

No. 618,789.

Patented Jan. 31, 1899.

C. M. DAY.
LOOM.

(Application filed Oct. 6, 1898.)

(No Model.)

Fig. 1.

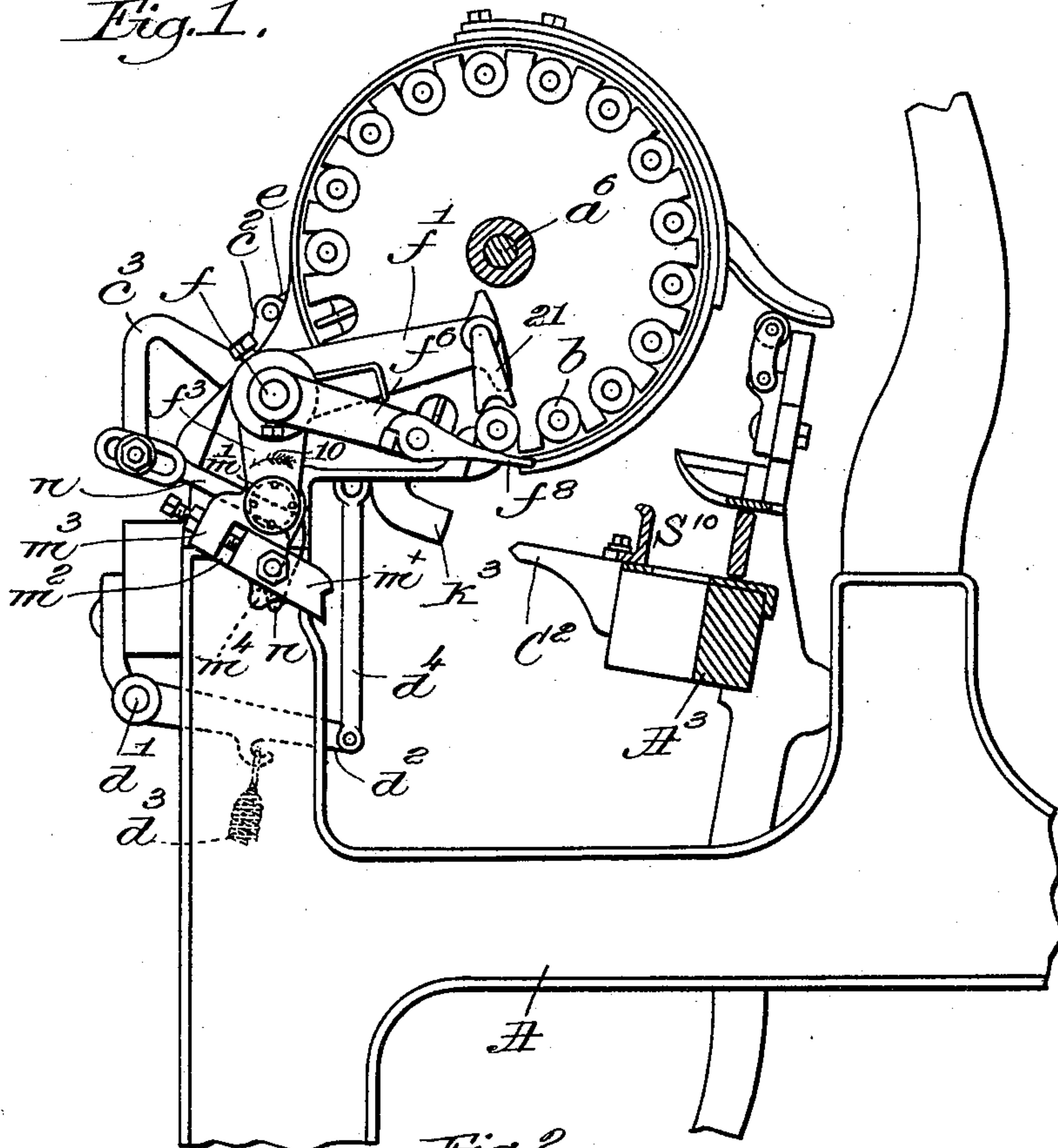


Fig. 2.

