W. A. WOODS.

ATTACHMENT FOR LOOMS.

APPLICATION FILED JUNE 22, 1912.

1,074,682.

Patented Oct. 7, 1913.

2 SHEETS—SHEET 1.

FIG. 1.

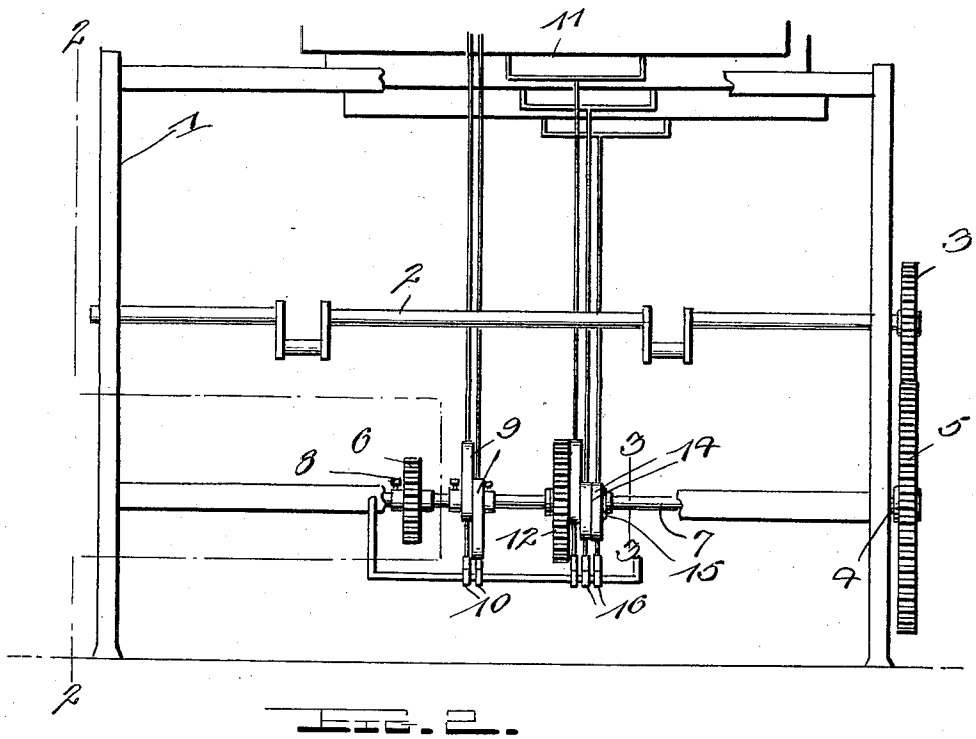
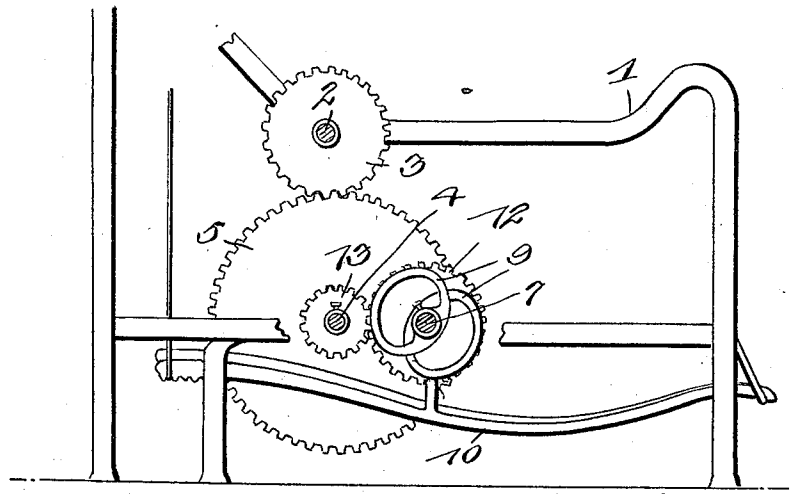


FIG. 2.



Inventor

W. A. Woods,

Witnesses

H. L. McQuay.

A. B. Norton.

By Watson E. Coleman.

Attorney

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

W. A. WOODS.

ATTACHMENT FOR LOOMS.

APPLICATION FILED JUNE 22, 1912.

1,074,682.

Patented Oct. 7, 1913.

2 SHEETS—SHEET 2.

FIG. 3.

