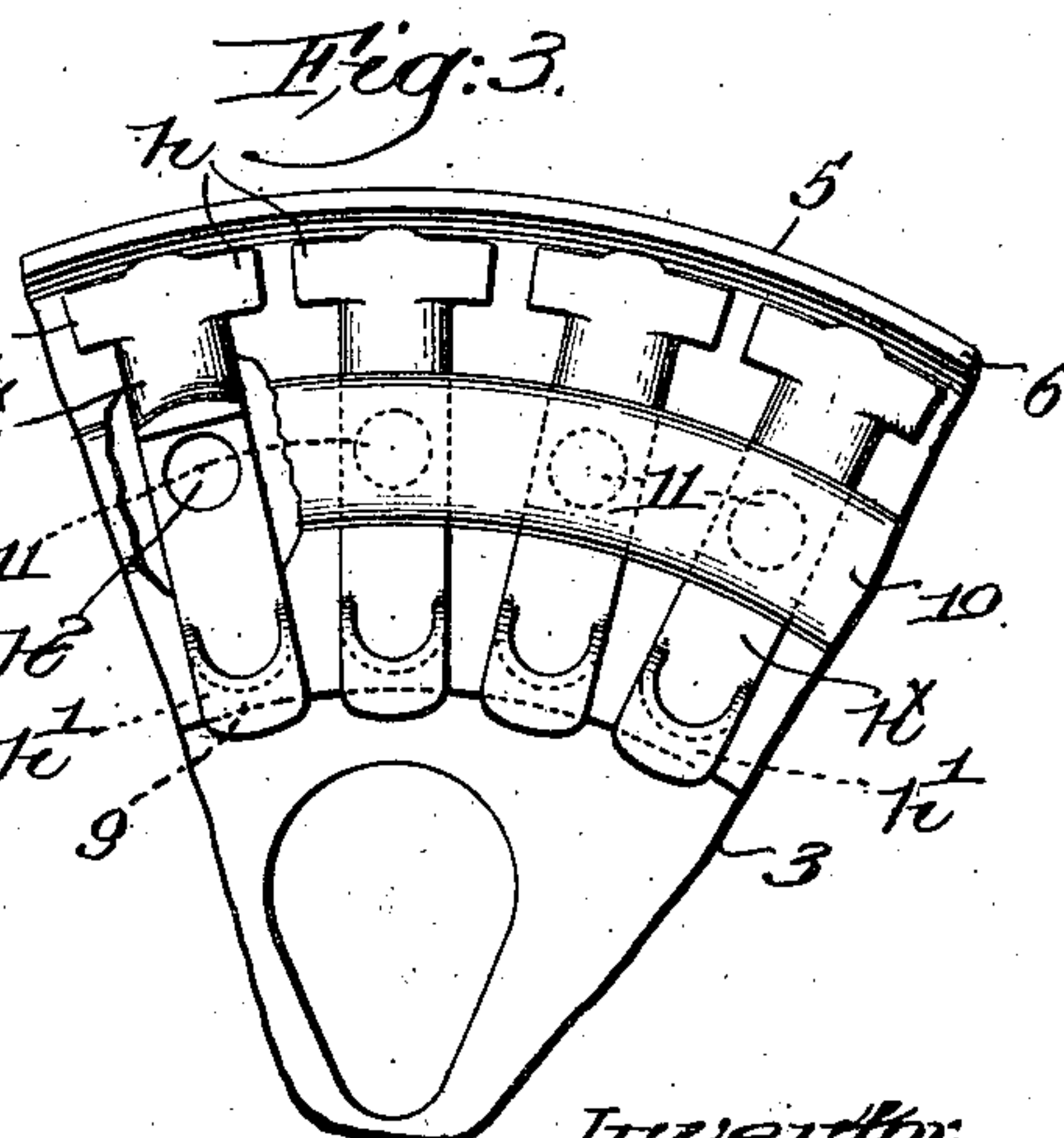
