Sept. 17, 1929. E. JÄGE R 1,728,347

WIRE WEAVING LOOM

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FIG. 1.

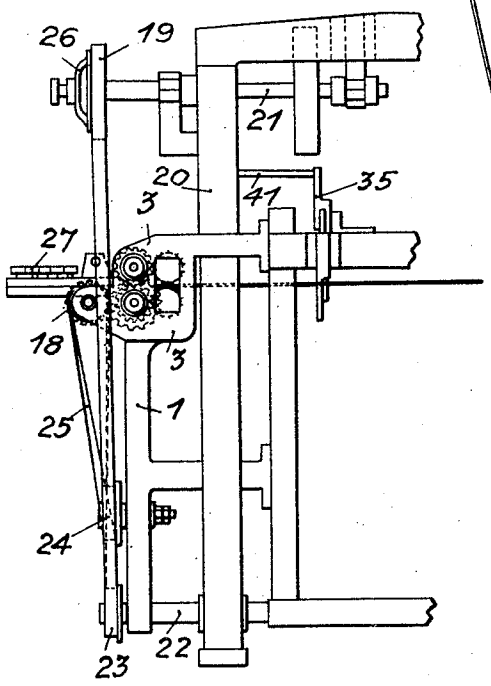


FIG. 2.

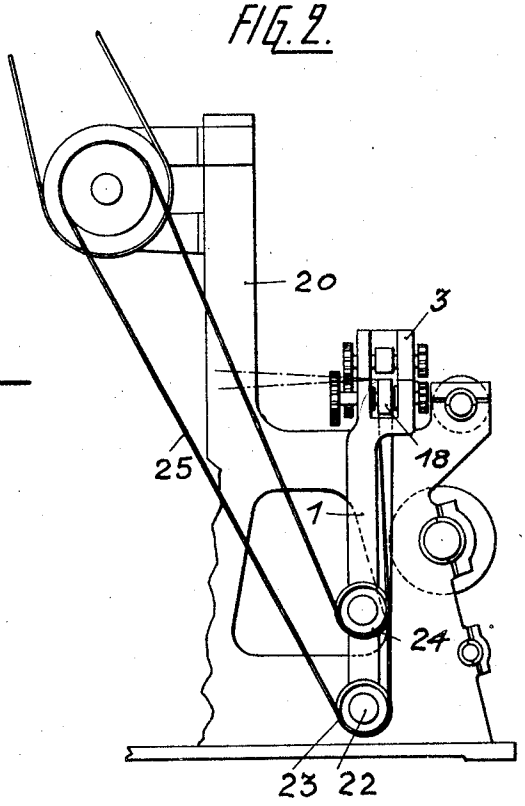


FIG. 3.

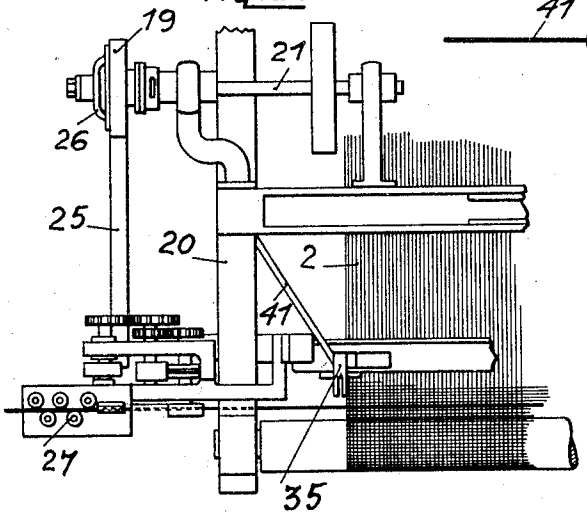
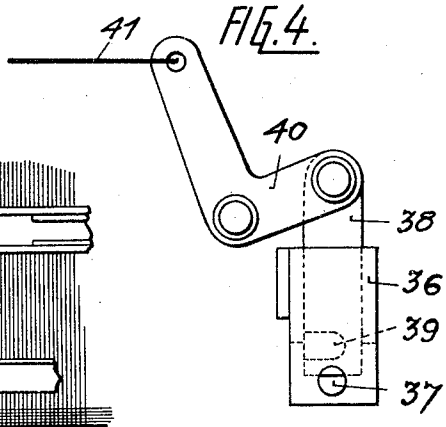


FIG. 4.



