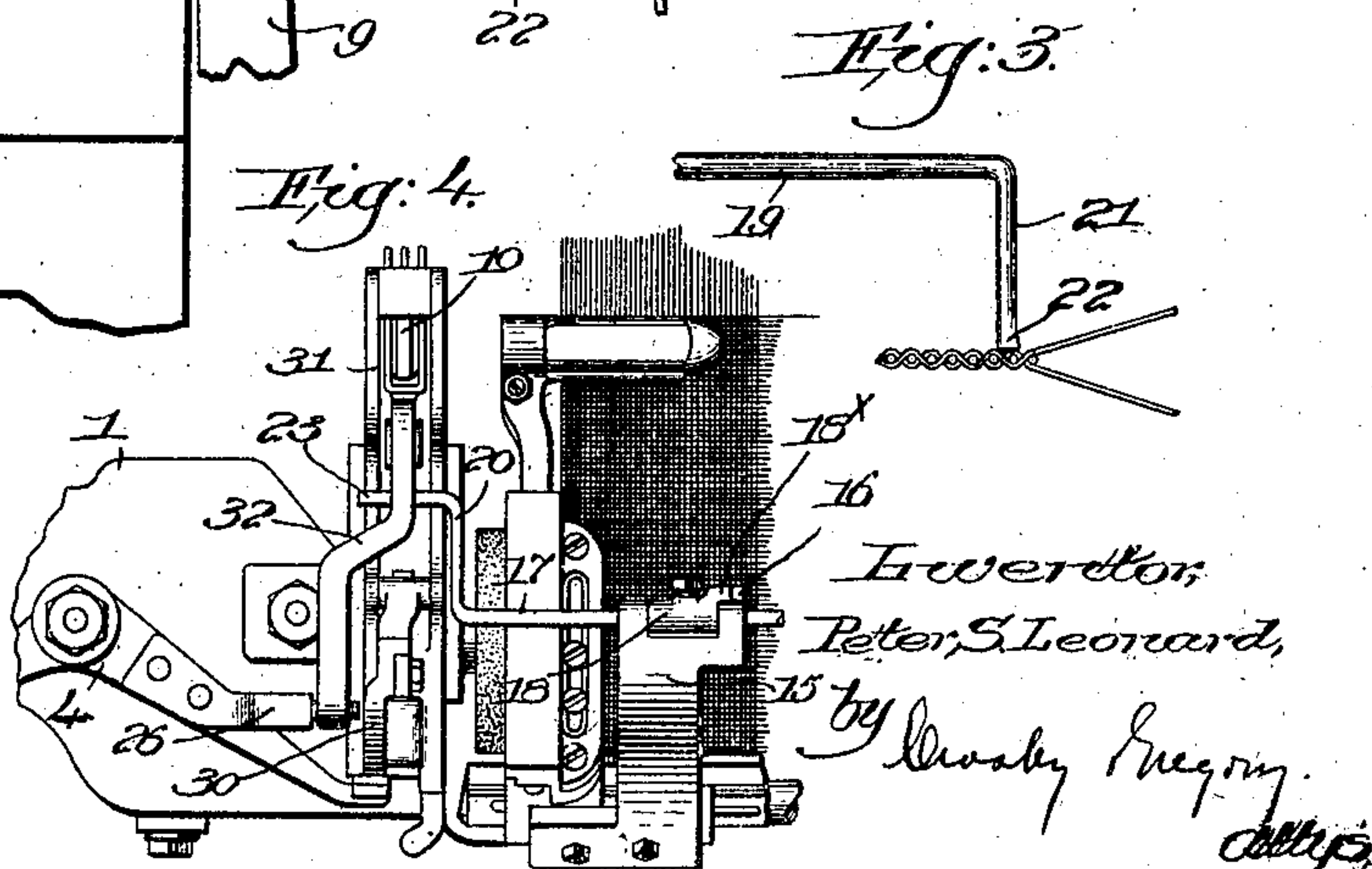
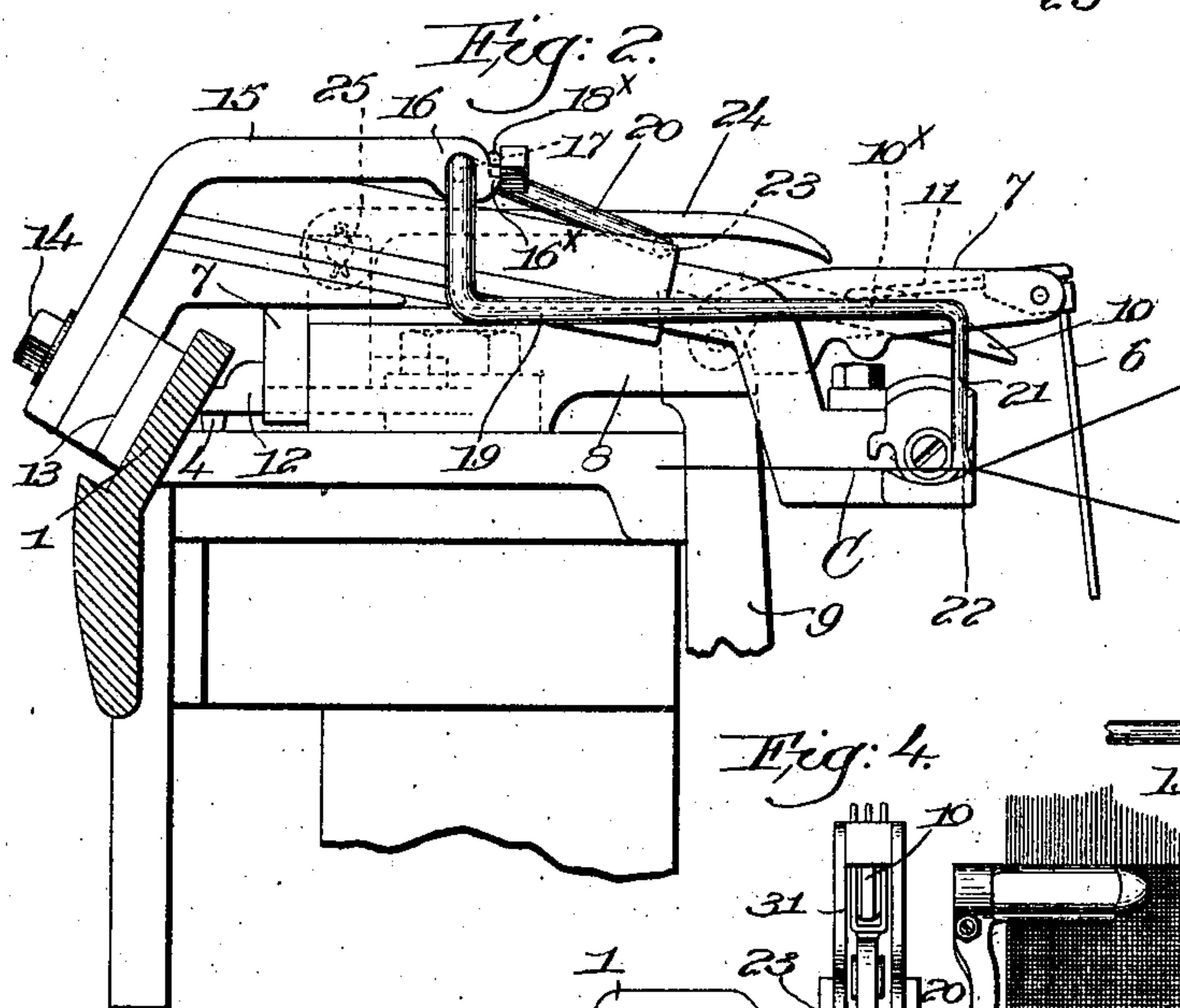