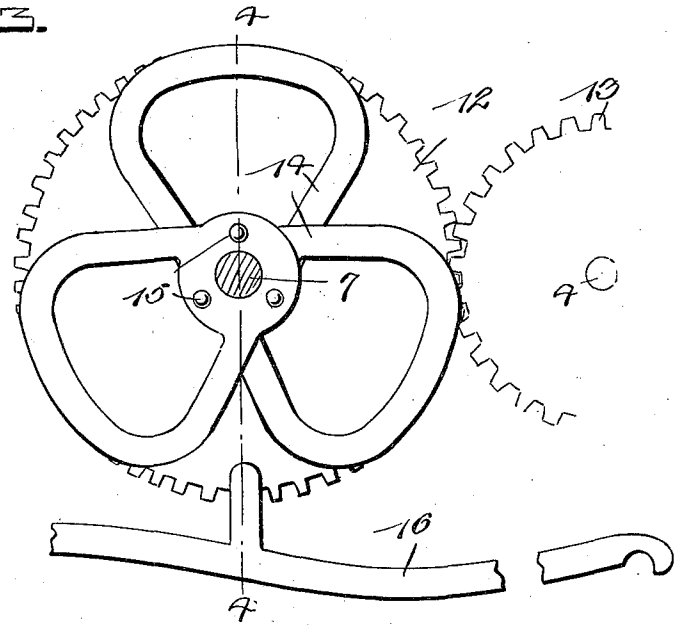
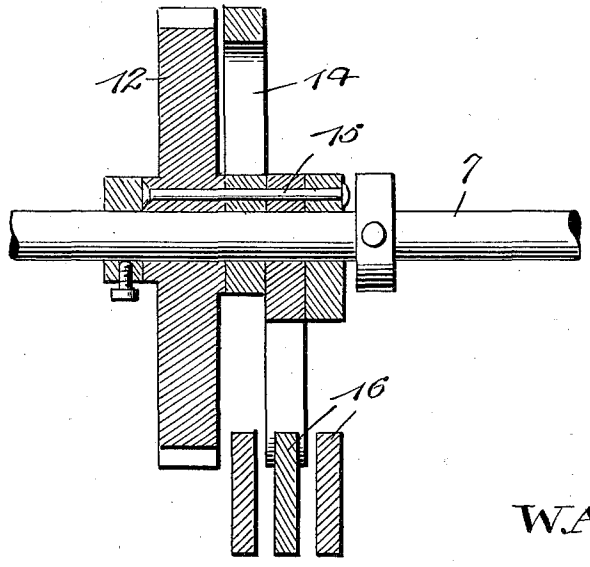


FIG. 4.



Witnesses

W. F. McDaniel

A. B. Norton.

Inventor

W. A. Woods,

By Watson E. Coleman.

Attorney

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WALTER A. WOODS, OF WILMINGTON, NORTH CAROLINA.

ATTACHMENT FOR LOOMS.

1,074,682. Specification of Letters Patent. Patented Oct. 7, 1913.

Application filed June 22, 1912. Serial No. 705,331.

To all whom it may concern:

Be it known that I, WALTER A. WOODS, a citizen of the United States, residing at Wilmington, in the county of New Hanover and State of North Carolina, have invented certain new and useful Improvements in Attachments for Looms, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to new and useful improvements in loom attachments and has for its object to provide an attachment, which when applied to a loom adapted to weave plain cloth, will permit fancy goods to be woven thereon.

A further object of the invention resides in providing a plurality of cams adapted to be loosely mounted on the cam shaft and a still further object resides in providing a gear loosely mounted on the cam shaft with which said cams are engaged, whereby the latter will be caused to rotate on the cam shaft upon the rotation of said gear.

Still another object resides in providing a device which is extremely simple and durable in construction, inexpensive to manufacture and one which will be very efficient and useful in operation.

With these and other objects in view, the invention consists in the novel features of construction, combination and arrangement of parts as will be hereinafter referred to and more particularly pointed out in the specification and claims.

In the accompanying drawings forming a part of this application, Figure 1 is a front elevation of the device with parts broken away. Fig. 2 is a vertical section as seen on line 2—2, Fig. 1. Fig. 3 is a vertical section as seen on line 3—3, Fig. 1; and Fig. 4 is a similar view as seen on line 4—4, Fig. 3.

In describing my invention, I shall refer to the drawings in which similar reference characters designate corresponding parts throughout the several views and in which—

1 indicates a frame of a loom used in weaving cloth, upon which is rotatably mounted the main drive shaft 2, said shaft being designed to drive the various parts of the loom (not shown) and having a gear 3 mounted on one end thereof. Also mounted on the frame 1 below the shaft 2 is a cam drive shaft 4 which has an enlarged gear 5 mounted on one end thereof meshing with the gear 3 of the shaft 2, said gears 3 and 5 being respectively geared at a ratio of 1 to 2 and also carried on the cam drive shaft 4 is a gear (not shown) which meshes with an additional gear 6 which is of similar size carried on a cam shaft 7 which is rotatably mounted on the frame 1 immediately in the rear of said shaft 4. This gear 6 is held on the cam shaft 7 which is of the usual type by means of the set screw 8 and also adjustably secured to the cam shaft are the usual cams 9 which are adapted to engage the treadles 10 and coöperate with the harness 11 for the weaving of plain cloth.

