

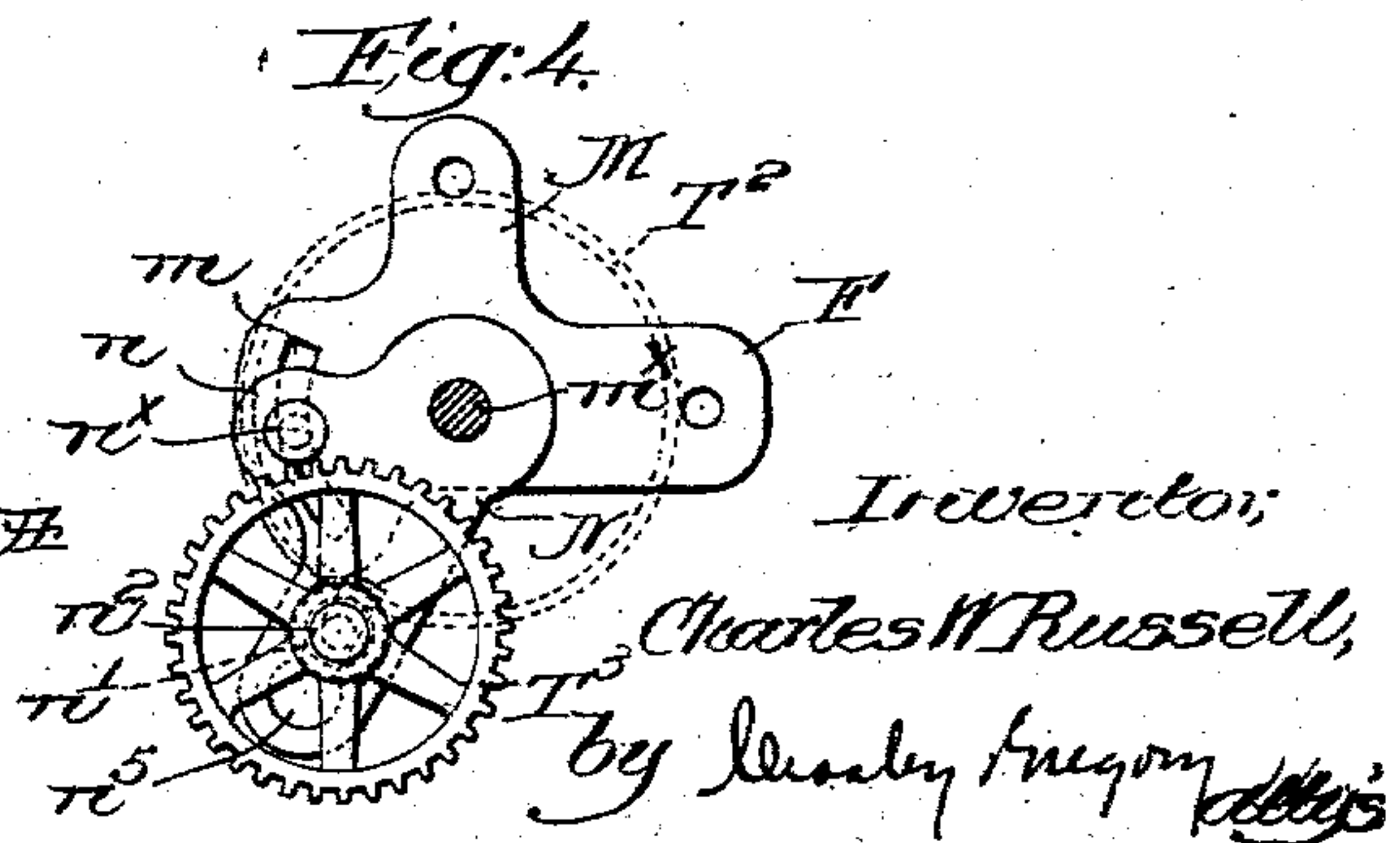
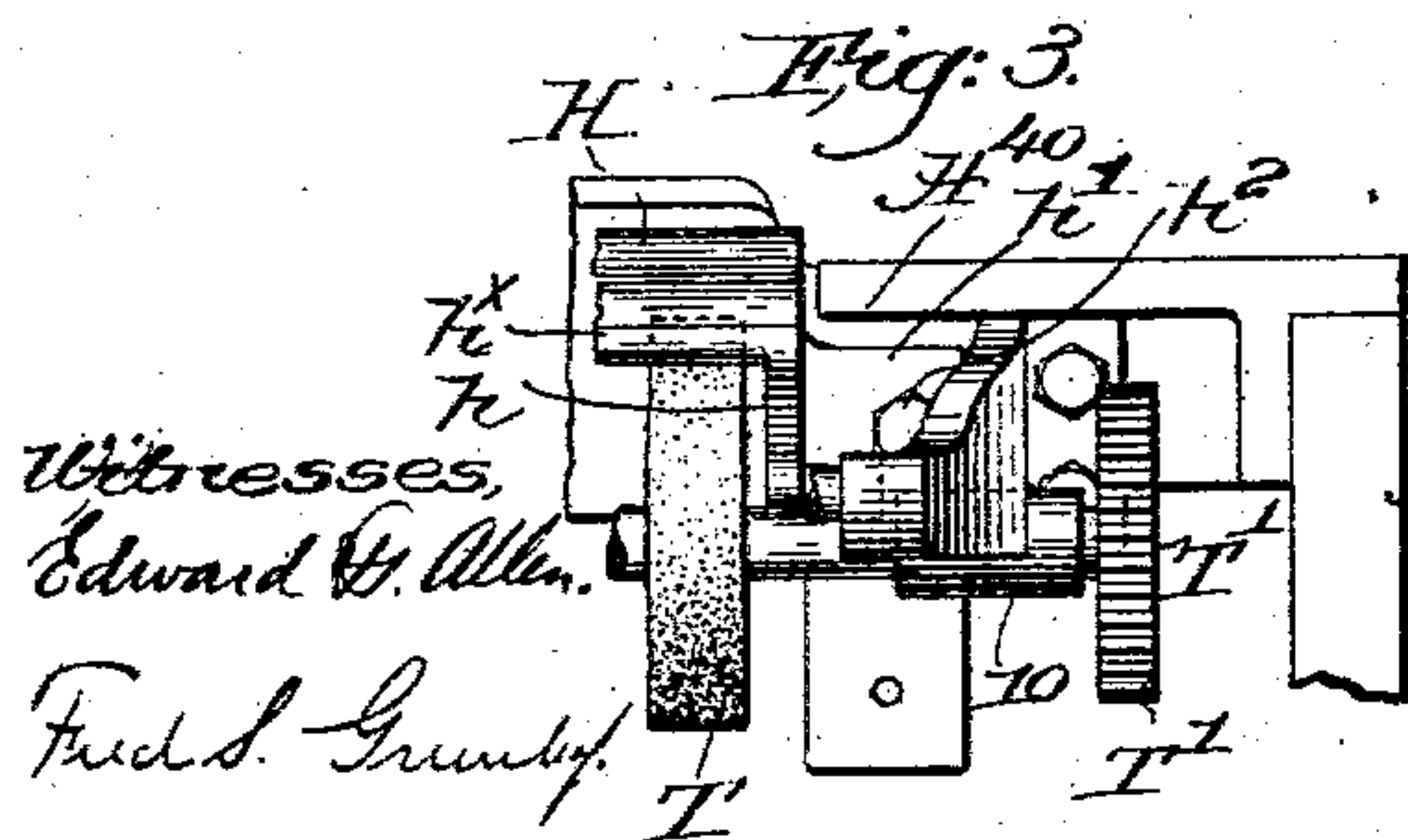
