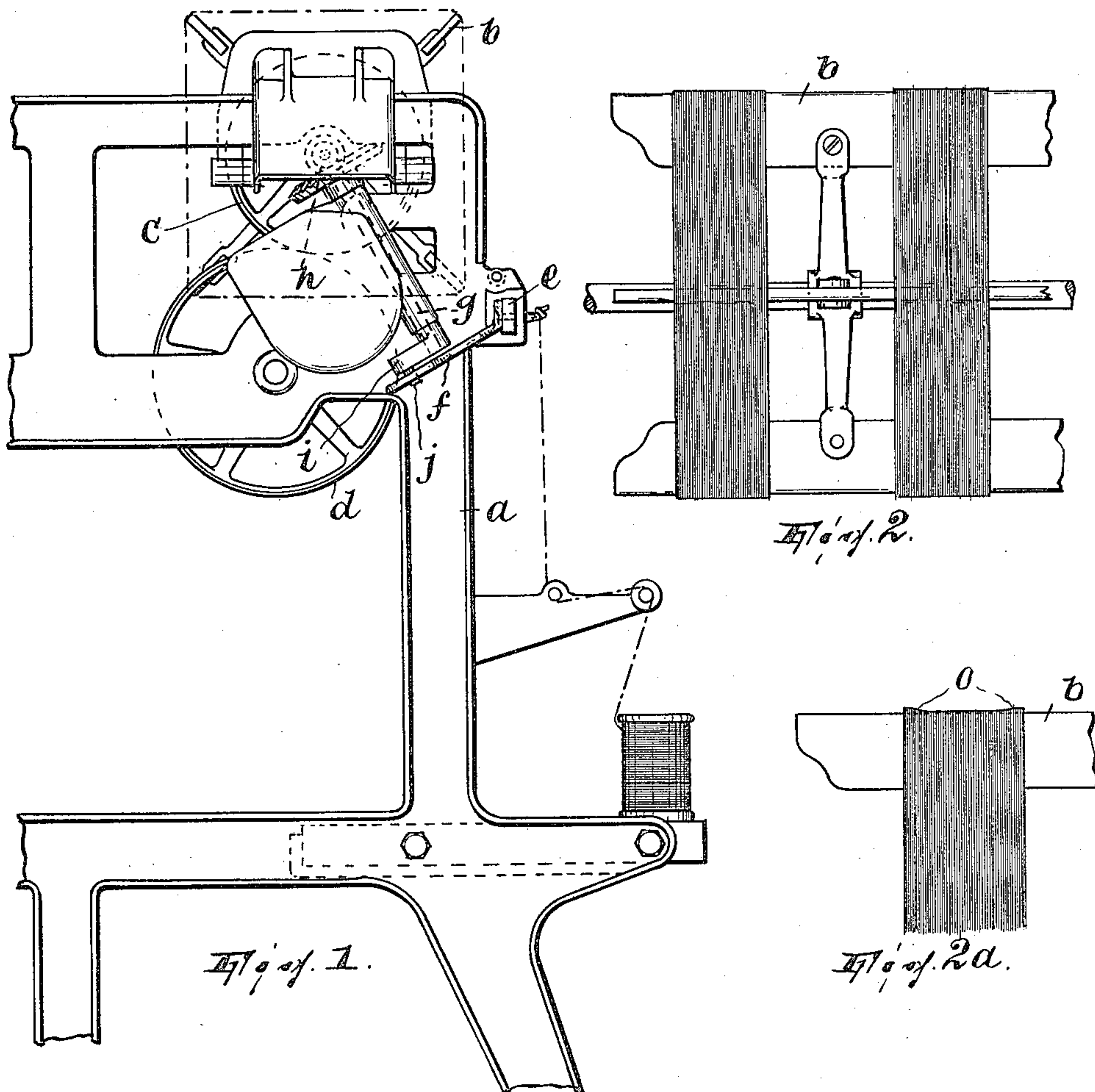


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APPLICATION FILED MAY 14, 1915.

1,154,705.

Patented Sept. 28, 1915.  
2 SHEETS—SHEET 1.



