No. 618,214. Patented Jan. 24, 1899.

O. A. STEERE.

NARROW FABRIC LOOM.

(Application filed Jan. 27, 1896.)

(No Model.) 3 Sheets—Sheet 1.

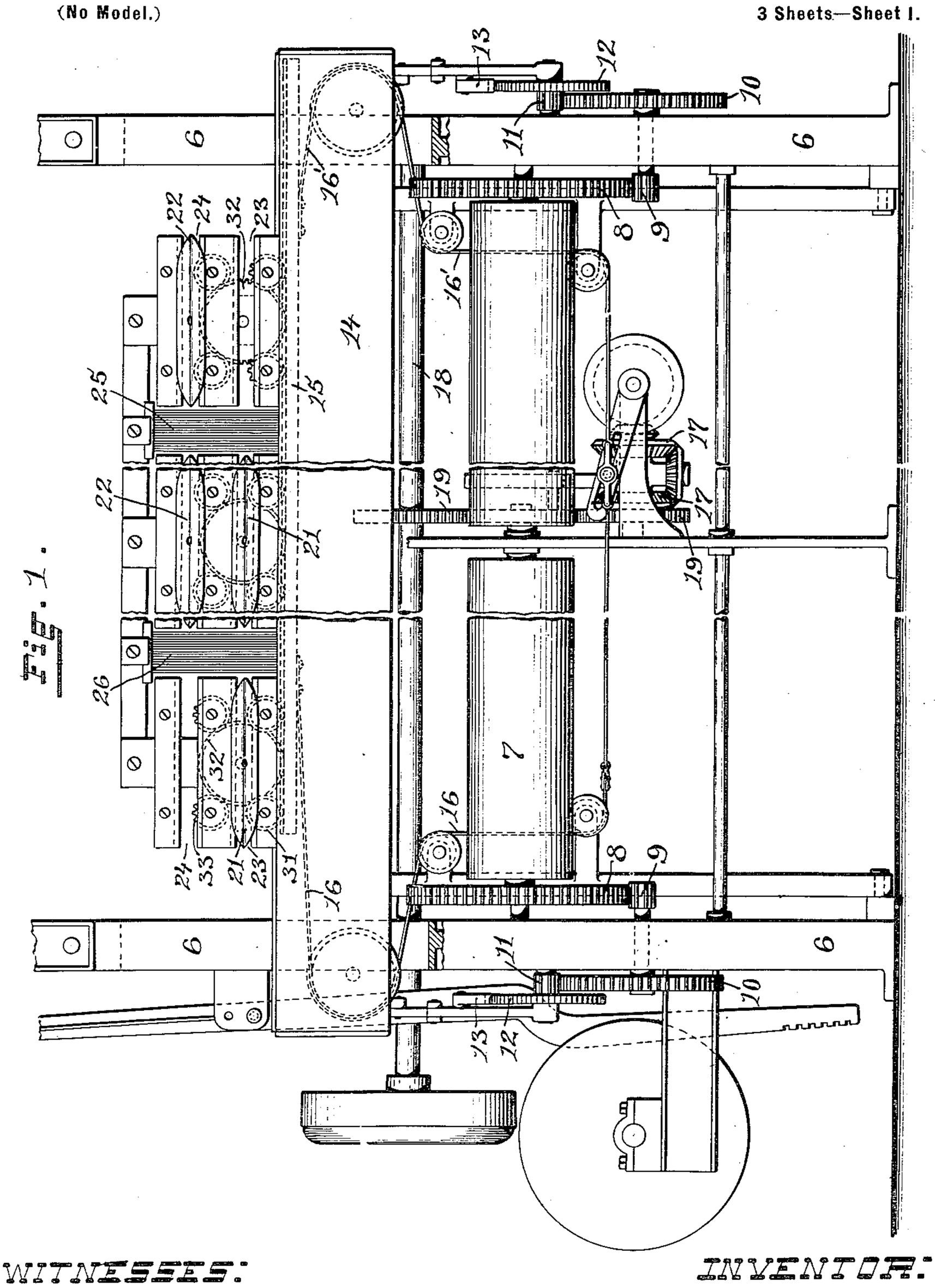

Fig. 1.

WITNESSES:

M. F. Bligh.

Chas. H. Luther Jr

INVENTOR:

Oscar A. Steere,

by Joseph A. Miller Her Attys.

No. 618,214. Patented Jan. 24, 1899.

O. A. STEERE.

NARROW FABRIC LOOM.

(Application filed Jan. 27, 1896.)

(No Model.) 3 Sheets—Sheet 2.

