

Aug. 5, 1924.

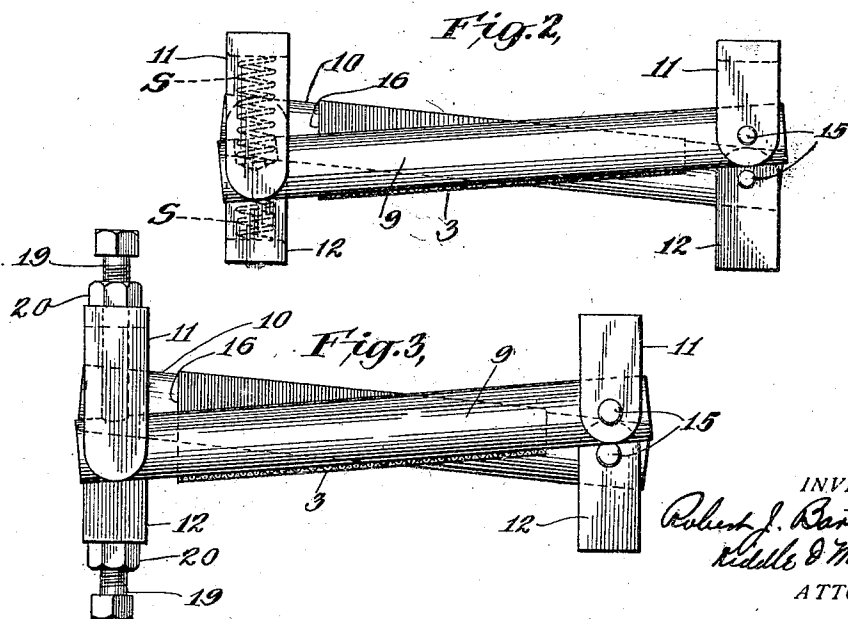
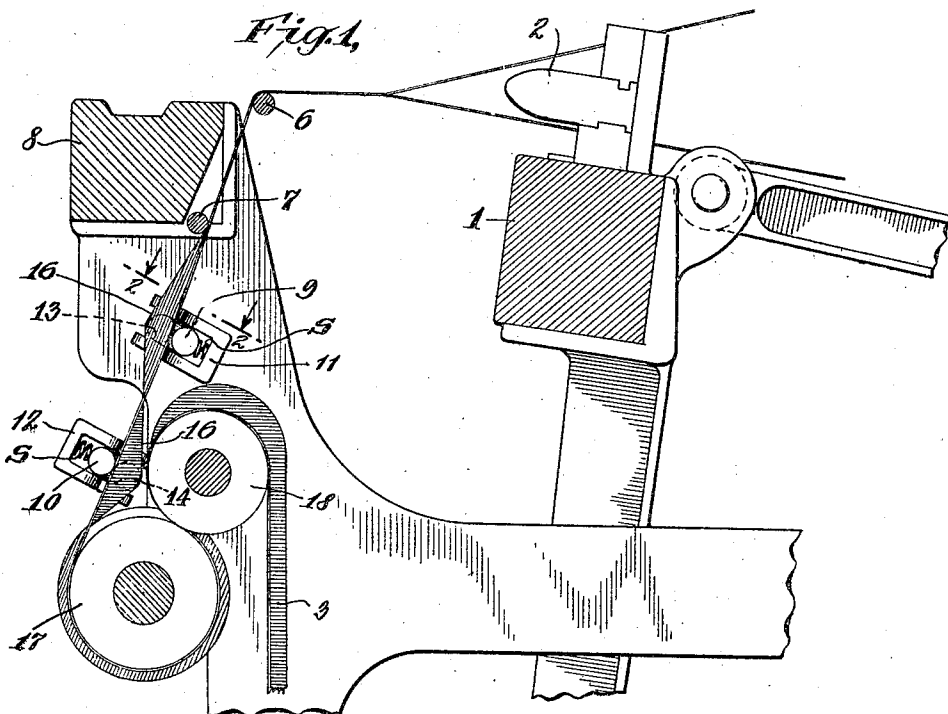
R. J. BARTHOLOMEW

