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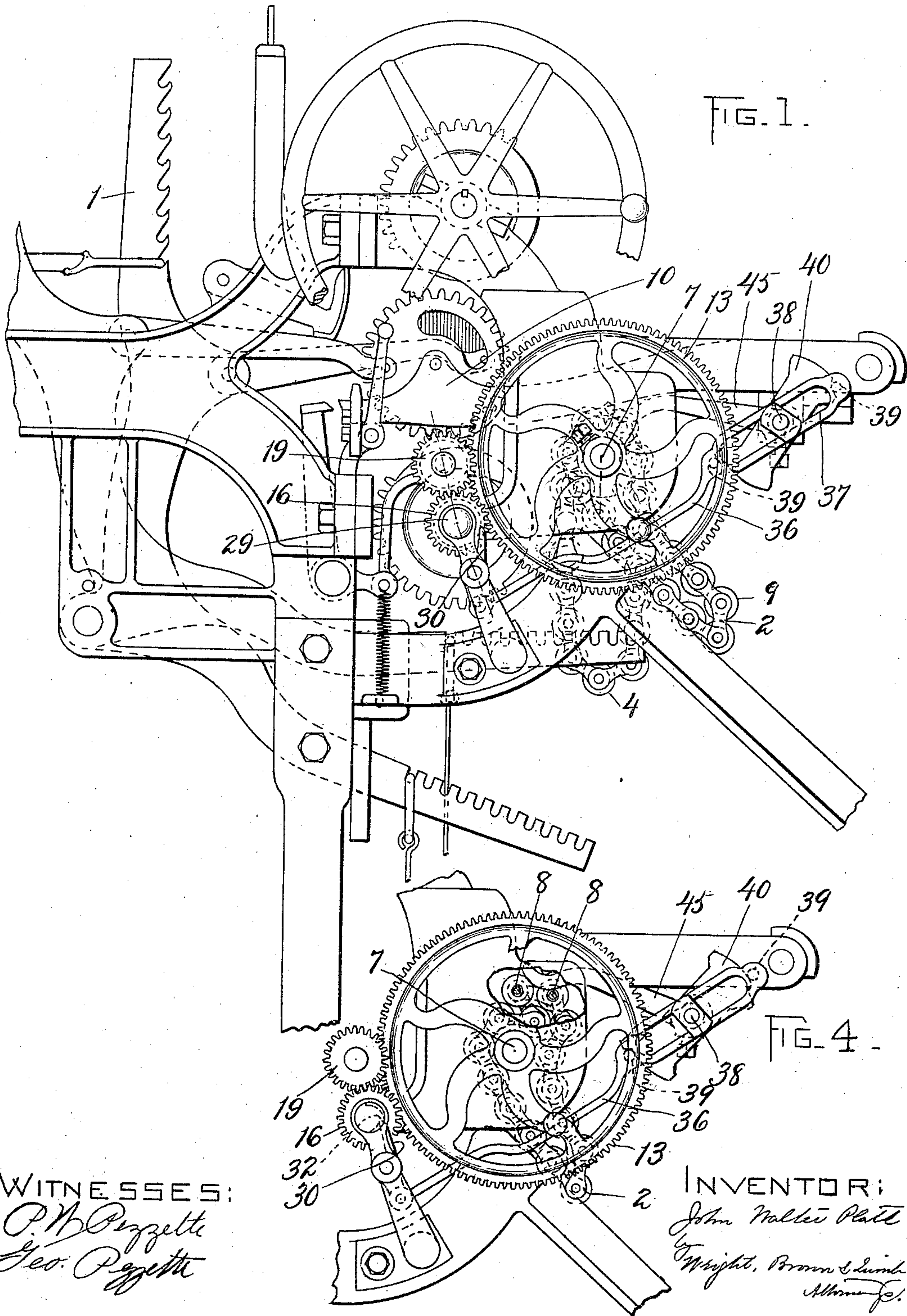
Patented Jan. 7, 1902.

J. W. PLATT.  
LOOM SHEDDING MECHANISM.

(Application filed Feb. 27, 1901.)

(No Model.)

