

(No Model.)

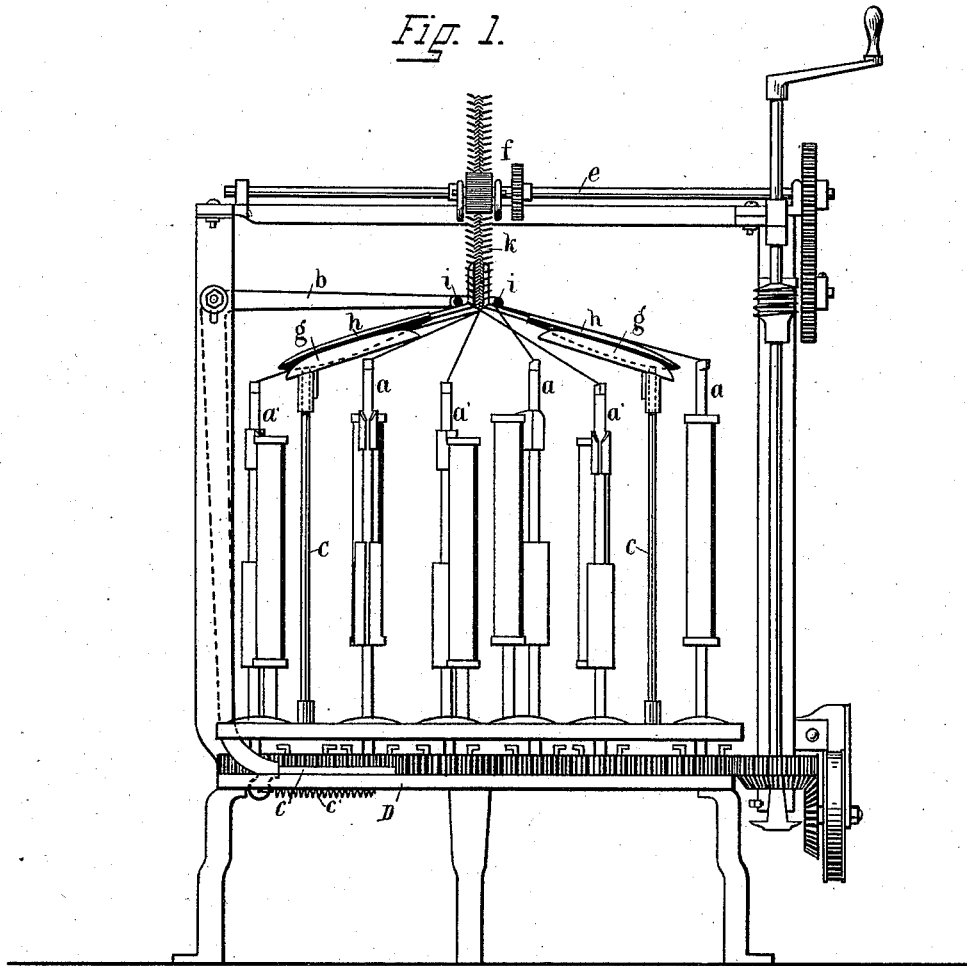
3 Sheets—Sheet 1

J McCAHEY.
BRAIDING MACHINE.

No. 385,364.

Patented July 3, 1888..

Fig. 1.



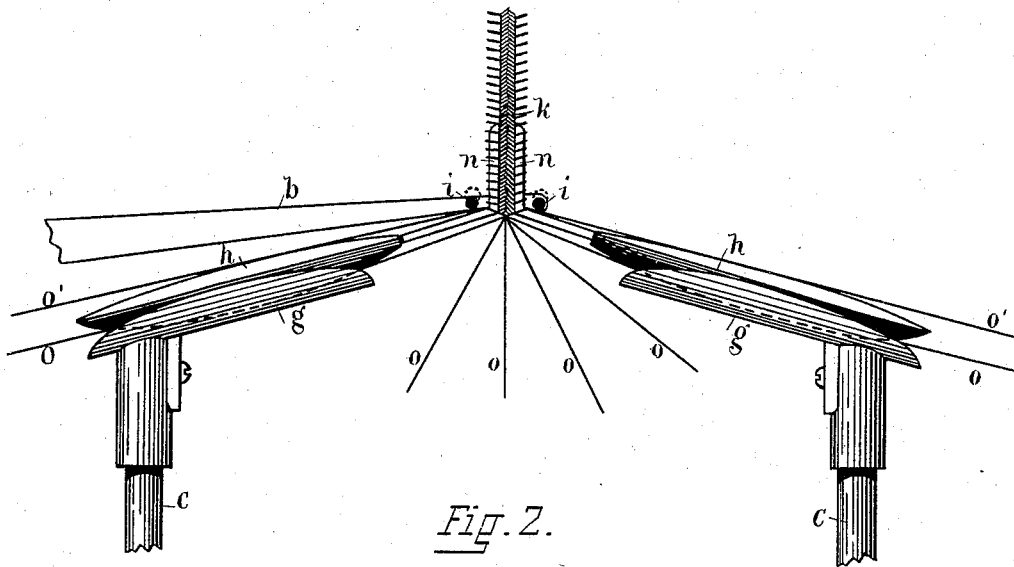
Witnesses,
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D. A. Shove.

