No. 758,895. PATENTED MAY 3, 1904.

C. A. BRINK & C. CHRISTENSEN.

AUTOMATIC LOOM.

APPLICATION FILED JUNE 3, 1903.

NO MODEL. 4 SHEETS—SHEET 1.

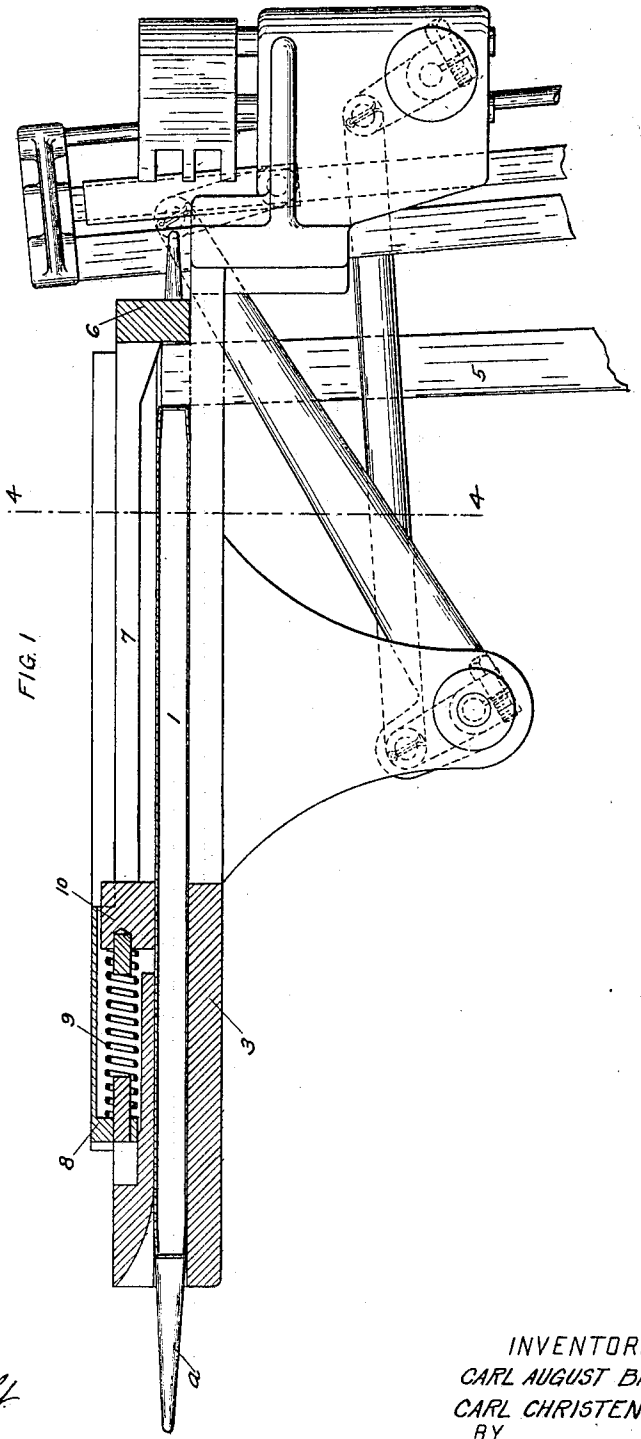


FIG. 1

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THE NORRIS PETERS CO. PHOTO-LITHO. WASHINGTON, D. C.

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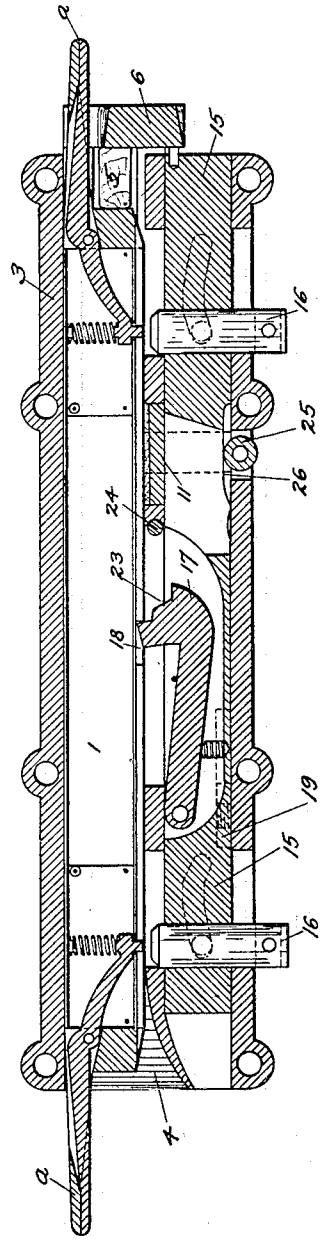
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NO MODEL. 4 SHEETS—SHEET 2.