My improvement comprehends an attachment to this same loom for the weaving of fancy cloth and to this end, I provide an additional gear 12 which is loosely mounted on said cam shaft 7. This gear 12 meshes with an additional gear 13 securely mounted on the cam drive shaft 4, the ratio of said gears 12 and 13 being 3 to 2, and also loosely mounted on said shaft 7 is a plurality of cams 14 arranged thereon in a predetermined manner. In the drawing, I have shown three of these cams 14, and while the same are loosely mounted on the shaft 7, they are also secured in this predetermined arrangement to the gear 12 by means of the bolts 15. Additional treadles 16 are carried on the frame 1, which cooperate in the usual manner with the harness 11 and are adapted to be engaged by the cams 14. From this construction, it will be seen that as the main drive shaft 2 is caused to rotate, the cam drive shaft 4 will also be rotated which will, in turn, cause the cam shaft 7 to be rotated in view of the intermeshing of the gears 6 and gear not shown. There being an equal number of teeth on these last mentioned gears, will cause the cam shaft to have the same number of revolutions as the cam drive shaft 4 and in view of the fact that the gear 12 and cams 14 are loosely carried on said shaft 7, the latter will merely form a bearing for the former and will have no material effect on said gear and cams through its own rotation. The cams 9 which are carried on the cam shaft 7 so as to rotate therewith will engage the treadles at regular intervals and in view of the fact that I have shown a pair of such cams, the same will weave at every pick of the loom. In view of the gearing in connection with the additional cams 14, which gearing is in the ratio of 3 to 2, said cams will be caused to

make a complete revolution while the gear 13 on the shaft 4 makes one and one-half revolutions and as I have shown three such cams 14, each of which forms one-third of a circle, the respective treadle for each will be held down one pick of the loom and allowed to be retained up or in its ineffective position two picks of the loom. This set of cams 14 is turned completely over every three picks of the loom, and as said other cams 9 engage the treadles at each pick of the loom, it will be appreciated that the weaving of fancy cloth may be done on the same loom and simultaneous with the weaving of plain cloth.

In the drawings, I have shown two cams for the purpose of weaving plain effects and three cams for the weaving of fancy effects, but of course, it will be understood that any number of cams may be used and it will be appreciated that various fancy effects may be woven by the mere changing of the gears and the positioning of the cams.

From the foregoing description of the construction of my attachment, the operation thereof will be readily understood that it will be appreciated to those familiar with machines of this character that, the attachment provides a simple and inexpensive means whereby fancy cloth may be woven on the same machine upon which the plain cloth is woven, thus saving considerable labor and general expense.

While I have particularly described the elements best adapted to perform the functions set forth, it is obvious that various changes in form, proportion and in the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the principles of the invention.

Having thus described this invention, what I claim is:

1. In a device of the class described, the combination with a frame, a main drive shaft rotatably mounted thereon, a cam drive shaft also rotatably mounted on said frame, means to drive said cam drive shaft from the main drive shaft, and a cam shaft driven from said last mentioned shaft; of a plurality of cams adjustably mounted on said cam shaft and adapted to be rotated therewith, a plurality of additional cams spaced from the aforesaid cams and loosely mounted on said cam shaft, a gear also loosely mounted on said cam shaft, means to secure said additional cams to said gear at predetermined points thereon, an additional gear mounted on said cam drive shaft to rotate therewith, said additional gear being meshed with the aforesaid gear to cause the latter and said additional cams to be rotated on the cam shaft, and a plurality of treadles adapted for engagement by said cams.

2. In a device of the class described, the combination with a frame, a main drive shaft rotatably mounted thereon, a cam drive shaft also rotatably mounted on said frame, means to drive said cam drive shaft from the main drive shaft, and a cam shaft driven from said last mentioned shaft; of a plurality of cams mounted on said cam shaft to be rotated therewith and individually adjustable thereon, a plurality of additional cams spaced from the aforesaid cams and loosely mounted on said cam shaft, a gear also loosely mounted on said cam shaft, bolts extending through said last mentioned cams and said gear to secure the former to the latter at predetermined points thereon, an additional gear mounted on said cam drive shaft to rotate therewith, said additional gear being in mesh with the aforesaid gear to cause the latter and said additional cams to be rotated on the cam shaft, and a plurality of treadles adapted for engagement with said cams.

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

WALTER A. WOODS.

Witnesses:
THOMAS R. AMES,
WILL I. HOLT.