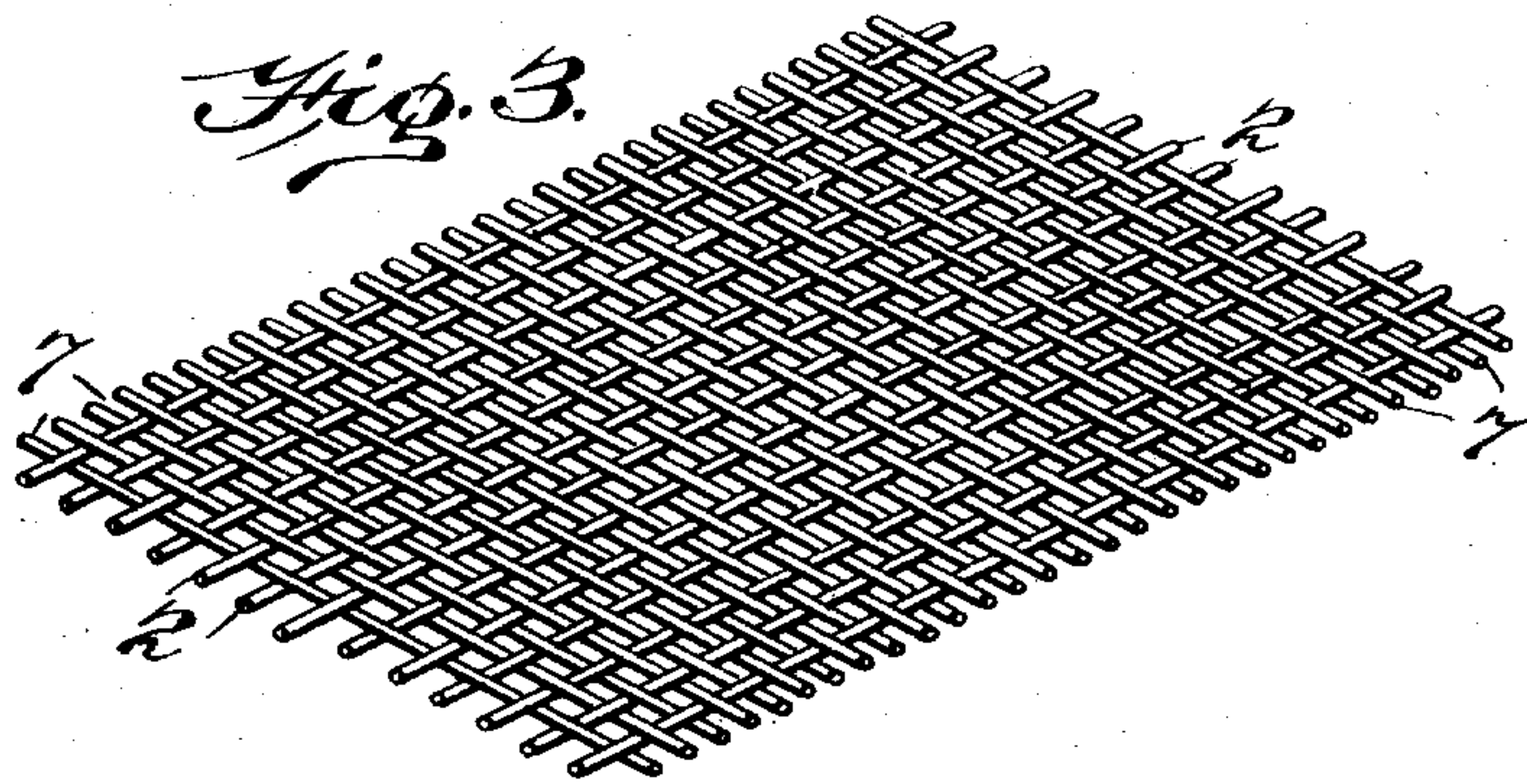
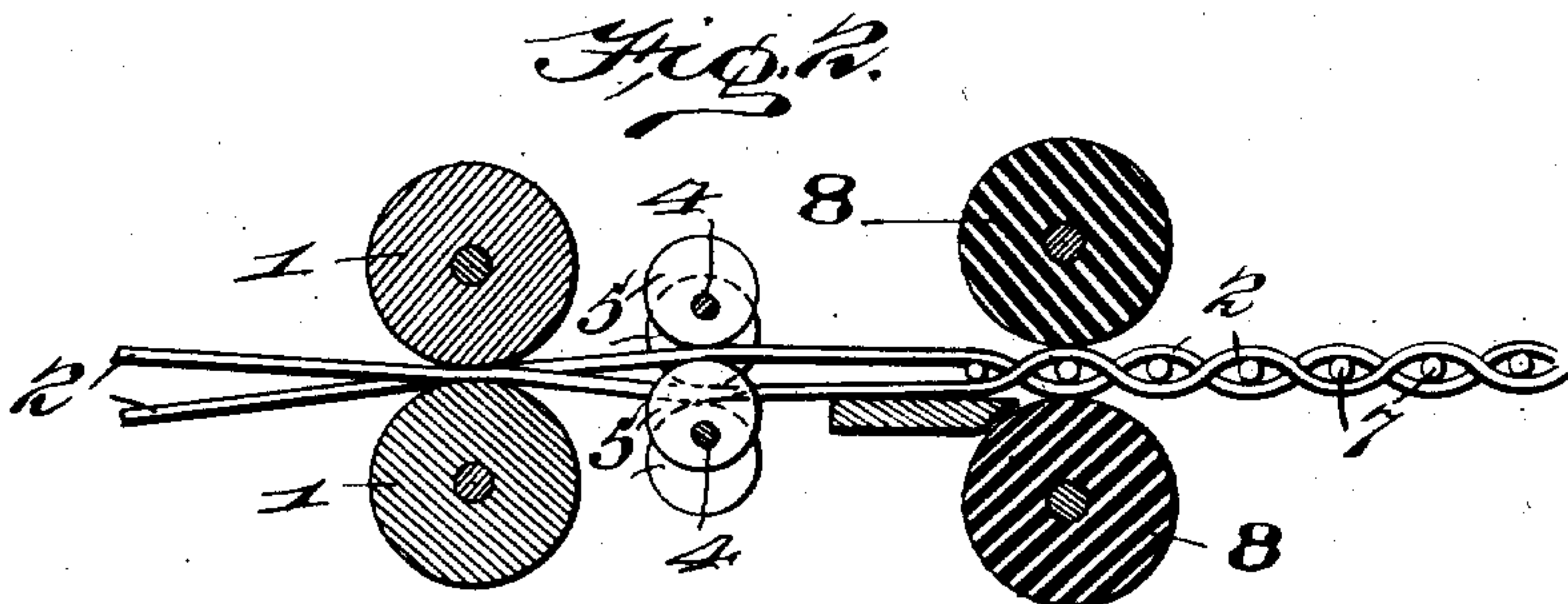
