Dec. 30, 1947. H. PELCÉ 2,433,479

WEFT STOP MOTION FOR CIRCULAR LOOMS

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Fig. 2

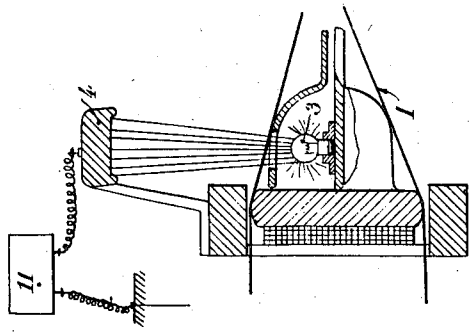
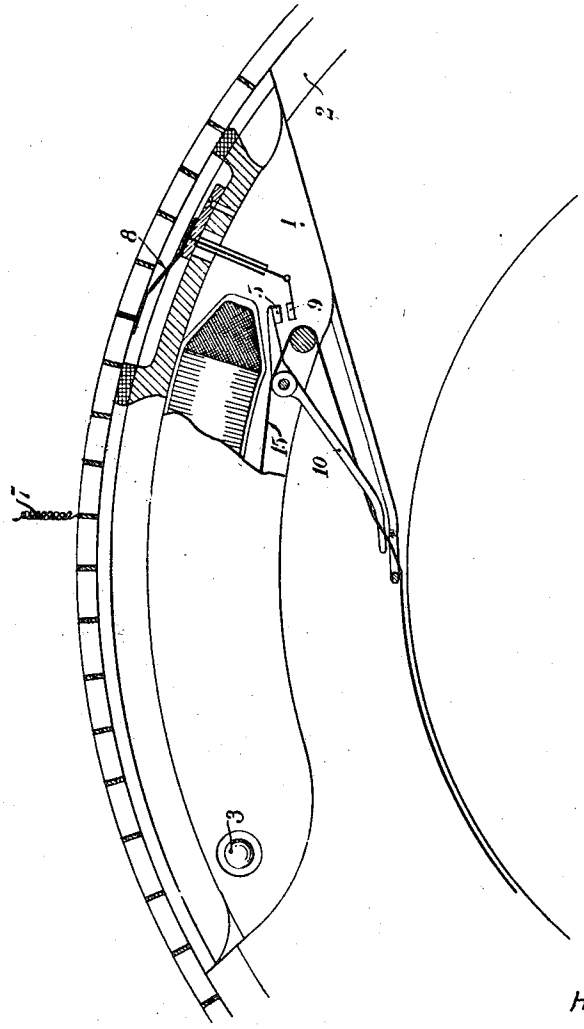


Fig. 1



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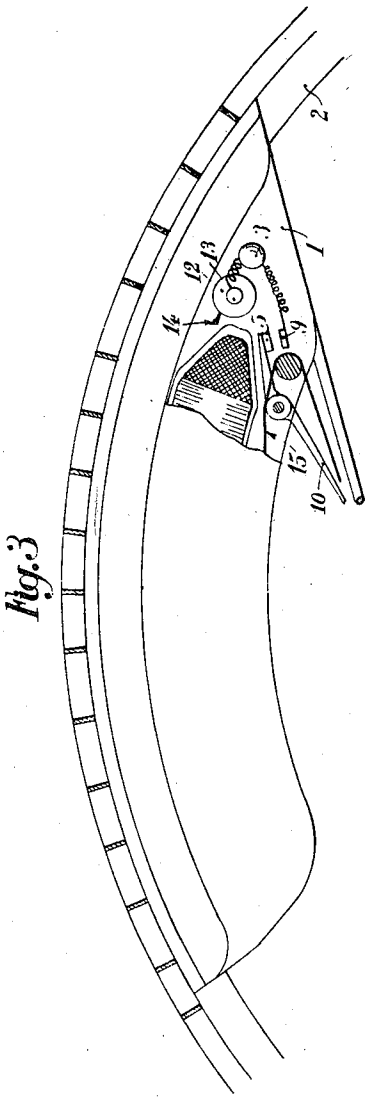


Fig. 3

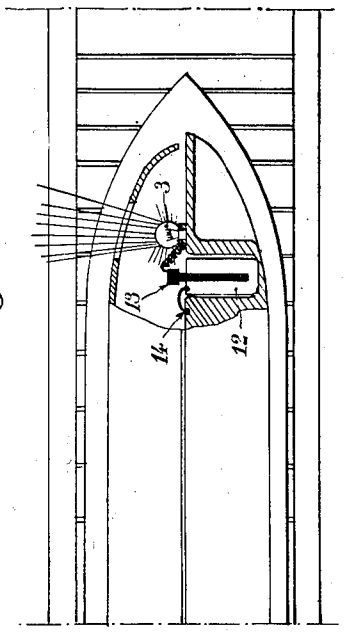


Fig. 4

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WEFT STOP MOTION FOR CIRCULAR LOOMS

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4 Claims. (Cl. 139—371)

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This invention has for its object a weft stop motion to be mounted on a circular weaving loom and in which electric phenomena are taken into action to control the stopping of the loom whenever the weft thread happens to fail.

