July 15, 1969 R. B. GOLOBART 3,455,343

TEMPLES FOR SHUTTLELESS LOOMS

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Fig 1

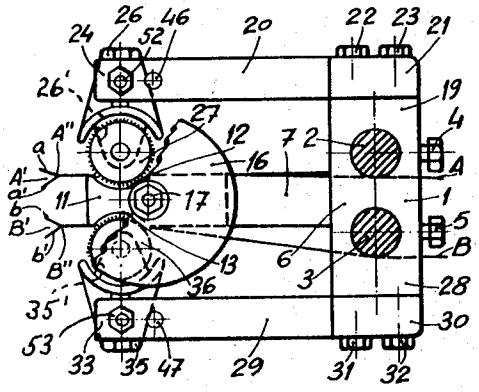


Fig 2

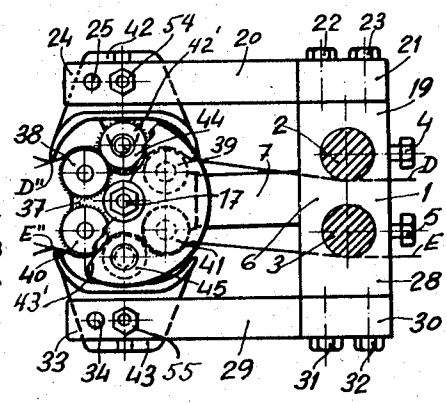


Fig 3

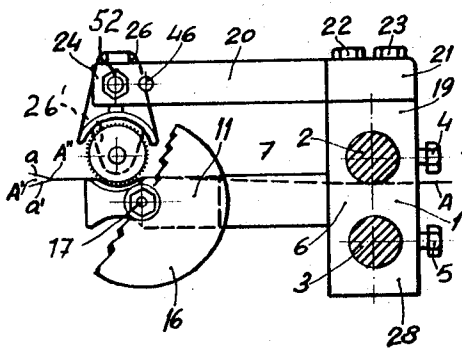
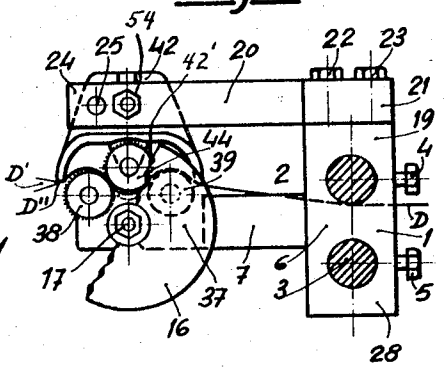


Fig 4



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TEMPLES FOR SHUTTLELESS LOOMS

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Fig 5

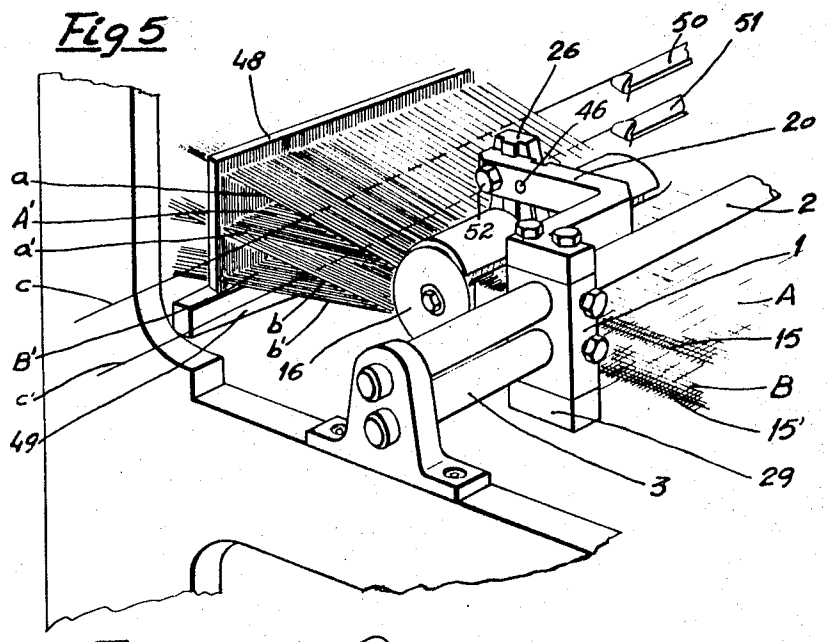
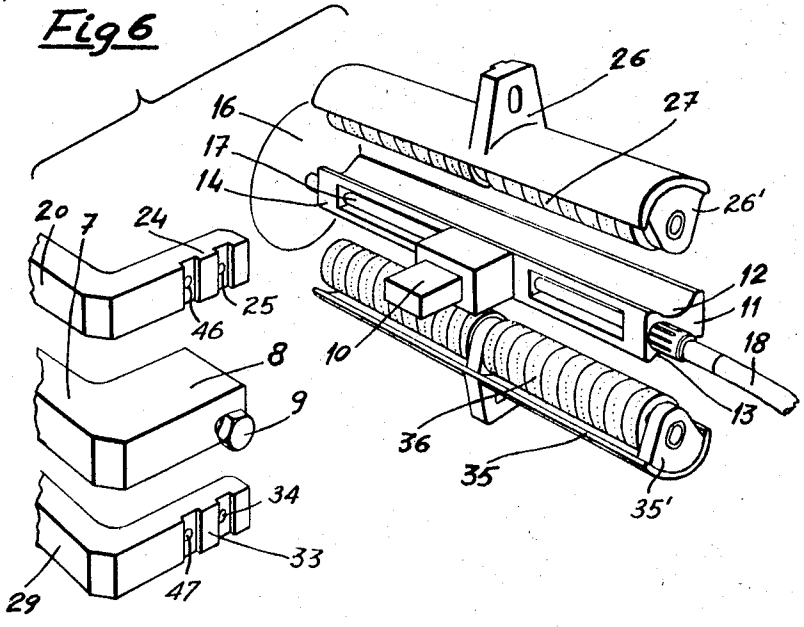


