

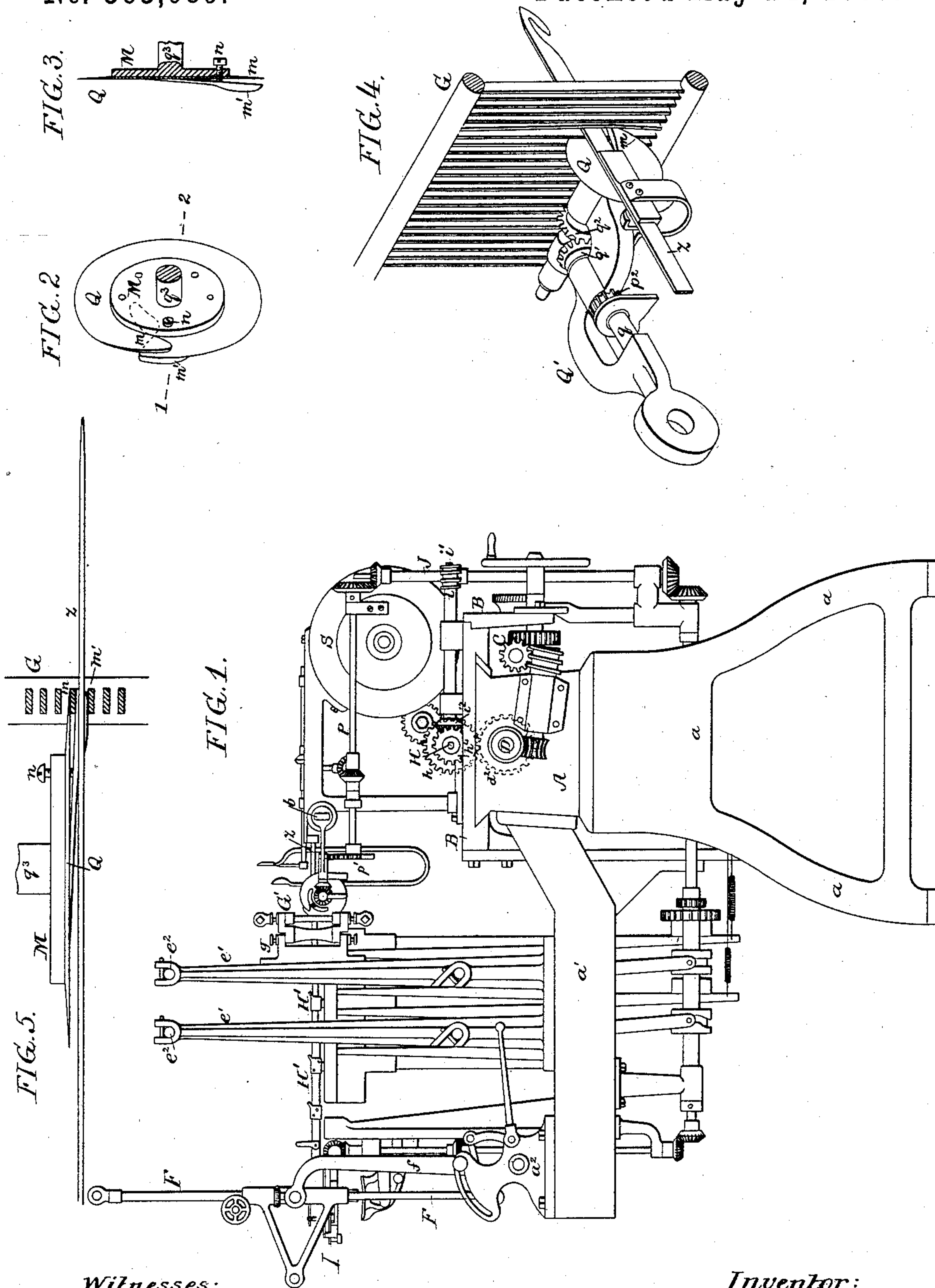
(No Model.)

L. P. SHERMAN.

REED DENT SEPARATING DEVICE FOR WARP DRAWING MACHINES.

No. 363,689.

Patented May 24, 1887.



Witnesses:
Walter Bassett
John E. Parker.

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UNITED STATES PATENT OFFICE.

LEWIS P. SHERMAN, OF BIDDEFORD, MAINE, ASSIGNOR TO GEORGE MOORE,
OF SAME PLACE.

REED-DENT-SEPARATING DEVICE FOR WARP-DRAWING MACHINES.

SPECIFICATION forming part of Letters Patent No. 363,689, dated May 24, 1887.

Application filed March 17, 1887. Serial No. 231,263. (No model.)

To all whom it may concern:

Be it known that I, LEWIS P. SHERMAN, a citizen of the United States, and a resident of Biddeford, York county, Maine, have invented certain Improvements in Reed-Dent-Separating Devices for Warp-Drawing Machines, of which the following is a specification.

