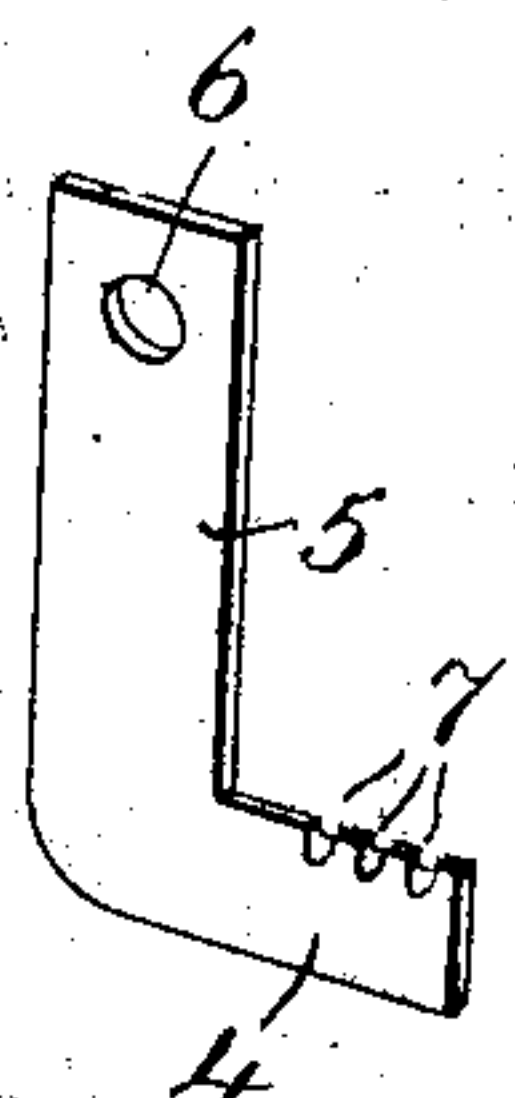