Fig 6



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TEMPLES FOR SHUTTLELESS LOOMS

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Int. Cl. D03j 1/22
U.S. Cl. 139—294 4 Claims

ABSTRACT OF THE DISCLOSURE

A temple, adapted to operate with various types of shuttleless looms which operate to produce simultaneously two parallel fabrics. The temple maintains the woven fabrics under widthwise tension and, at the same time, prevents rearward movement of the fell lines and effects automatically the severing of the inserted weft threads at the selvedge of the fabrics.

There are known many types of temples for looms. In one known device of this kind there are mounted on a stationary shaft a number of rings provided with pins, the fabric to be stretched being gripped between the said pins and a cover of arched cross-section. Another device of this kind is the so-called three roller temple which comprises three parallel helically toothed rollers, two of which are situated in the same plane and the third one is situated at a higher level between the said two rollers, the fabric to be stretched being passed through the slot formed by the said rollers. In another device of this kind there is provided a bar having inversely threaded end portions. A further known type of temples for looms is the so-called plate grip temple which comprises two jaw-like horizontal pressure plates between which the fabric is retained by mutual pressure, the said pressure plates being controlled by the loom slay in such a way that the fabric is released during the advance movement of the slay and clamped during its return movement. There exist also temples which are combined with a weft thread cutting device controlled by the slay movement. All these known temples are appropriate only for looms adapted to produce one single fabric.

It is an object of the present invention to provide a temple that may be used either on shuttleless looms for producing one single fabric or on shuttleless looms for producing two parallel fabrics at a time, and which may be arranged either on the right or left side of the loom without needing any constructional modification, and which, moreover, is adapted for automatically cutting the inserted weft threads at the selvedge of the fabric.

The temple according to the invention comprises on each side of the loom, a first elbowed support arm secured to a stationary support member which extends in the sense of the warp threads, a temple base member transversally secured to the free end of the said elbowed support arm, at least one temple roller rotatably mounted on a cover member adjustably secured to a second elbowed support arm carried by the said stationary support member, the said base member cooperating with the said temple roller in such a manner that the fabric passing between them is stretched in the sense of its width, a shaft rotatably mounted in a longitudinal bore of the temple of said base member, this shaft extending through the whole length of this temple base member and protruding on both ends thereof, a weft thread cutting disc positioned to be aligned with the selvedge edge of the fabric to be stretched, the cutting disc being secured to one of the protruding ends to the other protruding end of the said shaft and adapted

to impart to the weft thread cutting disc a high speed rotating movement.

The device according to the invention may be used on shuttleless looms adapted to produce thick fabrics, as well as on shuttleless looms adapted to produce thin fabrics. In the first case, there is used a temple base member provided with upper and under surfaces having a channel of arched cross-section. In the second case there is provided a temple base member carrying for each fabric to be stretched a pair of auxiliary temple rollers adapted to cooperate with the main temple roller of the respective cover member in such a manner, that the said auxiliary temple rollers define respective tangent planes with the main temple roller, the fabric to be stretched being passed through these tangent planes.

