F. B. WILDMAN.

FABRIC CUTTING DEVICE FOR KNITTING MACHINES.

APPLICATION FILED JUNE 4, 1907.

960,755.

Patented June 7, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

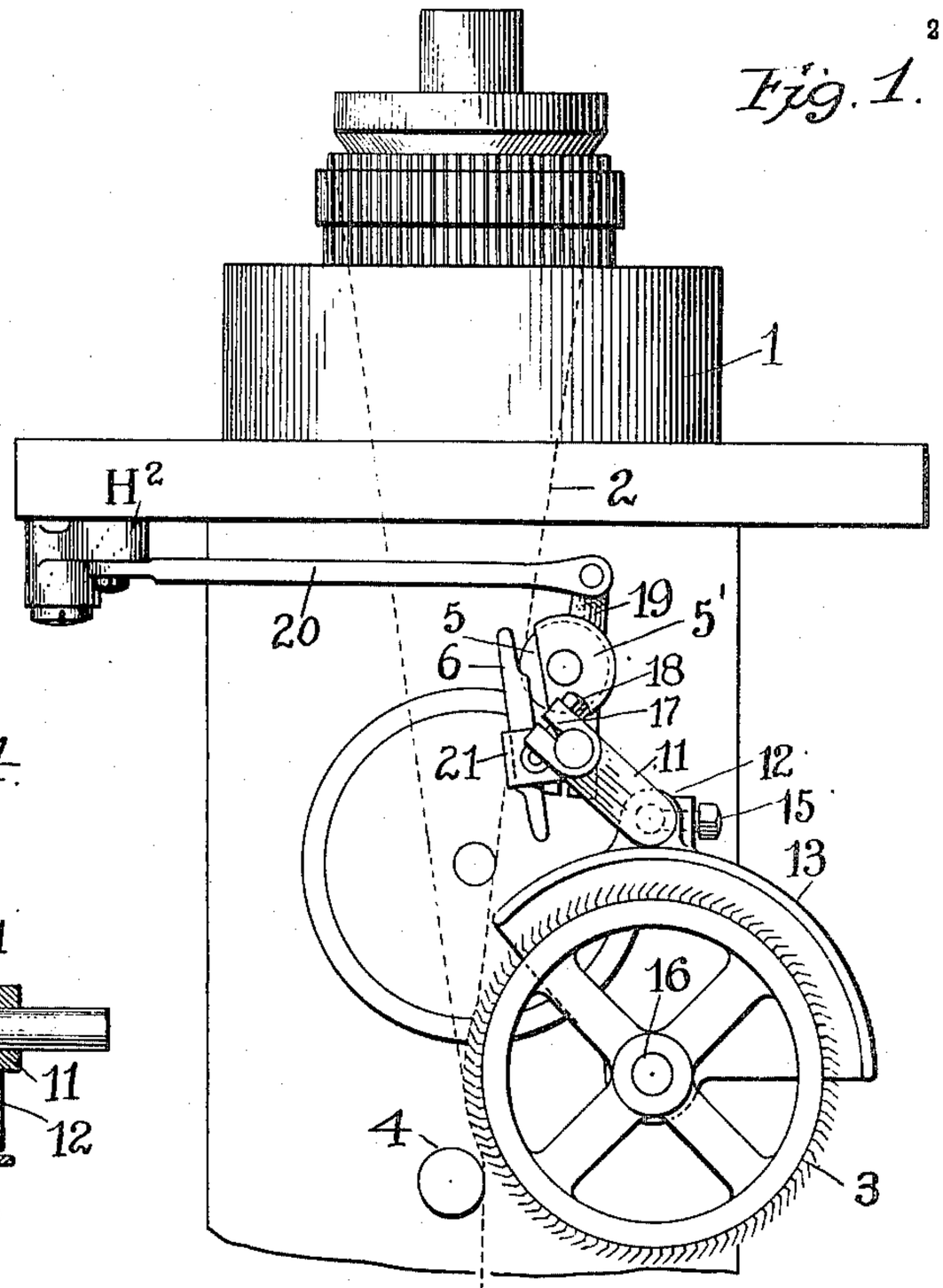



Fig. 4.