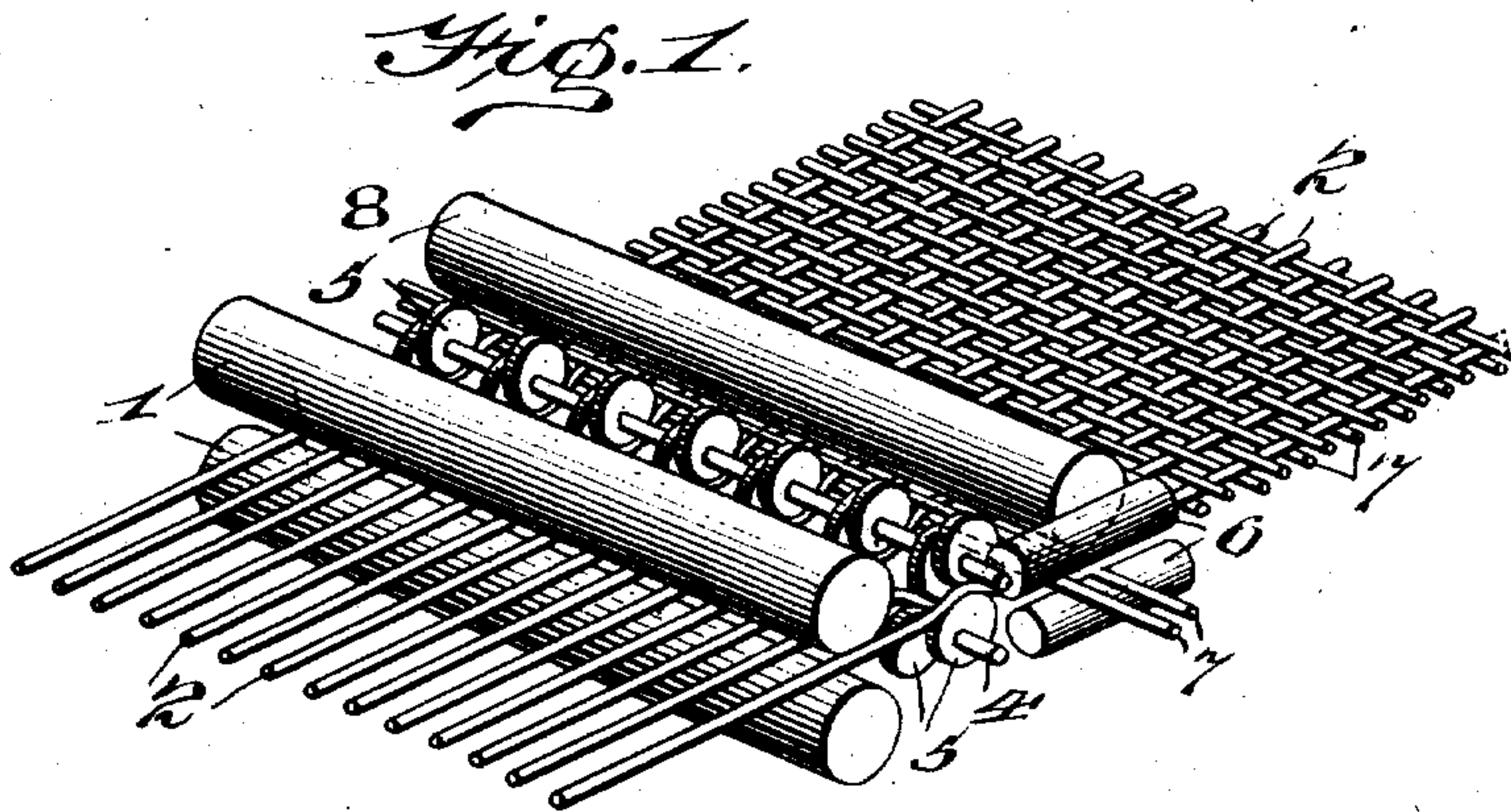
PATENTED NOV. 1, 1904.