4 Sheets—Sheet 1.



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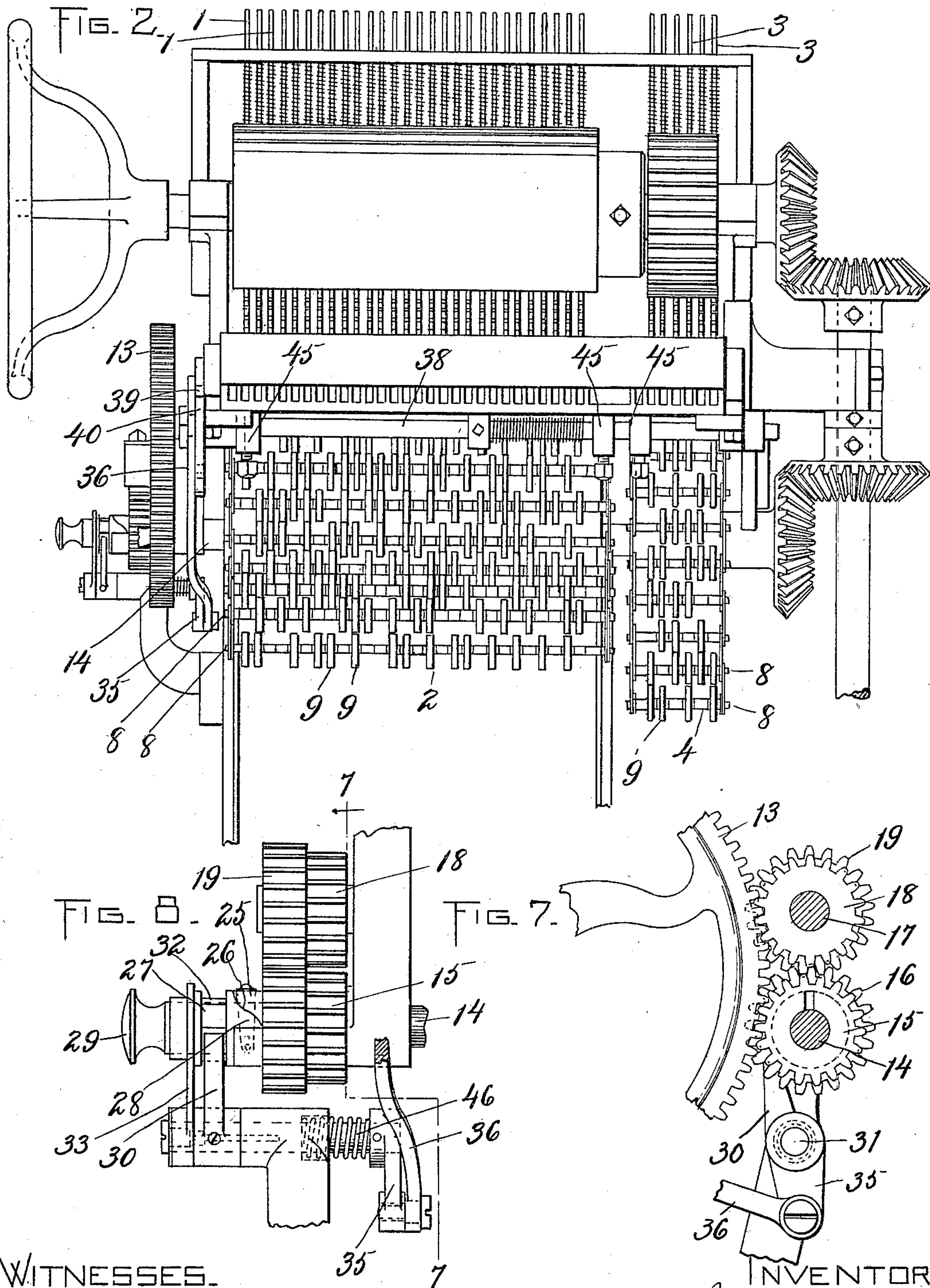
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4 Sheets—Sheet 2.