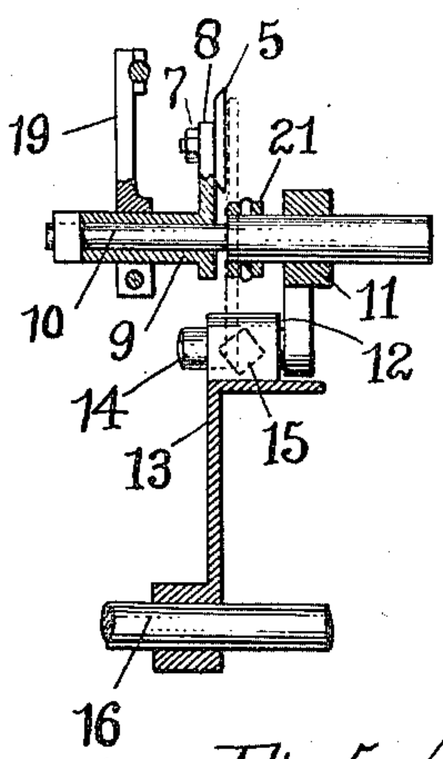



Fig. 5.

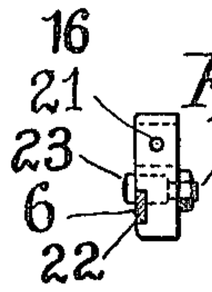
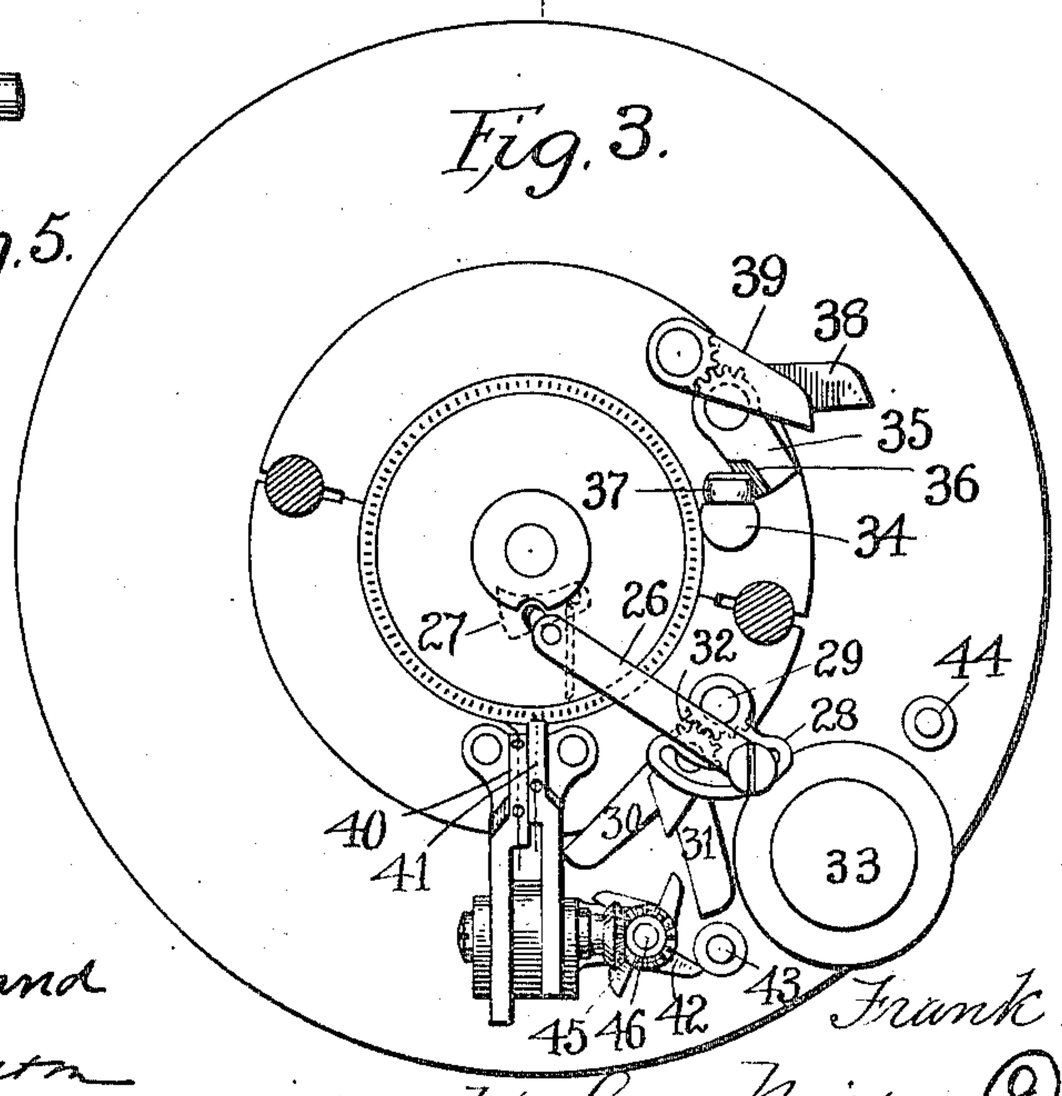



Fig. 6

Fig. 3.




