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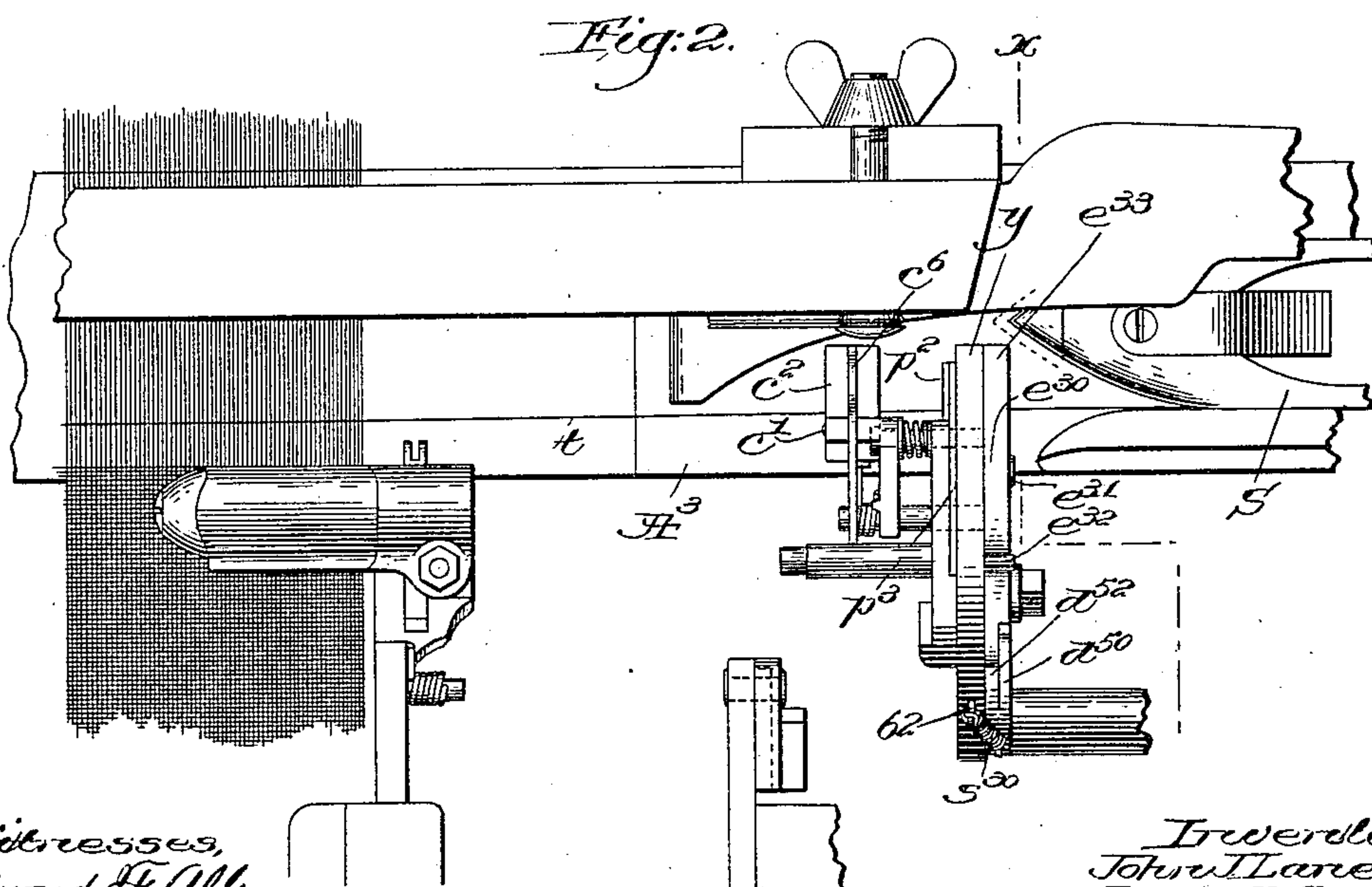