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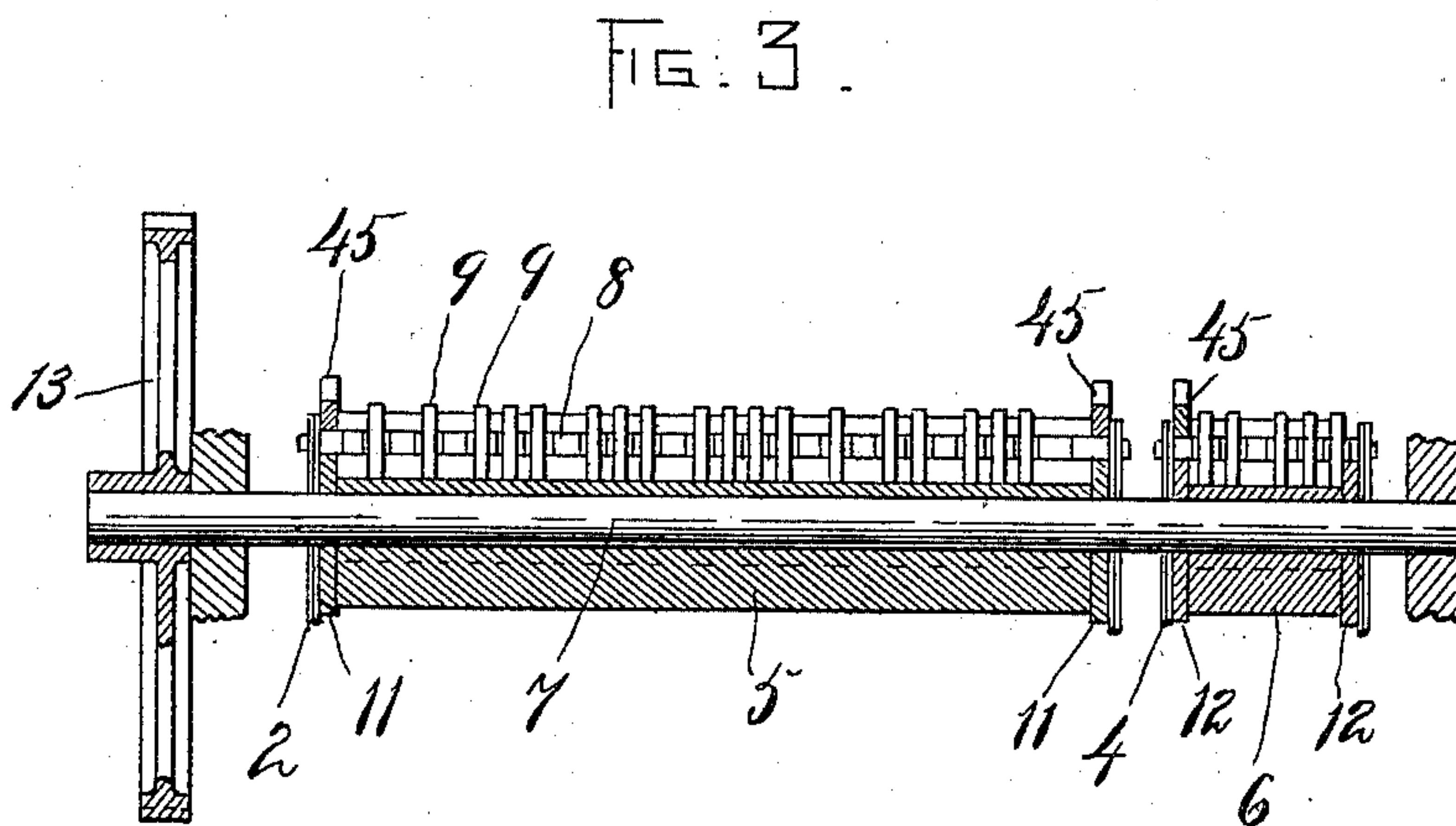