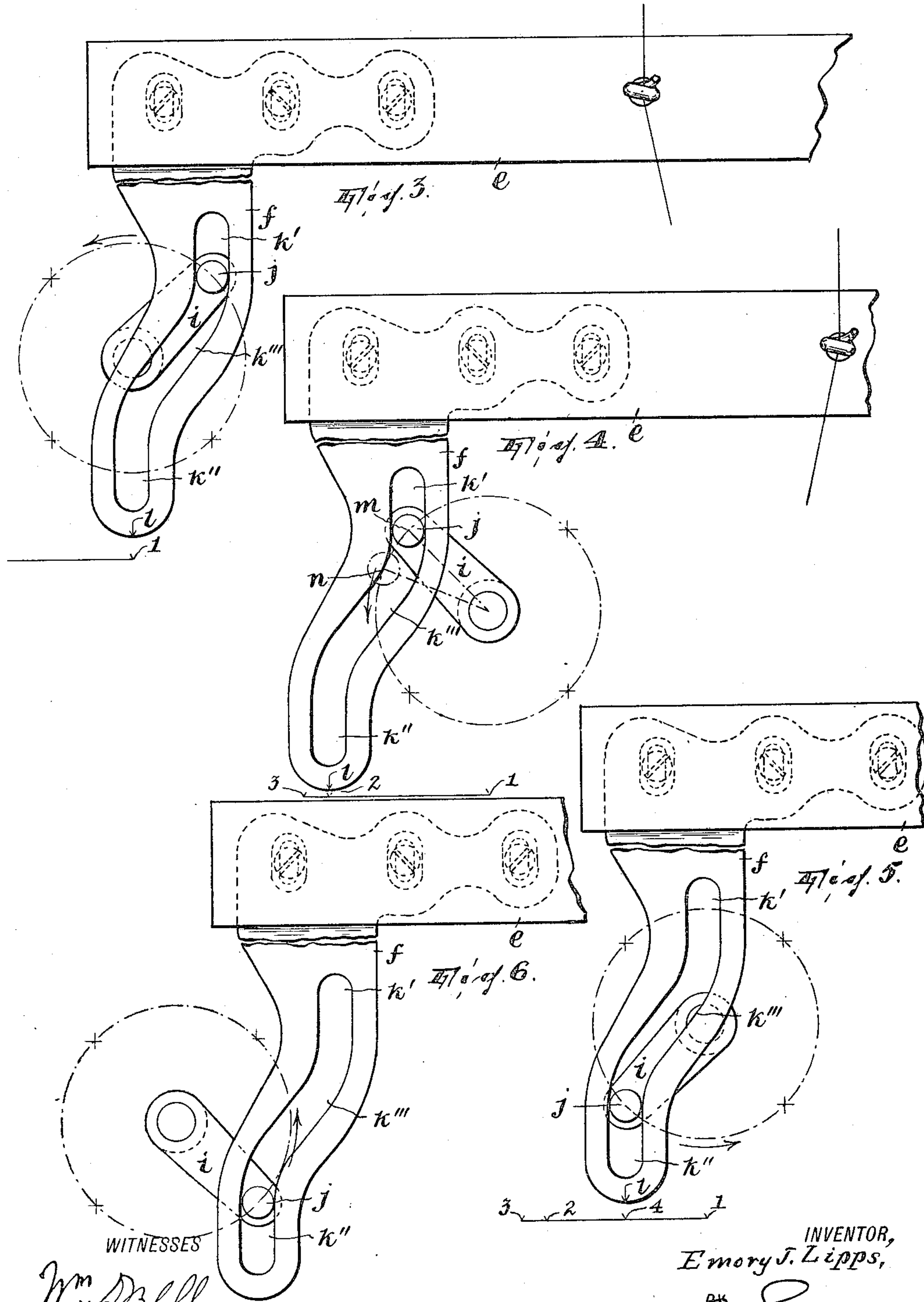
WITNESSES  
Wm. Orrell.  
Clara Kaufmann.

INVENTOR,  
Emory J. Lipps,  
BY  
Shubert Ward,  
ATTORNEY.

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WITNESSES  
*Wm. Bell.*  
*Chas. Kaufmann*

INVENTOR,  
*Emory J. Lipps,*  
BY *J. H. Steward,*  
ATTORNEY.



# UNITED STATES PATENT OFFICE.

EMORY J. LIPPS, OF FOUNTAIN HILL BOROUGH, PENNSYLVANIA.

## MACHINE FOR REELING SKEINS.

1,154,705.

Specification of Letters Patent. Patented Sept. 28, 1915.

Application filed May 14, 1915. Serial No. 27,987.

*To all whom it may concern:*

Be it known that I, EMORY J. LIPPS, a citizen of the United States, residing in the borough of Fountain Hill, in the county of Lehigh and State of Pennsylvania, have invented certain new and useful Improvements in Machines for Reeling Skeins, of which the following is a specification.