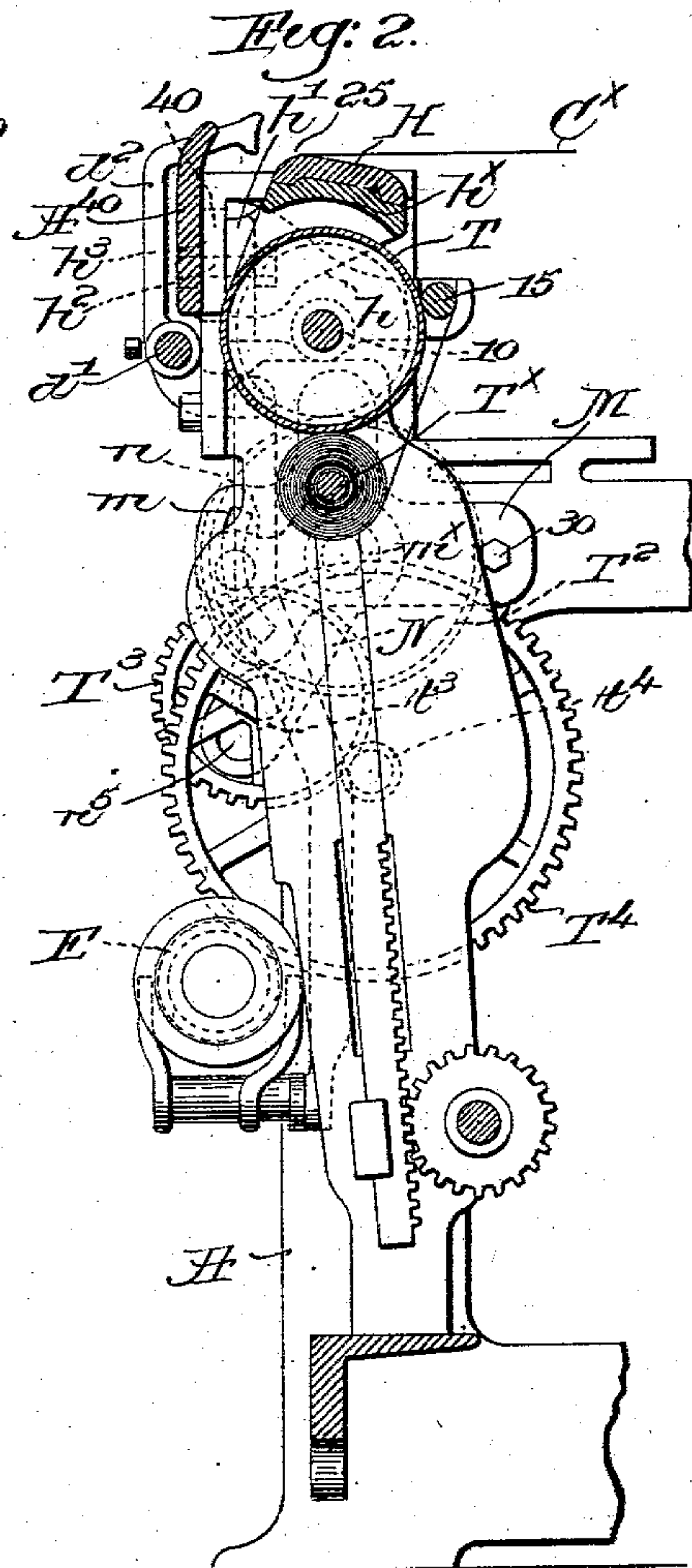
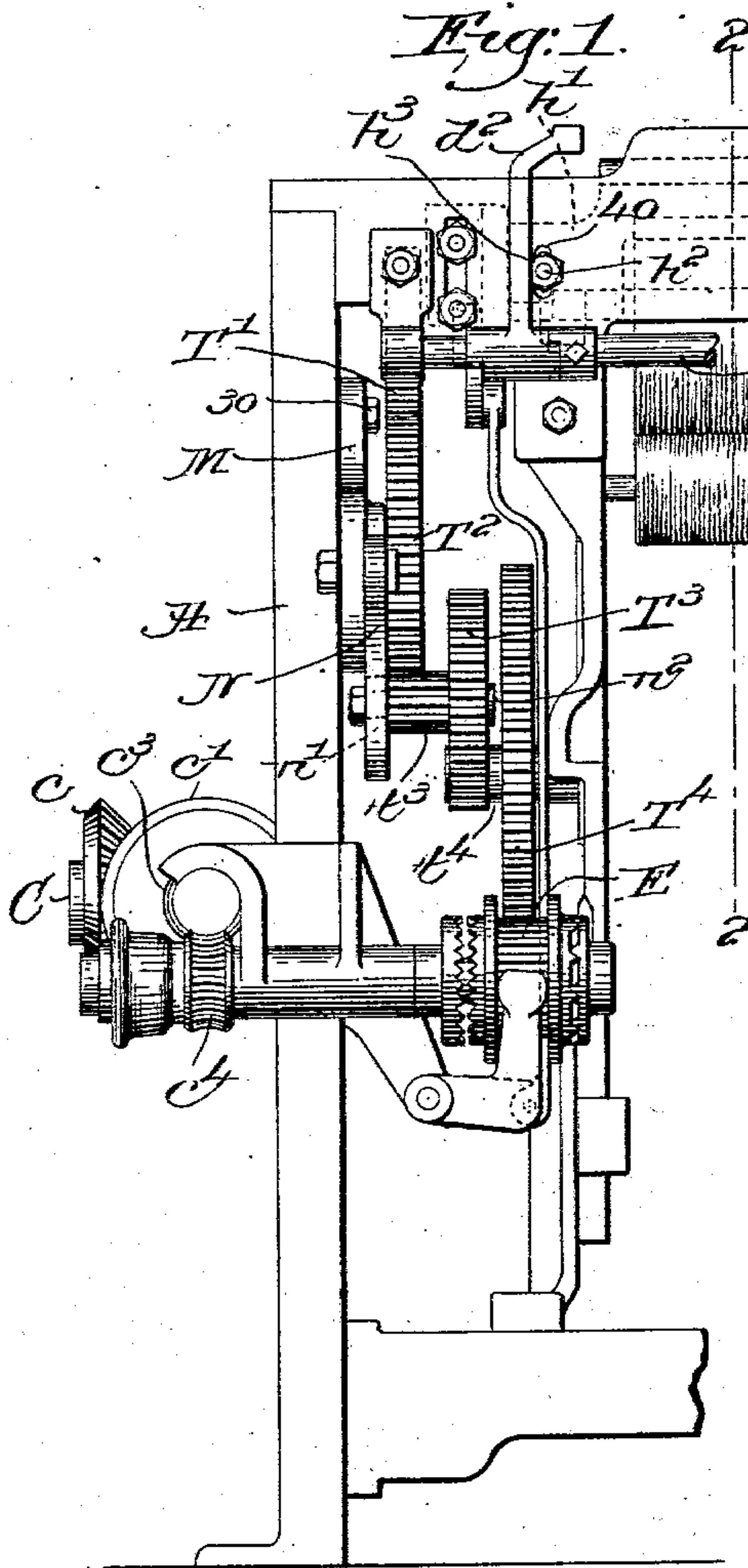
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TAKE-UP MECHANISM FOR LOOMS.