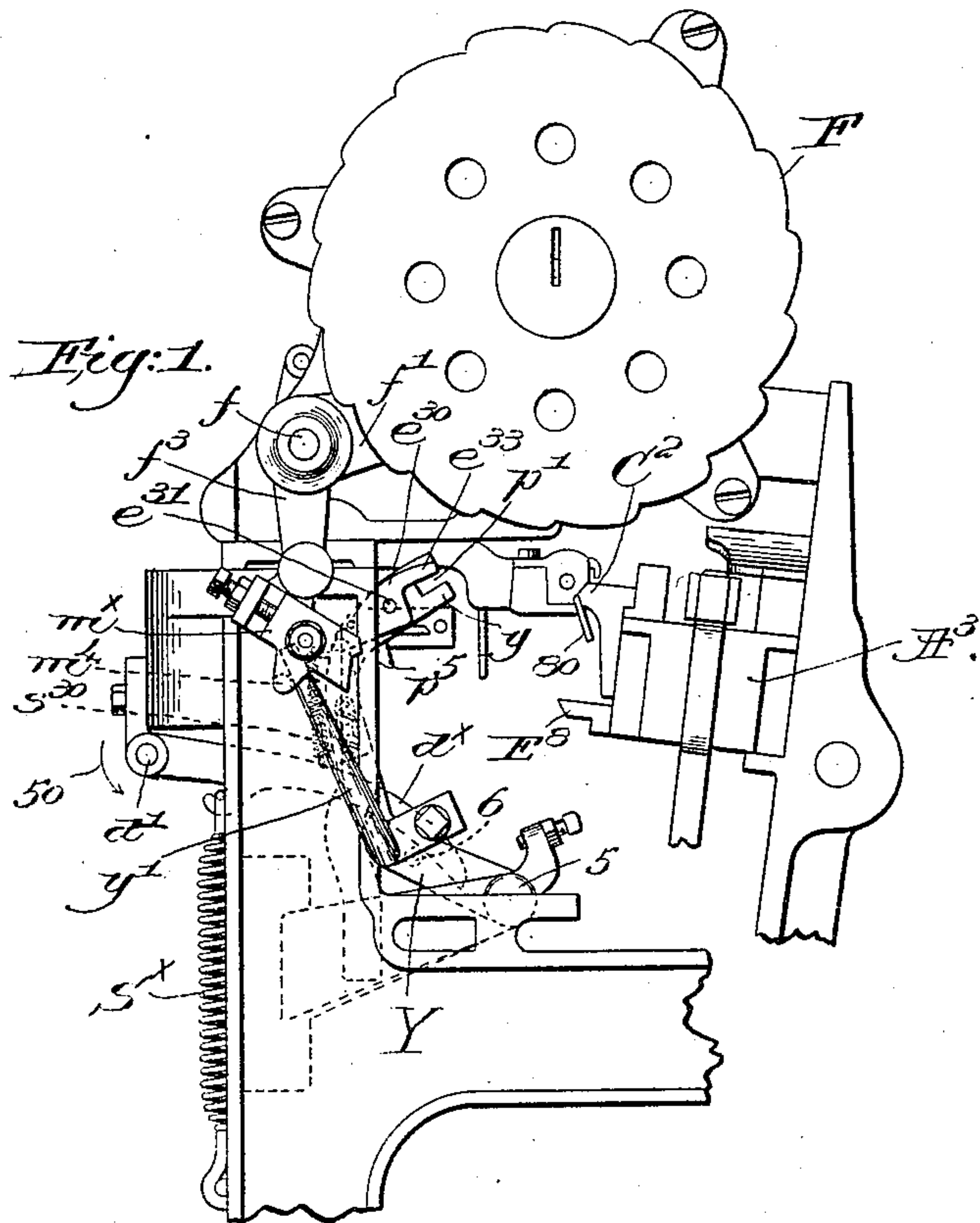
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FILLING REPLENISHING LOOM.