T. PENTLARGE.
APPARATUS FOR FORMING WOVEN FABRICS.

APPLICATION FILED JAN. 24, 1903.

NO MODEL.

3 SHEETS—SHEET 1.



Witnesses

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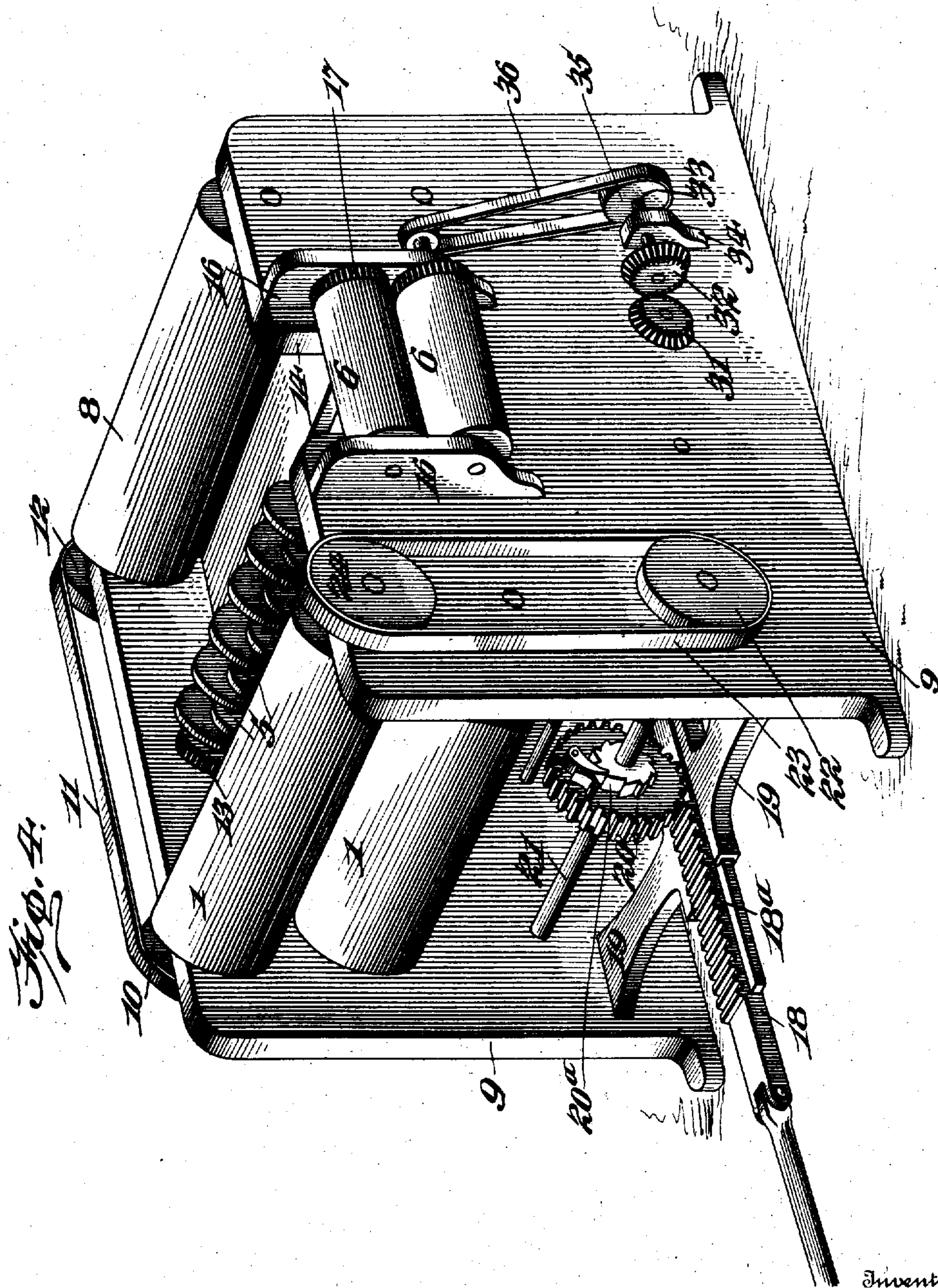
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