Inventor,
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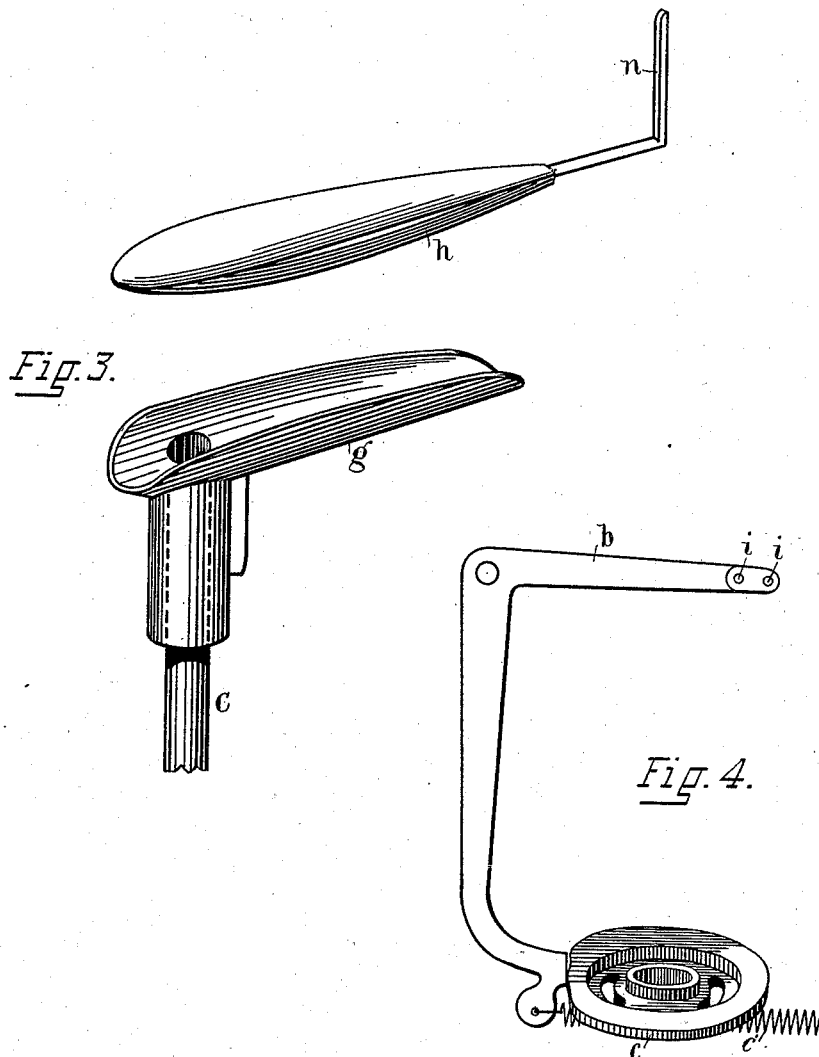
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UNITED STATES PATENT OFFICE.

JOHN McCAHEY, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO THE NEW ENGLAND BUTT COMPANY, OF SAME PLACE.

BRAIDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 385,364, dated July 3, 1888.

Application filed March 9, 1888. Serial No. 266,759. (No model.)

To all whom it may concern:

Be it known that I, JOHN McCAHEY, of Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Braiding-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon, which form a part of this specification.

This invention consists of improved mechanism for making a variety of braid or gimp having rows of loops on one or both of its edges, and is more in the nature of an attachment to the common form of braiders already well known than of a machine entirely original.

In the drawings, Figure 1 shows a front elevation of a braider with the devices for making the loops. Fig. 2 is an enlarged elevation of the parts constituting the looping mechanism. Fig. 3 shows an enlarged perspective view of one of the oval guides or formers and its cradle. Fig. 4 shows a separate perspective view of the cam *c* and its knee-lever *b*.

