

No. 896,412.

PATENTED AUG. 18, 1908.

R. C. RAHM.
BRAIDING MACHINE.
APPLICATION FILED APR. 17, 1907.

2 SHEETS—SHEET 1.

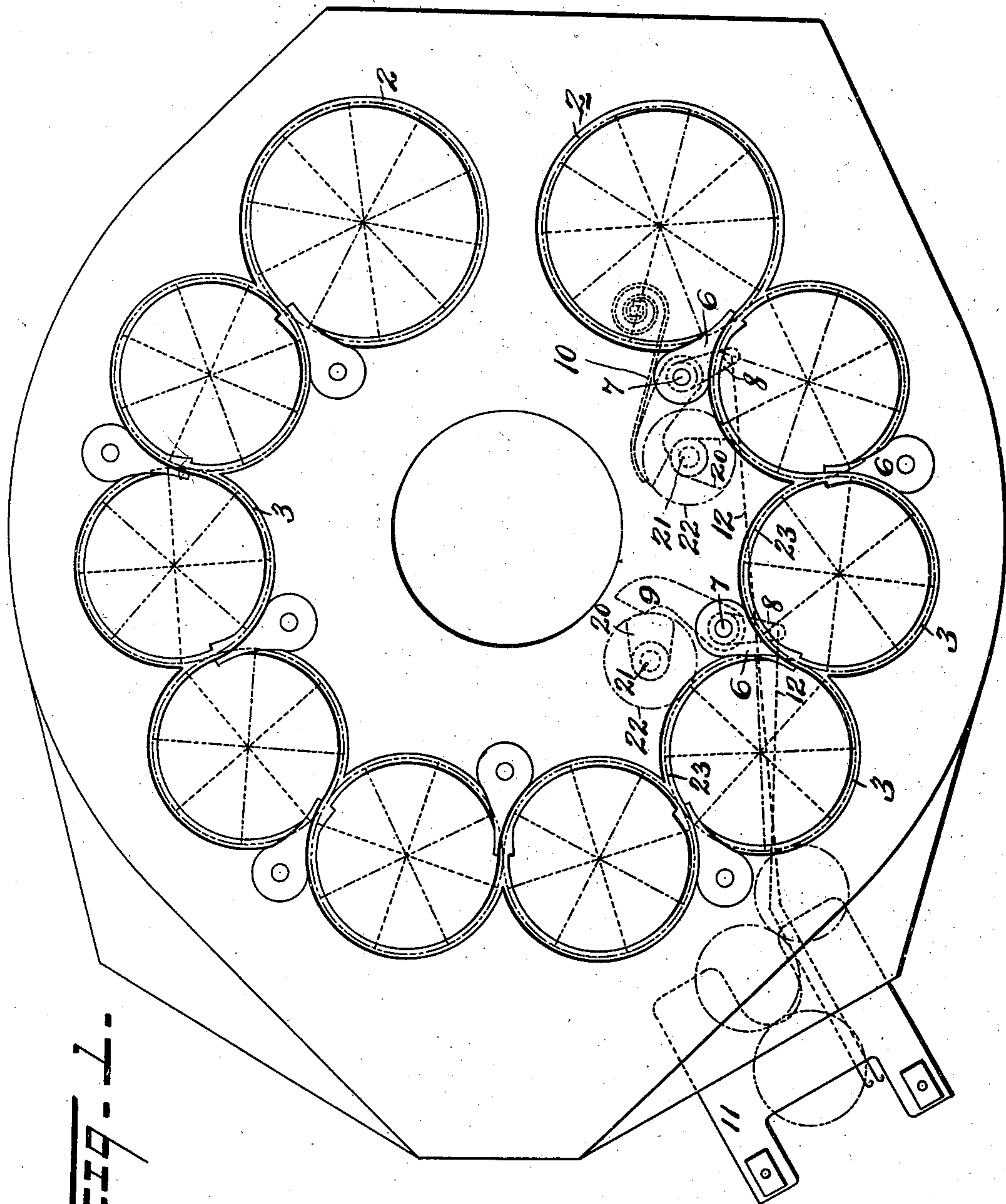


FIG. 1.