In both cases, the said elbowed support arms, the said temple member, the said temple rollers, the said cover member and the said weft thread cutting disc, are symmetrically arranged with respect to the horizontal middle plane parallel to the web, so that the device may be mounted on the right or left side of the loom by simply turning it 180°.

Specific embodiments of the invention will now be described by way of example with reference to the accompanying drawings in which,

FIGURE 1 is a schematic view in side elevation of the device for looms adapted to produce two parallel thick fabrics at a time;

FIGURE 2 is a schematic view in side elevation of the device for looms adapted to produce two parallel thin fabrics at a time;

FIGURE 3 is a schematic view in side elevation of the device for looms adapted to produce one single thick fabric;

FIGURE 4 is a schematic view in side elevation of the device for looms adapted to produce one single thin fabric;

FIGURE 5 is a fragmentary perspective view of a weaving machine with the device shown in FIGURE 1 mounted thereon; and

FIGURE 6 is an enlarged exploded perspective view of the device shown in FIGURE 1.

The device as illustrated comprises a stationary support member **1** mounted on two cross bars **2** and **3** of the weaving machine and secured thereto by means of the screws **4** and **5** (FIG. 1). From the central portion **6** of the support member **1** projects an elbowed support arm **7**, to the free end **8** of which (FIG. 6) there is adjusted and secured thereto by means of a mortice and an adjusting screw **9**, a tenon **10** of a temple base member **11**. The upper and under surfaces of this temple base member **11** form respective longitudinal channels **12** and **13** of arched cross-section, and the end **14** of the said temple base member is positioned to be aligned with selvedge edges **15** and **15'** of the fabrics A and B (FIG. 5) is provided with a weft thread cutting disc **16**, secured to the protruding end of a shaft **17** extending through the whole length of the temple base member (FIG. 6). The opposed equally protruding end of the shaft **17** is secured to a flexible drive means **18** connected to an auxiliary drive motor or to a rotating shaft of the loom through a multiplying mechanism (not shown).

To the upper portion **19** of the stationary support member **1** there is secured, by means of screws **22** and **23**, the end **21** of a further elbowed support arm **20**. The free end **24** of this support arm is provided with a bore **25** (FIG. 2) to which there is connected by means of an adjusting screw **52**, a cover member **26** carrying a temple roller **27**. The temple rollers **27**, **36**, **44** and **45** are rotatably mounted on their respective cover members **26**, **35**, **42** and **43** through corresponding bearing members **26'**, **35'**, **42'** and **43'**, and they are positioned relative to

the base members **11** or **37** by means of the adjusting screws **52**, **53**, **54** or **55**.

To the lower portion **28** of the support member **1** there is secured by means of screws **31** and **32**, the end **30** of another elbowed support arm **29**. The free end **33** of this support arm is provided with a bore **34** (FIG. 2) to which there is connected, by means of an adjusting screw **53**, a cover member **35** carrying a temple roller **36**.

The embodiment referred to above and shown in FIGURE 1 is appropriate for looms adapted to produce thick fabrics.

The embodiment shown in FIGURE 2 is appropriate for looms adapted to produce thin fabrics. It should also be noted that support member **1**, support arms **20** and **29** and cutting disc **16** are the same throughout. In this case, there is provided a temple base member **37** carrying four auxiliary temple rollers **38**, **39**, **40**, **41**. The corresponding cover members are designated with the reference numerals **42** and **43**. Each of these cover members carries a temple roller **44** and **45**, respectively, and they are secured by means of respective adjusting screws **54** and **55** to the upper and lower elbowed support arms **20** and **29** through their respective bores **46** and **47** (FIG. 1).

The embodiments illustrated in FIGURES 3 and 4 are appropriate for looms adapted to produce one single fabric. The embodiment shown in FIGURE 3 is appropriate for thick fabrics and corresponds to FIGURE 1 except that the lower elbowed support arm **29** with its cover member **35** and the temple roller **36** have been omitted. The embodiment shown in FIGURE 4 is appropriate for thin fabrics and corresponds to FIGURE 2 except that also the lower elbowed support arm **29** with its cover member **43** and the temple roller **45**, as well as the auxiliary temple rollers **40** and **41** have been omitted.

