

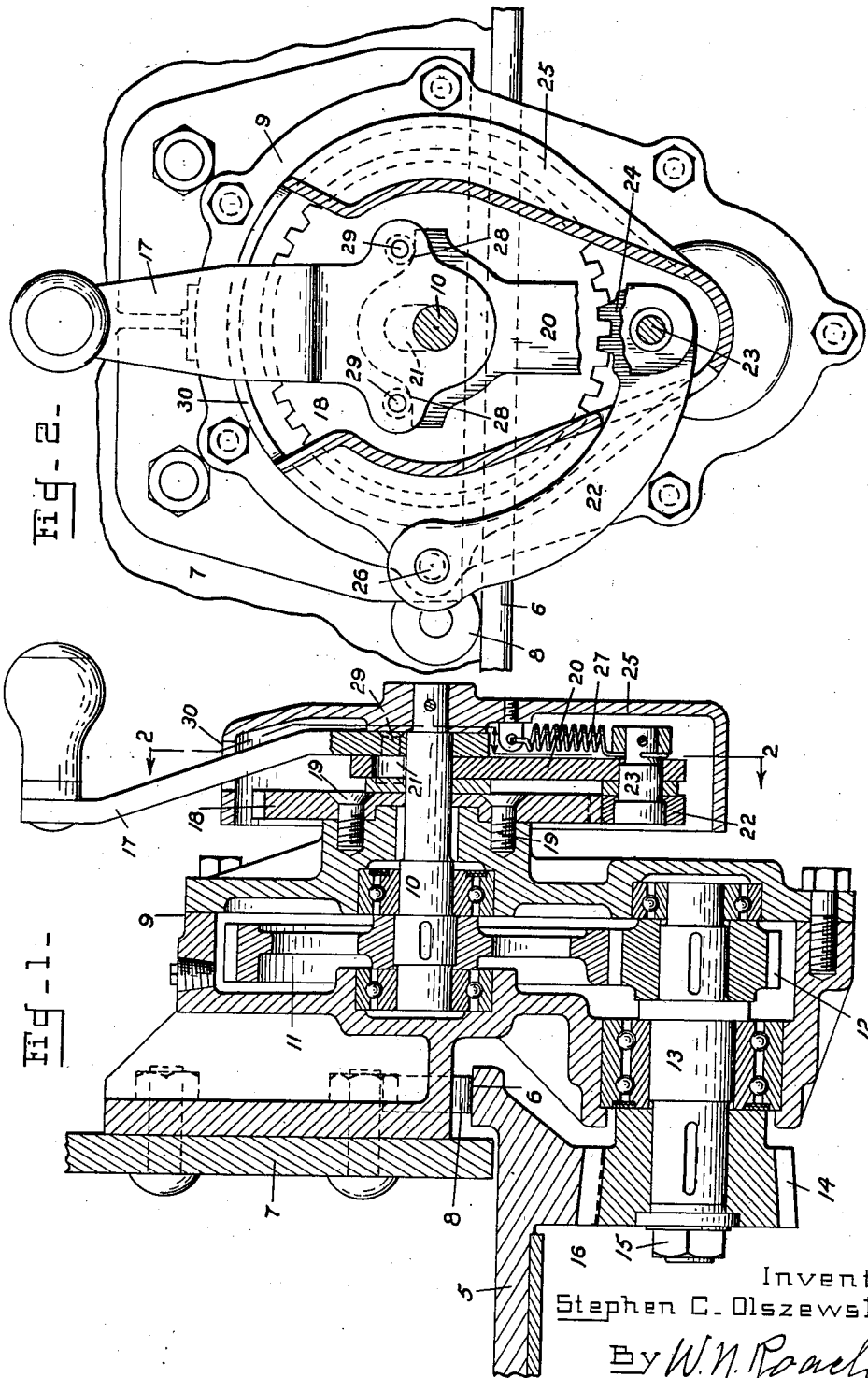
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ACTUATING MECHANISM FOR GEARING

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# UNITED STATES PATENT OFFICE

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## ACTUATING MECHANISM FOR GEARING

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2 Claims. (Cl. 192-8)

(Granted under the act of March 3, 1883, as amended April 30, 1928; 370 O. G. 757)

The invention described herein may be manufactured and used by or for the Government for governmental purposes, without the payment to me of any royalty thereon.

This invention relates to an actuating mechanism for gearing.