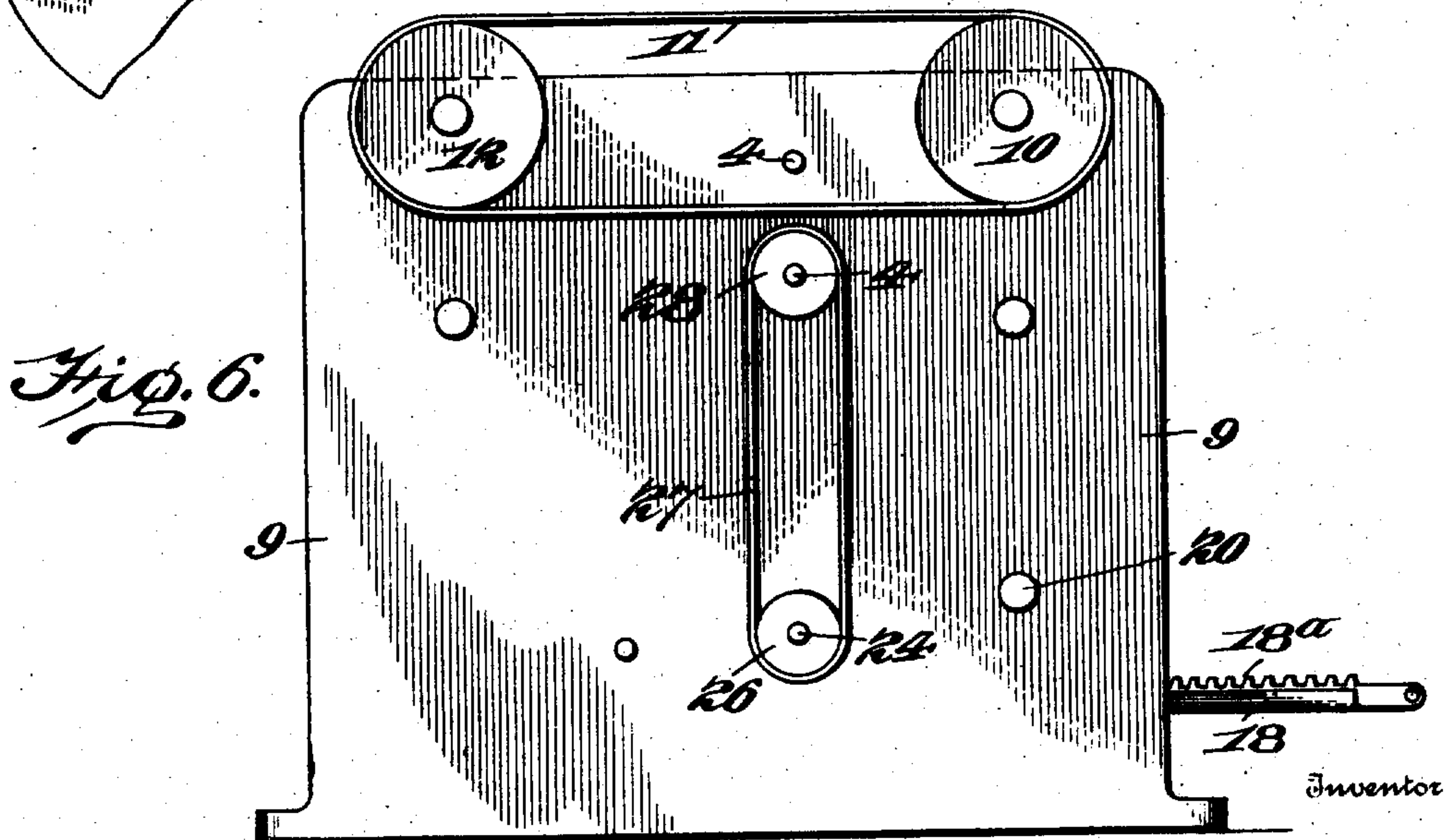
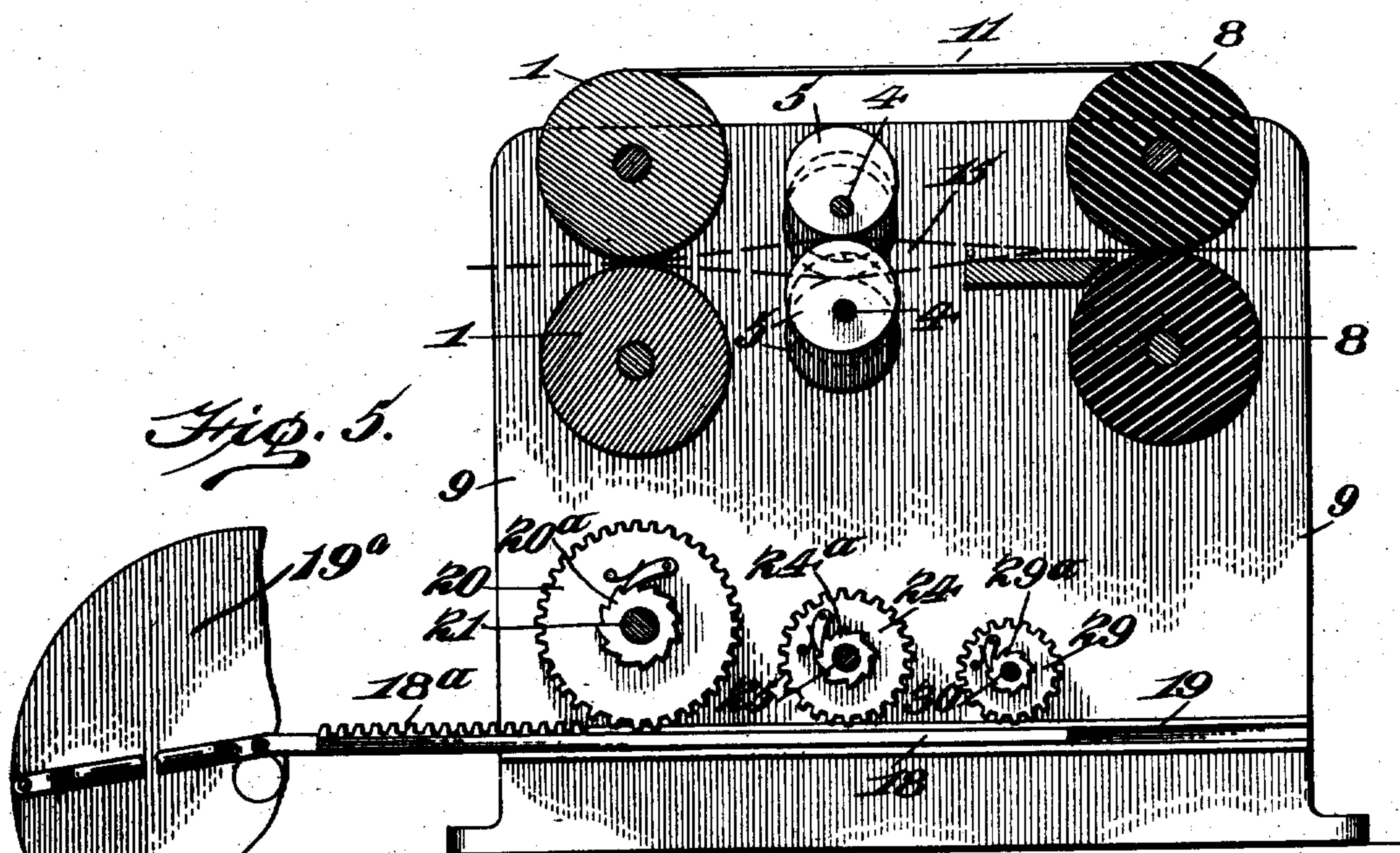
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