The weft stop motion according to the invention is characterized thereby that, upon the weft thread failing to be fed from a shuttle which is inaccessible while running, a lamp on said shuttle will light up, by whose action upon a photo-electric cell the loom is brought to rest.

Preferably, a neon lamp is used for the excitation of the photo-electric cell; said lamp is carried by the shuttle and is supplied with high-frequency current through a brush secured to the shuttle and adapted to sweep the shuttle guide rail that receives the electric excitation, said current flowing through a circuit that will become closed following the breakage of the weft thread.

The lamp for the excitation of the photo-electric cell may also be a filament lamp mounted on the shuttle and supplied with current from a source similarly mounted on the shuttle through a circuit that becomes closed following the breakage of the weft thread.

A description of both of these embodiments is given hereinafter, reference being had to the appended drawings in which:

Figure 1 is a fragmentary plan view of the first embodiment of the loom.

Figure 2 is a corresponding fragmentary vertical section.

Figures 3 and 4 are similar views representing the second embodiment.

The photo-electric cell is only illustrated diagrammatically in Fig. 2 for the sake of clearness.

The lamp 3 in Figs. 1 and 2 is a scintillating neon lamp arranged within the shuttle. It will become luminous whenever one pole thereof is connected with a source of high-frequency current. It is mounted in such manner that the rising light bundle emanating therefrom shall encounter the photo-electric cell.

The photo-electric cell 4 is located outside the thread sheet at a point designedly chosen in a dark region above the loom. Said cell is adapted to influence an amplifying relay controlling the electromagnets by which the loom is kept in operation. Upon the cell being excited the electromagnets will act upon the uncoupling and related means to stop the fabric, uncover the shuttles, etc.

A plurality instead of one single photoelectric cell may be arranged, all of which facing downwards in order to collect the excitation emanating from the lamp carried by the shuttle.

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The shuttle 1 is insulated from the rail 2 which itself need not be insulated and which is connected with a source of high-frequency current through the medium of a lead 7. A collector 8 insulated from the shuttle is provided with a contact stud 9 adapted to engage the contact stud 5 arranged on weft feeler 10 on which the weft thread 15 runs. When the said thread breaks the feeler thus deprived of its support is rocked by the action of the centrifugal force, so that the studs 5 and 9 engage each other. At that moment the high-frequency current from the rail 2 is led to the lamp which is brought to full brightness. The light therefrom finds its way through the upper sheet of warp threads and is flashed upon the cell 4 by which the relay 11 is influenced and the loom stopped.

In the second embodiment of the invention the shuttle 1 carries a filament lamp 3 operated with a voltage of, say, 1.5 v. It also carries a battery 12 one terminal of which is connected with one terminal of lamp 3. The other terminal 14 of the battery is earthed preferably to the shuttle 1 as well as the weft feeler 10. The other terminal of the lamp 3 is connected with a stud 9 adapted to engage the stud 5 on the weft feeler when same has been caused to rock on account of the breaking of the weft thread. This results in the closure of the circuit, so that the lamp will light up and excite a suitably located photoelectric cell.

It will be appreciated that both of the above-described embodiments are free from the drawbacks of electric arrangements in which the source is located without the shuttle. In such arrangements satisfactory operation depends upon the reliability of the connections in the circuits and on the insulation of the rail; said arrangements are elaborate in design owing to the necessity of having the circuit pass through the sheets in order to complete the same at the shuttle. The arrangement according to the invention involves the use of one single current collector, and even does away therewith where the current source is carried by the shuttle. Besides, it should be understood that further embodiments may be contemplated. Thus, the arrangement and location of the lamps, the weft feeler and the contact studs as well as the shape of the latter may be modified, amongst others, without departing from the scope of the invention.

What I claim as my invention and desire to secure by Letters Patent is:

1. A weft stop motion for circular looms comprising a lamp, a photoelectric cell responsive to the light from the lamp, means to cause said cell upon its being excited by the lighting up of the lamp to stop the loom and means to cause the lamp to light up whenever the weft thread happens to fail.

2. A weft stop motion according to claim 1 for use in circular looms comprising a ring-shaped shuttle-guiding rail wherein a neon lamp is used for the excitation of the photoelectric cell, said lamp being carried by the shuttle and fed with high-frequency current, a brush attached to the shuttle and adapted to sweep said ring-shaped shuttle-guiding rail in order to receive the electric excitation and to transmit the current to the lamp and a circuit for said current to be closed whenever the weft thread happens to fail.

3. A weft stop motion according to claim 1 wherein a filament lamp mounted on the shuttle is used for the excitation of the photoelectric cell, which also carries the source of current therefor, the circuit for said current being closed whenever the weft thread happens to fail.

4. A weft stop motion according to claim 1 comprising a current supply circuit for the lamp, a switch to close said circuit, a weft-engaging lever for the actuation of said switch and a pivot on the shuttle about which said lever will be rocked into circuit-making position by the centrifugal force whenever the weft thread happens to fail.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
2,419,437	Bricout	Apr. 22, 1947