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NO MODEL.



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TAKE-UP MECHANISM FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 730,404, dated June 9, 1903.

Application filed February 2, 1903. Serial No. 141,511. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. RUSSELL, a citizen of the United States, and a resident of Providence, county of Providence, State of Rhode Island, have invented an Improvement in Take-Up 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.

As is well known to those skilled in the art, the take-up mechanism in a loom has for its main object the taking up or drawing through the loom of a specific length of warp bearing a certain ratio to the revolutions of the loom-driving shaft, and certain essential features are of great moment in such mechanism. One of these features is the capability of obtaining a variable finish or surface to the cloth. Another feature is the provision of sufficient elasticity for the cloth between the fell and the positive point of contact of the cloth with the take-up roll, so that there will not be such an overstress on the cloth as would damage or break the fibers.

Heretofore one or the other of the above features has been accomplished in greater or less degree individually, but not collectively, so far as I am aware, in one unitary take-up mechanism.

My present invention, accordingly, has for its object the production of take-up mechanism wherein the foregoing features and others of importance are combined in a novel and effective manner, the construction and arrangement of the various parts whereby the desired results are obtained being simple and readily adjustable to conform to circumstances.

Figure 1 is a partial front elevation of the take-up mechanism of a loom embodying one form of my invention. Fig. 2 is a transverse sectional detail thereof on the line 2-2, Fig. 1, looking toward the left. Fig. 3 is a detail view, in rear elevation, of a portion of the mechanism shown in Figs. 1 and 2, to be referred to; and Fig. 4 is an inner side view of the support for the change-gear.

The take-up mechanism is herein shown as

actuated from the cam-shaft C of the loom, Fig. 1, through bevel-gears $c\ c'$, worm c^3 and worm-gear c^4 , and a clutch device including a pinion E, all substantially as in United States Patent No. 648,903, dated May 1, 1900, though other actuating or driving means may be employed so far as my present invention is concerned. The loom-frame A, the controlling rock-shaft d' to govern the operation of a loom-stopping mechanism, or a filling-replenishing mechanism, both well known in the art, is provided with an upturned arm d^2 to be engaged by the usual weft-fork slide (not shown) upon detection of filling failure, substantially as in the patent referred to.