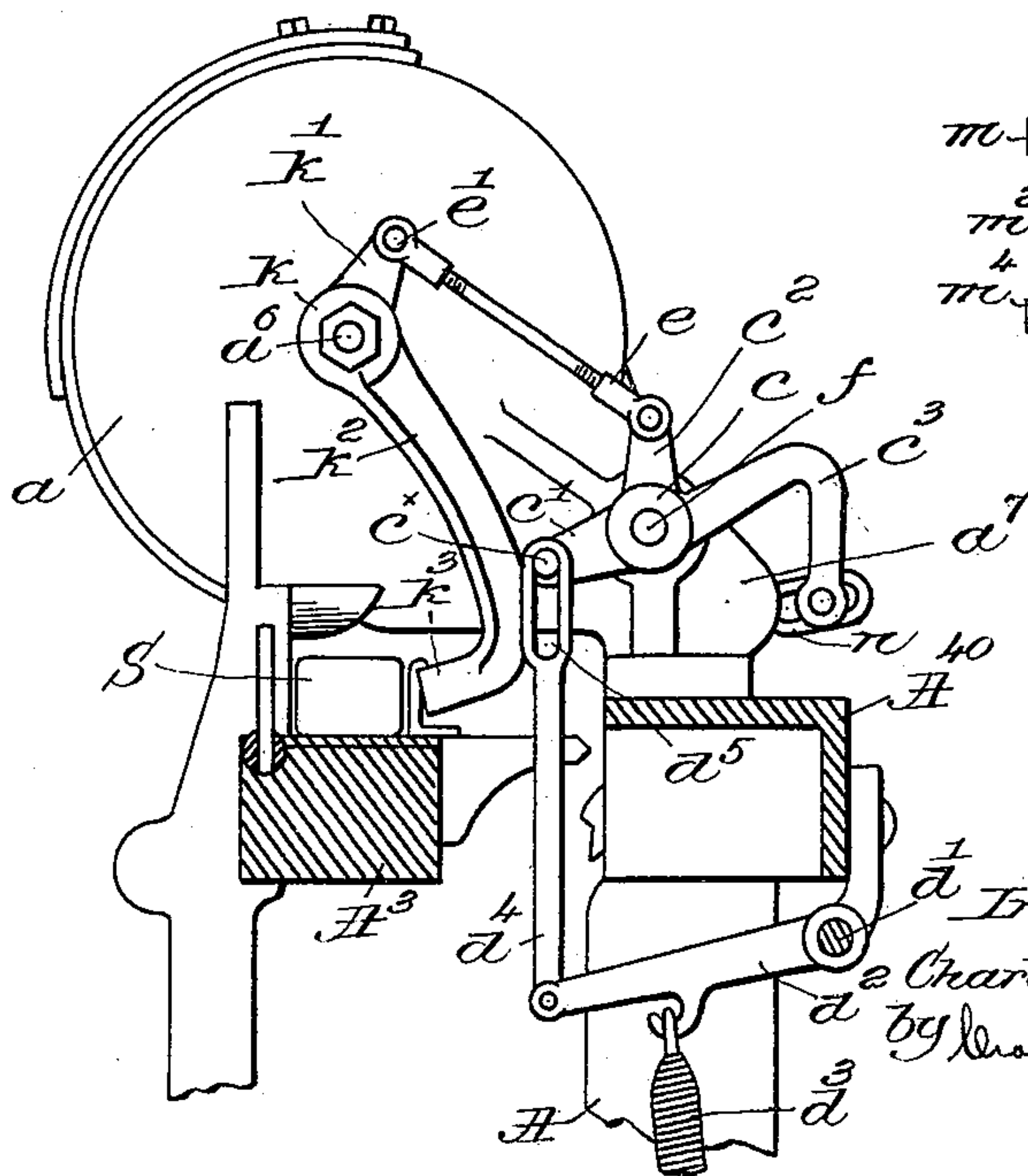


Fig. 3.