THEODORE PENTLARGE, OF ESSEX, NEW JERSEY, ASSIGNOR TO THE WILLIAMS MANUFACTURING COMPANY, OF NORTHAMPTON, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

APPARATUS FOR FORMING WOVEN FABRICS.

SPECIFICATION forming part of Letters Patent No. 773,808, dated November 1, 1904.

Application filed January 24, 1903. Serial No. 140,439. (No model.)

To all whom it may concern:

Be it known that I, THEODORE PENTLARGE, a citizen of the United States, residing in East Orange, county of Essex, State of New Jersey, have invented certain new and useful Improvements in Apparatus for Forming Woven Fabrics, of which the following is a specification.

This invention relates to an apparatus for forming woven fabrics.

It has for its object to provide an improved manner of forming a fabric for baskets and other receptacles, screen-shades, mats, wall-ornaments, and the like.

In the drawings, Figure 1 is a perspective view of the material parts of the apparatus, showing the method of forming the fabric. Fig. 2 is a vertical longitudinal section of Fig. 1. Fig. 3 is a perspective view of a mat of woven fabric made in accordance with my invention. Fig. 4 is a perspective view showing a manner of mounting and operating the rollers. Fig. 5 represents a vertical section of the machine shown in Fig. 4. Fig. 6 illustrates the opposite side of the machine shown in Fig. 4.

A pair of feed-rollers 1, mounted in any suitable manner, feed forwardly between them a plurality of strands of splint, ratan, straw, grass, or other suitable material 2. Mounted in the rear of the feed-rollers 1 is a pair of shafts 4, one above and one below the strands 2, carrying a plurality of cams or eccentrics 5, alternately disposed in opposite directions and which alternately deflect the strands or warp in opposite directions to form a shed. A pair of rollers 6, arranged at right angles to the rollers 1, feed the weft-strand 7 into the shed formed by the eccentrics 5, after which the fabric thus formed is advanced by two compression-rollers 8.

