

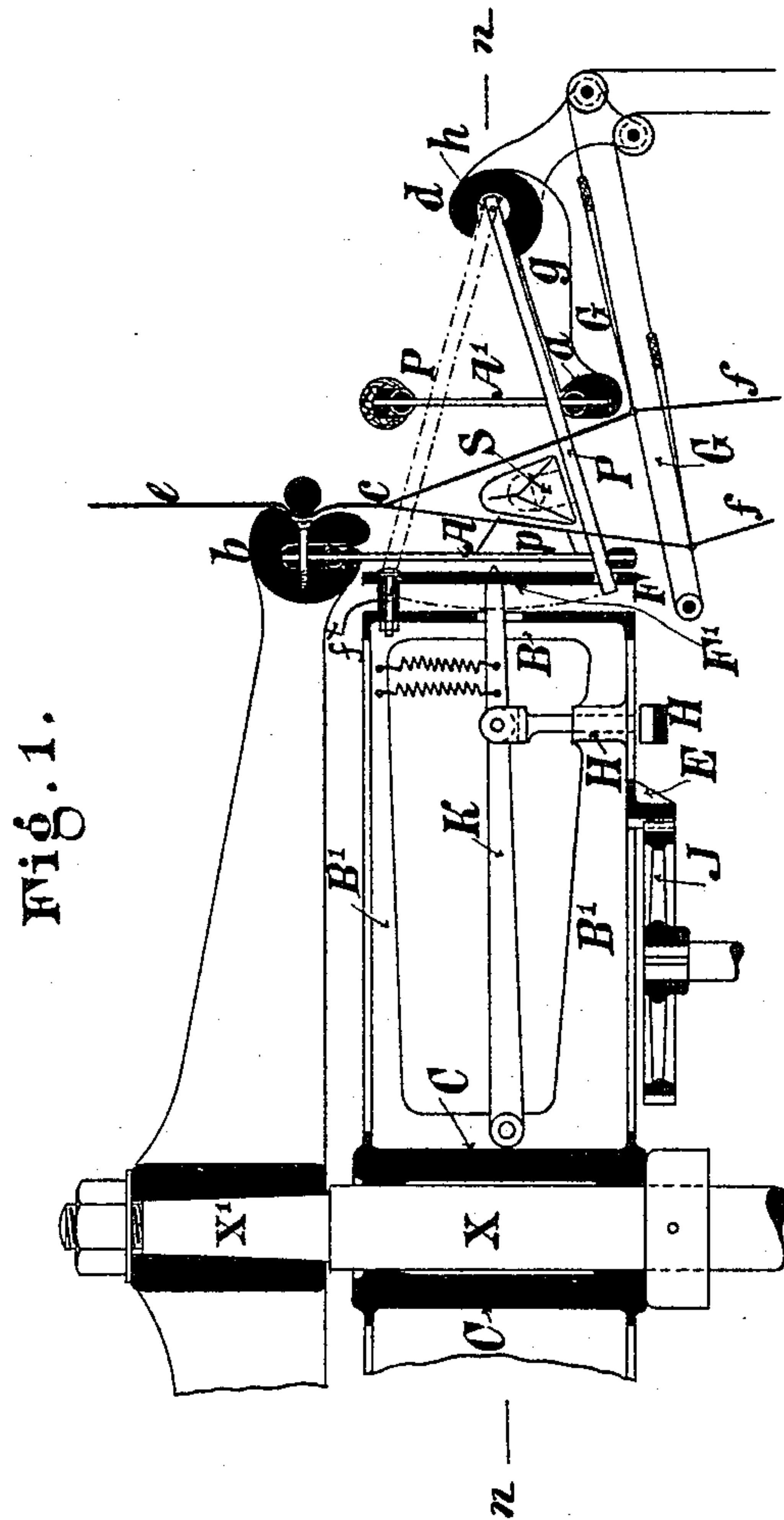
(No Model.)

2 Sheets--Sheet 1.

R. SAUTER.
CIRCULAR LOOM.

No. 365,101.

Patented June 21, 1887.



Witnesses.
T. Turner
Robt. H. Roy.

Inventor.
Robert Lauter
per Roeder & Primmer
Attorneys.

(No Model.)