(Application filed June 6, 1901.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses,  
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Adolph H. Kaiser.

Inventors,  
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by Crosby Gregory

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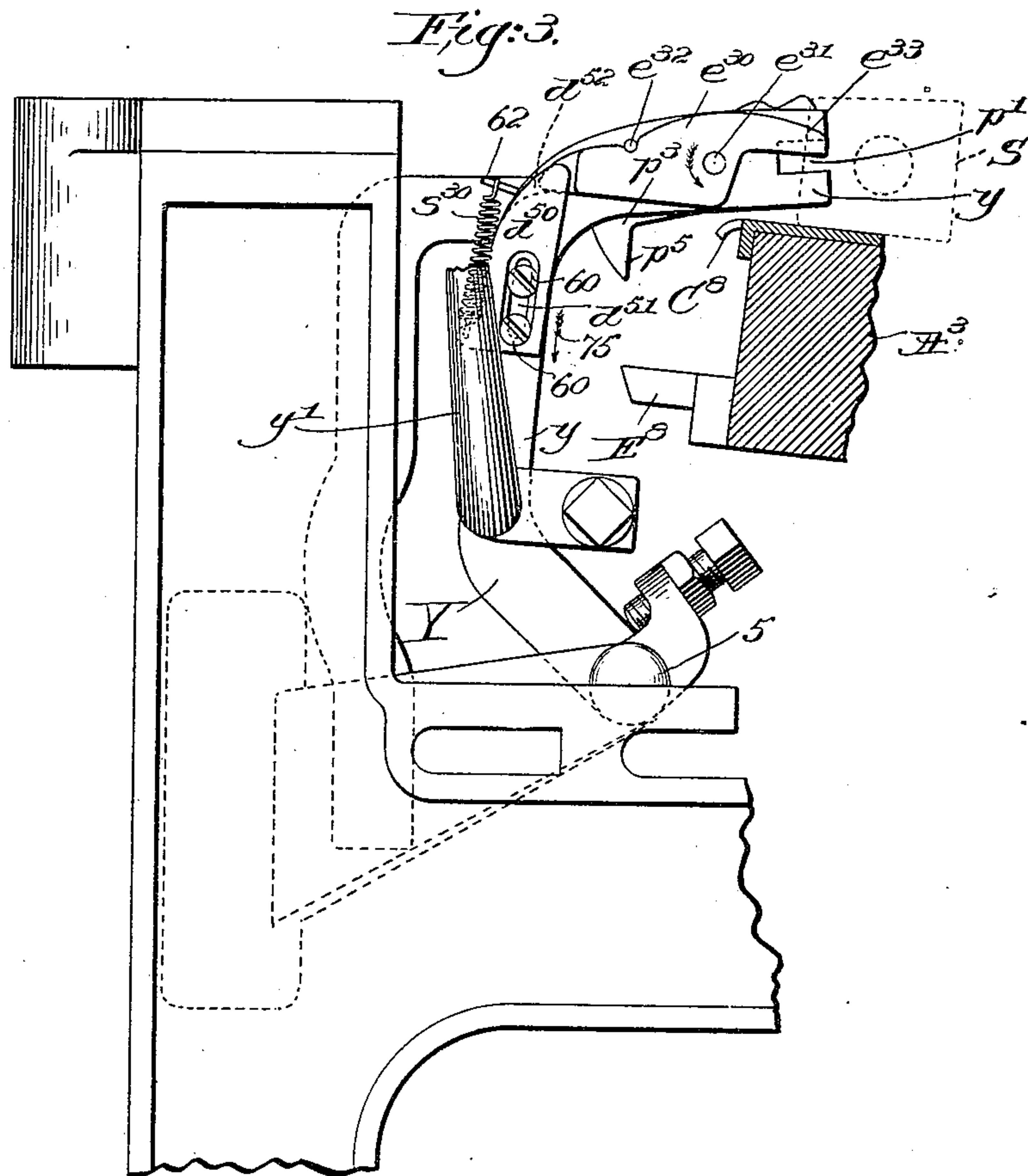
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# UNITED STATES PATENT OFFICE.

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HOPEDALE, MASSACHUSETTS.

## FILLING-REPLENISHING LOOM.

SPECIFICATION forming part of Letters Patent No. 680,601, dated August 13, 1901.