The purpose of the invention is to provide means for automatically locking gearing when an actuating handle is released and for automatically unlocking it when the handle is initially moved.

To these and other ends, the invention consists in the construction, arrangement and combination of elements described hereinafter and pointed out in the claims forming a part of this specification.

A practical embodiment of the invention is illustrated in the accompanying drawing, wherein:

Fig. 1 is a longitudinal sectional view of a traversing mechanism constructed in accordance with the invention.

Fig. 2 is a view on the line 2-2 of Fig. 1.

Referring to the drawing by characters of reference, there is shown a support 5 having a rail 6 whereby a member such as a turret 7 is rotatably mounted through rollers 8.

The traversing mechanism for rotating the turret comprises a gear case 9 fixed to the inner wall of the turret and depending below the support. A drive shaft 10 in the upper part of the case carries a gear wheel 11 which meshes with a pinion 12 on a driven shaft 13 in the lower part of the case. The driven shaft extends through the case and carries a pinion 14 which is retained by a nut 15. The pinion 14 meshes with a rack 16 on the lower side of the support. A crank handle 17 is freely mounted on the drive shaft 10.

A locking plate 18 which is in the form of a toothed ring coaxial with the drive shaft 10 is positioned between the crank handle and the gear case and is fixed to the case by one or more screws 19.

A latch comprises an arm 20 positioned between the crank handle and locking plate and having a slot 21 whereby it is guided on the drive shaft 10 for movement radially of the locking plate 18 and on arm 22 which is connected to the outer end of the arm 20 by a pivot pin 23 and is provided with one or more teeth 24 adapted to engage the teeth of the locking plate. The latch is also arranged for rotational movement with the drive shaft 10 by means of a connector in the form of a drum 25 which is fast on the drive

shaft and encloses the locking plate and latch while confining the latch and crank handle. The drum carries the outer end of the latch arm 22 by means of a pivot pin 26. A spring 27 associated with the drum and with the pin 23 normally urges the latch towards the drive shaft so that its teeth 24 will engage the locking plate.

The latch arm 20 is formed with a pair of oppositely arranged seats 28-28 adapted to be engaged by a pair of pins 29-29 correspondingly positioned on the crank handle. The crank handle extends through an opening 30 in the rim of the drum and has a limited arcuate movement before it bears against the drum.

The crank handle is normally in a position relative to the drum as shown in Fig. 2 by virtue of the arrangement therewith of the spring-pressed latch through the seats 28 and pins 29. The latch is normally engaged with the rocking plate 18 and acts through its arm 22 to hold the drum 25 and drive shaft 10 against movement. In this position of adjustment the turret 7 cannot be moved.

When the crank handle is moved from the position of rest into engagement with the drum 25 it acts through one or the other of its pins 29 to disengage the latch from the locking plate. On continued rotation the handle acts directly on the drum and also through the latch 20-22 to produce rotation of the drum and through it the drive shaft 10, the gearing and the turret. The latch is rotatable with the drum and whenever pressure on the crank handle is released the latch is immediately moved by its spring into engagement with the locking plate and during this movement it restores the crank handle to the neutral position of rest.

I claim:

1. In an actuating mechanism, a gear case, a drive shaft mounted in the case and projecting therefrom, a locking plate coaxial with the drive shaft and fixed on the outside of the case, a drum fast on the projecting end of the shaft and having an opening in its rim, a handle freely mounted on the shaft and extending through the opening in the drum, a latch comprising pivotally connected arms one of which is guided on the drive shaft and the other of which has pivoted engagement with the drum, said other latch arm movable into and out of engagement with the locking plate, a spring normally holding the latch in engagement with the locking plate, seats on opposite sides of the latch arm on the drive shaft and pins on the handle each engageable with a seat of the latch arm for the

purpose of moving the latch out of engagement with the locking plate.

2. In an actuating mechanism, a gear case, a drive shaft mounted in the case and projecting therefrom, a locking plate coaxial with the drive shaft and fixed on the outside of the case, a drum fast on the projecting end of the shaft and having an opening in its rim, a handle freely mounted on the shaft and extending through the opening in the drum, a latch comprising pivotally connected

arms one of which is guided on the drive shaft and the other of which has pivotal engagement with the drum, said other latch arm movable into and out of engagement with the locking plate, a spring normally holding the latch in engagement with the locking plate, and means whereby the handle disengages the latch from the locking plate.

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