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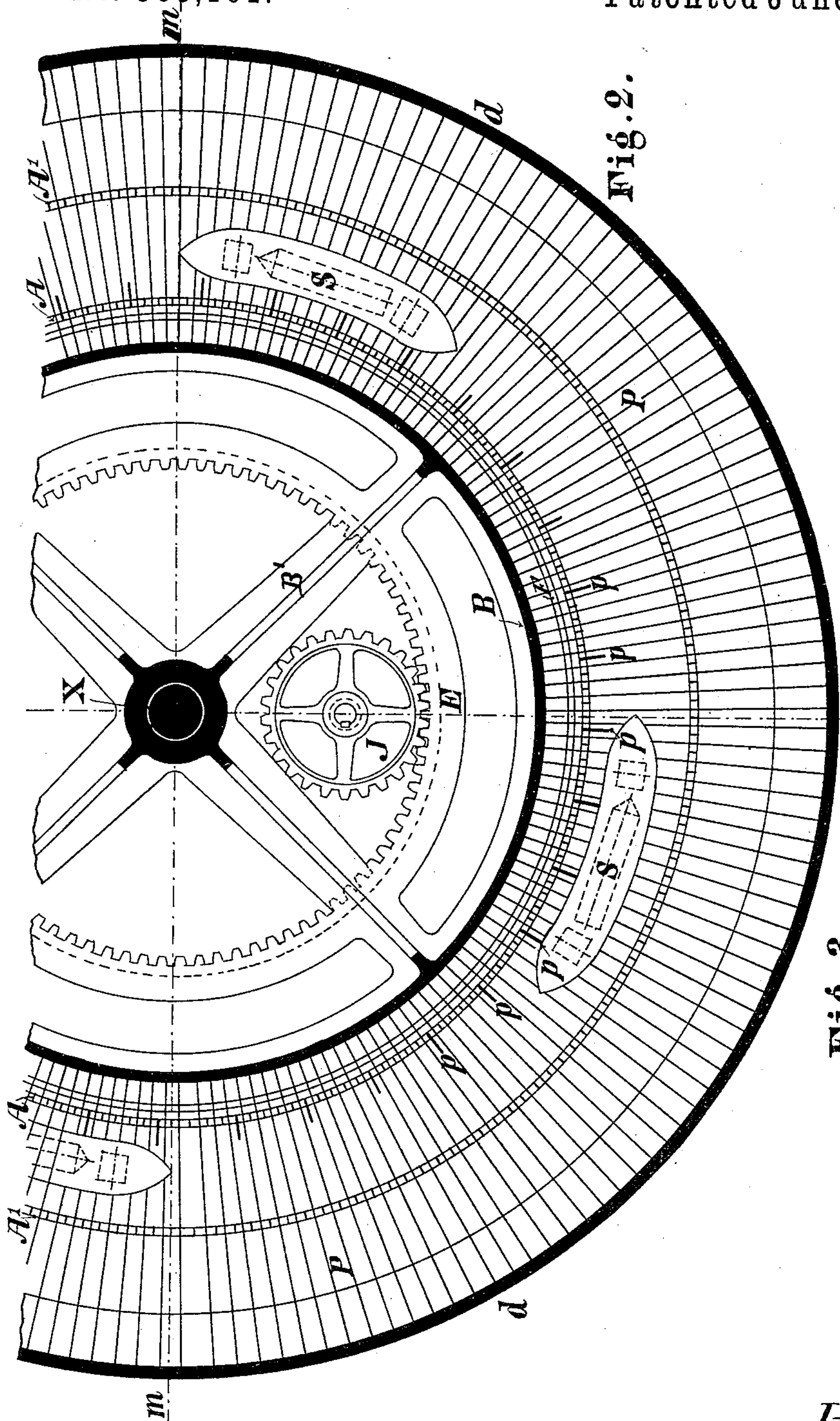
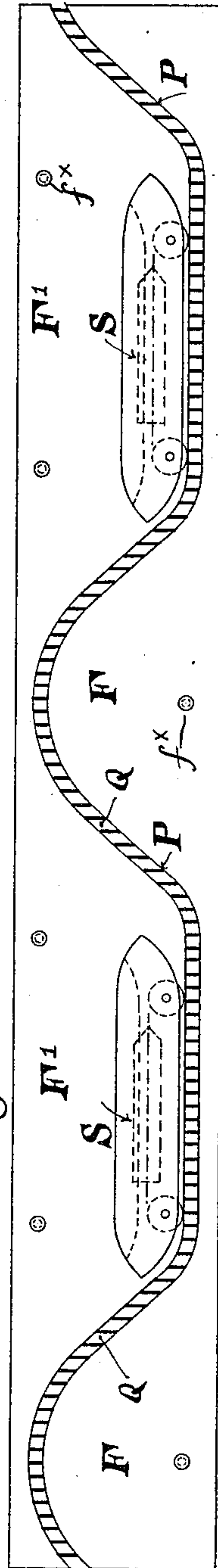


Fig. 3.