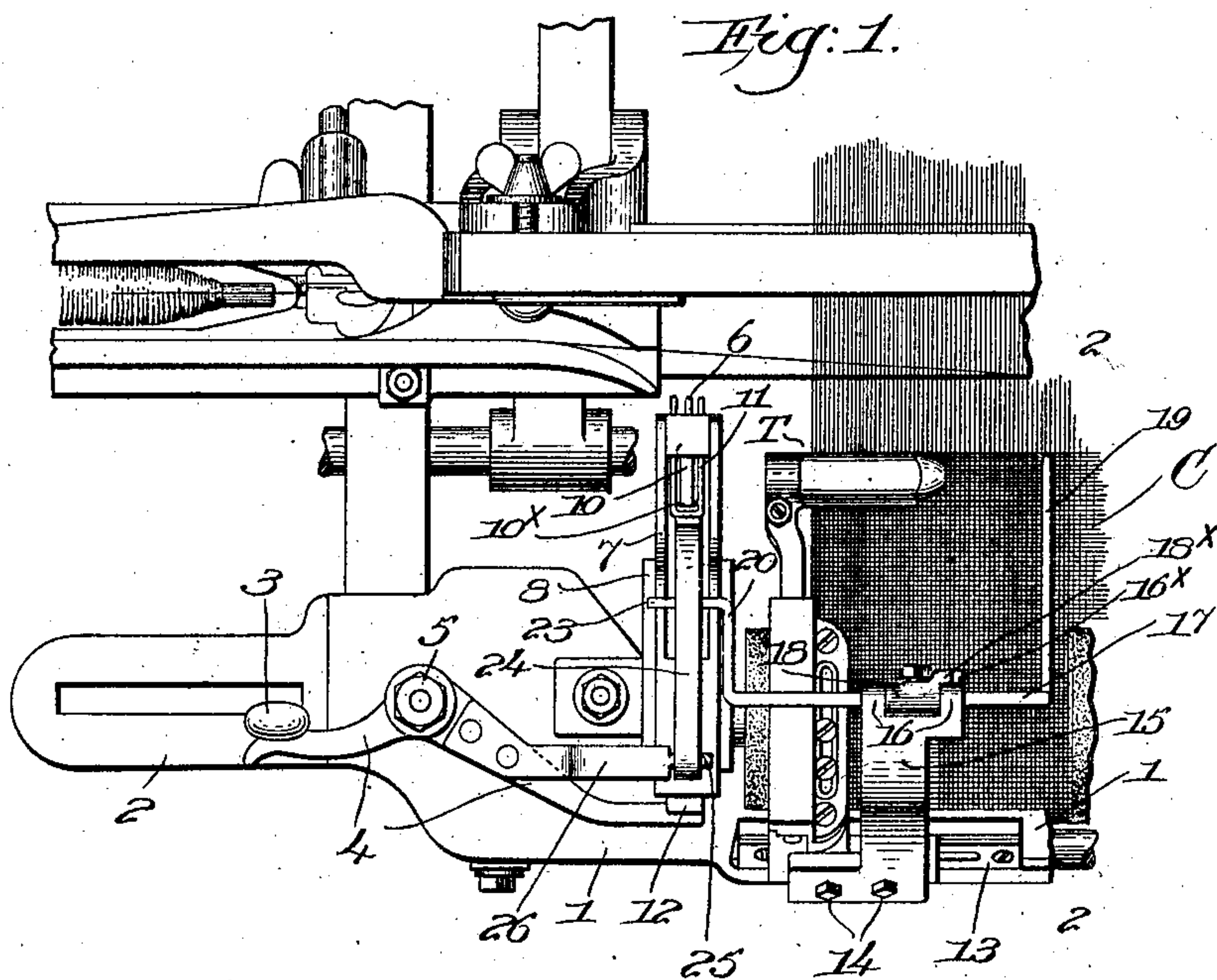