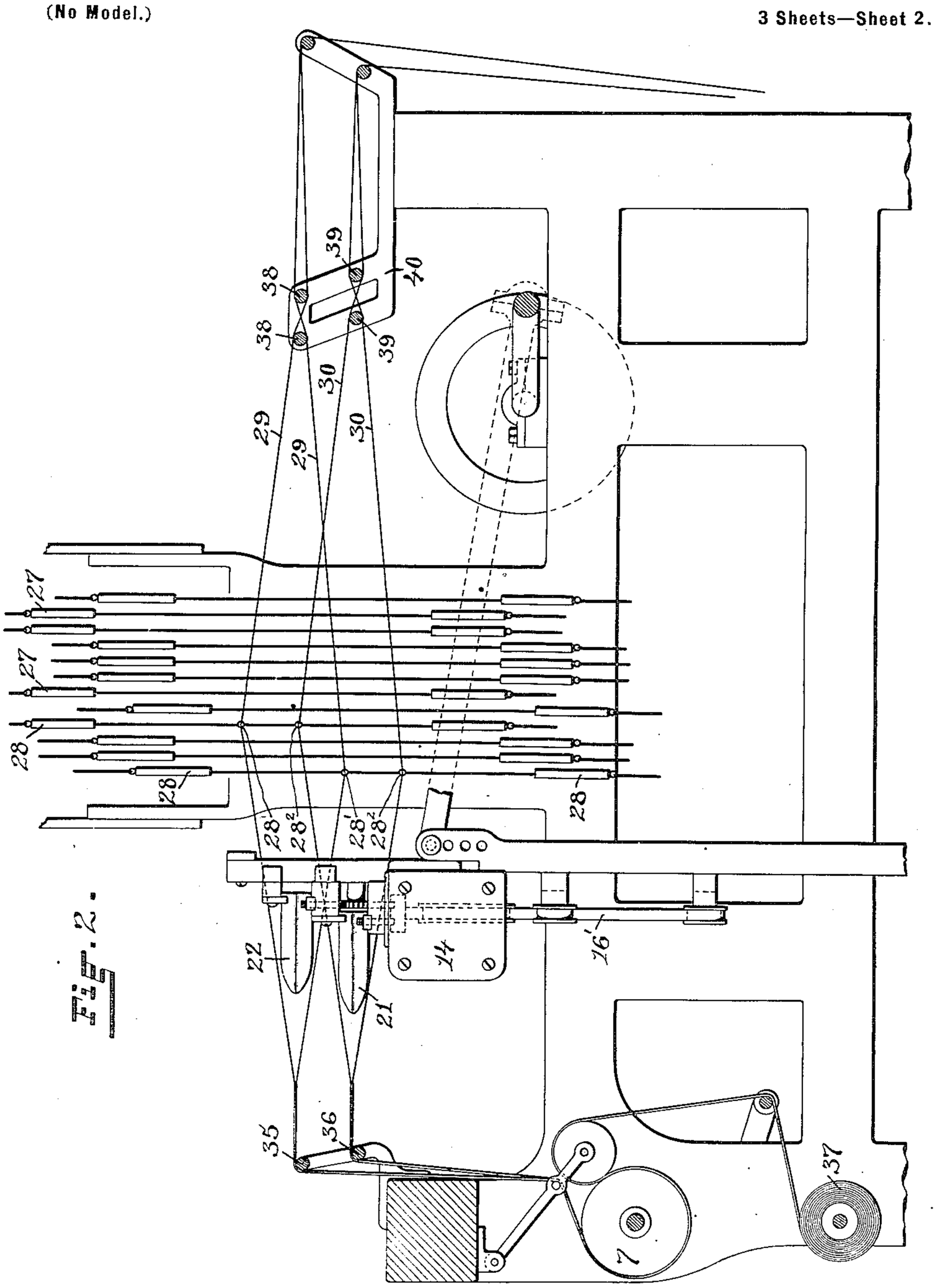

Fig. 2.

WITNESSES:

W. F. Bligh.

Chas. H. Luther Jr.

INVENTOR:

Oscar A. Steere,

by Joseph A. Miller & Co.,

Attys.

No. 618,214. Patented Jan. 24, 1899.

O. A. STEERE.

NARROW FABRIC LOOM.

(Application filed Jan. 27, 1896.)

(No Model.) 3 Sheets—Sheet 3.

Fig. 4.