It will thus be understood that I may employ any approved mechanism for mounting and operating the parts above described and that I do not desire to be limited to the hereinafter-described machine, which is shown and described to illustrate only one of the many constructions which may be employed. In this construction the rollers 1 are journaled

one above the other in two side frames 9 and are connected by pulley 10 on the upper roller 1 and belt 11 to pulley 12 on the upper roller 8, whereby both pairs of rollers 1 and 8 are rotated simultaneously and the pulleys 10 and 12 being of the same size they will be rotated at the same speed. Between the pairs of rollers 1 and 8 is mounted the pair of eccentric-shafts 4, which are connected by gears 13, one on each shaft and both of the same size, so that both shafts rotate at the same speed. One of the side frames is cut away at 14, so that the weft-strand 7 may be fed into the shed by the rollers 6, arranged at right angles to the rollers 1 and journaled in two brackets 16, secured to one of the side frames on each side of the cut-away portion 14. The rollers 6 are connected by gears 17 of like size.

The rollers 1 are first rotated to feed the strands 2 until they are caught by the rollers 8. This is accomplished by a sliding bar 18, mounted in brackets 19, operated by crank-disk 19^a, and provided with a small rack 18^a, engaging a gear 20 on a shaft 21, which is connected by pulley 22 and belt 23 to a pulley 24 on one of the shafts of the rollers 1. After the rollers 1 are operated the eccentrics or cams 5 make a half of a revolution to form the shed 15. This movement is accomplished by means of the rack 18^a, before mentioned, and gear 24 in the rear of the gear 20, the gear 24 being mounted on shaft 25, which is connected by pulley 26 and belt 27 with pulley 28 on one of the shafts 4. The upper eccentrics are at such a distance apart from the lower eccentrics as to permit the strands 2 to pass freely between them. The rollers 6 are now brought into operation to feed a weft-strand 7 into the shed 15 by means of a third gear 29, with which the rack 18^a meshes. This gear 29 is mounted on a shaft 30, carrying a bevel-gear 31, which in turn meshes with a bevel-gear 32 on a short shaft 33, journaled in a bracket 34 on one of the side frames. On this short shaft 33 is a pulley 35, connected by belt 36 with a pulley 37 on one of the shafts of the rollers 6. This connection between the rack 18^a and the rollers 6 causes the

rollers to carry the weft-strand 7 between the whole shed formed by the eccentrics 5 and after which the rollers 1 and 8 are again rotated and another shed formed in a reverse direction, the operation being continued until a mat is provided of the desired size. The rack 18^a is of a length insufficient to engage more than one of the pinions 20, 24, or 29 at the same time, thus permitting the consecutive operation of the parts. Further, said shaft rotates the shafts of the gears 20 24 29 in one direction of its movement only, pawl-and-ratchet connections 20^a, 24^a, and 29^a being provided whereby lost motions between the said gears and their shafts are obtained in the other direction of movement of the rack.

What I claim as new, and desire to secure by Letters Patent, is—

20 1. In an apparatus of the class described, the combination of a pair of warp-feed rollers, arranged one above the other, a pair of shafts carrying circular eccentrics alternately

disposed in opposite directions for deflecting the warp members fed by said rolls, and means 25 for introducing weft members through the shed formed by the eccentrics.

2. In a machine for forming woven mats or fabric of splints or the like, the combination of a pair of rolls arranged one above the other 30 and feeding the warp members, a pair of rolls feeding the weft members at an angle to the warp members, a fixed pair of shafts, and eccentrics on said shafts, deflecting the warp members in opposite directions to form a shed 35 to receive the weft members.

3. In a machine of the class described, a means for shedding the warp comprising a pair of shafts, carrying circular eccentrics alternately disposed in opposite directions. 40

The foregoing specification signed this 18th day of December, 1902.

THEODORE PENTLARGE.

In presence of—

WILLIAM HENRY IVIMEY,
LUCIE V. WHITING.