Application filed June 6, 1901. Serial No. 63,433. (No model.)

*To all whom it may concern:*

Be it known that we, JOHN J. LANE and LOUIS A. AUMANN, citizens of the United States, residing at Chicopee, in the county of Hampden and State of Massachusetts, have invented an Improvement in Automatic Filling-Replenishing Looms, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

In United States Patent No. 641,792, dated January 23, 1900, a loom is shown provided with automatic filling-replenishing mechanism and with a thread-parter to part the thread in use between the shuttle and the cloth upon a change of filling, the thread-parter being movable with a shuttle-feeler into position to part the thread, means being provided for thereafter actuating the parter to part the thread. In such apparatus the change of filling is not permitted to take place if the shuttle-feeler engages the shuttle, as will be the case if the shuttle is improperly boxed, but the thread-parter may be operated and the filling-thread may be severed, so that the shuttle will be returned through the shed without laying filling, resulting in a mispick. A comparatively slight deviation in the position of the shuttle in the box is sufficient to render the replenishing mechanism inoperative through the shuttle-feeler and properly in order to prevent a smash when the filling is changed, but it will be manifest that owing to the position of the filling-thread near the front of the lay sufficient retraction of the thread-parter will not ordinarily be effected to also prevent parting of the thread.

Our present invention has for its object the production of means, in mechanism substantially such as is disclosed in the patent referred to, to positively prevent the actuation of the thread-parter, even should the usual shuttle-feeler fail to prevent its bodily movement into position to engage the filling-thread.

In accordance with our invention, therefore, we have provided independent means for controlling the operation of the thread-parter,

such means being governed by or through the shuttle when improperly boxed.

Figure 1 is a right-hand side elevation of a loom provided with filling-replenishing mechanism, one embodiment of our present invention being shown in connection therewith. Fig. 2 is an enlarged plan view of a part of the loom, showing the thread-parter in position ready to part the filling-thread in use between the cloth and the shuttle; and Fig. 3 is an enlarged transverse sectional view on the line  $xx$ , Fig. 2, looking toward the left.

As in said Patent No. 641,792, the filling-carriers are mounted in a rotatable feeder  $F$ , from which they are removed one by one by a transferrer  $f'$ , fulcrumed at  $f$  and having a depending end  $f^3$ , on which is mounted a spring-controlled notched dog  $m^x$ , having a lateral lug  $m^1$ , engaged by an upturned arm  $y'$  of a yoke  $Y$ , fulcrumed on the loom side at 5, the dog being moved into the path of a bunter  $C^2$  on the lay  $A^3$  when the usual controlling rock-shaft  $d'$  is rotated in the direction of the arrow 50, Fig. 1, a detent-finger  $d^x$ , fast on the rock-shaft, engaging a projection 6 on the yoke and maintaining the latter normally in the position shown by means of a strong spring  $S^x$ . The yoke-arm  $y$  herein is likewise shown as upturned and bent rearwardly to act as a shuttle-feeler, its extremity being notched, as at  $p'$ , and the fixed and movable parting-blades  $p^2 p^3$  are mounted on the shuttle-feeler, the blade  $p^3$  having a depending heel  $p^5$  at its front end, to be engaged at the proper time by an actuator  $C^8$  on the lay, to close the blades and part the thread. A thread-clamp  $c' c^2 c^6$  is also mounted on the shuttle-feeler, and means for opening the jaws of the clamp and the blades of the thread-parter are shown in Fig. 2 and operate as in said patent.