In machines for winding skeins, of the class in which the traverse of the thread or yarn guiding rail is effected by a crank whose wrist-pin engages a slot or other path or way on the rail or a suitable part attached thereto, the said way extends at right angles to the path of reciprocation of the rail, so that, while the rate of rotation of the reel on which the skeins are wound of course remains constant throughout each cycle of movement of the crank, the rate of reciprocation of the rail varies to such an extent that whereas the rail has considerable movement imparted thereto by the crank while the latter is passing through those arcs of its cycle, each of 90 degrees (approximately), whose chords are substantially parallel to the path of travel of the rail, it obtains relatively little movement while it is passing through either of the remaining arcs of 90 degrees (approximately). In other words, what amounts substantially to a "dwell" at each of the limits of movement of the rail is excessive in extent in proportion to the amount of movement which the rail obtains while the crank is moving through either of the two arcs of its cycle, each of 90 degrees (approximately), whose chords are parallel to the path of movement of the rail. A serious consequence of this is that the material of the skeins is deposited in greater quantity at the sides of the skeins than at the middle, this being the more pronounced, of course, the greater the yardage of the skeins. Skeins so wound, especially those of considerable yardage, possess various disadvantages well recognized by those familiar with this art, among which it will be sufficient to mention the difficulty of withdrawing the thread or yarn from skeins so constituted (the winding being non-symmetrical in character and the convolutions of each layer being of unequal lengths) without entangling the thread or yarn.

The object of this invention is to provide a traverse motion for machines for winding skeins and other wound packages where-

by the extent of dwell assumed by the rail or equivalent at each of its limits of reciprocating motion shall be so shortened that in fact it will be negligible and the skein or other wound package will be of substantially uniform thickness from side to side thereof.

In the accompanying drawings, wherein the invention will be found fully illustrated, Figure 1 is an end elevation of a skein winding or reeling machine of the class above referred to; Fig. 2 shows skeins wound on a reel by the use of my invention; Fig. 2<sup>a</sup> shows a skein wound on a reel by the use of the traverse motion commonly employed; and, Figs 3, 4, 5 and 6 are semi-diagrammatic views illustrating my invention.

A conventional machine of the class in which the thread-guide-carrying rail is reciprocated from a rotating crank is shown in Fig. 1, *a* being the frame, *b* a reel journaled therein and furnished with the friction wheel *c*, *d* the driving wheel on which the friction wheel bears and by which it, and consequently the reel, is rotated, *e* the thread-guide-carrying or traverse rail sliding longitudinally and horizontally in suitable guides, and in the present case provided with or including an arm or bracket *f*, and *g* a suitably journaled rotary shaft geared with the reel shaft at one end, as at *h*, and at the other end provided with a crank *i* whose wrist-pin *j* is engaged with the contact way, now to be described, which said arm affords. Said way is preferably in the form of a slot whose upper and lower ends *k'* and *k''* are vertical (at right angles to the path of travel of the traverse rails), one of which is offset laterally of the other, and whose intermediate portion *k'''* is oblique. Now, on reference to Figs. 3 to 6 it will be seen that while the wrist-pin *j* is passing through either of the arcs, of 90 degrees (approximately), of its cycle whose chord is parallel with the path of travel of the rail *e*, the wrist-pin being then engaged in one of the portions *k'* *k''* of the slot, and this being at right angles to the path of travel of the rail, the latter will obtain a lateral movement in one direction or the other equal to the length of the chord of said arc—for example, a point as *l* on arm *f* will travel from position 1 (Figs. 3 and 4) to position 2 (Fig. 4); and that while the wrist-pin is passing through either of the other two arcs, each of 90 degrees (approximately), of its cycle, the



wrist-pin being then engaged in the portion  $l'''$  of the slot, and this being oblique to the path of travel of the rail, the latter will obtain a short movement in one direction (point  $l$  reaching position 3, Fig. 4) and then a long movement in the opposite direction (point  $l$  reaching position 4, Fig. 5), the aggregate of these two latter movements being equal to a very considerable part of that obtained from the wrist-pin when traveling in either of the first two named arcs. Thus, whereas according to the traverse-motion heretofore employed, the rail stands practically at a dwell for the whole extent of movement of the wrist-pin through the relatively lateral arcs of its cycle, according to my invention the rail moves a very considerable distance while the wrist-pin is passing through either of said arcs, the dwell being almost eliminated. Such dwell as does occur, being while the wrist-pin is passing through either the arc  $m-n$  or its diametric opposite, is so far inappreciable that in practice, instead of the skeins being formed with side-ridges  $o$ , as in Fig.

2<sup>a</sup>, they are perfectly uniform in thickness from side to side, as in Fig. 2.

The crank is indicated by arrows as rotating counter-clockwise in Figs. 3 to 6; substantially the same result is accomplished when the crank rotates clockwise.

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

In combination, a frame, a rotary member on which to wind the material, another rotary member geared with the first member to rotate in unison therewith and having an eccentric wrist-pin, and a thread-guiding member arranged to reciprocate parallel to the axis of rotation of the first rotary member and having a contact way engaged by said wrist-pin, said contact way having its end portions laterally offset relatively to each other and each extending substantially at right angles to the path of movement of the thread-guiding member and having its intermediate portion oblique to said path.

In testimony whereof I affix my signature.  
EMORY J. LIPPS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."