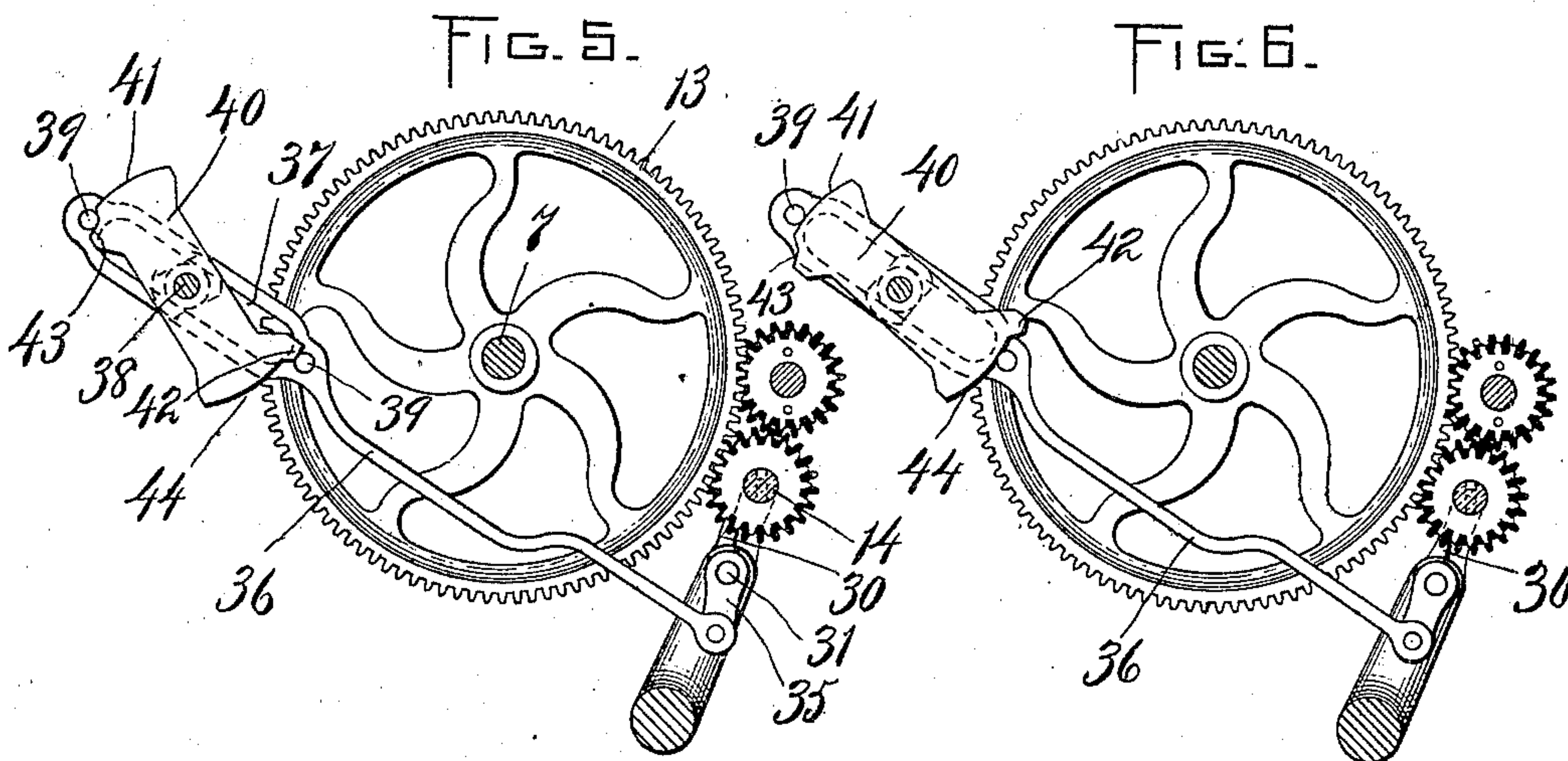
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(No Model.)