FIG. 2



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NO MODEL. 4 SHEETS—SHEET 3.

FIG. 3

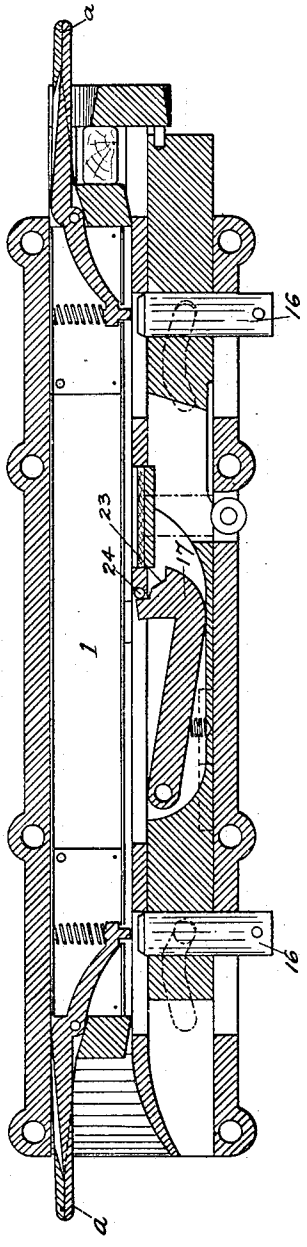
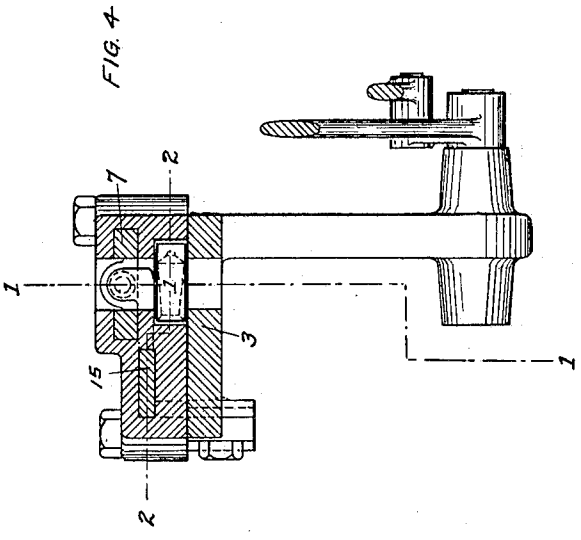