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ATTACHMENT FOR LOOMS

Filed May 19, 1922

2 Sheets-Sheet 1



INVENTOR

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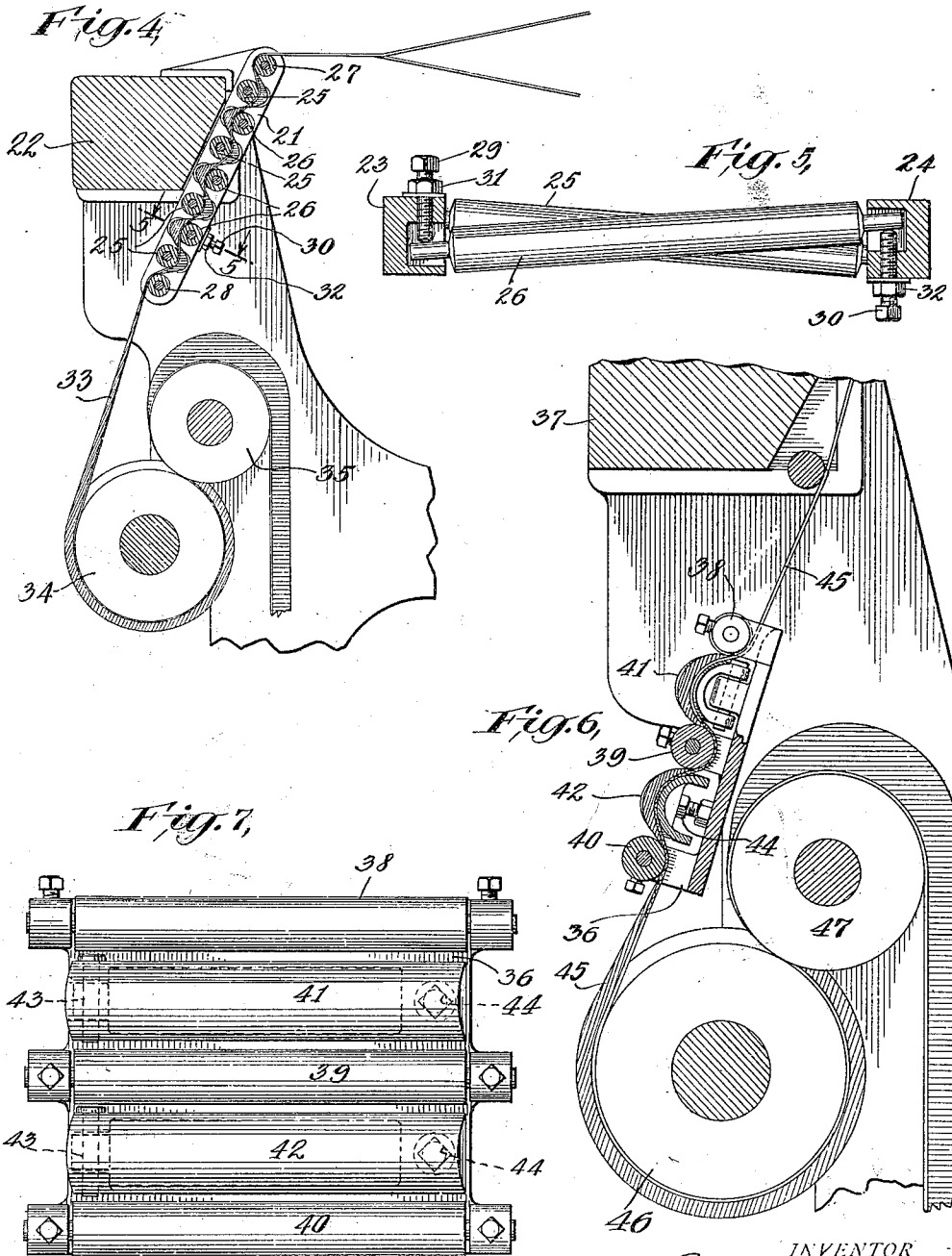
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2 Sheets-Sheet 2



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ATTACHMENT FOR LOOMS.

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To all whom it may concern:

Be it known that I, ROBERT J. BARTHOLOMEW, a citizen of the United States, and a resident of the city of Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented certain new and useful Improvements in Attachments for Looms, of which the following is a specification.

My invention relates to attachments for looms and provides an accommodating mechanism whereby curved fabrics may be woven.

Inasmuch as the construction of the loom proper forms no part of the present invention I have deemed it unnecessary to illustrate the same in the accompanying drawings.

In the weaving of curved fabrics it will be readily understood that unless some special mechanism is provided it will be impossible to weave such fabric and obtain the filling in radial effect with the curve of the warp threads in the fabric. This particular effect is obtained by the introduction of accommodating rolls which are adjusted to take up the difference in length of the inside and outside of the curve of the fabric between the fell of the fabric and the take up roll.

In the accompanying drawings several embodiments of my invention have been illustrated.

Fig. 1 shows my attachment in part sectional elevation in place on a loom;

Fig. 2 is a section taken substantially on the line 2—2 of Fig. 1;

Fig. 3 is a slightly modified form of the apparatus of Fig. 2;

Figs. 4 and 5 illustrate still further modifications, Fig. 5 being a section taken substantially on the line 5—5 of Fig. 4; and

Figs. 6 and 7 illustrate a still further modification, Fig. 7 being a plan view of the mechanism of Fig. 6.

Referring to the drawings in detail and first of all to the embodiment of my invention as illustrated in Figs. 1 and 2,—1 designates the batten beam of a loom, 2 the shuttle and 3 the material being woven. The woven material in leaving the loom is led over a small roller 6 and beneath a similar roller 7, the latter being carried by the breast beam 8. From the roller 7 the material is passed over a roller 9 and under a

roller 10. The roller 9 is carried in a suitable frame 11 suitably attached to the loom while the roller 10 is carried in a similar frame 12. These two rollers are spaced some distance apart and in plan lie parallel to each other but in side elevation they are disposed at an angle to each other, their adjacent ends being arranged in staggered relation. For example, looking at Fig. 1, the end of the roller 9 nearest the observer is lower than the opposite end which is indicated by the dotted circle 13, showing that the roller 9 is set at an angle.