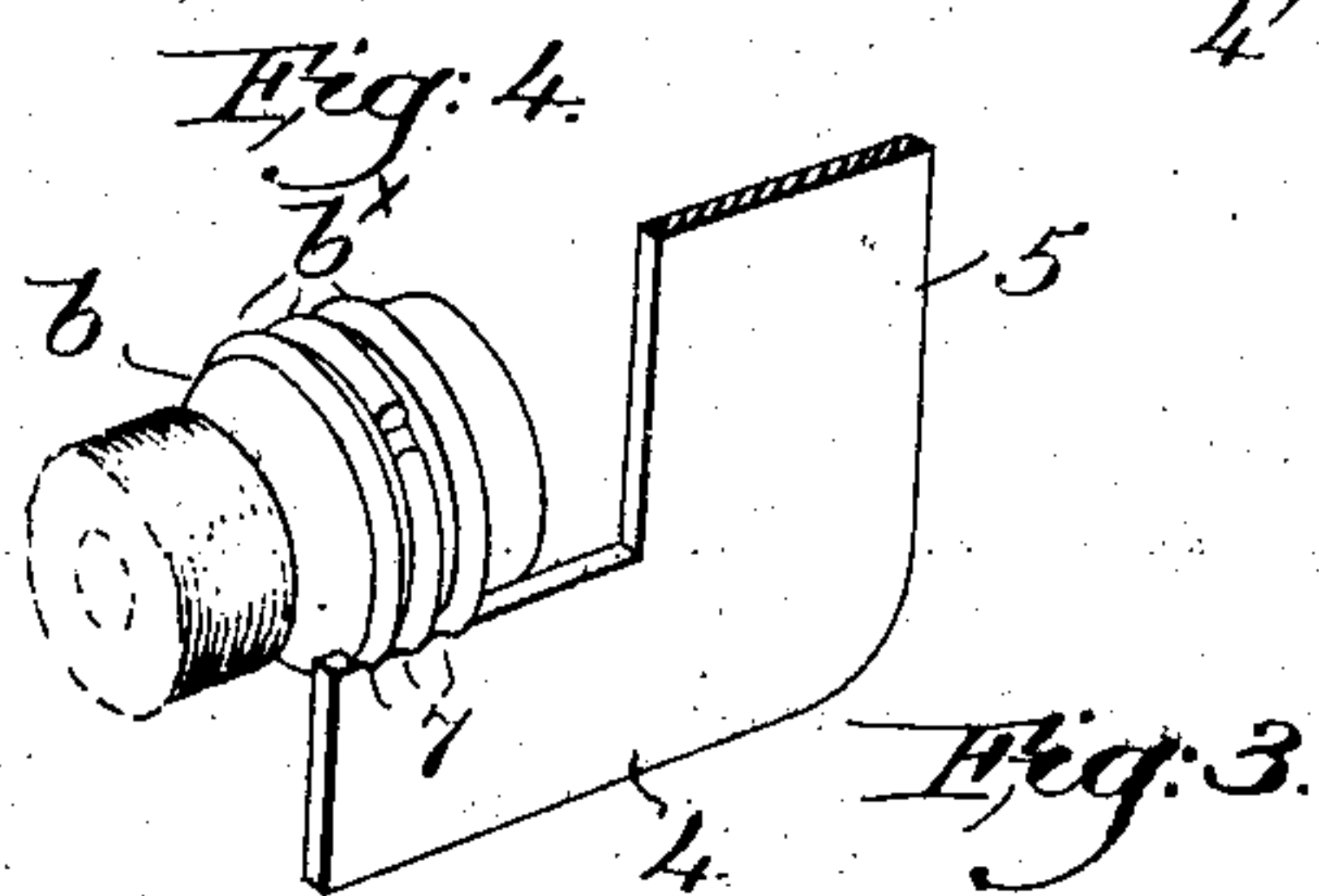
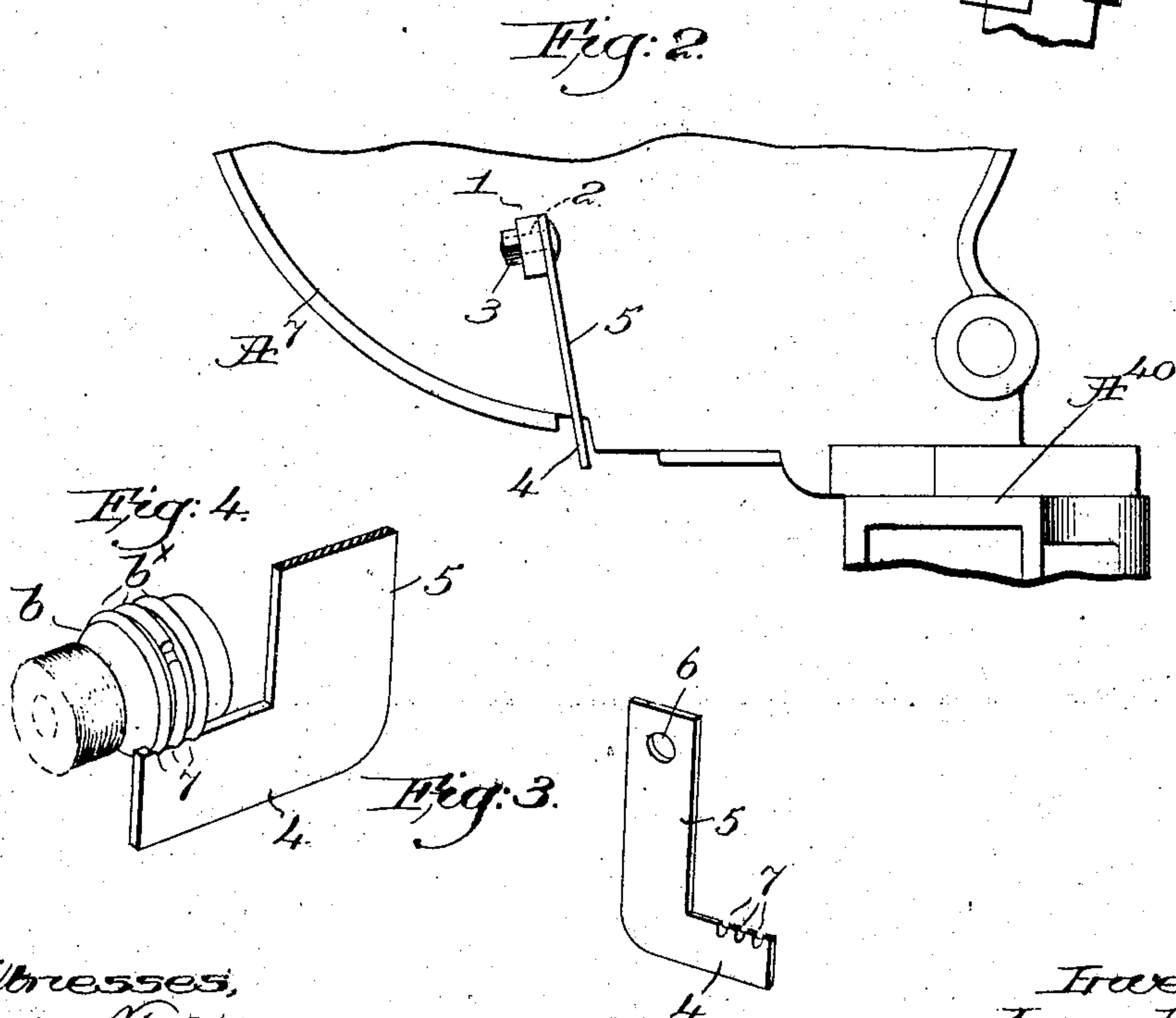