FIG. 4



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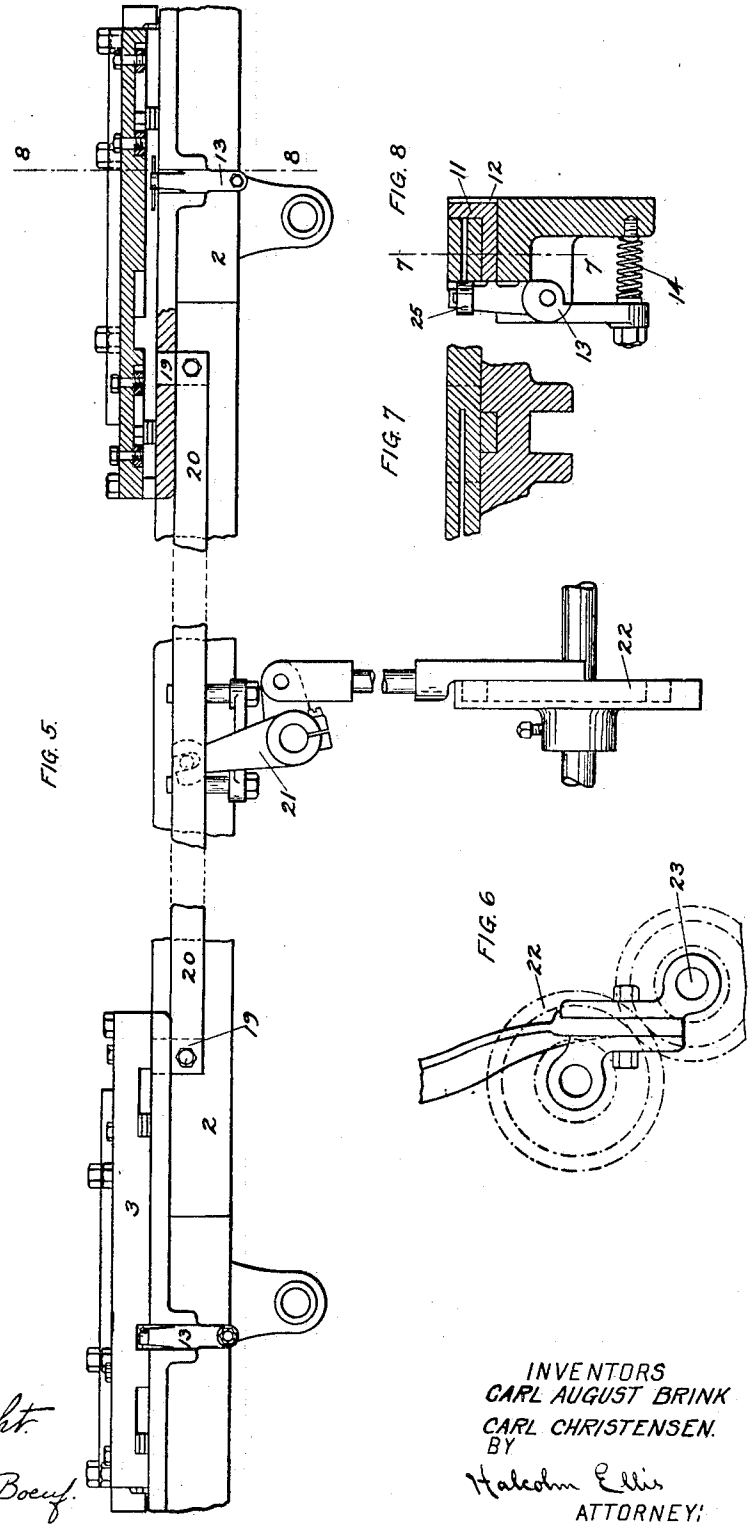
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NO MODEL. 4 SHEETS—SHEET 4.



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No. 758,895. Patented May 3, 1904.

UNITED STATES PATENT OFFICE.

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AUTOMATIC LOOM.

SPECIFICATION forming part of Letters Patent No. 758,895, dated May 3, 1904.

Application filed June 3, 1903. Serial No. 159,909. (No model.)

To all whom it may concern:

Be it known that we, CARL AUGUST BRINK, residing in the city of Providence, State of Rhode Island, and CARL CHRISTENSEN, residing in the town of Attleboro, State of Massachusetts, citizens of the United States, have invented certain new and useful Improvements in Automatic Looms, of which the following is a specification.

This invention relates to improvements in automatic looms which have no bobbin in the shuttle and instead are provided with a thread-carrier which traverses across the loom, drawing the thread first from one side and then from the other from suitable supplies maintained at each end; and it consists, essentially, in improved devices for stopping the movements of the thread-carrier by the interposition of a yielding stop before the thread-carrier has completed its travel, an automatic device for positively pushing the thread-carrier to the last position of its travel and for releasing the thread-carrier from all tension prior to the time when it is returned across the loom by the picker, together with other features of novelty which will be more particularly pointed out and explained in the following specification and drawings, in which—

Figure 1 is a vertical longitudinal section through the thread-carrier and its receiving-box, the same being taken on line 1 1 of Fig. 4. Fig. 2 is a horizontal section on line 2 2 of Fig. 4, showing the thread-carrier in its received position. Fig. 3 is a horizontal section on line 2 2 of Fig. 4, showing the thread-carrier in its extreme position. Fig. 4 is a vertical cross-section on line 4 4 of Fig. 1. Fig. 5 is a front view of the loom-beam and its connections, parts being broken away for the purpose of condensing the figure, the right-hand end being shown in section on line 5 5 of Fig. 4. Fig. 6 is a detail view indicating the connection of the cam-shaft to the rock-shaft. Fig. 7 is a section on line 7 7 of Fig. 8. Fig. 8 is a section on line 8 8 of Fig. 5.