It will be seen also from an inspection of this figure that the end of the roller 10 nearest the observer is above the opposite end indicated by the dotted circle 14. It will be apparent therefore that this roller is inclined in a direction opposed to the angle of inclination of the roller 9. For convenience I prefer to pivot one end of each roller in its respective frame as indicated at 15 in Fig. 2, the other end being free and backed by a coil spring S. This method of mounting enables the rollers to accommodate themselves automatically to goods of different curvatures.

As will be seen from Fig. 1 the fabric 3 lies flat upon the roller 9 as it passes over the same, the longer edge 16 of the goods passing over the high part of the roller. After leaving the roller 9 the fabric is partially twisted and passed under the roller 10, the longer edge 16 of the fabric travelling beneath the low end of this roller. The fabric after leaving the roller 10 passes around a tapered take up roller 17 and between it and a tapered presser roller 18 from which the fabric is discharged from the loom.

It will be seen from the foregoing that I interpose my attachment between the fell of the fabric and the take up roller for taking up the difference in length of the inside and outside edges of the fabric, and that by pivoting the rollers constituting this mechanism I am enabled to automatically change the angle of inclination of one roller to the other so as to automatically compensate for variations in the relative lengths of the inner and outer edges of the fabric being woven.

The modification shown in Fig. 3 embodies an apparatus exactly like the guid-

ing mechanism shown in Fig. 2 with the exception that the spring S has been replaced by an adjusting screw 19 held in adjusted position by a lock nut 20.

5 In the embodiment of my invention shown in Figs. 4 and 5 I provide compensating mechanism of a slightly modified form. This mechanism comprises a frame 21 which may be attached to the breast beam 22 in
10 any suitable manner and comprises side bars 23 and 24 carrying a series of compensating rollers 25 and 26. These rollers are arranged relatively to each other in a manner similar to the arrangement of the rollers
15 9 and 10 of Fig. 1, their adjacent ends being staggered although the rollers lie parallel when viewed in plan.

In addition to these compensating rollers I provide idler rollers 27 and 28, one at
20 each end of the frame 21.

In order that this compensating mechanism may be set to accommodate fabric of different curvatures one of the rollers 26 is so mounted in the bars 23 and 24 that its
25 angle of inclination may be varied, this adjustment being effected by means of adjusting screws 29 and 30 held in adjusted position by lock nuts 31 and 32. In this embodiment of my invention the fabric 33
30 passes over the idle roller 27 beneath one of the rollers 25, over one of the rollers 26, beneath the next roller 25 and so on until the entire compensating mechanism has been traversed, the fabric finally being
35 passed around the tapered take up roller 34 and between it and the presser roller 35 from which it is discharged from the loom.

In the embodiment of my invention illustrated in Figs. 6 and 7 I provide a frame 36
40 secured to the breast beam 37 in any suitable manner, this frame carrying a set of three wooden rollers designated 38, 39 and 40 arranged in parallel relation as viewed both in plan and elevation. Between the rollers
45 38 and 39 I provide a pivoted half-round non-rotatable compensating member 41 and between the wooden rollers 39 and 40 I provide a similar metal member 42. One end of each of the members 41 and 42 is
50 provided with a fulcrum 43 about which these members are adapted to pivot. These half-round metal members are set at an

angle to the rollers 38, 39 and 40 as viewed in elevation, the angle of inclination of these metal members to the wooden rollers
55 being variable by means of an adjusting screw 44. The woven fabric 45 is passed through this mechanism, passing under the roller 38, over the half-round metal guide member 41, under the wooden roller 39, over
60 the guide member 42, under the wooden roller 40, to the tapered take up roller 46, passing around this take up roller and between it and a presser roller 47.

It will be seen from the foregoing that I
65 have provided compensating mechanism between the fell of the fabric and the take up roller whereby it is possible to weave curved fabrics, the difference in length between the inside and outside of the curve in the fabric
70 in the length of the fabric between the fell and the take up roller being automatically taken up.

I claim:

1. An attachment for looms for weaving
75 curved woven fabrics comprising a pair of compensating rollers having their adjacent ends staggered to set the rollers at an angle to each other, said rollers being pivoted to automatically compensate for fabrics of
80 different curvatures.

2. An attachment for looms for weaving curved fabrics comprising a pair of pivoted compensating rollers, the adjacent ends of said rollers being staggered to set the rollers
85 at an angle to each other and means for supporting the free ends of said rollers to effect a variation in the relative angle of inclination of the two rollers to accommodate the attachment to variations in the
90 relative length of opposite edges of the fabric being woven.

3. An attachment for looms comprising a pair of compensating rollers lying parallel to each other in plan and at an angle to each
95 other in elevation, one end of each roller being pivoted to automatically compensate for fabrics of different curvatures, and a tapered take up roller and a tapered presser roller cooperating with said compensating
100 rollers.

This specification signed this 17th day of May, 1922.

ROBERT J. BARTHOLOMEW.