4 Sheets—Sheet 3.



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No. 690,873.

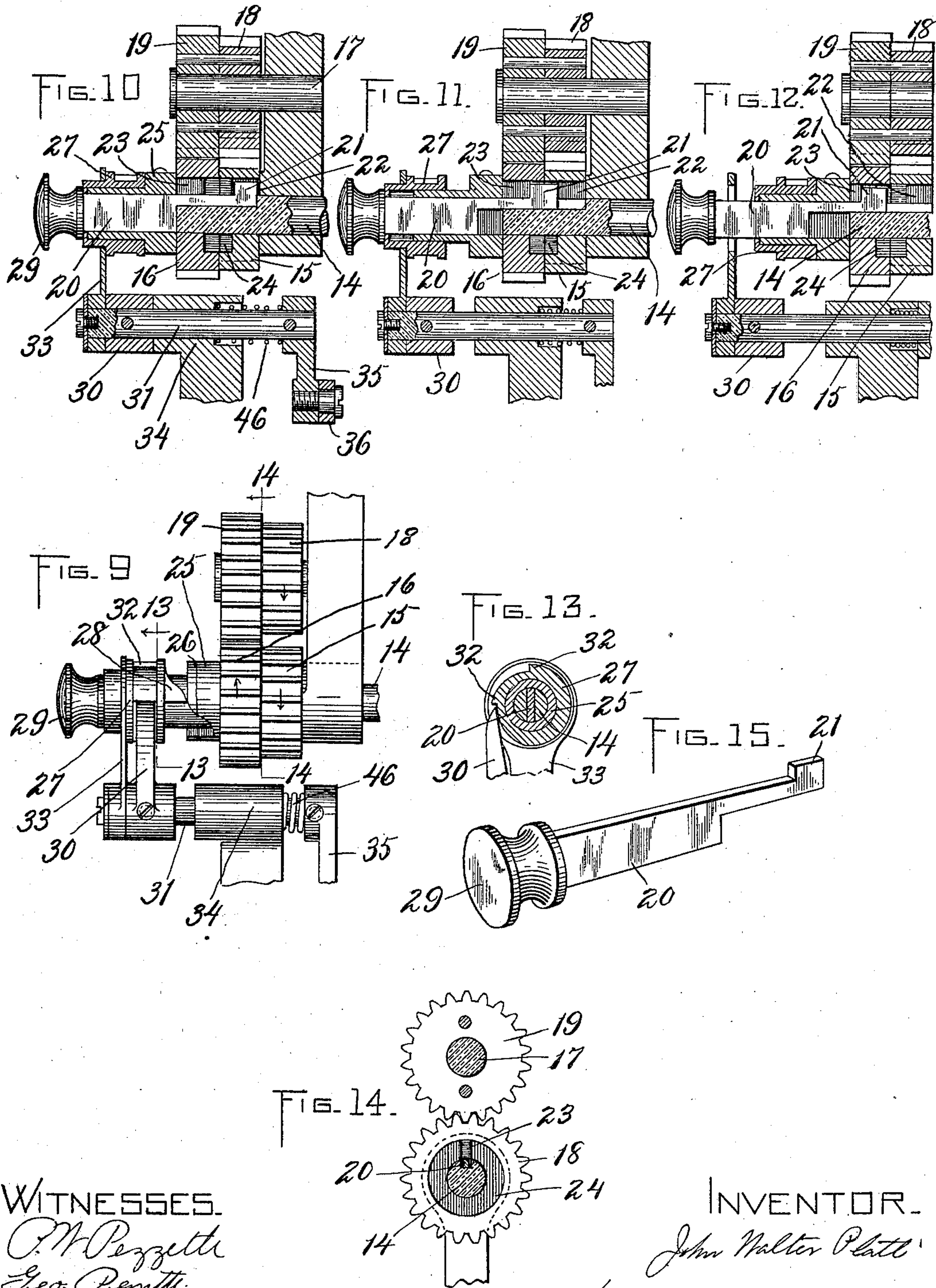
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4 Sheets—Sheet 4.



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# UNITED STATES PATENT OFFICE.

JOHN WALTER PLATT, OF DOVER, NEW HAMPSHIRE.

## LOOM SHEDDING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 690,873, dated January 7, 1902.

Application filed February 27, 1901. Serial No. 49,028. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN WALTER PLATT, of Dover, in the county of Strafford and State of New Hampshire, have invented certain new and useful Improvements in Loom-Shedding-Mechanism Stop-Motions, of which the following is a specification.

This invention relates to shedding mechanism for looms; and its object is to provide a stop-motion for arresting a pattern-chain when the latter becomes displaced. The invention relates wholly to the pattern-chain and its propelling mechanism, and the particular form of shedding mechanism, dobby, jacquard, or shuttle-controller to which it shall be applied, as well as the particular form of chain, is immaterial.

In the accompanying drawings I have illustrated the invention as embodied in a well-known form of loom-dobby, to which, however, it is in no wise confined.

Figure 1 represents a left-hand elevation of the dobby. Fig. 2 represents a front elevation. Fig. 3 represents a section on the shaft of the pattern-cylinder. Fig. 4 represents a detail side elevation, partly broken away, of the parts which include the invention. Fig. 5 represents a section showing the opposite side of said parts. Fig. 6 represents a similar section showing the parts in another position. Fig. 7 represents a detail section and elevation looking from the right of the chain-propelling gears and adjacent parts. Fig. 8 represents a front elevation of said parts. Fig. 9 represents a front elevation of the parts in another position. Figs. 10, 11, and 12 represent sectional views of said parts, illustrating different positions of the gear-locking key. Fig. 13 represents a section on the line 13 13 of Fig. 9. Fig. 14 represents a section on the line 14 14 of Fig. 9. Fig. 15 represents a detail perspective view of the key.

The same reference characters indicate the same parts in all of the figures.