Robert C. Rahm,
Inventor

Witnesses
Caleb Prebet
D. M. Stewart

By *[Signature]*

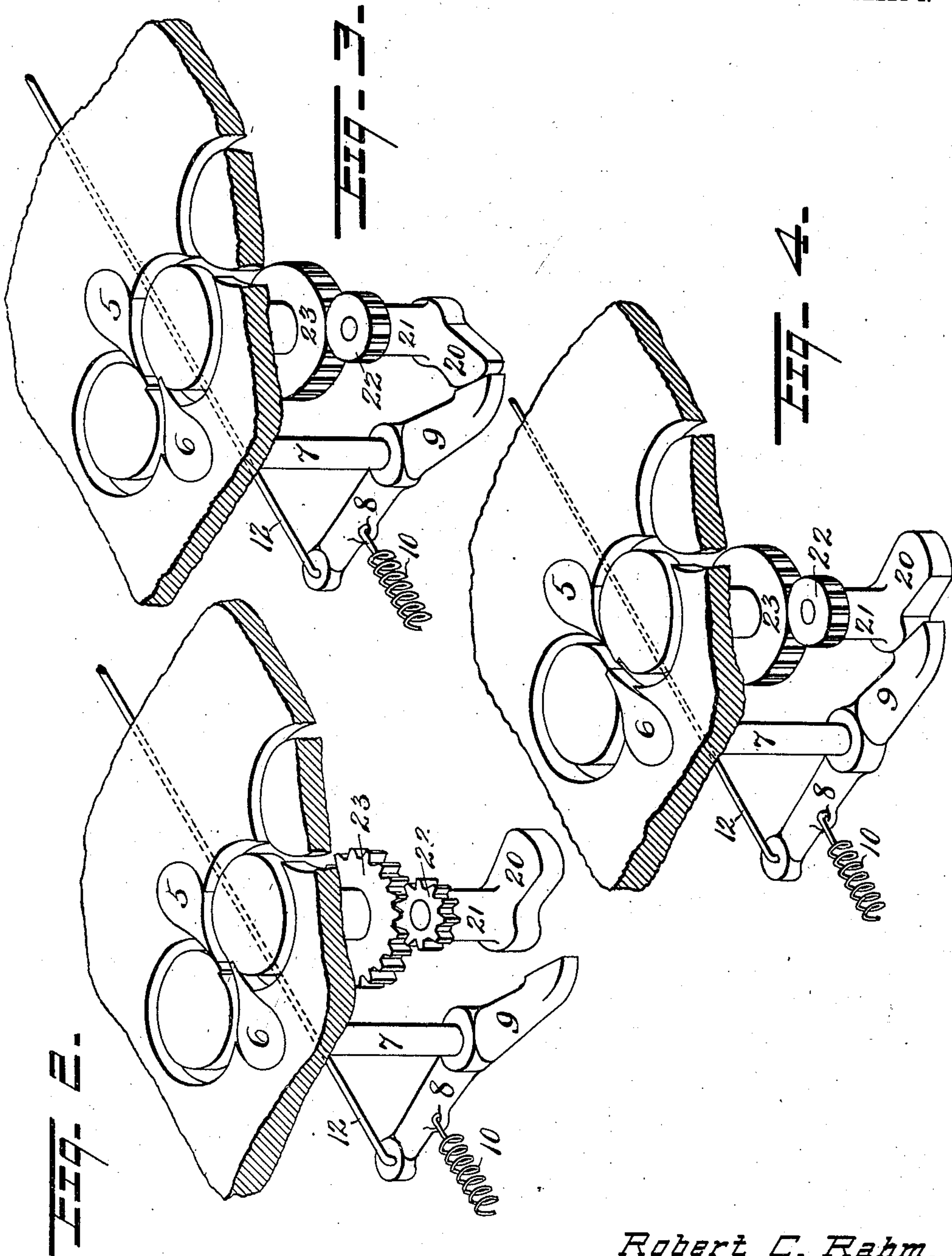
Attorneys

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2 SHEETS—SHEET 2.



Robert C. Rahm,
Inventor

Witnesses
Caleb J. Preber.
D. M. Stewart

by

[Signature]

Attorneys

UNITED STATES PATENT OFFICE.

ROBERT C. RAHM, OF WYOMISSING, PENNSYLVANIA, ASSIGNOR TO TEXTILE MACHINE WORKS, OF WYOMISSING, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

BRAIDING-MACHINE.

No. 896,412.

Specification of Letters Patent.

Patented Aug. 18, 1908.

Application filed April 17, 1907. Serial No. 368,626.

To all whom it may concern:

Be it known that I, ROBERT C. RAHM, a citizen of the United States, and a resident of Wyomissing, in the county of Berks and State of Pennsylvania, have invented certain new and useful Improvements in Braiding-Machines, of which the following is a specification.

My invention relates to braiding machines in which a jacquard or pattern mechanism is employed to enable the production of various designs of braids, and it consists mainly in providing an improved switch mechanism adapted to be operated jointly by the jacquard mechanism and by drive-gear-operated cams, the main purpose being to simplify the jacquard mechanism and the operation of the machine by effecting the regular switch movements required directly from the train of drive-gears.