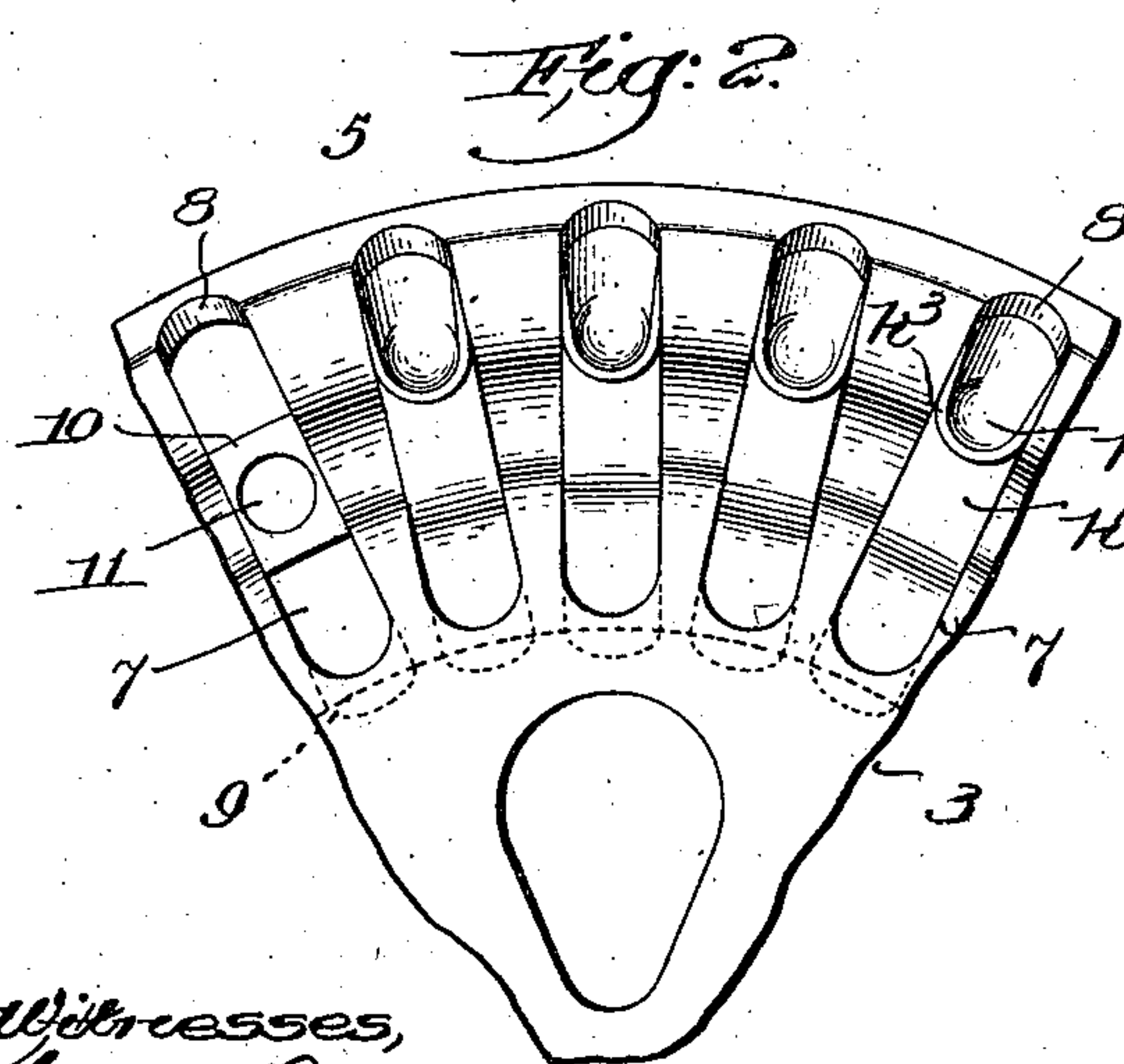