No. 846,801.

PATENTED MAR. 12, 1907.

P. S. LEONARD.
THIN PLACE DETECTOR FOR LOOMS.
APPLICATION FILED AUG. 8, 1906.



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UNITED STATES PATENT OFFICE.

PETER S. LEONARD, OF ST. LOUIS, MISSOURI, ASSIGNOR TO DRAPER COMPANY, OF HOPEDALE, MASSACHUSETTS, A CORPORATION OF MAINE.

THIN-PLACE DETECTOR FOR LOOMS.

No. 846,801.

Specification of Letters Patent.

Patented March 12, 1907.

Application filed August 8, 1906. Serial No. 329,650.

To all whom it may concern:

Be it known that I, PETER S. LEONARD, a citizen of the United States, and a resident of the city of St. Louis, State of Missouri, have
5 invented an Improvement in Thin-Place Detectors for Looms, of which the following description, in connection with the accompanying drawing, is a specification, like letters on the drawing representing like parts.

10 This invention relates to looms for weaving; and it has for its object the production of means for detecting the occurrence of a thin place or streak in the cloth being woven and upon such detection to effect automatically and promptly the stoppage of the loom.

15 A thin or bare place, sometimes called a "streak," is made in the cloth by the continued operation of the weaving instrumentality if the take-up mechanism of a loom
20 continues to operate after failure of the filling, whether such failure be breakage or running out of the filling. If upon the occurrence of such a thin place or streak in the cloth the loom is stopped promptly, the weaver has to
25 turn the cloth back a very short distance in order to correct the error.

The various novel features of my invention will be fully pointed out in the following claims, one practical embodiment of my invention being herein explained, and illustrated in the accompanying drawing.

30 Figure 1 is a top plan view of a sufficient portion of a loom to be understood, showing filling-detecting mechanism and with one embodiment of my invention applied to the loom. Fig. 2 is a transverse sectional detail on the line 2 2, Fig. 1, looking to the left. Fig. 3 is an enlarged detail in side elevation of the thin-place detector *per se*. Fig. 4 is
40 a view similar to Fig. 1, showing the invention in connection with a filling-replenishing loom.

The breast-beam 1, having a notched holding-plate 2 for the shipper 3, (the latter being
45 adapted to throw the motive power onto or off the loom in any suitable manner,) and a lever 4, Fig. 1, fulcrumed at 5 on the breast-beam, may be and are of any well-known or usual construction.