In Fig. 1 is shown an ordinary twelve-strand braider complete in all its parts for use for making braid, and having in addition the mechanism for forming loops on the edge of the braid. This mechanism consists, first, of two standards, *C C*, firmly secured in the middle of two of the center plates, around which the spool-carriers pass in the top plate or disk of the braider. These two center plates are opposite to each other and have each of them one of the standards *C* rigidly fixed in its center. On the top of each standard *C* an oblong trough or cradle, *g*, is secured by means of a hub attached to the under side at one end, the other end of the cradle *g* projecting in toward the center of the braider at an angle substantially coinciding with that made by the threads in their usual course from the tops of the carriers to their junction with the braid. An oblate-shaped guide-holder, *h*, is placed in each cradle *g*, in which it fits loosely, its bottom being curved, so that the end of the guide-holder is raised somewhat from the bottom of the cradle in which it lies. The inner ends of the guide-holders *h* have wire-guides *n* inserted in them

which extend into the braid *k*, where they are turned up parallel with the sides of the braid for a short distance.

Each alternate guide bar *a* of the spool-carriers is made longer than the intermediate ones, *a'*, for the purpose of carrying its thread over the outer end of the guide-holder *h* (see carrier-bar *a* to the right side in Fig. 1) when the carrier goes around outside of the center plate holding the standard *C*, but should not be too long to pass under the threads from the shorter guide-bars, *a'*, when they pass inside of them. The guide-bars *a'* of the other carriers are made just high enough to carry their threads between the outer ends of the cradle *g* and the guide-holder *h* (see carrier-bar *a* to the left side in Fig. 1) as their carriers go out around a center plate holding one of the standards *C*. The threads of the last-mentioned carriers *a'*, that pass in between the cradles *g* and the guide-holders *h*, are braided in with the other threads to form the body of the braid; but the threads from the carrier-bars *a* that pass over the guide-holders *h* slide up to the guide-wires *n*, which hold them from the body of the braid, so that they form loops on the edges of the braid which slide up on the guide-wires *n* and off their upper ends as the braid is drawn up by the feed-motion.

The loops of the thread on the guide-wires *n* would by the friction on the wires carry them up with the braid as it is made if they were not held down in some way. To accomplish this a knee-lever, *b*, is pivoted to the side frame at its angle, so as to bring the inner end of its horizontal arm just back of the braid *k*. This end of the lever *b* terminates in two short prongs, *i i*, bent forward at a right angle to the lever, so as to bring one of the prongs *i* on one side and the other prong on the other side just over the guide-wires *n*, a short distance away from the angle in that wire. These prongs *i* would keep the guide-wires from rising with the braid if held rigidly in position, but they would also prevent the threads that pass over the guide to form the loops from sliding up on the wires. This makes it necessary to give the prongs a short intermittent motion up and down, so that the loop-threads can pass under the prongs when

they rise, and the return of the prongs down again will prevent the guide-wires *n* from being drawn up with the braid. This intermittent motion is given to the lever *b* by a cam, 5 *c*, made fast on one of the gear-wheels *r*, that drive the carriers in their grooves. This cam *c* consists of a circular plate having a recess or notch in one side, (see Fig. 4,) and the vertical arm of the lever *b* is so placed that its lower 10 end will rest on the edge of the cam and be drawn into the recess in it by the spring *c'*, which raises the prongs *i i* for a moment, and this occurs as often as one of the tall carrier-bars *a* passes around outside of a standard, *C*, 15 and carries its thread over one of the guide-holders *h*. At other times the end of the lever *b* rests on the cam, so that the prongs *i i* are pushed down against the wires *n* and held there positively.

20 The threads *o* from all the carrier-bars *a* and *a'* are braided in to form the body of the braid at all times, except when a tall carrier-bar

passes around outside of one of the standards *C*, as above described.

Having thus described my improvements, 25 what I claim as my invention is—

1. The combination, with mechanism for interbraiding threads, embracing devices for carrying intermediate threads higher than the other threads, of the stationary standard *C*, 30 cradle *g*, guide-holder *h*, guide-wires *n*, prongs *i*, and mechanism to give the prongs an intermittent motion.

2. The combination, with mechanism for interbraiding threads, having two sets of 35 guide-bars of different lengths, of the stationary standard *C*, cradle *g*, guide-holder *h*, guide-wires *n*, prongs *i*, cam *c*, lever *b*, and spring *c'*, substantially as and for the purpose set forth.

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Witnesses:

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