In accordance with my present invention the take-up roll T has been lowered from its previous position on the loom and mounted in fixed or permanent bearings, as 10, Figs. 2 and 3, so that the first point of contact of the cloth C^x with said roll will be far enough away from the fell to permit of the required elasticity on any grade of goods. A gear T^1 , secured to one of the journals of the take-up roll, meshes with a large gear T^2 , supported in a manner to be referred to, this latter gear being driven by a pinion t^3 , secured to or forming part of the change-gear T^3 , which in turn meshes with a pinion t^4 , rotatable with a second large gear T^4 . This gear meshes with the pinion E, hereinbefore referred to, and the described train of gearing is in general substantially as shown in the patent referred to. As best shown in Fig. 2, the cloth passes from the fell over a novel support, to be described, then down toward the front of the loom and around the take-up roll T and up over and around a guide-roll 15 behind it, the cloth passing thence down to and around the bar or roll T^x , upon which the cloth is wound by frictional engagement with the take-up roll in well-known manner.

The breast plate or beam A^{40} has secured to it a cloth-support shown as a preferably metal bar h^x , extended from one to the other side of the loom above the take-up roll and provided at its ends with downturned feet h , having lateral extensions h' , which bear against the rear face of the breast-beam. A

vertical slot 40 (see Fig. 1 and dotted lines, Fig. 2) is made in the latter opposite each extension to receive a bolt h^2 , passing through the latter, a check-nut h^3 serving to clamp the extension firmly in place on the beam. I prefer to attach a cap or contact-facing H, of wood or other elastic material, to the top of the support h^x , rounded or convexed at its edge, as at 25, Fig. 2, to obviate any sharp edges or other impediments to the easy traverse of the cloth thereover as it passes to the take-up roll. By loosening the check-nuts h^3 the cloth-support can be readily raised or lowered sufficiently to vary the angle or inclination of the cloth between the fell and the support. Such variation in the inclination of the cloth causes the filling to be beaten in toward the top, center, or bottom of the woven cloth, as the operator may desire, in order to give the required surface or finish to the cloth.

The unusual position of the take-up roll herein described requires some change in the train of gearing which actuates it and necessitates a novel form of stand or support for what is usually termed the "change-gear," a gear which is changed for one having a different number of teeth, in order to change the ratio of the warp taken up to the revolutions of the driving-shaft of the loom.

The gear T^3 is the change-gear, and it has secured to or forming a part of it the pinion t^3 , the pinion in all cases having the same number of teeth, while the teeth of the attached gear vary in number. The change-gear support, in accordance with my invention, comprises two parts or members M and N, (see Figs. 1, 2, and 4,) the member M being rigidly secured to the loom side by suitable bolts 30, Fig. 2, and having secured to it a stud m^x , which forms a bearing for the gear T^2 . Such stud also forms a fulcrum on which the member N is supported and about which it is movable angularly, said member N having an offset portion n , superposed upon a part of the member M having a segmental slot m , Fig. 4, to receive a clamping-bolt n^x , by which the members are held in adjusted angular position. A radial slot n' (see dotted lines, Fig. 1) is made in the member N to receive the stud n^2 , on which the change-gear is rotatably mounted, radial adjustment of the stud being thereby effected in order that the change-gear T^3 may mesh properly with

the pinion t^4 . Variation in the diameter of the change-gear makes it necessary to swing the member N about its fulcrum m^x in one direction or the other, while the distance between the centers of the pinion t^3 and gear T^2 is maintained substantially constant. The lower end of the member N is provided with a finger-hole n^5 , by means of which the attendant can easily swing the said member to adjust the change-gear to its proper position, and then while holding it in position he can set up the clamping-bolt n^x to secure the change-gear in such position.

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

1. In take-up mechanism for looms, a take-up roll mounted in fixed bearings, and actuating means therefor including a change-gear, a two-part support for the change-gear, one member of said support being fixedly mounted and having a bearing for an intermediate gear, the other member being fulcrumed coaxially with such bearing, and means to fixedly connect said members in variable angular position.

2. In take-up mechanism for looms, a take-up roll mounted in fixed bearings, and actuating means therefor including a change-gear, a support for the latter including a member fixedly mounted on the loom-frame, an angularly-movable member fulcrumed on the fixed member and radially slotted to receive the bearing-stud of the change-gear, and means to connect the fixed and movable members in adjusted angular position.

3. In take-up mechanism for looms, a take-up roll mounted in fixed bearings, and actuating means therefor including a change-gear, a support for the latter including a fixed member and an angularly-movable member fulcrumed thereon and on which the change-gear is radially adjustable, a finger-piece on the movable member, and means to rigidly connect the members in angularly-adjusted position.

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

CHARLES W. RUSSELL.

Witnesses:

GEORGE OTIS DRAPER,
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