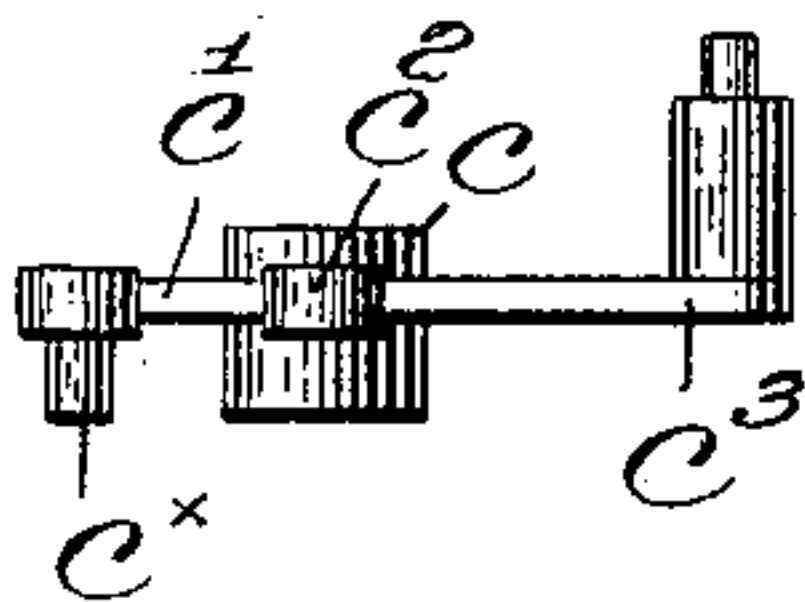
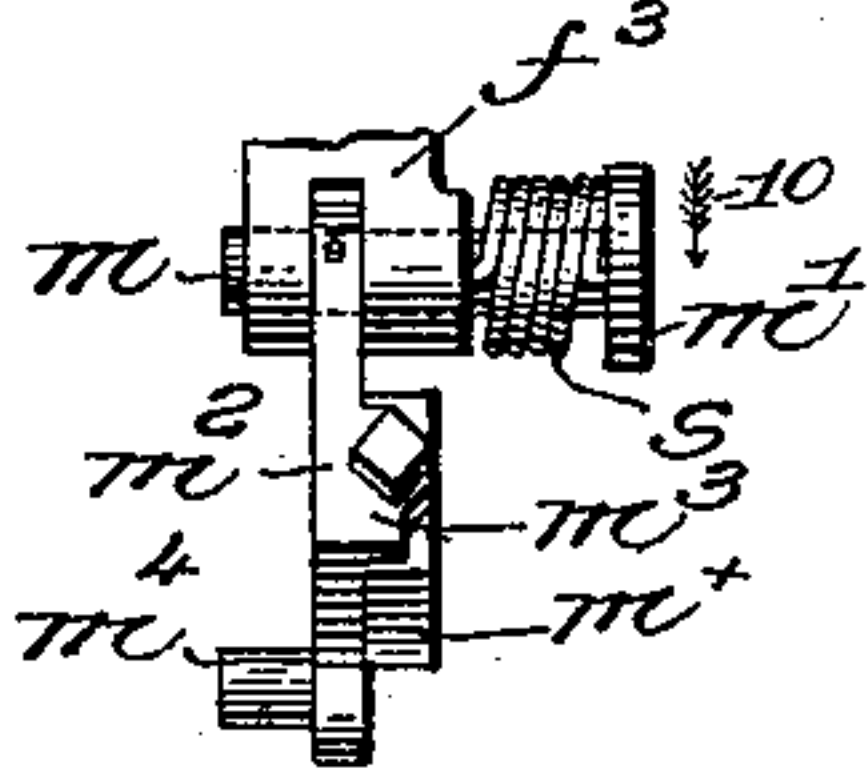


Fig. 4.



Witnesses:
Fred S. Grunka,
James M. Urquhart.

Inventor:
Charles M. Day,
by Crosby Gregory,
Attys.

UNITED STATES PATENT OFFICE.

CHARLES M. DAY, OF HOPEDALE, MASSACHUSETTS, ASSIGNOR TO THE
DRAPER COMPANY, OF SAME PLACE AND PORTLAND, MAINE.

LOOM.

SPECIFICATION forming part of Letters Patent No. 618,789, dated January 31, 1899.

Application filed October 6, 1898. Serial No. 692,819. (No model.)

To all whom it may concern:

Be it known that I, CHARLES M. DAY, of Hopedale, county of Worcester, State of Massachusetts, have invented an Improvement in Looms, of which the following description, in connection with the accompanying drawings, is a specification, like letters and numerals on the drawings representing like parts.

This invention relates more particularly to that class of looms wherein a plurality of filling-carriers are automatically transferred one by one from a filling-feeder to the shuttle upon failure of the filling, such a loom being shown in United States Patents Nos. 529,940 and 529,942, dated November 27, 1894; and this invention has for its object the simplification and improvement of means for detecting the improper positioning of the shuttle in the shuttle-box and upon such detection preventing the transfer of filling.

Another form of shuttle-detector similar in some respects to my present invention forms the subject-matter of United States Patent No. 568,455, dated September 29, 1896, to which reference may be had.

Figure 1 is a partial end elevation of a loom with my invention applied thereto, the outer or right-hand end of the filling-feeder being omitted. Fig. 2 is a sectional view of the loom, taken inside the filling-feeder mechanism, the lay being shown as in its forward position; and Figs. 3 and 4 are details to be referred to.

The loom-frame A, breast-beam A⁴⁰, the lay A³, having the bottom of its shuttle-box S¹⁰, Fig. 1, cut away below the self-threading shuttle S, the filling-feeder comprising connected plates suitably shaped to receive the ends of the filling-carriers b, Fig. 1, and mounted to rotate on the stud a⁶, the stud f, the transferrer f¹, mounted thereon and having the forked depending end f³ and a projection 21, the arm f⁶, provided with the tip-supporting device f⁸, and the shaft d', adapted to be rotated by the movement of the weft-fork in the absence of the filling, are and may be all as represented in said Patent No. 529,942.