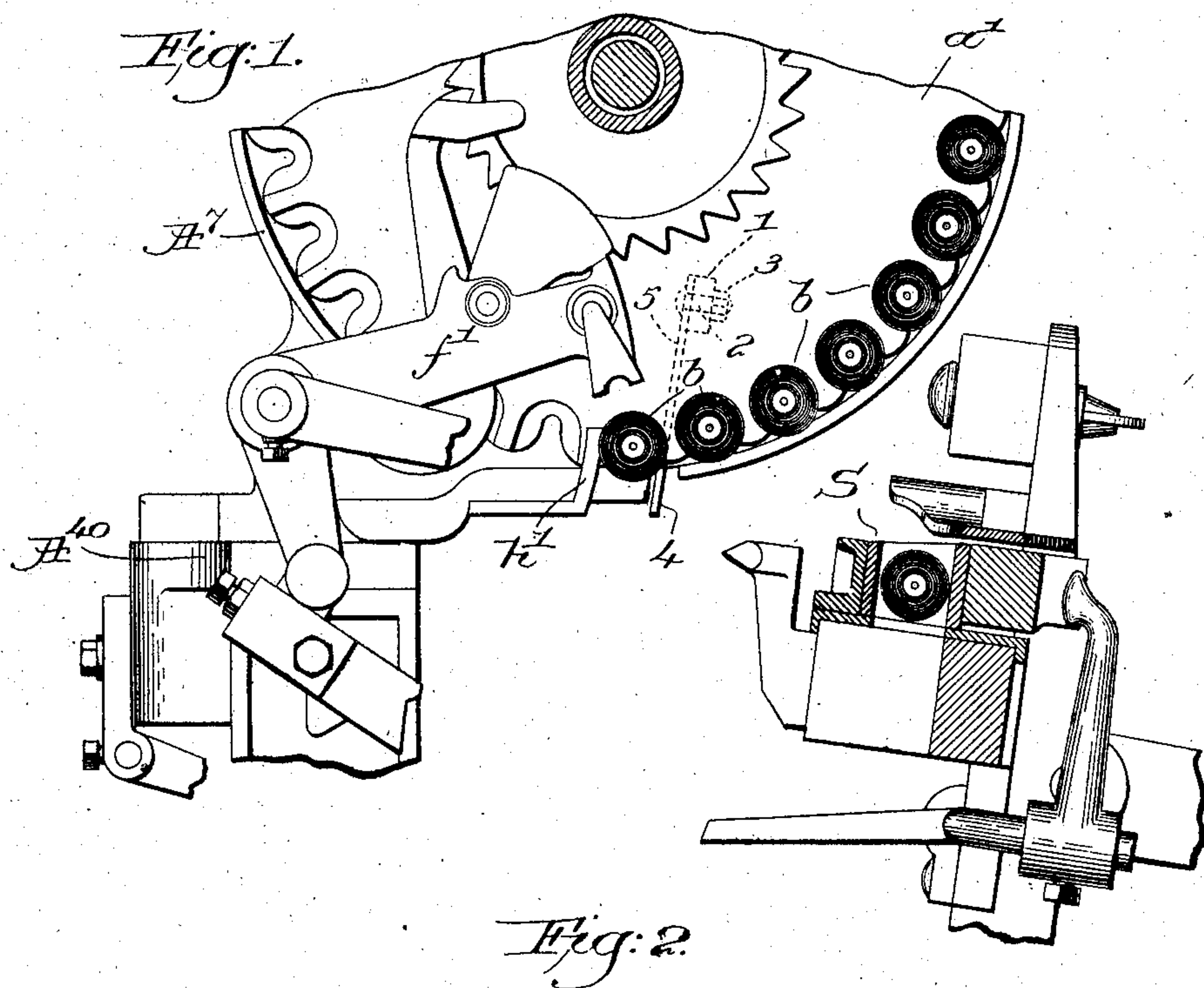