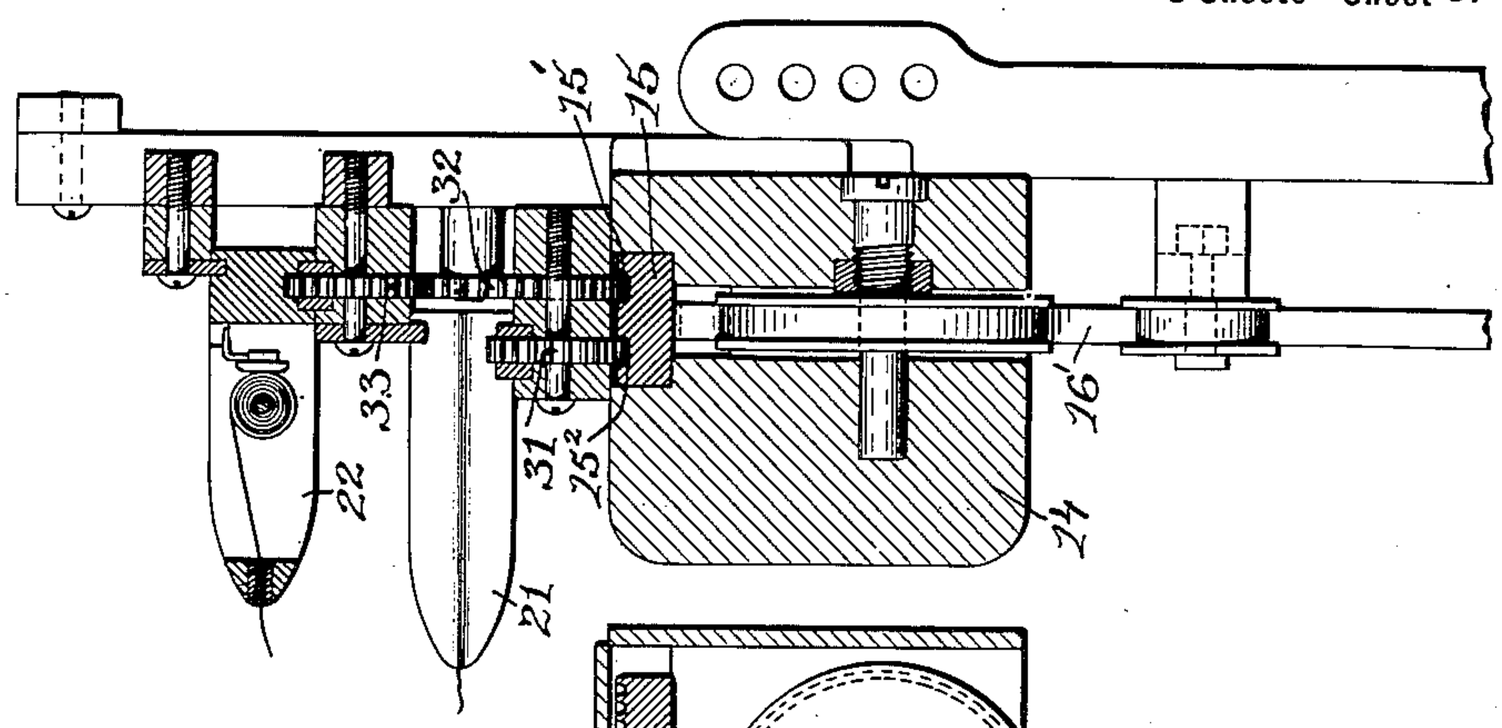

Fig. 5.

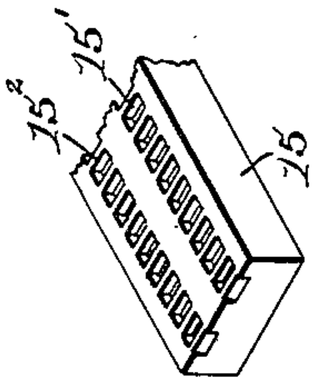

Fig. 3.

WITNESSES:

W. F. Bligh.

Chas. H. Luther Jr.

INVENTOR:

Oscar A. Steere,

by Joseph A. Miller & Co.

Attys.

UNITED STATES PATENT OFFICE.

OSCAR A. STEERE, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO THE HOPE WEBBING COMPANY, OF PAWTUCKET, RHODE ISLAND.

NARROW-FABRIC LOOM.

SPECIFICATION forming part of Letters Patent No. 618,214, dated January 24, 1899.

Application filed January 27, 1896. Serial No. 577,011. (No model.)

To all whom it may concern:

Be it known that I, OSCAR A. STEERE, of the city of Pawtucket, in the county of Providence and State of Rhode Island, have invented a new and useful Improvement in Narrow-Fabric Looms; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

This invention has reference to an improvement in narrow-fabric looms adapted to weave two sets of narrow fabric one above the other.