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FIG. 5.

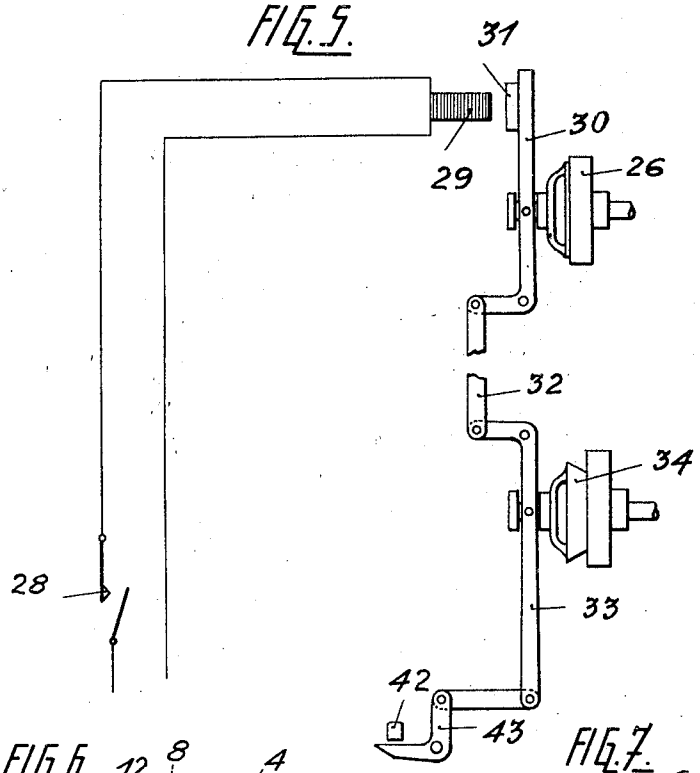


FIG. 6.

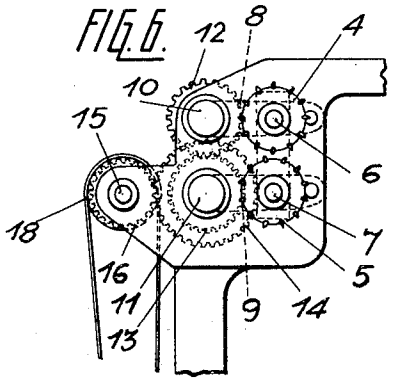
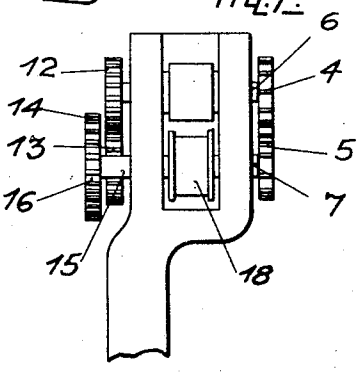


FIG. 7.



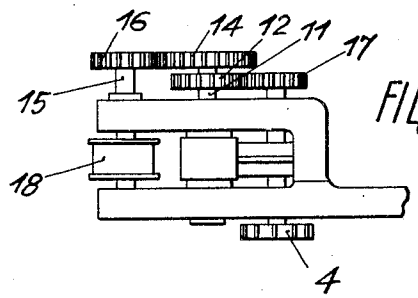


FIG. 8.

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UNITED STATES PATENT OFFICE

EMIL JÄGER, OF NEUSTADT-ON-THE-ORLA, GERMANY

WIRE-WEAVING LOOM

Application filed June 11, 1928, Serial No. 284,599, and in Germany February 4, 1925.

In the process of weaving wire fabric with wefts too thick to be dealt with by means of shuttles it has heretofore been usual to crimp and cut the weft wires in a separate machine, and then to insert them by hand. According to my invention the loom itself is provided with a crimper arranged at one side of the shed and operating so that the push given to the wire by the crimping insert it into the shed. There is, consequently, no work to be done between the crimping and insertion of the weft wires, and a single man can attend to the loom.

A loom according to the invention is shown in the annexed drawings, in which Fig. 1 is a front elevation, Fig. 2 a side elevation, and Fig. 3 a plan view. Figs. 4 to 8 show details.

