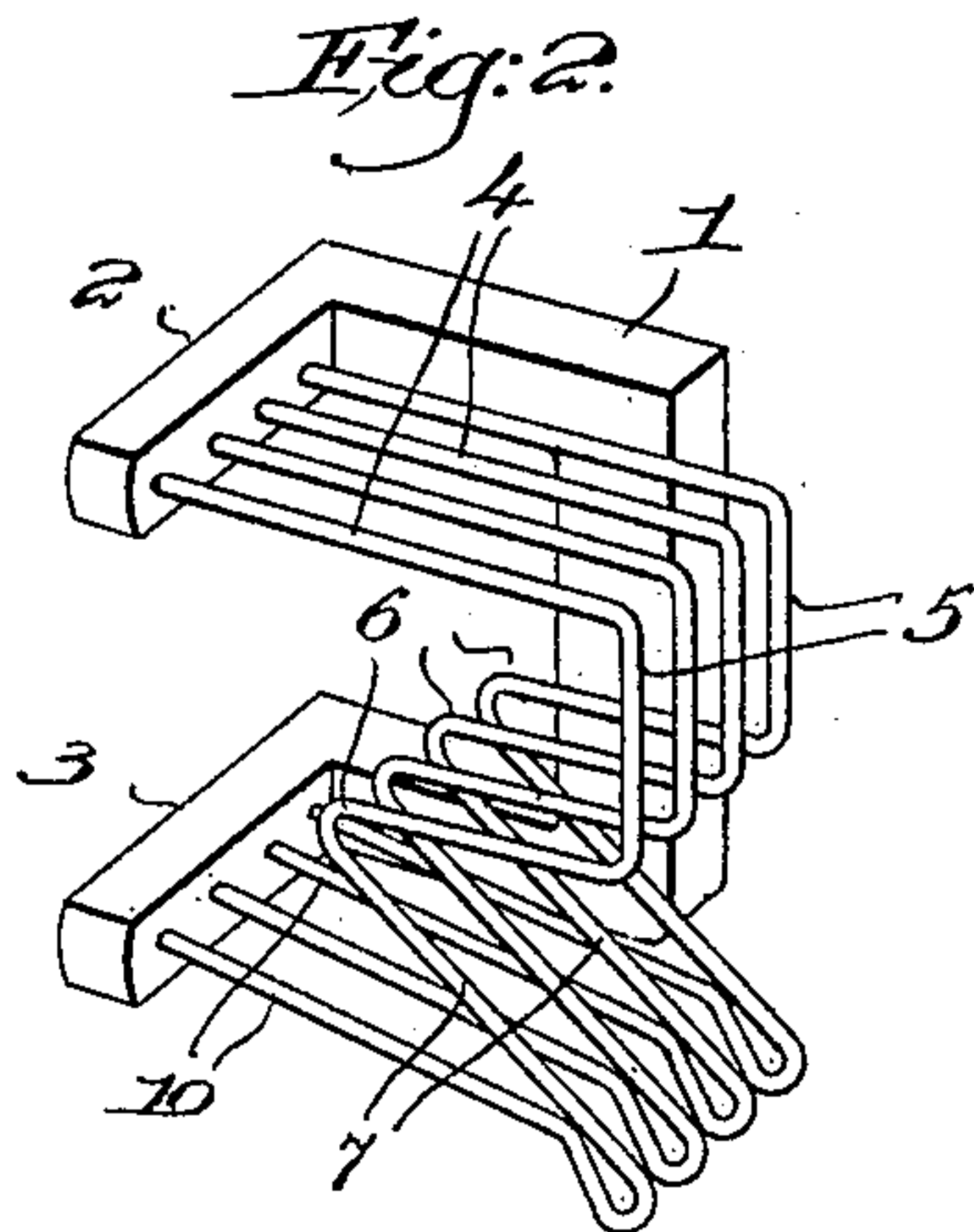