The invention consists in the peculiar and novel construction and arrangement of the shuttle-operating mechanism whereby the filling-threads are laid in the two superimposed fabrics simultaneously, as will be more fully set forth hereinafter.

Figure 1 is a front view of part of a positive-motion narrow-fabric loom. The breast-beam and other parts not required to illustrate the operation of the shuttles are left out, so as to more clearly show the essential parts. Fig. 2 is a vertical sectional view of parts of the loom, showing the warp, the heddles, the lay, the two races, one above the other, and the two banks of shuttles arranged for the weaving of two distinct fabrics. Fig. 3 is a sectional view of the lay, showing the mechanism for operating the two banks of shuttles. Fig. 4 is a transverse sectional view of the lay, showing the two shuttle-races one above the other, the shuttles, and the mechanism for imparting motion to the two shuttles. Fig. 5 is a perspective view of part of the double rack-bar.

Similar numerals of reference indicate corresponding parts in all the figures.

In the drawings, 6 6 indicate the end frames of the loom; 7, the fabric-take-up roll, which may be operated in any usual manner to maintain the stretch and take up the cloth or fabric. It is operated in the loom shown in the drawings through the gears 8 8, secured to the shaft of the take-up roll 7, the pinions 9 9, the gears 10 10, the pinions 11 11, the ratchet-gears 12 12, and the pawls 13 13, supported on arms connected with the lay 14. The rack-bar 15 is supported in suitable ways on the lay 14. Reciprocating motion is imparted to the rack-bar 15 by the straps 16 16 through the compound gears 17 17, which receive motion from the main shaft 18 through the train-gears 19 19 or in any other suitable manner. The lay is operated in the usual manner from the crank-shaft. It is provided with the two banks of shuttles 21 and 22, one above the other, supported in the two races 23 and 24, and the lay is also provided with the reeds 25 and 26.

The harnesses 27 27 used are provided with heddles 28, each of which is provided with the two warp-eyes $28'$ and 28^2. The warp-threads 29, which form the warp for the upper distinct fabric, pass through the upper warp-eyes $28'$, while the warp-threads 30, which form the warp for the lower fabric, pass through the lower warp-eyes 28^2, so that each heddle controls one warp-thread of each of the two independent fabrics, and two independent sheds are formed in front of the reed, and the weft laid in these sheds by the two shuttles is beaten up by the reed at one movement of the lay, all of which is clearly shown in Fig. 2. Twelve harnesses are shown in Fig. 2; but the number of harnesses required depends solely on the nature of the fabric to be produced. Two harnesses, the heddles of which are provided with the two warp-eyes $28'$ and 28^2, will be sufficient to form the sheds for the two independent fabrics of single ply.

Referring now more particularly to Figs. 3, 4, and 5, it will be seen that the rack-bar is provided with the two racks $15'$ and 15^2, and that the shuttles are provided at their lower faces with a rack, and that the intermediate gears 31, journaled on shafts secured to the lay, engage with the rack 15^2 of the rack-bar 15 and with the rack on the shuttles 21, while the shuttles 22 are operated by the larger gears 32 engaging with the rack $15'$ and with the intermediate gears 33, which engage with the rack on the shuttles 22, so that the upper shuttles always move with and in the direction of the rack-bar 15, while the lower shuttles 21 move in the opposite direction, and that by the reciprocation of the rack-bar the reciprocation of the shuttles is secured.

The fabrics pass over the cloth-beams 35 and 36 and down around the take-up roll 7 to the cloth-roll 37, the warp being supplied

at the opposite end of the loom in the usual manner.

The lease-rods 38 38 for the upper set of warp and 39 39 for the lower set of warp are supported on two brackets 40, so that each set of warp-threads for each separate and distinct fabric is supported separately at one end of the loom, and two separate and distinct fabrics are each separately supported on a cloth-beam.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

In a positive-motion loom adapted to weave simultaneously two independent fabrics one above the other, the combination with the lay, the two shuttle-races one above the other, and shuttles having toothed racks, of the actuating mechanism secured to a fixed part of the loom below the lay, a double rack-bar carried by the lay, pulleys on each end of the lay, straps secured to the actuating mechanism and to the two ends of the double rack-bar, the gears 31 31 for operating the lower shuttle, and the gears 32 and 33 33 for transmitting the motion of the rack-bar to the upper shuttle; whereby the shuttles are moved to lay the weft-threads simultaneously into the two sheds of two separate fabrics, as described.

In witness whereof I have hereunto set my hand.

OSCAR A. STEERE.

Witnesses:
JOSEPH A. MILLER,
B. M. SIMMS.