For the purposes of this invention it is necessary merely to state that by or through the operation of the controlling means for the filling-replenishing mechanism the yoke  $Y$  is swung upon its fulcrum 5, and if the shuttle  $S$  is properly boxed the thread-parter will be moved into the position shown in Figs. 2 and 3, the filling-thread  $t$  entering the notch  $p'$  of



the feeler and between the parting-blades  $p^2 p^3$ . Thereafter as the lay completes its forward beat the actuator  $C^8$  will engage the heel  $p^5$ , and the parting-blades will act upon  
 5 and sever the thread  $t$  in well-known manner, the thread-clamp being also operated as in said patent. It will be noted, however, by reference to Fig. 2 that even should the shuttle be out of the box far enough to en-  
 10 gage the feeler  $y$  and prevent the operation of the filling-replenishing mechanism still the thread  $t$  would be between the blades  $p^2 p^3$ , and the latter would be closed by the ac-  
 15 tuator  $C^8$  on the beat up of the lay. In order to positively prevent this action of the thread-parter, we have mounted on the feeler-arm  $y$ , at its outer side, a sliding dog  $d^{50}$ , having a longitudinal slot  $d^{51}$ , entered by two support-  
 20 ing and guide studs 60 60, (see Fig. 3,) a spring  $s^{30}$ , attached at one end to the dog and at its other end to a pin 62 on the feeler, normally holding the dog in the position shown. A shoulder  $d^{52}$  on the inner face of the dog is in engagement with the front end of a plate  
 25  $e^{30}$ , fulcrumed at  $e^{31}$  on the feeler  $y$  and held by the action of the spring  $s^{30}$  against a stop  $e^{32}$ . The inner end of the plate, which may be termed an "auxiliary shuttle-feeler," is cut away to present a beak  $e^{33}$ , which projects  
 30 rearwardly alongside of the notch  $p'$  and partly covers it, as shown in Fig. 3. An auxiliary actuator or bunter  $E^8$  on the lay extends forward considerably in advance of the main actuator  $C^8$  and is adapted to engage  
 35 the dog  $d^{50}$  if the latter is moved in the direction of arrow 75. Now if the shuttle is not fully in the shuttle-box, but has permitted the thread-parter to move into position to receive the thread  $t$  between its blades, then  
 40 the tip of the shuttle will engage the beak  $e^{33}$  as the lay beats up and will lift the beak, depressing the front end of the plate  $e^{30}$ , which in turn moves the dog  $d^{50}$  in the direction of the arrow 75 into the path of the auxiliary  
 45 actuator  $E^8$ . The lay completes its forward movement, and in so doing the actuator  $E^8$  engages the dog  $d^{50}$  and moves it, and consequently the feeler  $y$  and the parting-blades thereon, toward the front of the loom, so that  
 50 the main actuator  $C^8$  cannot engage the heel  $p^5$  to close the blades, and the latter will not be closed upon the thread to part it. It will be manifest, therefore, that the thread  $t$  or the thread in use cannot be parted if the fill-  
 55 ing-replenishing mechanism is not permitted to operate, so that there will be no mispick, and as soon as the lay moves back the spring  $s^{30}$  returns the dog  $d^{50}$  and auxiliary feeler  $e^{30}$  to normal relative position.  
 60 By reference to Fig. 1 it will be seen that the lower beveled face of the bunter  $C^2$  has been elongated by the addition thereto of an extended safety-deflector 80, which acts upon the upper corner of the dog  $m^x$  when the lat-  
 65 ter is prevented from moving into full operative position by the shuttle-feeler  $y$ . Such engagement of the dog with the deflector acts

to further depress the dog when the lay completes its forward movement, so that it is im- possible for the dog to accidentally spring up  
 70 into the path of the bunter  $C^2$ .

Our invention may be modified or rearranged without departing from the spirit and scope of our invention, one practical embodiment thereof being herein shown and de-  
 75 scribed.

Having fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a loom provided with filling-replenish- 80 ing mechanism, controlling means therefor, a shuttle adapted to carry a supply of filling, a thread-parter, bodily movable by or through the operation of the controlling means into position to part the filling-thread in use, a de-  
 85 vice to normally actuate the thread-parter when so positioned, and independent means to positively prevent such actuation of the thread-parter if the shuttle is improperly boxed.

2. In a loom provided with filling-replenish- 90 ing mechanism, controlling means therefor, a shuttle adapted to carry a supply of filling, a shuttle-feeler, a thread-parter movable therewith into position to part the filling-  
 95 thread in use upon a change of filling, an actuating device for the thread-parter, and means operative independently of the said shuttle-feeler to prevent actuation of the thread-parter when the shuttle is improperly  
 100 boxed.