My invention consists of certain improvements in mechanism for separating the dents of reeds in machines for drawing in warp-threads.

In the accompanying drawings, Figure 1 is a side view of a warp-drawing machine with my improved dent-separating device. Fig. 2 is a perspective view of my improved reed-dent separator detached from the machine. Fig. 3 is a section on the line 12, Fig. 2. Fig. 4 is a perspective view showing part of the reed, the dent-separator, part of its operating mechanism, and part of the drawing-needle; and Fig. 5 is a view, partly in plan and partly in section, showing the dent-separator and part of the reed and needle.

The warp-drawing machine illustrated in Fig. 1 is fully described in the Patent No. 355,221, dated December 28, 1886, and therefore need not be described minutely.

A is the bed of the machine, supported on suitable legs, *a*, and having guides to which is adapted the traveling carriage or slide B, the latter being fed from right to left by means of a feed-screw, C, driven from the main shaft D of the machine.

S is the needle-casing, secured to the carriage B, and *n* the needle, which is drawn into and projected from the casing S by mechanism fully set forth in said prior patent, the needle being preferably a flat steel bar, as shown in Fig. 4.

Attached to the back of the frame A are brackets *a'*, on which are the posts *e' e'*, for supporting the cross-bars *e''*, carrying the heddles, and on the outer ends of the brackets *a'* are brackets *a''*, for supporting the adjustable arms *f*, to which are pivoted the warp-thread-carrying arms F. Brackets *g* on the forward posts, *e'*, carry a frame, G', which supports the reed G, as shown in the patent referred to.

H' H' are the brackets for the heddle-eye-separating devices, and I is the warp-thread-

selecting device, which separates a thread from the series on the frame F and places it in the path of the needle, as fully described in the patent referred to above.

The reed-dent-separating device comprises simply a disk, M, having a flange, Q, with overlapping ends *m m'*, the flange being free from connection with the disk for some distance from its end *m'*, so that the ends can be sprung apart from each other to any desired extent by means of the set-screw *n* acting on said free end of the flange, as shown in Fig. 3. The end *m'* of the flange is thickened or expanded laterally, so that when it is inserted between two of the dents of the reed it will spread said dents apart and facilitate the passage of the needle through the space between the dents.

The disk M is secured to a short shaft, *q''*, having its bearings in an arm, Q', hung to a stud on the casing S. The arm Q' is pivotally secured to the stud on the casing S by means of a set-screw, *b*, Fig. 1, in order that the reed-separator can be thrown up away from the reed and out of gear with the machine when desired.

On the shaft *q''* is a bevel-wheel, *q''*, which gears with a bevel-wheel, *q'*, on a short shaft, *q*, this shaft having a pinion, *p''*, which engages with a segment gear-wheel, *p'*, on a shaft, F, the latter being geared to an upright shaft, J, which in turn is geared to a horizontal shaft, I', by a worm, *i*, and worm-wheel *i'*, the shaft I' deriving its motion from the main shaft D through the medium of spur-gears *d''* and *h*, shaft H, and bevel-gears *h''* and *i''*, as will be seen on reference to Fig. 1. The segment gear-wheel *p'* serves to impart to the shaft *q* rotary movements with intervening periods of rest, as will be readily understood.

The flange Q acts as a screw-thread, the forward end of the flange entering space after space between the dents of the reed G in succession as the disk M rotates, and the movement of the dent separator is arrested at that point where the thickened end *m'* of the flange occupies the same space in the reed through which the needle has to pass, the dents being thus separated so as to be wholly out of the way of the needle. (See Figs. 4 and 5.)

The lateral adjustment of the end of the flange Q by means of the set-screw *n* serves to adapt the dent-separator to reeds of different gages.

5 By the use of the reed-dent separator described, friction on the needle is reduced and the skipping of any of the spaces is prevented.

I claim as my invention—

10 1. The combination of the reed holder and the reciprocating warp-drawing needle with the separator-disk and with mechanism whereby the same is intermittently rotated, all substantially as specified.

15 2. The combination of the reed-holder, the reciprocating warp-drawing needle, the intermittently-rotated separator-disk, and the slide or carriage on which said needle and disk are mounted, all substantially as specified.

20 3. The within-described reed-dent separator for warp-drawing machines, the same consisting of a disk with a flange forming a section of

a screw-thread, one of the ends of said flange being thickened, all substantially as specified.

4. The within-described reed-dent separator for warp-drawing machines, the same consisting of a disk with screw-flange having a free end, and means for laterally adjusting said free end, all substantially as specified. 25

5. The combination of the reed-holder, the slide or carriage, and a reed-dent separator, carried by a frame hung to the carriage, whereby said separator can be thrown up out of engagement with the reed, all substantially as specified. 30

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses. 35

LEWIS P. SHERMAN.

Witnesses:

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