No. 834,930.

PATENTED NOV. 6, 1906.

J. NORTHROP.
FILLING REPLENISHING MECHANISM FOR LOOMS.
APPLICATION FILED DEC. 15, 1905.



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UNITED STATES PATENT OFFICE.

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FILLING-REPLENISHING MECHANISM FOR LOOMS.

No. 834,930.

Specification of Letters Patent.

Patented Nov. 6, 1906.

Application filed December 15, 1905. Serial No. 291,821.

To all whom it may concern:

Be it known that I, JONAS NORTHROP, a citizen of the United States, and a resident of Hopedale, county of Worcester, State of Massachusetts, have invented an Improvement in Filling-Replenishing Mechanism for Looms, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invention has for its object the production of an efficient and simple combined guide-support and buffer to cooperate with a filling-carrier or bobbin when transferred from the filling-feeder to the shuttle in a loom of the Northrop type—such, for instance, as is shown and described in United States Patent No. 529,940.

Figure 1 is a side elevation and partial transverse section of a portion of the filling-replenishing mechanism of a Northrop loom with one embodiment of my invention applied thereto. Fig. 2 is an inner side elevation of the feeder-stand with the buffer and guide-support thereon. Fig. 3 is a perspective view of the buffer detached, and Fig. 4 is a perspective detail of the buffer to be referred to.

The stand A^7 , mounted on the breast-beam A^{40} , the filling-carriers or bobbins b , supported in the intermittingly-rotatable feeder, (one of the disks a' thereof being shown in Fig. 1,) the transferrer f' , to remove the filling-carriers one by one from the feeder and insert them in the running shuttle S , and the abutment h' on the stand may be and are all of well-known construction and operate in a manner familiar to those skilled in the art. The abutment h' directs or guides one side of the head of a filling-carrier during transfer, forming a fixed and rigid side of a discharge-throat through which the carrier-head passes during transfer from the feeder to the shuttle. A lug or ear 1 on the inner face of the stand A^7 is adapted to receive a bolt 2, which by means of a suitable nut 3 clamps in operative position the combined buffer and support which forms the opposite side of the discharge-throat in accordance with my present invention.