Attest

K. L. Durand

S. Middleton

Inventor

Frank B. Wildman

by Spear, Middleton, Donaldson & Spear

Attys.

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2 SHEETS—SHEET 2.

Fig. 7.

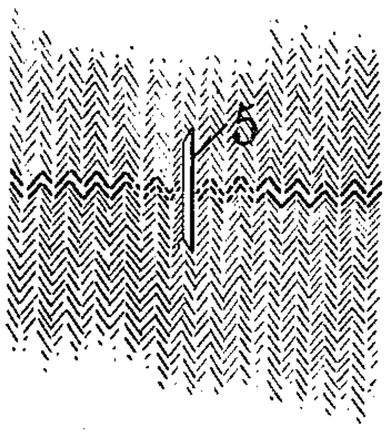





Fig. 2.

Attest

R. E. Durand

S. Middleton

Inventor

Frank B. Wildman

by Spear, Middleton, Donaldson & Spear

Attys.

# UNITED STATES PATENT OFFICE.

FRANK B. WILDMAN, OF NORRISTOWN, PENNSYLVANIA.

## FABRIC-CUTTING DEVICE FOR KNITTING-MACHINES.

960,755. Specification of Letters Patent. Patented June 7, 1910.

Application filed June 4, 1907. Serial No. 377,212.

*To all whom it may concern:*

Be it known that I, FRANK B. WILDMAN, a citizen of the United States, residing at Norristown, Pennsylvania, have invented certain new and useful Improvements in Fabric-Cutting Devices for Knitting-Machines, of which the following is a specification.

My invention relates to knitting machines and particularly to automatic cutting apparatus for such machines whereby the fabric is cut as it leaves the needles and is cut in a certain relation to the points where changes in the knitting takes place. For instance, I so arrange and combine the parts that where a clearing course is introduced into the fabric I cut the fabric at the beginning of the said clearing course so that the thread which is severed may be drawn through and the fabric separated at this point, or where striping mechanism is employed I so combine and arrange the parts that the cutting of the fabric will take place at that point in its circumference where the striping thread is introduced into the fabric.

I have shown my invention as applied to the general style of machine disclosed in Letters Patent of the United States granted to me Nov. 1. 1898, #613346, though it will be understood that I do not limit myself to any particular form of machine with which my invention is combined.

The invention consists in the features, combination and arrangement of parts hereinafter described and particularly pointed out in the claims.

In the accompanying drawings,—Figure 1 is a front view of so much of a knitting machine as is necessary to fully understand my invention which is shown as combined therewith. Fig. 2 represents conventionally the knitting head looking from the right of Fig. 1 and with one side of the frame omitted to show my improvements in place. Fig. 3 is a plan view of a knitting head showing the relation between the cutting device and the automatic devices for effecting the changes in the knitted fabric. Fig. 4 is a detailed view partly in section of the cutting device and parts associated therewith. Figs. 5 and 6 are views of details. Fig. 7 illustrates the cutting device in its relation to the knitted fabric and to the changes occurring in said fabric.

In these drawings 1, indicates conventionally a knitting head. The fabric as it passes down from the needles is indicated at 2. This fabric passes between a measuring wheel 3 and a guide roller 4 on its way to the take-up devices, such for instance as shown in the patent above mentioned and indicated therein at C.

At a point above the measuring wheel I locate the devices forming my improvement and consisting of cutters, one of which is in the form of a disk 5, and the other of which is in the form of a bar 6, these parts having coöperating cutting edges for severing the fabric as it passes down in contact therewith. The cutting disk is secured rigidly by a bolt 7 to an arm 8 fixed to a sleeve 9 adapted to rotate back and forth on a pin 10, which pin is fixed in an arm 11, which in turn is fixed rigidly in a boss 12 formed on the guard 13 of the measuring wheel 3, the said arm 11 having a laterally extending stud 14 passing through the boss 12 and held by a set screw 15. The guard frame or shell 13 of the measuring wheel is in turn held in fixed relation on the pin or shaft 16 of the measuring wheel. The arm 11 is split at 17 and the pin 10 is clamped in this split portion by a bolt 18.