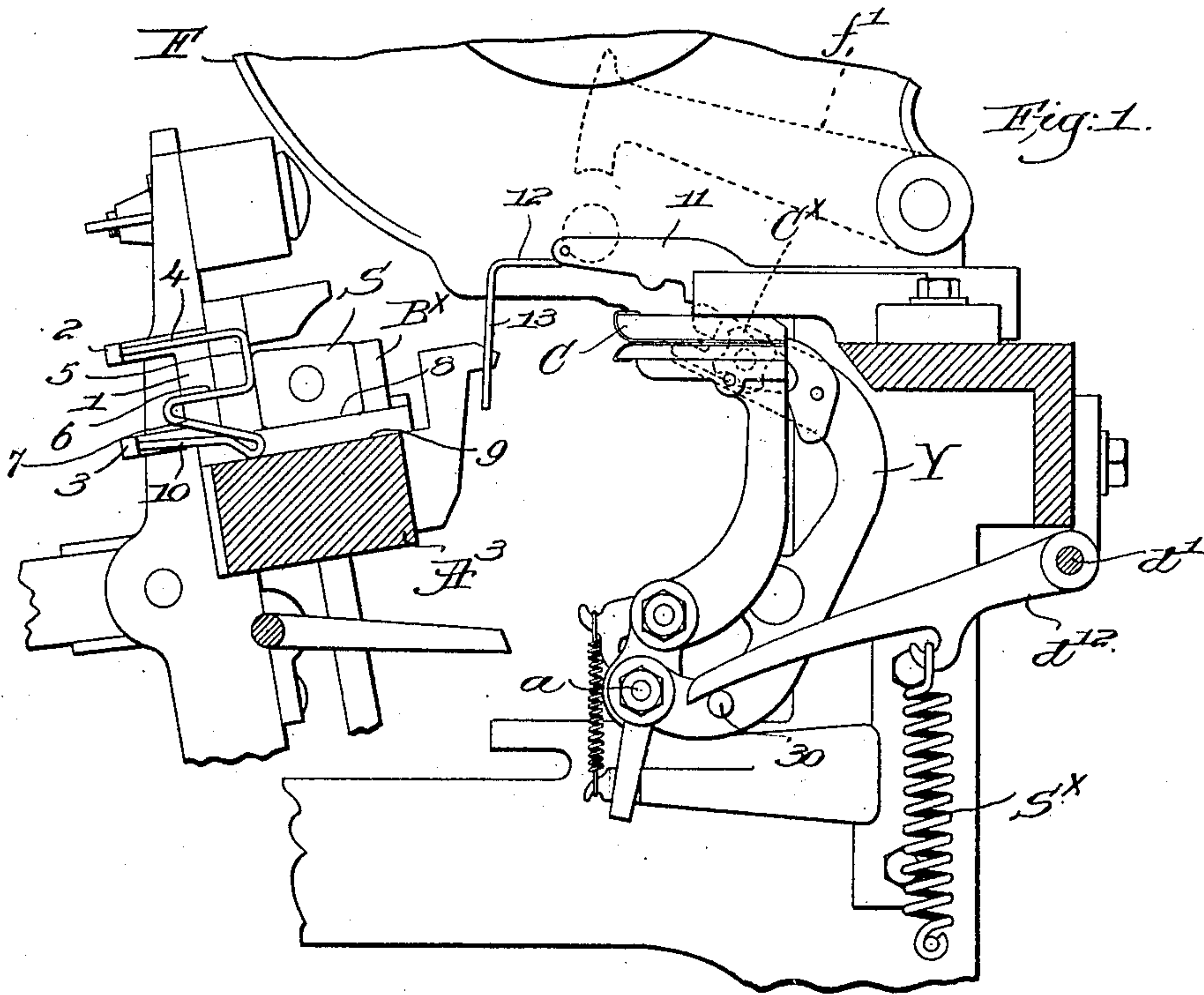