Referring to Fig. 3, a thin, flat, and substantially L-shaped plate of resilient metal 4

5 is shown, the lower end or foot 4 forming the buffer proper, the upright shank 5 having at its upper end a hole 6, through which the bolt 2 is passed, the shank being clamped thereby in position against the lug 1. (See Figs. 1 and 2.) The buffer and shank thus lie in a plane at right angles to the face of the stand A^7 , and the foot or buffer 4 projects beneath said stand opposite the abutment h' and substantially parallel thereto, the abutment and buffer forming opposite and relatively deep sides of the discharge-throat.

As shown in Fig. 1, the normal position of the buffer is such that its upper edge comes somewhat beneath the head of the filling-carrier next to be transferred and at one side of its longitudinal axis, assisting in supporting the filling-carrier; but when the transferrer f' forces it downward the head of the carrier passes between the abutment and buffer, moving the latter away from the abutment laterally while maintaining the same position relatively to the abutment, the resiliency of the shank 5 permitting such movement. As the abutment is set on edge its flat face affords an extended guiding and supporting surface for the adjacent side of the filling-carrier until the latter emerges from the lower end of the throat and enters the shuttle, the buffer 4 cooperating with the filling-carrier until the same is engaged by the holding means in the shuttle.

So far as I am aware buffers or guide-supports as heretofore devised have permitted the filling-carrier or bobbin in its transfer to the shuttle to be relieved from contact with the guide or buffer for a short period before entering or cooperating with the holding means or jaws in the shuttle. This introduces an element of uncertainty and is liable to result in an improper transfer.

The guide or buffer embodied in my present invention operates both from its position and its method of acting to contact with the filling-carrier until the latter is definitely gripped by the spring-jaws or other holding means in the shuttle.

The heads of the filling-carrier are ringed, as at b^x , Fig. 4, in well-known manner, and to form an additional means for guiding and controlling the same I notch the upper edge of the buffer, as at 7, Figs. 3 and 4, to coop-

erate with such rings when the filling-carrier begins its transferring movement. Such notches also permit the leading filling-carrier to pass the buffer when the feeder is advanced after a transfer has taken place.

The form of buffer shown is efficient, it is easily and cheaply made, and it possesses great durability, as it partakes of the nature of a leaf-spring and is not readily broken, while its resilient action is long-lived; but a single fastening secures the buffer in place, and its broad or extended flat face affords extended guidance and support to the filling-carrier when transferred.

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

1. The combination, with a feeder to hold a plurality of filling-carriers, and a transfer, of a discharge-throat through which said filling-carriers pass, comprising a fixed abutment to cooperate with one side of the head of a filling-carrier, and a resilient plate fixedly secured at one end and having its free end shaped to present a guiding and supporting buffer substantially parallel to the face of the abutment.

2. The combination, with a feeder to hold a plurality of filling-carriers, and a transfer, of a discharge-throat through which said filling-carriers pass, comprising a fixed abutment, and a yielding, oppositely-located buffer substantially in parallelism therewith, the buffer supporting and guiding the adjacent side of the filling-carrier as the latter passes through the throat and yielding to permit such passage while maintaining its relative position to the abutment.

3. The combination, with a feeder to hold a plurality of filling-carriers, and a transfer, of a discharge-throat through which said filling-carriers pass, comprising a fixed abutment, and a flat, resilient buffer located opposite said abutment in substantial parallelism and having its upper edge notched to cooperate with the head of the filling-carrier.

4. The combination, with a feeder to hold a plurality of filling-carriers, and a transfer to remove them one by one, of a fixed abutment to cooperate with one side of the filling-carrier during transfer, and a movable buffer located opposite said abutment to guide and support the opposite side of the filling-carrier, the acting faces of the abutment and buffer being in substantial parallelism and separating as the filling-carrier passes between them.

5. An intermittingly-rotatable feeder to hold a plurality of filling-carriers, a stand on which it is mounted, a transfer, and a fixed abutment forming one side of a discharge-throat for a filling-carrier when transferred, combined with a substantially L-shaped, flat resilient buffer member fixedly secured on the stand and having its free lower end or

foot extended beneath the stand opposite and with its flat acting face substantially parallel to the abutment, to form the opposite, yielding side of the discharge-throat.