3. In a loom provided with filling-replenish- ing mechanism, controlling means therefor, a shuttle adapted to carry a supply of filling, a thread-parter, bodily movable by or through  
 105 the operation of the controlling means into position to part the filling-thread in use, the lay, main and auxiliary actuators thereon, the former being adapted to normally actuate the thread-parter when placed in operative  
 110 position, and independent, normally inoperative means rendered operative by or through the shuttle when improperly boxed, to be engaged by the auxiliary actuator and moved to prevent coöperation of the thread-parter  
 115 and the main actuator.

4. In a loom provided with filling-replenish- ing mechanism, controlling means therefor, a shuttle adapted to carry a supply of filling, a shuttle-feeler, a thread-parter mounted  
 120 thereon and bodily movable by or through the operation of the controlling means into position to part the filling-thread in use, an actuator to normally effect the operation of the thread-parter when so positioned, and in-  
 125 dependent means actuated by engagement with the tip of the shuttle to positively retract the shuttle-feeler and move the thread-parter away from the filling-thread if the shuttle is not fully and properly boxed.

5. In a loom provided with filling-replenish- ing mechanism, controlling means therefor, a shuttle adapted to carry a supply of filling, a shuttle-feeler, fixed or movable thread-  
 130



parting blades bodily movable therewith by  
or through the operation of the controlling  
means to receive between them the filling-  
thread in use, the lay, a main actuator there-  
5 on to close the blades when so positioned, to  
part the thread, an auxiliary feeler mounted  
adjacent said blades and adapted to be moved  
by the shuttle if not properly boxed, a dog  
adapted to be operatively positioned by such  
10 movement of the auxiliary feeler, and an aux-  
iliary actuator on the lay and extended for-  
ward beyond the main actuator, to engage  
the dog when in abnormal position, to thereby  
bodily retract the parting-blades and prevent  
15 cooperation of the main actuator therewith.

6. In a loom provided with filling-replenish-  
ing mechanism, controlling means therefor,  
a shuttle adapted to carry a supply of filling,  
a shuttle-feeler, a thread-parter mounted  
20 thereon, and bodily movable by or through  
the operation of the controlling means into  
position to part the filling-thread in use, an  
actuator to normally effect the operation of  
the thread-parter when so positioned, and in-  
25 dependent means to effect bodily retraction  
of the thread-parter beyond the thread-path  
if the shuttle-feeler fails to detect an im-  
proper boxing of the shuttle.

7. In a loom provided with filling-replenish-  
30 ing mechanism, controlling means therefor,  
a shuttle adapted to carry a supply of filling,  
a shuttle-feeler to prevent the actuation of  
said mechanism if the shuttle is improperly  
boxed for a change of filling, a thread-parter

bodily movable with the shuttle-feeler into 35  
position to part the thread of the filling-car-  
rier to be ejected from the shuttle, a device  
to normally actuate the thread-parter when  
so operatively positioned, and independent  
means adapted to be operated by the shuttle 40  
if the latter is not fully boxed to bodily re-  
tract the thread-parter beyond the path of  
the thread, to thereby prevent parting of the  
latter when the filling in the shuttle is not  
changed.

8. In a loom provided with filling-replenish- 45  
ing mechanism, controlling means therefor,  
including a pivotally-mounted dog, a shuttle  
adapted to carry a supply of filling, the lay,  
a bunter thereon to engage and move the dog 50  
when operatively positioned, to effect actua-  
tion of the filling-replenishing mechanism, an  
elongated safety-deflector on the bunter, and  
a shuttle-feeler, operatively connected with  
the dog, to prevent movement of the latter 55  
into operative position when the shuttle is  
improperly boxed, the safety-deflector at such  
time engaging the end of the dog and posi-  
tively deflecting it out of the path of the  
bunter. 60

In testimony whereof we have signed our  
names to this specification in the presence of  
two subscribing witnesses.

JOHN J. LANE.

LOUIS A. AUMANN.

Witnesses:

ELIZABETH H. PRICE,

WILLIAM J. FULLER.