R. BURGESS.
FILLING DETECTING MECHANISM FOR LOOMS.
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Patented Feb. 23, 1909.



Witnesses.
Edward G. Allen.
Joseph M. Ward.

Inventor:
Robert Burgess.
by Leroy Gregory.
Atty.

UNITED STATES PATENT OFFICE.

ROBERT BURGESS, OF PAWTUCKET, RHODE ISLAND, ASSIGNOR TO DRAPER COMPANY, OF
HOPEDALE, MASSACHUSETTS, A CORPORATION OF MAINE.

FILLING-DETECTING MECHANISM FOR LOOMS.

No. 913,196.

Specification of Letters Patent.

Patented Feb. 23, 1909.

Application filed June 13, 1908. Serial No. 438,301.

To all whom it may concern:

Be it known that I, ROBERT BURGESS, a citizen of the United States, and resident of Pawtucket, county of Providence, State of Rhode Island, have invented an Improvement in Filling-Detecting Mechanism for Looms, of which the following description, in connection with the accompanying drawing is a specification, like characters on the drawing representing like parts.

This invention relates to filling-detecting mechanism for looms, and more particularly to the construction of the grid or grating which supports the intact filling when engaged by the filling-fork on the detecting beat, the grid in my present invention being so constructed and arranged that the filling is accurately positioned and prevented from passing under the fork.

By reason of the accurate positioning of the filling my invention is also particularly adapted for use in feeler looms provided with double forks and with mechanism to replenish the running filling prior to its complete exhaustion, wherein the end of the old filling extending from the cloth to the shuttle is clamped and parted adjacent the shuttle.

Sometimes the thread will drop down out of the range of the parting mechanism so the severance is unduly delayed, but by using for the fork at that side of the loom my novel grid the filling is held up in position to be accurately engaged and severed by the parting mechanism.

I have shown my invention in connection with an automatic filling-replenishing loom having parting mechanism for the old filling end, the novel grid and the cooperating fork being at the same side of the loom.

The various novel features of my invention will be fully described in the subjoined specification and particularly pointed out in the following claims.

Figure 1 is a transverse sectional view of a portion of a loom provided with automatic filling-replenishing mechanism, with one embodiment of my invention applied thereto; Fig. 2 is an enlarged perspective view of the grid, detached.

The lay A^3 , the filling-feeder or hopper F to hold the filling-carriers or bobbins to be transferred to the shuttle S by the transferrer f' , Fig. 1, and the controlling rock-shaft d' governing the operation of the replenishing mechanism, are all substantially as in United

States Patent No. 683423 granted September 24, 1901 to Draper. So too, the shuttle-feeler Y mounted to rock on the stud a , the arm d^{12} fast on rock-shaft d' and bearing on the pin 30 on the feeler Y , the spring S^x , the notched end of the shuttle-feeler to receive the filling thread when it is to be clamped and parted by the device C^x on the feeler, and the thread-catcher C , may be and are all substantially as in said patent, it being understood that when the shuttle-feeler swings rearward across the mouth of the box B^x when the shuttle is properly boxed therein the thread is clamped and then parted, as described in the patent referred to.

I have herein shown my novel grid as comprising a substantially \sqsubset -shaped body 1, best shown in Fig. 2, having parallel upper and lower lateral extensions 2, 3 preferably formed as a casting, the said extensions supporting the bars of the grid, said bars being herein shown as peculiarly bent wires permanently embedded at their upper and lower ends in the extensions.

Each bar is extended forward at 4 from the extension 2 and then downturned substantially at right angles, as at 5, and then bent rearward and again forward, as at 6, 7, forming a reëntrant V -shaped angle, the portions 6 being shown as substantially parallel to the portions 4, while the portions 7 are inclined forward and downward to a point below the raceway 8 of the lay, Fig. 1.

The usual transverse recess 9 is formed in the race-plate, through which the fork-tines pass as the lay beats up, the inclined portions 7 of the bars of the grid extending into said recess near its rear end, the forward ends of said portions being sharply bent and extended rearward at 10 to the lower extension 3.

The fork is pivotally mounted on the usual slide 11, Fig. 1, and herein I have shown the tines as extended rearward at 12 and then downturned at 13, to carry the tines farther back toward the lay, the tines passing between the grid bars on the beat-up.