6. An intermittingly-rotatable feeder to hold a plurality of filling-carriers, a transfer, and a fixed abutment forming one side of a discharge-throat for a filling-carrier when transferred, combined with a flat buffer opposite the abutment and forming the other side of the throat, and a resilient shank fixedly secured at one end and attached to the buffer at its other end.

7. An intermittingly-rotatable feeder to hold a plurality of filling-carriers, a transfer, and a fixed abutment forming one side of a discharge-throat for a filling-carrier when transferred, combined with a flat buffer opposite and substantially parallel to the abutment, forming a yielding side for the throat, and a resilient, upturned shank integral with the buffer and fixedly held at its upper end.

8. An intermittingly-rotatable feeder to hold a plurality of filling-carriers, a transfer, and a fixed abutment forming one side of a discharge-throat for a filling-carrier when transferred, combined with a flat, yielding, mounted buffer set on edge and having notches in its upper edge to cooperate with the ringed head of the filling-carrier.

9. An intermittingly-rotatable feeder to hold a plurality of filling-carriers, a stand on which it is mounted, a lug on the inner face of the stand, a transfer, and a fixed abutment to cooperate with one side of the filling-carrier next to be transferred, combined with a resilient L-shaped plate fixedly attached at its upper end to the lug on the stand and having its lower end projecting under the stand opposite the abutment, to form a buffer and guide and support the adjacent side of the filling-carrier next to be transferred.

10. The combination, with a feeder to hold a plurality of filling-carriers, and a transfer, of a fixed abutment, and a broad-faced, yielding buffer mounted opposite the abutment and presenting a substantially upright and extended guiding and supporting surface for the filling-carrier when transferred.

11. A buffer for supporting and guiding a filling-carrier during transfer in filling-replenishing mechanism for looms, consisting of a resilient L-shaped flat metallic plate the foot whereof forms the guide and support for the filling-carrier, and a fixed support for the upper end of the upright shank, whereby by flexure of the shank the foot can yield laterally.

12. The combination, with a feeder to hold a plurality of filling-carriers, a transfer, and a shuttle adapted to receive and hold a filling-carrier, of a yielding buffer mounted on a fixed part of the feeder and extending near enough to the shuttle path so that a filling-

carrier when transferred to the shuttle will be under constant pressure by the buffer from the instant the filling-carrier is started from the feeder until definitely engaged by the holding means in the shuttle.

13. The combination, with a feeder to hold a plurality of filling-carriers and a transferrer, of a discharge-throat for a filling-carrier when transferred, said throat having at one side a resilient buffer lying in a plane substantially parallel to that of the other side.

14. The combination, with a filling-feeder, of a discharge-throat therefor having a fixed side, and a buffer forming the opposite side movable bodily toward and away from the fixed side and maintaining throughout such movement the same position relatively to the fixed side.

15. The combination, with a filling-feeder, of a discharge-throat therefor having opposite upright and relatively deep sides substantially in parallelism, a fixed abutment forming one side, and a yieldingly-controlled buffer forming the other, movable side, said abutment and buffer maintaining the same relative position whether the buffer is at rest or is moved toward or away from the abutment.

16. The combination, with a filling-feeder, a transferrer, and a shuttle adapted to receive and hold a filling-carrier, of a fixed abutment below the feeder, and a yielding buffer opposite said abutment and presenting an upright face substantially in parallelism therewith and movable toward and from it laterally, while maintaining the same position relative thereto, the lower portions of the abutment and buffer extending near enough to the shuttle-path to maintain control of a filling-carrier during transfer until it is definitely engaged by the holding means in the shuttle.

17. The combination, with a filling-feeder, of a fixed abutment and an opposite, laterally-movable buffer, forming a discharge-throat for a filling-carrier when removed from the feeder, the throat sides formed by said abutment and buffer maintaining a constant relative position at all times.

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

JONAS NORTHROP.

Witnesses:

C. H. DRAPER,
GEORGE OTIS DRAPER.