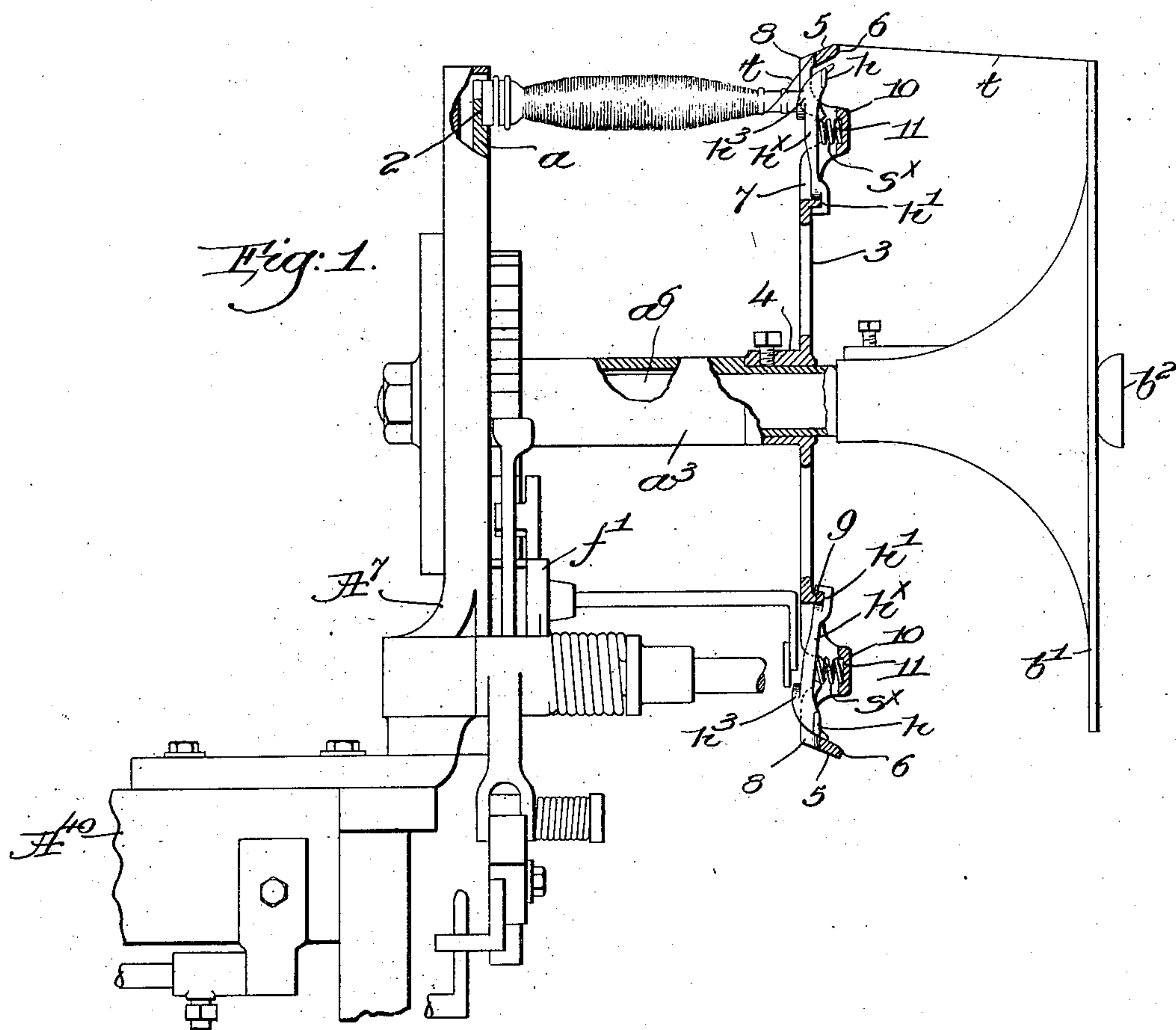