The operation of the device is as follows:

The warp threads *a* and *a'* of the upper shed A' corresponding to the fabric A, and the warp threads *b* and *b'* of the lower shed B' corresponding to the fabric B, are guided through the interstices of the reed **48** carried by the loom slay **49** (FIG. 5). The weft threads *c* and *c'* coming from stationary bobbins (not shown), are inserted through the sheds A' and B' by means of weft inserting members **50** and **51**. The reed **48** of the loom slay **49**, illustrated in FIGURE 5 in its rearward position, pushes during its advance movement the weft threads *c* and *c'* towards the fabric forming lines A'' and B'' (FIG. 1). At the end of the advance movement of the loom slay **49**, the weft threads *c* and *c'* impinge the periphery of rotating disc **16** and become severed at the selvedge of the fabrics A and B. The loom slay then returns to its starting position and the fabrics are drawn by means of conventional takeup mechanism (not shown) through the slot existing between the channel-like surfaces **12** and **13** of the temple base member **11** and the temple rollers **27** and **36**. In this way, the fabrics become stretched in the sense of their width.

In the embodiment shown in FIGURE 2, appropriate for thin fabrics, the inserted weft threads are analogously pushed towards the fabric forming lines D'' and E'' and become severed by means of the rotating disc **16** at the selvedges of the fabrics D and E, these fabrics being then drawn through the slot existing between the temple rollers **38**, **44**, and **39**, and **40**, **45**, and **41**, respectively, and become also stretched in the sense of their width.

The temple rollers may be made of a synthetic plastic material, of rubber or the like, or be provided, in a conventional manner, with pins helically arranged on their surface. Two or more of the said rollers, as illustrated in FIGURE 6, may be arranged coaxially in the respective cover member when the device is to be mounted on looms

for producing fabrics of great width. The cover members **26**, **35**, and **42**, **43**, which protect the temple rollers and prevent that these rollers may be touched with the hands during operation, are easily interchangeable and adjustable to different thickness of the fabrics. Therefore, the device is a universal one, i.e. it may be used on looms for producing two parallel fabrics at a time (FIGS. 1 and 2), and on looms for producing one single fabric (FIGS. 3 and 4). In both cases, the fabric may be thick or thin, and wide or narrow.

What I claim is:

1. A temple for shuttleless looms, adapted to produce two parallel fabrics at a time and which comprises warp threads for forming upper and lower sheds, corresponding weft thread inserting elements and a loom slay carrying a reed, characterized by the fact that said temple comprises a support arm secured to a support member of the loom, a temple base member transversally secured to the support arm, at least one temple roller rotatably mounted on a cover member adjustably secured to another support arm carried by the said support member, the said temple base member cooperating with said temple roller for stretching the fabric in the sense of its width, a shaft rotatably mounted in a longitudinal bore of the said temple base member, this shaft extending through the whole length of the temple base member and protruding on both ends thereof, a weft thread cutting disc fixed on one end of said shaft in the vertical plane defined by the selvedge of the fabric, and a flexible drive means connected to the other protruding end of the said shaft and adapted to be driven by a rotating element of the loom.

2. A temple as claimed in claim **1**, which includes upper and lower temple rollers mounted on said support member and wherein the upper and lower surface of the said temple base member form respective longitudinal channels of arched cross-section adapted to cooperate with the respective temple rollers.

3. A temple as claimed in claim **1**, for shuttleless looms adapted to produce thin fabrics, wherein the said temple base member is provided, for each fabric to be stretched, with a pair of auxiliary temple rollers adapted to cooperate with the said temple roller carried by the respective cover member in such a manner, that the said auxiliary temple rollers define respective tangent lines with the said temple roller carried by the said cover member, the fabric to be stretched being passed through these tangent lines.

4. A temple as claimed in claim **1**, wherein the said support arms, the said temple base member, the said temple rollers, the said cover members and the said weft thread cutting disc are symmetrically arranged with respect to the horizontal middle plane parallel to the fabrics being woven, so that the device may be mounted on either side of the loom by simply turning it 180°.

References Cited

UNITED STATES PATENTS

1,042,774	10/1912	Elmendorf et al.	139—266
1,774,435	8/1930	Glattfelter	139—294
1,786,684	12/1930	Turner	139—294

FOREIGN PATENTS

1,118,411	3/1956	France.
638,991	12/1937	Germany.

HENRY S. JAUDON, Primary Examiner

U.S. Cl. X.R.

139—298