The sleeve 9 carrying the cutter disk is turned back and forth on the pin 10 by an arm 19 secured to the said sleeve and connected by a pitman 20 with the lever $H^2$ corresponding to the lever similarly marked in the patent above referred to. This lever is operated in a manner similar to that disclosed in the said patent through a slide H′ and through these connections the arm 8 carrying the cutting disk is given oscillating movement so as to coöperate with the fixed cutter 6 to sever the fabric. This fixed cutter is carried by an arm 21 which is pinned onto the stud or pin 10, the said cutter being in the form of a bar or blade fitting in a recess 22 in the arm and clamped therein by a bolt 23 and nut 24, Figs. 2, 5 and 6. The bolt has a notch 25 which receives the cutter bar or knife. This cutter bar is provided with a cutting edge on each end so that it may be reversed when one end is worn. The fixed cutter 6 projects across the path of the rear portion of the fabric as it passes down from the needles to the measuring wheel and the action of the oscillating cutter is to give a draw-cut in connection with the fixed cutter and thus sever the fabric at this point.

I so combine and arrange the cutting

mechanism in its relation to the knitting devices that it will cut the fabric at the wale or point in the circumference thereof at which the automatic change in the knitting takes place.

In Fig. 3 I show means similar to that disclosed in Letters Patent of the United States granted to me May 23, 1905, #790772 for making the tuck courses and welts, said mechanism consisting of a bar 26 connected with the wing cam 27 and pivoted to an arm 28 on a post or shaft 29 operated by arms 30—31, one of which is connected directly to the post or shaft 29, the other being connected thereto through segmental gearing 32. The arms 30—31 are adapted to be operated by a roller 33 similar to that disclosed in the patents above referred to and said roller is controlled in its vertical position by a suitable pattern mechanism not necessary to show herein. This roller is fixed in relation to the rotary motion of the machine and it is so located on the fixed ring of the knitting head that it operates the arms to produce a change in the knitting at that particular point or wale in the circumference of the fabric which will arrive at the cutters as the fabric is drawn down from the machine. This is true also of the other devices for effecting changes in the knitting. For instance, I show at 34 a post connected with the stitch cam of the cylinder needles which post is operated in a manner similar to that disclosed for example in Letters Patent of the U. S. granted to me June 13, 1905, #792301, that is, by an arm 35 having a cam incline 36, the said arm being adapted to be thrown under a roller 37 on said post 34 or removed therefrom when the arms 38—39 in the revolution of the machine are brought against the roller or disk 33. The adjustment of this post 34 with the stitch cam connected thereto effects the introduction into the fabric of a clearing course and the parts are so combined and related that the clearing course is introduced at the point where the cutters will operate on the fabric so that the beginning of the clearing course will be cut and the whole course may therefore be drawn from the fabric to separate the goods. So also is the striping device arranged in its relation to the cutting mechanism, that is to say, to begin the striping course at the point where the cutters will operate on the fabric. This striping mechanism is only shown conventionally herein, consisting of the thread feeding arms 40—41, pivotally supported and adapted to be thrown into and out of work by the operation of a star wheel 42 against studs 43—44 controlled by pattern mechanism forming no part of my invention, the said star wheel being connected through any suitable mechanism at the gearing 45, 46 with the arms 41—40. These means also form no part of my invention.

I show in Fig. 7 the cutter arranged in its relation to the fabric and to the point where the stripe is introduced into the said fabric.

The cutter disk is shielded by a guard plate 5′ which has its edge extending beyond that of the edge of the cutter disk for the greater part of its circumference leaving only enough exposed to do the cutting.

What I claim is:—

1. In combination with a knitting head, a cutting mechanism comprising a supporting arm, a pin or stud carried thereby, a sleeve on the said stud, an arm on the sleeve carrying a cutter, means for moving the sleeve back and forth, and a fixed cutter supported by the said stud, substantially as described.

2. In combination with the knitting head, a cutter, means for operating said cutter, a fixed cutter, an arm supporting said cutters and means for adjustably holding the said arm, substantially as described.

3. In combination with the knitting head, a measuring wheel, a guard therefor, and cutting means for the fabric supported on the said guard, substantially as described.

4. In combination with a knitting head, an arm having a stud thereon, a boss in which said stud fits, means for adjustably holding the stud, a second stud on the arm, a sleeve movable on said second stud, a cutter on the sleeve, a fixed cutter, an arm supporting the same from the second stud, and means for operating the sleeve to move the cutter, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK B. WILDMAN.

Witnesses:

GEO. R. RALSTON,

CARRIE LANDIS.