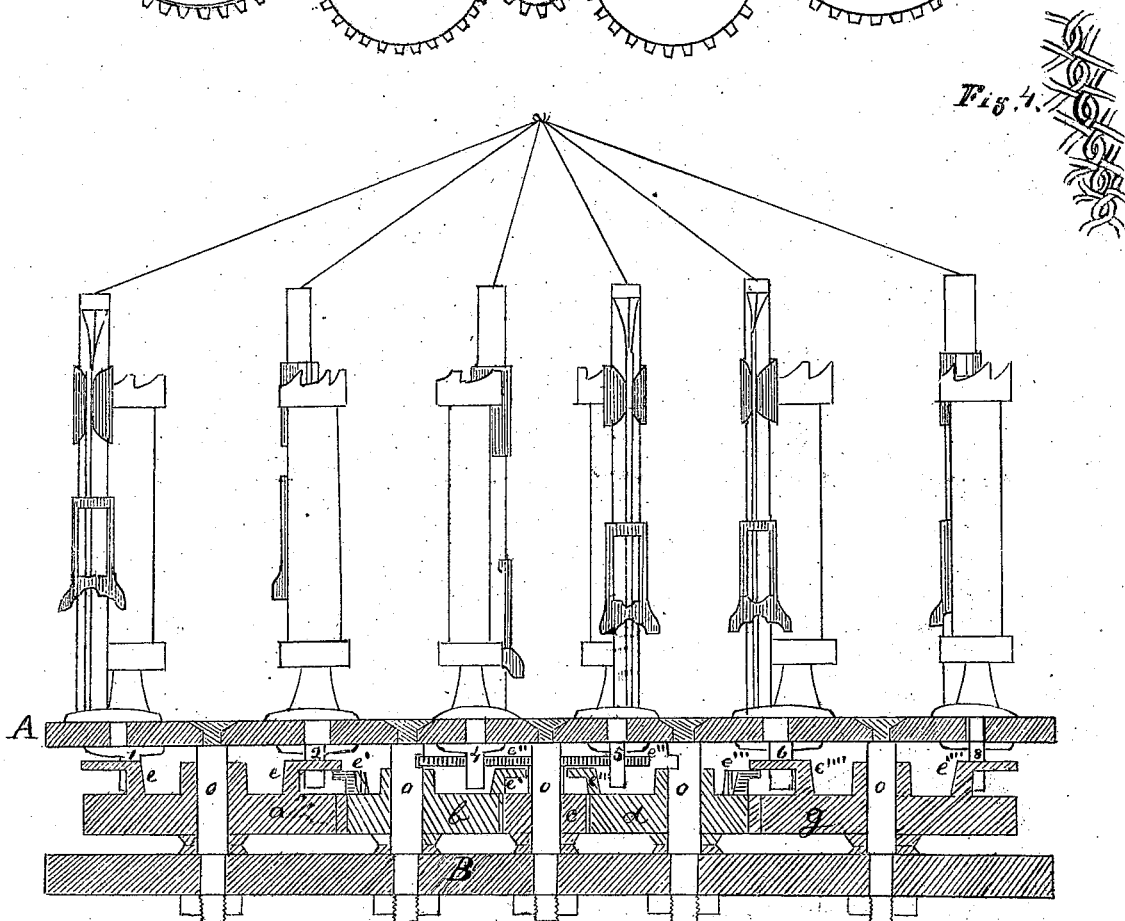
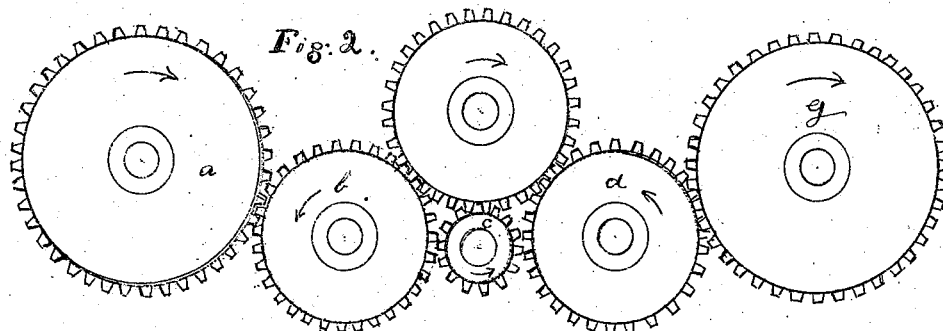
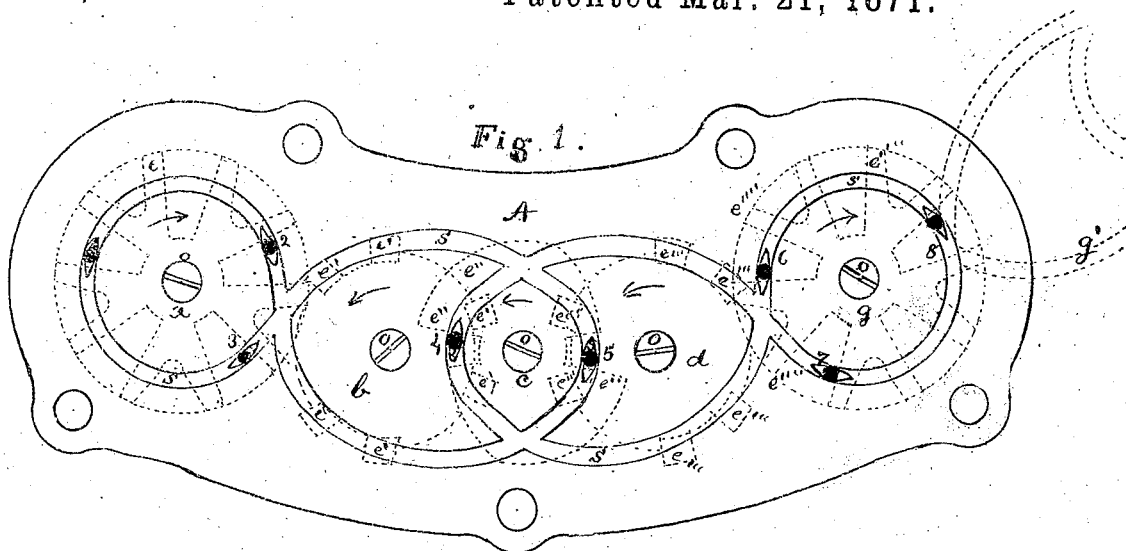