As the lay beats up the intact filling is engaged by the tines of the fork and held as the lay continues to move forward, the inclined portions 7 of the bars passing under and lifting up the thread as it passes into the reëntrant angle of the bars so that it cannot drop or sag below the level of the raceway and get under the tines of the fork. The

thread thus kept elevated and in proper position is sustained in such position by the parts 7 of the grid bars, so that the fork is properly tilted.

5 By the peculiar shape of the fork the engagement with intact filling occurs at an earlier point in the movement of the lay than would be possible if the tines depended immediately from the fork fulcrum, giving
10 more time for proper tilting of the fork, and the construction of the body of the grid affords ample clearance for the changed construction of the fork.

When a double fork loom is used the construction is very advantageous for the replenishing side of the loom, inasmuch as the old filling end is engaged and lifted by the portions 7 of the grid bars into proper position to insure its prompt engagement by the
15 clamping and parting device C^x on the shuttle-feeler.

In Fig. 1 it is supposed that the fork and grid illustrated are at the replenishing side of a loom provided with double forks, but it is
25 to be understood that so far as the grid and fork are concerned they can be used by themselves, in any type of loom, within the spirit and scope of my invention.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. In a loom, in combination, a filling-fork, a lay, and a grid mounted thereon having its bars shaped to present a reëntrant
35 angle to receive the intact filling thread and support it in proper position to tilt the fork.

2. In a loom, in combination, a lay, a grid mounted thereon having its bars shaped to present a reëntrant angle to receive and
40 lift the intact filling thread, the upper and lower ends of the bars being extended rearwardly, and a tilting filling-fork having its tines depending from a point considerably back of the fulcrum thereof.

3. In a loom, in combination, a filling-fork, a lay having a transverse recess through which the lower ends of the tines pass as the lay beats up, and a grid fixedly mounted on the lay and having its bars inclined forward
50 and downward into the recess near its rear end, to pass beneath and lift up the intact filling thread into position to tilt the fork, said bars passing beneath the thread on the forward movement of the lay after the
55 thread has been engaged by the fork tines.

4. In a loom, in combination, a filling-fork, a lay having a transverse recess through

which the lower ends of the tines pass as the lay beats up, and a grid mounted on the lay and having its bars shaped to present a re- 60
entrant angle to receive the intact filling thread, the portions of the bars forming the lower side of such angle extending into the recess to pass beneath and raise the thread into proper position to tilt the fork. 65

5. In a loom, a filling-fork, a lay, and a grid thereon comprising a L-shaped body having laterally extended parallel upper and lower portions, and bars fixed at their upper and lower ends to said extensions and bent 70
to present a reëntrant angle to receive the intact filling thread, the inclined portions of the bars forming the lower side of the angle lifting the thread into position to tilt the fork. 75

6. In an automatic filling-replenishing loom, the lay, a thread-parter and clamp to act upon the thread of the filling-supply to be abandoned, an adjacent filling-fork, and a coöperating grid mounted on the lay and 80
having its bars shaped to present a reëntrant angle to receive and lift the filling into position to insure proper engagement thereof by the thread-parter and clamp.

7. In a loom, in combination, a fork-slide, 85
a fork pivoted thereon and having its tines extended rearward from its pivot and then downturned, to advance the engagement of the tines with intact filling, a lay, and a grid fixedly mounted thereon opposite the fork 90
and having its bars bent to present a reëntrant angle, the forwardly and downwardly inclined portions of the bars forming the lower side of such angle, passing under and lifting the filling into position to prop- 95
erly act upon the tines of the fork, to tilt the latter.

8. A fork-grid for looms, comprising a body portion having upper and lower parallel lateral extensions, and a series of bars 100
arranged in parallel vertical planes and secured at their rearwardly extended ends to said extensions, the bars being bent to present a reëntrant angle to receive and raise the intact filling into proper position 105
to tilt the fork and prevent the filling from passing beneath the tines of the fork.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

ROBERT BURGESS.

Witnesses:

A. SHORE,

W. J. CAPRON.