50 The filling-detecting mechanism to detect presence or absence of the filling as laid in the shed comprises a tilting fork 6, mounted on a slide 7, supported in a fixed guide 8, a vibrating actuator, herein the weft-hammer 9,

provided with a shouldered hook 10, adapted 55 to coöperate with the tail 11 of the fork when the latter is not tilted, as will be the case upon the occurrence of a filling fault, such as running out or breakage of the filling. Upon such engagement of the filling detector
60 or fork and the vibrating actuator the slide is moved outward and engages a lug 12, Fig. 1, on the shipper-releasing device, actuating the same to release the shipper from its holding-notch to thereby effect stoppage of the loom. 65

The part 13 of the breast-beam which supports the stand of the temple T, Fig. 1, has secured to it in a laterally-adjustable manner by clamp-bolts 14 a support 15, provided with ears 16, Fig. 1, in which is mounted a
70 rock-shaft 17, held from longitudinal movement by a collar 18, fast thereon between the ears. The rock-shaft has secured to it or forming a part of it two arms 19 and 20, the arm 19 being downturned at its rear end to
75 form a thin-place detector 21, adapted to rest upon the cloth C adjacent the fell, and the extremity of the detector is reduced, being pointed or flattened, herein shown as flattened, to form a thin blade-like portion
80 22 parallel to the warps and resting on the filling-threads at the fell. The arm 20 is bent laterally at its extremity to form a detent 23, which in the present embodiment of my invention extends under a dog or pawl 24,
85 pivotally mounted at 25 on the shipper-releasing device. Herein said device has a rigidly-attached arm 26, the end of which is reduced and rounded at 25 to form the pivotal support for the dog 24. The latter is lo-
90 cated above the fork-slide, and its free rear end or tip is adapted, when released, to drop onto the hook 10 in front of its shoulder 10^x, so that on the next forward movement of the hook the dog 24 will be moved longitudinally
95 toward the front of the loom and will thereby actuate the shipper-releasing means to release the shipper and effect loom stoppage.

While the filling at the fell of the cloth sustains the thin-place detector 21, the de- 100 tent 23 maintains the dog 24 inoperative; but upon the occurrence of a thin place, so that such detector will be no longer supported, its thin end 22 drops between the warp-threads and the shaft 17 is rocked to
105 lower the arm 20 and the detent 23. The dog thereupon drops down into position to coöperate with the vibrating hook 10 and

stoppage of the loom is effected. The thin-place detector can be adjusted laterally either by loosening the collar 18 and moving the rock-shaft 17 to the right or left, the
 5 detent 23 being long enough to permit considerable movement, or the adjustment may be made by moving the support 15 laterally on the part 13 of the breast-beam. A stop
 10 18^x on the collar 18 coöperates with a shoulder 16^x on one of the ears 16 when the detector operates to prevent the tip of the latter from descending through the warp far enough to touch and scar the race-plate or raceway of the lay.

15 In Fig. 4 the invention is shown in connection with an automatic filling-replenishing loom—such, for instance, as shown in United States Patent No. 529,943, granted to Northrop, November 27, 1894—the latch
 20 30 on the fork-slide 31 being adapted to engage the shipper-releasing lever 4 and release the shipper when the slide has been moved outward a predetermined number of times in succession. The only change required in
 25 the thin-place-detecting means is the shaping of the dog, it having a bend or offset 32, so that it will not interfere with the latch 30, as shown in Fig. 4.

30 My invention is not restricted to the precise arrangement and construction herein shown and described, as the same may be modified or rearranged in different particulars by those skilled in the art without departing from the spirit and scope of my invention.

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

1. A loom having a shipper, means to re-

lease it, a normally disconnected actuator for said means, and an instrumentality to effect
 40 operative connection between the actuator and the releasing means upon the occurrence of a thin place in the cloth, said instrumentality including a detector adapted to
 45 rest upon the cloth adjacent the fell and to descend when a thin place is detected, and an adjustable stop to coöperate with and limit descent of the detector independently
 of engagement of the latter with the cloth.

2. In a loom, a thin-place detector to nor-
 50 mally rest upon the cloth adjacent the fell, means controlled by the detector and adapted to effect stoppage of the loom upon the occurrence of a thin place in the cloth, the
 55 detector at such time descending through the warp, and means independent of said detector-controlled means and also independent of the cloth to limit the descent and prevent engagement of the detector with the
 60 raceway of the lay when a thin place occurs.

3. In a loom, a thin-place detector to normally rest upon the cloth adjacent the fell, means controlled by said detector and adapted to effect stoppage of the loom upon the
 65 occurrence of a thin place in the cloth, and adjustable means acting independently of the cloth to limit the descent of the detector through the warp when a thin place occurs.

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

PETER S. LEONARD.

Witnesses:

TOM B. ADAIR,

AUG. H. SCHNEIDER.