The invention is fully described in connection with the accompanying drawings and is specifically pointed out in the claims.

Figure 1 is a diagrammatic plan view indicating a preferred application of my invention. Figs. 2, 3 and 4 are fragmentary perspective views showing the switch position controlled respectively by the jacquard, by the drive-gear-operated cam, and by its spring—the form of which latter is different from that indicated in Fig. 1.

In the preferred application of my invention indicated in Fig. 1, the braiding machine carrier course is provided with carrier drive-gears each of which has double the number of carrier-engaging horns or recesses ordinarily provided; that is each of the terminal gears indicated by the pitch circles 2—2, is a double five-horn, having a total of ten horns; and each of the intermediate gears indicated by the pitch circles 3—3, is a double four-horn having a total of eight horns; the course being thus adapted for double the ordinary number of carriers, which may be operated without collision in separate series as desired. As shown the machine is provided with a series of switches 5, 5, 5 which are operated directly by the carriers themselves and which serve merely to properly round out the carrier groove or way as is usually done, without controlling the course of the carriers. This control is provided for by the switches 6, 6, 6, each of which is fixed to a shaft 7 extending between the top and bot-

tom plates of the machine and provided as shown with rigid arms 8 and 9 by means of which the required movements are transmitted to the switch. A spring 10 serves to press the switch into one position excepting as it is positively moved at intervals into the reverse position by other operating means. These means comprise both a jacquard mechanism, and cam mechanism in mesh with the drive gears, said mechanisms being so arranged as to jointly effect, in connection with the springs 10, all the movements of the switches 6 required for differing designs of braids to be produced. The jacquard mechanism 11 as shown has wires 12 connecting with each arm 8 of the switch shafts so as to turn each of the latter as determined by the pattern card employed; while at the same time each of said switch shafts is arranged to be turned in the same direction as by the jacquard but at different times, by means of a cam 20 fixed to a cam shaft 21 having a pinion 22 in mesh with an adjacent drive gear 23 of the carrier train; said cam being in each case adapted to operate the corresponding switch, at regular intervals, by coming in contact with the switch shaft arm 9 as indicated.

In Fig. 4 the switch 6 is shown turned to the left side by the spring 10, both the jacquard and cam mechanisms being at that moment inoperative; while in Fig. 2 it is shown turned to the right side by the action of the jacquard or pattern mechanism, and in Fig. 3 similarly turned by the action of the cam; both of the right hand movements being effected against the tension of the spring 10, and the intervening movements effected by the action of the spring itself, being turned to the required setting of the switch to the left side position. By thus employing a drive-gear-operated cam mechanism for each spring-pressed switch 6, in combination with a jacquard or pattern mechanism coöperatively arranged, I am enabled to produce a great variety of braids on a machine of comparatively simple construction and operation, by means of greatly simplified jacquard cards; and with a relatively slow speed of the jacquard mechanism. Thus in the machine shown in Fig. 1, a series of carriers may be employed whose movements will be controlled by the switches as operated at regular intervals by the interposed drive-

gear operated cams, while the series of supplementary carriers employed may be co-operatively controlled as required by a jacquard mechanism employing a comparatively small number of wires and run at a relatively slow rate of speed.

What I claim is:—

1. In a braiding machine the combination with the carrier drive-gears and a jacquard mechanism of a switch having operating connections with both the drive-gears and jacquard substantially as set forth.

2. In a braiding machine the combination with the carrier drive-gears and a jacquard mechanism of a switch which is spring-pressed into one position and reversely moved at pattern-determined intervals by said jacquard mechanism, and a drive-gear-operated cam arranged to reversely move the same at regular intervals substantially as set forth.

3. A braiding machine having a carrier course with drive-gears for operating separate series of carriers, a series of switches for controlling both series of carriers, and separate jacquard and drive-gear operating

mechanisms for said switches, substantially as set forth.

4. A braiding machine having a carrier course with drive-gears for operating separate series of carriers, a series of switches for controlling both series of carriers, a jacquard mechanism arranged to operate said switches for one of said series of carriers, and a drive-gear-operated cam arranged to operate the same switches for the other series of carriers substantially as set forth.

5. A braiding machine having a carrier course comprising double terminal-gears and double intermediate-gears, series of carriers traversed in said course by said double gears, a single series of switches controlling the carriers, and independently operated jacquard and drive-gear mechanisms both of which operatively engage said switches substantially as set forth.

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

ROBERT C. RAHM.

Witnesses:

D. M. STEWART,
E. Y. COXE.