An arm d² is secured to the rock-shaft d' and is connected to one end of a spring d³, its other end being attached to the loom-frame,

and a link d⁴ is jointed to the arm d², the upper end of the link having a longitudinal slot d⁵ entered by a pin or stud c^x on one of the arms c' of a hub or sleeve c, mounted rotatably on the stud f and having a second upturned arm c². To this arm one end of an adjustable link e is pivotally connected, the other end of the link being jointed at e' to a short upturned arm k' of a hub K, mounted on the shaft or stud a⁶, projecting from the stand a⁷, which supports the filling-feeder, as shown in Fig. 2.

A depending arm k², secured to or forming a part of the hub k, is bent laterally at its lower end k³ and forms the shuttle feeler or detector.

By mounting the feeler or detector on the center of rotation of the filling-feeder the parts are brought into better working position and fewer and simpler parts can be employed, it being understood that the end k³ of the detector is turned toward the lay to engage the shuttle if the latter is improperly positioned in the shuttle-box.

As in Patent No. 568,455 a rocker-stud m, Fig. 4, having a disk-like head m', is mounted on the end f³ of the transferrer, a spring s normally tending to turn the stud in the direction of the arrow 10, Fig. 1, the stud m having an arm m², with an ear m³ on one side and a projection m⁴ on the other side, while a notched dog m^x, adjustably held on the arm m², is adapted to be engaged by a bunter C² on the lay when a filling-carrier is to be transferred to the shuttle.

A third outwardly-extended and downturned arm c³ on the hub c has attached to its extremity a downturned finger n which extends down over the lug m⁴ on the arm m², (see Fig. 1) and at times controls the latter.

When the loom is running properly, the dog m^x is out of the path of the bunter C², and the rock-shaft d' holds the link d⁴ down, and the arm c³ is thereby elevated, with the finger n toward the front of the loom to thereby act on the lug m⁴ and maintain the dog m^x in inoperative position, the finger n thus forming a detent for the dog. When the filling fails, however, the rock-shaft d' will be turned, elevating link d⁴ and permitting the

hub c and its arms to turn on the stud f , so that the spring s immediately turns the stud m to throw the dog m^x into position to be engaged by the bunter C^2 when the lay beats up. The movement of the arm m^2 by its spring causes the lug m^4 to move the finger n inward, depressing the arm c^3 and rocking the hub c to operate through the link e and move the shuttle feeler or detector k^2 across the inner end of the shuttle-box, so that if the shuttle is properly positioned the bunter will engage the dog m^x and operate the transferrer f' .

Should the shuttle be improperly positioned, it will meet the end k^3 of the feeler as the lay beats up and will swing it on its fulcrum, moving the arm k' in the opposite direction, and through link e and arm c^2 the hub c will be turned to swing the arm c^3 outwardly, thereby causing the finger n to engage the lug m^4 and rock the arm m^2 oppositely to the arrow 10, Fig. 1, depressing the dog m^x out of the path of the bunter.

Inasmuch as the transferrer is only operated when the dog is engaged by the bunter the transferrer will not be operated to transfer a filling-carrier to the shuttle when the latter is improperly positioned.

The slot d^5 in the link d^4 permits the described rocking movement of the hub c when the link is elevated and the shuttle is improperly positioned.

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

1. In a loom, the lay having a shuttle-box; a rotatable filling-feeder; a shuttle-feeler fulcrumed on the axis of rotation of the filling-feeder, and means to move the feeler to detect

improper positioning of the shuttle in the shuttle-box.

2. In a loom, the lay; a rotatable filling-feeder; filling-transferring mechanism; a shuttle-feeler fulcrumed above the lay, in alinement with the axis of rotation of the filling-feeder, and connections between the said feeler and the filling-transferring mechanism.

3. In a loom, the lay having a slotted shuttle-box; a rotatable filling-feeder; a transferrer to transfer filling-carriers therefrom singly to the shuttle; means to operate the transferrer upon failure of the filling; a shuttle-feeler fulcrumed above the lay in alinement with the axis of rotation of the filling-feeder; and connections between said feeler and the transferrer-operating means, to prevent operation of said means when the shuttle to be supplied with filling is not in proper position in the shuttle-box.

4. In a loom, the lay having a shuttle-box; a rotatable filling-feeder; filling-transferring mechanism operated by or through failure of the filling; a shuttle-feeler fulcrumed above the lay on the axis of rotation of the filling-feeder; and connections between said feeler and the filling-transferring mechanism, to prevent operation of the latter when the shuttle to be supplied with filling is not in proper position in the shuttle-box.

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

CHARLES M. DAY.

Witnesses:

GEO. OTIS DRAPER,
T. E. CUNNINGHAM.