J. McCAHEY & S. B. SALISBURY.
BRAIDING MACHINE.

No. 112,946.

Patented Mar. 21, 1871.



Witnessed.
Henry L. Leonard.
Benson Arnold

Inventors.
John McCahey
Stephen B. Salisbury

United States Patent Office.

JOHN McCAHEY AND STEPHEN B. SALISBURY, OF PROVIDENCE, RHODE ISLAND,
ASSIGNORS TO THE NEW ENGLAND BUTT COMPANY, OF SAME PLACE.

Letters Patent No. 112,946, dated March 21, 1871.

IMPROVEMENT IN BRAIDING-MACHINES.

The Schedule referred to in these Letters Patent and making part of the same.

To whom it may concern:

Be it known that we, JOHN McCAHEY and STEPHEN B. SALISBURY, both of Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Machines for Making Braid; and do hereby declare the following to be a full and correct description thereof, reference being had to the accompanying drawing making part of this specification, and to the letters and numbers of reference marked thereon, similar letters and numbers being used in all the figures to denote the same parts.

The fabric produced by the braiding-machine with these improvements is substantially a union of two or more braids, of the same or different colors or materials, joined together by interlocking their edges while in the process of making, and is accomplished mainly by making the "run" or groove that guides the spool-carriers of a peculiar form, and by the construction and position of the driving-wheels and the "horns" on them, whereby the force that drives the carriers is applied in the proper direction.

Description of the Drawing.

Figure 1 is a view of the top plate, showing the shape of the run; also, by dotted lines, the position of the drivers and the horns on them.

Figure 2 is a top view of the gearing.