E. S. STIMPSON.
FILLING FEEDER FOR FILLING REPLENISHING LOOMS.
APPLICATION FILED FEB. 2, 1910.

966,615.

Patented Aug. 9, 1910.



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UNITED STATES PATENT OFFICE.

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FILLING-FEEDER FOR FILLING-REPLENISHING LOOMS.

966,615.

Specification of Letters Patent.

Patented Aug. 9, 1910.

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To all whom it may concern:

Be it known that I, EDWARD S. STIMPSON, a citizen of the United States, and resident of Hopedale, county of Worcester, State of Massachusetts, have invented an Improvement in Filling-Feeders for Filling-Replenishing 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 looms wherein the running shuttle is replenished automatically with filling by the insertion therein of a fresh filling-carrier or bobbin, the filling-carriers in reserve being held in a suitable feeder or magazine.

There are numerous instances in the prior art of filling-feeders arranged to support the filling-carriers at their butts and tips in such manner that they may be removed readily and transferred to the shuttle at the proper time, a well known type of feeder comprising essentially two connected and rotatable plates or heads arranged to cooperate respectively with the butts and tips of the carriers. Some of the feeders have been arranged with yieldingly-mounted butt-holders, while others have been provided with yieldingly-mounted tip-holders, one instance of the latter arrangement being shown in my United States Patent No. 755,252 dated March 22, 1904. Reference is made to this patent because in my present invention the tip-holders are very similar to those shown in said patent, and so far as their functions are concerned they are substantially the same.

My present invention, however, has for its object the production of a filling-feeder embodying certain novel and valuable features of construction whereby, notwithstanding the pressure of yieldingly-mounted tip-holders, the catching, pinching or other interference with the filling-ends, as they are led from the tips of the filling-carriers to a suitable end-holder, is absolutely and altogether eliminated.

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 front elevation and partial section of a filling-feeder embodying one form of my present invention, shown in connection with other parts of the filling-replen-

ishing mechanism of an automatic loom of the well-known Northrop type; Fig. 2 is a partial inner side elevation of the plate or head of the feeder which supports the tips of the filling-carriers, one of the tip-holders being omitted to show the aperture in which such holder is seated; Fig. 3 is a similar view, but of the outer side of the plate, showing the backs of the tip-holders and their relation to certain portions of the plate, to be referred to.

Referring to Fig. 1, the circular plate *a* of the filling-feeder, its hub *a*³, the stand *A*⁷ mounted on the breast-beam *A*⁴⁰; the fixed horizontal stud *a*⁸ on which the feeder rotates, the filling-end holding means, as the disk *b*¹ and stud *b*², carried by and rotatable with the feeder, and the transferrer *f*¹, may be and are all substantially as in my patent hereinbefore referred to, the plate *a* having a series of open-ended, circularly-arranged seats or pockets 2 to receive the butts of the filling-carriers. In accordance with my present invention the plate 3 at the outer end of the feeder is also circular, its hub 4 being rigidly attached to the hub *a*³ of plate *a*, so that said plates will rotate in unison, the plate 3 being herein shown as provided with an outwardly flared peripheral flange 5 which presents a smooth and continuous annular surface to support the filling-ends, the outer edge 6 of the flange also being continuous, as shown. Said plate 3 thus has a smooth and continuous circular periphery, and within it the plate has a series of radially arranged apertures, shown herein as elongated slots 7, which in practice equal in number to and are arranged opposite the seats or pockets 2 of plate *a*.

As shown in Figs. 1 and 2 the inner and outer ends of the apertures 7 are curved, the outer ends extending into the base of the flange 5, as at 8, the apertured portion of the plate being thickened to form a transverse rib 9 at the inner end of each of the apertures, see Figs. 1 and 3, on the outer side of the plate, while the latter is shaped to present spring-seats 10 spanning the apertures 7 between their ends.