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UNITED STATES PATENT OFFICE.

ROBERT SAUTER, OF SULGEN, THURGAU, SWITZERLAND.

CIRCULAR LOOM.

SPECIFICATION forming part of Letters Patent No. 365,101, dated June 21, 1887.

Application filed May 19, 1886. Serial No. 202,609. (No model.)

To all whom it may concern:

Be it known that I, ROBERT SAUTER, a resident of Sulgen, Thurgau, Switzerland, have invented certain new and useful Improvements in Circular Looms, of which the following specification is a full, clear, and exact description.

My invention relates to a circular loom provided with horizontal hinged needles, by which the shuttle with the weft is moved between the threads of the warp in a continuous manner by the action of a cam-shaped groove upon the ends of the needles.

The invention consists in the various elements of improvement hereinafter described, and as particularly pointed out in the claim.

In the accompanying drawings, Figure 1 represents a vertical section of part of a circular loom at line *m m*, Fig. 2. Fig. 2 is a horizontal section of the loom at line *n n*, Fig. 3. Fig. 3 is a side view of the shuttles and of the mechanisms by means of which they are operated.

Upon the end *X'* of a fixed support, *X*, a ring, *b*, is attached by means of four (more or less) spokes or arms. From this ring a reed, *A*, is suspended, and a second reed, *A'*, is supported in a ring, *a*, attached to a circular frame, *d*, which latter is provided with a groove, *h*. The ring *a* is attached to the frame *d* by means of arms or spokes *g*, and said frame *d* is supported by four (more or less) vertical supports. (Not represented in the drawings.) Instead of reeds, as above mentioned, slotted plates may be used. The two reeds or slotted plates *A* and *A'* serve to guide the needles *P* in said slots. The needles *P* are hinged at one end in the groove *h* in the circular frame *d*, while the other ends of the needles rest upon the edge of a plate, *F*.

B is a drum, turning around the axle or support *X*, against the periphery of which the plates *F F'* are arranged and attached thereto by suitable studs or distance-bolts, *f^x*. The upper surface of the plate *F*, upon which the inner ends of the needles *P* rest, is cam-shaped, and the lower edge of the plate *F'* is also cam-shaped, and corresponds exactly to the cam-shaped edge of the plate *F*.

B' represents two, three, or more arms, which join the rim *B* with the socket *C* turning round its axle *X*. The edges of the two plates *F F'* are so arranged in relation to each other as to form a regular cam-shaped groove, *Q*. (See Fig. 3.) The cam-shaped edge of the plate *F* raises the needles one after another by means of its inclined face (see the position, Fig. 3) till they pass the weft against the fell *c*, while the lower edge of the plate *F'* brings them back again into their original position. (See Figs. 1 and 3.) The shuttles *S* rest upon the needles *P*, situated side by side close to each other, and bear with one of their sides against teeth or projections *p*, attached to the plate *A* at small intervals, Figs. 1 and 2. The needles *P* push during their ascensional movement against the inclined face of the shuttle ends and force them to advance.

f represents the warp, and *c* the web which is rolled upon a cylinder. (Not shown in the drawings.)

The rotary movement of the drum, together with the plates *F F'*, is produced by means of the toothed wheel *J*, which engages the teeth of the wheel *E*, attached to the arms *B'*.

The movement of the harness *G* is produced in the usual manner by eccentrics and beveled levers, which are arranged beneath the loom. (Not shown in the drawings.)

The needles may be formed or constructed in different manners, and they can be moved in different ways.

I claim as my invention—

The combination of standard *X* and carrying-ring *b*, with reed *A*, ring *a*, reed *A'*, drum *B*, plates *F F'*, forming a cam-shaped groove, *Q*, and hinged needles *P*, and shuttle *S*, substantially as described.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

ROB. SAUTER.

Witnesses:

N. SCHIRNHAUSER,

C. BÜRGIS,

Both of Sulgen.