In the drawings 1 represents the lay, and 2 the fabric. At one side of the fabric there is a wire crimper 3 which is on the lay and has two ribbed wheels 4, 5 (Fig. 6) mounted on spindles 6 and 7 respectively, the spindles being carried by levers 8 and 9 fixed to shafts 10 and 11, which are connected by gears 12 and 13. The gear wheel 12 meshes with a gear wheel 17 on the spindle 6, and the gear wheel 13 meshes with a gear wheel on the spindle 7, not shown in the drawings. On the shaft 11 there is a gear wheel 14 meshing with a gear wheel 16 on a shaft 15. The shaft 15 is driven by means of a belt 25 and a pulley 19 connected by a clutch 26 with a shaft 21 mounted in the frame 20, the belt 25 passing over a pulley 23 coaxial with the lay shaft 22, and over a tensioning roller 24 and a pulley 18 on the shaft 15.

The wire crimper 3 comes into operation when the lay 1 is at rest in its rearward position, the clutch 26 being then thrown into engagement. The weft wire coming from a reel passes through a guide or straightening device 27 to the ribbed crimping wheels 4 and 5. By the stress due to the bending it is pushed into the shed. When the wire has passed through the shed it strikes an electric contact 28 (Fig. 5) and closes the circuit of an electromagnet 29, whose armature 31 is fixed to the lever 30 of the clutch 26, and disengages the clutch, so that the bender is stopped. The lever 30 is connected by links 32 to a lever 33 controlling a clutch 34 in the loom actuating mechanism, so that when the clutch 26 is disengaged the clutch 34 is engaged, and the lay beats up the weft. The movement of the lay actuates a cutter 35 (Fig. 4) having a fixed shearing plate 36 with a hole 37 therein for the weft wire, and a moving blade 38 having a slot 39, whose lower edge is a cutting edge. The blade is actuated by means of a bell crank lever 40 and a cord 41 pulled by the forward movement of the lay.

When the lay returns an abutment 42 thereon (Fig. 6) actuates a bell crank lever 43 connected to the lever 33, and disengages the clutch 34, to stop the loom, the clutch 26 being thrown into engagement again to drive the wire crimper.

Instead of keeping the lay at rest during the crimping the arrangement may be such that during the crimping it moves sufficiently slowly to avoid interference with the crimping. The construction is in that case more simple, as there is no mechanism connecting the crimper clutch to the main clutch.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. A wire fabric loom having incorporated therewith, a lay, a crimper on the lay for the weft wires, arranged at one side of the shed, operating so that the movement imparted to the wires by the crimping thereof introduces them into the shed.

2. A loom as claimed in claim 1, wherein the crimper is put into operation while the lay is at rest in its rearward position, is moving with retardation.

3. A loom as claimed in claim 1, wherein the crimper is driven by belt and pulley gear including a pulley having its axis in line with the lay shaft.

4. A loom as claimed in claim 1, having a wire cutter actuated by the beating up motion of the lay, for cutting the weft wire.

5. A loom as claimed in claim 1 having an electric contact actuatable by insertion of the

weft wires to close the circuit of an electromagnet controlling a clutch for driving the wire bender.

6. A wire fabric loom having incorporated therewith a lay, a crimper on the lay for the weft wires, arranged at one side of the shed, operating so that the movement imparted to the wires by the crimping thereof introduces them into the shed and also having a wire cutter actuated by the beating up motion of the lay, for cutting the weft wire and a cord to actuate said cutter, said cord being attached to the frame of the loom and tensioned by the beating up motion of the lay.

7. A loom as claimed in claim 1, having an electric contact actuatable by insertion of the weft wires to close the circuit of an electromagnet controlling a clutch for driving the wire crimper, and a clutch controlling the loom actuating mechanism and to which the first named clutch is connected so that engagement of either clutch causes the other to be disengaged.

8. A loom as claimed in claim 1, having an electric contact actuatable by insertion of the weft wires to close the circuit of an electromagnet controlling a clutch for driving the wire crimper, and a clutch controlling the loom actuating mechanism and to which the first named clutch is connected so that engagement of either clutch causes the other to be disengaged, said clutch in the driving mechanism of the loom being disengageable by mechanism actuated by the lay on the completion of its return stroke after beating up the weft.

In testimony whereof I affix my signature.

EMIL JÄGER.