Viewed from the outer side the spring-seats 10 form a continuous annular rib, as shown best in Fig. 3, and each seat on its inner face has a circular depression or pocket 11 to receive one end of a spiral spring *s*^x, Fig. 1.

As the plate 3 is made as a casting the structure described can be readily secured, and in the features of the spring-seats and the ribs 9 the construction and arrangement is substantially as in my patent previously referred to.

A tip-holder is mounted in each of the apertures 7, each holder comprising an elongated body h^x just wide enough to move freely between the sides of one of the apertures, with lateral ears h at the outer end of the body, Fig. 3, each body at its inner end being shaped to present a deep transverse and slightly curved groove h' to receive and rock on the rib 9.

When the holder is in position on the plate the ears h extend laterally adjacent the outer side of plate, at each side of the aperture 7, so that the holder can rock outward on the rib 9 but can rock inward only to an extent limited by engagement of the ears with the plate.

The spring s^x at its inner end enters a socket or recess h^2 in the back of the holder, opposite the spring-seat 11, the spring maintaining the holder pressed inward, as shown at the lower part of Fig. 1.

Upon its inner face the holder is thickened at h^3 to form a substantially U-shaped seat h^4 for the reception of the tip of the filling-carrier, the spring s^x acting with a longitudinal pressure upon the carrier to hold it firmly in position in the feeder, with its butt in the opposite seat 2.

The thickened seat-forming parts h^3 of the tip-holders project through the apertures 7 beyond the inner side of the plate 3, and as the seats open outwardly the tips of the filling-carriers are readily inserted in the seats when the feeder is being loaded, the springs s^x yielding at such time to permit the requisite outward rocking movement of the holders on the ribs 9 as fulcra.

As shown clearly in Fig. 2, and also at the upper part of Fig. 1, the outer ends of the holders extend into the outer ends of the apertures 7, and the parts 8 of the latter which extend into the base of flange 5 provide for a free and uninterrupted passage of the tips of the carriers down into the seats h^4 .

The filling-end t is led from each filling-carrier upward and outward onto the smooth and continuous annular face of the flange, over its circular, continuous edge 6 to the disk b' and thence to the holding or fastening stud b^2 , about which the end is wound, in usual manner.

As will be apparent the flange overhangs and hoods or shields the outer ends of the

tip-holders, and the filling-ends are supported by the continuous outer face of such flange well beyond the outer ends of the holders, so that it is impossible for the filling-ends to be caught, pinched or held in any way.

By outwardly flaring the flange 5 the filling-end is led outward diagonally with relation to the longitudinal axis of the filling-carrier, in such a position that it is clear of the enlargement h^3 for the tip-seat h^4 , and with such direction of lead for the filling-end there is very little chance for it to pull off or unwind from the tip end of the yarn mass.

I make no claim herein to the tip-holders, *per se*, as they are substantially the same as those shown in my prior patent and form the subject-matter of claims therein.

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

1. A filling-feeder comprising a plate adapted to sustain the butts of a series of filling-carriers, a connected plate having a continuous, circular periphery over which the filling-ends are led, a corresponding series of tip-holders movably mounted on the latter plate to engage and sustain the tips of the filling-carriers at the inner face of said plate and wholly within its continuous periphery, and springs to maintain the tip-holders in operative position, the filling-ends being led from the filling-carriers over the peripheral edge of the plate and being held thereby out of contact with the tip-holders.

2. A filling-feeder comprising a plate adapted to sustain the butts of a series of filling-carriers, a connected plate having a peripheral, outwardly-flared flange presenting a smooth, continuous annular supporting surface for the filling-ends, said plate having a series of elongated, closed radial slots whose outer ends terminate adjacent the base of said flange, and a series of yieldingly-sustained and individually-movable holders seated in said slots, to engage and sustain the tips of the filling-carriers at the inner side of said plate, the flange covering the outer ends of the holders and preventing contact of the filling-ends therewith.

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

EDWARD S. STIMPSON.

Witnesses:

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GEO. E. CHANDLER.