Figure 3 shows a longitudinal section, taken vertically through the centers of the gear-wheels *a b c d g*.

Figure 4 shows the position of the strands of the braid as they are interlocked.

General Description.

A is the top plate, having the run *S*, as it is called, a groove of nearly uniform width, cut through it.

The parts of the plate inclosed by the run are called "quoits," and they are held in their places by being screwed to the tops of the studs *o o*, which are fastened to the lower plate *B* by passing through it, and having nuts screwed on their ends.

These studs also hold the driving-wheels *a b c d g*, which are free to turn on the studs, and are furnished with teeth to gear together and drive one another.

e e' e'' e''' are projections on the upper sides of the driving-wheels, called horns.

These horns are made of different heights; those on the wheels *a* and *g* are high enough to pass over the horns on the wheels *b* and *d* next to them, that they may not hit in passing each other and drive the carriers from one part of the run to another. These horns are made in pairs, so as to form recesses between them to receive the studs or lower ends of the spool-carriers. The carriers are indicated by the figures 1 2 3 4 5 6 7 8 in fig. 1. The driving-wheels

being put in motion in the direction indicated by the arrows, each carrier in the end circles of the run will be driven around that circle by its lower end, which projects down between the horns on the wheel under that circle. (See fig. 3.)

When a carrier, after passing around the end circle, comes to the crossing in the run, the width of that part of the carrier in the run keeps it in such a position that it enters the next circle or oval of the run, the horns on the next driving-wheel taking it from the first one and driving it forward.

Now, the run between the two outside circles is composed of two circles or ovals, overlapping each other in the middle; this brings the crossings of the ovals in such a position that a carrier, having entered the oval, cannot leave it at the middle crossing to enter the next oval, but must continue in the same until it gets back to the outside circle it started from, so that two carriers starting, one from each of the outside circles, at the same time, will pass around each other in the middle. (see 4 and 5 in fig. 1,) where the ovals overlap each other, and this interlocks their threads; and, as each carrier in the outer circle in its turn passes around another in the middle, it follows that the two braids are interlocked by each strand in its turn. (See fig. 4.)

When the spool-carriers leave the outer circle of the run they enter the horns *e'* and *e'''* on wheels *b* and *d*, which drive them forward until they come to the crossing of the run where the ovals overlap each other. Here they are taken by the horns *e''* *e'''* on the center wheel *c*, which drive them around the ends of the ovals, the lower ends of the carriers passing inside of the horns *e'* and *e'''*, between them and the centers of the wheels on which they are, (see fig. 3,) until they come to the other crossing, where they are again taken between the horns *e'* and *e'''* on the wheels *b* and *d*, and carried to the outer circles from which they started. This keeps each set of strands by itself, excepting at the edges where they are interlocked, and it will be seen that any number of sets like the outer circles before mentioned may be joined in the same way by having the overlapping circles or ovals placed between them, as above described, and thus form a braid of strips of different colors or materials, either flat or circular, as may be desired. The dotted lines *g'* to the right hand of fig. 1 show how this extending of the ovals can be made.

The braid is drawn up with feed-rolls placed above the spools, in the manner usual in this class of machines, and not necessary to be particularly described here, nor have we deemed it essential to describe more particularly the upper part of the spool-carriers, with their tensions, &c., as any of the usual modes may be used.

What we claim as our invention is—

1. A run or guiding-groove for the spool-carriers, formed of two circles or ovals overlapping each other so as to form a circular space between them, substantially as herein shown and described, and for the purpose specified.

2. The arrangement of the wheels *b c d* and the horns *e' e''*, whereby the studs or lower ends of the spool-carriers are carried in between the horns *e' e''* and the centers of the wheels *b* and *d*, on which those horns are placed, substantially as and for the purpose specified.

3. The combination of the run *S* and driving-wheels *b c d*, substantially as herein described, whereby the carrier-studs are made to pass between the horns *e'* and *e''* and the centers of the wheels on which those horns are placed.

JOHN McCahey.

STEPHEN B. SALISBURY.

Witnesses:

HENRY L. LEONARD,

BENJAMIN ARNOLD.