Referring to the drawings, 1 is the thread-carrier of the usual type and construction used in this character of looms—to wit, it is a long slender hollow metal box having a pair of nipper-jaws *a* at each end, springs within the box for holding the nipper-jaws *a* closed, and suitable provision made for opening the jaws *a* to grasp and release the thread, the details of which form no part of this invention and being in all respects similar in form and function to that shown and described in the patent to D. M. Seaton, No. 646,319, March 27, 1900, a detail description will not be here repeated. When the thread-carrier 1 has been thrown through the warp, it is received at either end of the loom-beam 2 in the thread-carrier box 3, which has extending through it a channel 4 with a flaring end toward the center of the loom, into which the thread-carrier 1 enters at each end of its stroke and is arrested in its motion by the picker-stick 5, which in turn rests against the spring-abutment 6. This abutment 6 is connected to a slide 7, longitudinally mounted in the thread-carrier box 3, and terminates in a lug 8, which engages a compression-spring 9, the other end of the spring 9 resting against a suitable stop 10 in the thread-carrier box 3. From this it will be seen that the blow of the thread-carrier 1 is received on the picker-stick 5, which rests against a yielding surface, the object of which is to prevent the upsetting of the thread-carrier 1. The action of the spring-abutment 6 on the thread-carrier 1 requires a still further element to prevent a rebound of the thread-carrier 1, and this is provided in a lateral brake consisting of a sliding angle-piece 11, mounted in the thread-carrier box 3 and provided with a leather face 12, which presses against the front face of the thread-carrier 1. It is held in contact by a small lever 13, actuated by a compression-spring 14. (See Figs. 5 and 8.) Under the action of this lateral brake the thread-carrier 1 comes to a stop in the position indicated in Figs. 1 and 2. This, however, is not the extreme position of the thread-carrier 1, and its further movement is made positively by a mechanical drive consisting, essentially, as follows: A slide 15, mounted within the thread-carrier box 3, is provided with the usual plun-

gers 16 for operating the nipper-jaws *a* of the thread-carrier 1. Mounted within the slide 15 there is a spring-latch 17, which presses against the front side of the thread-carrier 1. This latch 17 engages the opening 18 in the thread-carrier 1. The slide 15 has a downward-extending ear 19, which is connected to a sliding beam 20, mounted upon the loom-beam 2 and actuated by a bell-crank 21, which in turn is operated by a suitable cam 22, driven from the rocker-shaft 23. The operation of this slide 15 is as follows: When the thread-carrier 1 has come to the position shown in Fig. 2 and the latch 17 has engaged the opening 18, the cam 22 moves the bell-crank 21, sliding the beam 20 in the direction the thread-carrier 1 has just been moving. This movement of the slide 15 carries the thread-carrier 1 to the position shown in Fig. 3, the plungers 16 in this space having operated the nipper-jaws *a*, causing them to release the thread in one end and grasp it in the other. When the slide 15 is in its second position, as shown in Fig. 3, the latch 17 is disengaged from the thread-carrier 1, the cam-surface 23 having met the pin 24, as clearly shown in Figs. 2 and 3. The upper end of the brake-lever 13 is provided with a small roller 25, which rests against a cam-surface 26 on the edge of the slide 15, and the movement of the slide 15 to the position shown in Fig. 3 serves to remove the pressure of the lever 13 from the brake-slide 12, and so leave the thread-carrier 1 free within the slide 4 to be returned by the picker-stick 5.

Having described our invention, we claim—

1. In an automatic loom of the class described, a thread-carrier, means for throwing same from one side of the loom to the other, means for arresting the movement of the thread-carrier before the end of its stroke, a lateral moving slide, on which is mounted a latch for engaging the thread-carrier when in its arrested position, and means for positively moving said slide, and thereby the thread-carrier through the last part of its stroke, substantially as described.

2. In an automatic loom of the kind described, thread-carrier, means for throwing the same from one side of the loom to the other, means for arresting the movement of the thread-carrier before the end of its stroke, a slide mounted to move parallel to the travel of the thread-carrier, provided with a latch for engaging the thread-carrier in its arrested position, means for moving the slide to positively drive the thread-carrier to the end of its stroke, means for releasing the latch from the thread-carrier when at the end of its stroke, substantially as described.

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