Referring to the drawings, 1 1 represent a series of harness-levers controlled by a pattern-chain 2, and 3 3 represent a separate series of levers which may operate a shuttle-changing mechanism and which are controlled by a separate pattern-chain 4. These chains are mounted upon pattern-cylinders 5 6, secured to a shaft 7, and they are made up of

a series of flexibly-connected bars or rods 8 8, on which rollers 9 9 are arranged in accordance with the pattern of the cloth, the rollers and the spaces between them acting as selectors. Above the pattern-cylinders 5 6 are mounted a series of pivoted jacks 10 10, which operate as feelers and coact with the selectors on the pattern-chain in a well-known manner. The intermediate mechanism whereby the jacks 10 act upon the levers 1 3 need not be described, as it forms no part of my invention and may be varied at pleasure. The ends of the pattern-cylinders are provided with sprocket-wheels 11 12, between the teeth of which the bars 8 of the pattern-chains rest as the chains pass over the cylinders. Those portions of the bars which engage the sprocket-wheels are unprovided with selectors.

It frequently happens in shedding mechanism of this and a similar character that the bars or lags of the pattern-chains will be bunched or the chain will kink or become displaced upon the cylinder, whereby derangement of the dobby mechanism is often occasioned, necessitating stoppage of the loom and repairs or causing bad places in the cloth, which losses and others due to this cause it would be an advantage to obviate. Such a result I accomplish with the following mechanism.

13 is a large gear fast to the shaft 7 of the pattern-cylinders, and 14 is a driving-shaft constantly rotated in one direction. On the shaft 14 are two loose gears 15 16, of which the former meshes with gear 13. On a short fixed counter-shaft or stud 17 are two gears 18 19, fixed together, the former meshing with gear 13 and the latter with gear 16. Should the gear 15 be fixed to the shaft 14 and the gear 16 loose thereon, the pattern-cylinder shaft 7 will be rotated in its normal or forward chain-propelling direction by the motion of the shaft 14, transmitted through gear 15 to gear 13. Should the gear 16 be fast to the shaft 14 and the gear 15 loose thereon, the shaft 14 will operate through gears 16, 19, and 18 on the gear 13 to rotate the pattern-cylinder shaft in the reverse direction.

20 is a flat key slidingly mounted in a slot in shaft 14, so as to rotate therewith, and having a projection 21, adapted to engage



radial key-slots 22 23 in the respective gears 15 16. The key 20 has three positions. (Represented in Figs. 10, 11, and 12.) In one extreme position (shown in Fig. 10) its projection 21 occupies slot 22 and connects gear 15 to the shaft 14, gear 16 being then disconnected. In the other extreme position (shown in Fig. 12) projection 21 occupies slot 23 and connects gear 16 to shaft 14, the gear 15 being then disconnected. In the intermediate position of the key (shown in Fig. 11) projection 21 occupies an annular space or chamber 24, formed by recessing the opposed faces of the two gears, and both gears are then disconnected from the shaft.

25 is a collar fast to the shaft 14 and having a cam-recess 26.

27 is a sleeve loose on shaft 14 and having a cam-tooth 28, adapted to enter the recess 26. The end of sleeve 27 engages a knob or handle 29 on the end of key 20 and is adapted to move said key outwardly when the sleeve is displaced outwardly.

30 is an arresting-dog affixed to a short shaft 31 and adapted to have its free end moved by the oscillation of said shaft into or out of the path of a series of teeth 32 32, formed on sleeve 27. The shaft 31 has also affixed to it an arm or plate 33, engaged by sleeve 27, whereby the latter when moved outwardly carries with it the shaft 31, which is mounted to slide longitudinally in a bearing 34. This keeps the arresting-dog 30 in register with the teeth 32. A spring 46 tends to hold the shaft 31 in its inward position.

Also affixed to shaft 31 is a short arm or wrist 35, connected with the inner or lower end of a sliding rod 36. The latter is formed at its outer end with a slot 37, occupied by a shaft or stud 38, whereby the rod is guided in its longitudinal movements, and is provided with two pins 39 39, engaged by a cam member 40, fixed to shaft 38. This cam is provided with raised portions 41 42 and recesses 43 44 on its opposite ends, with which the pins 39 engage. When the pins are engaged by the projection 42 and the recess 43, as shown in Figs. 1 and 5, the rod 36 will be moved inwardly, so as to bring the end of dog 30 out of the path of the teeth 32 on sleeve 27. When the projection 41 and the recess 44 engage the pins 39, the dog will be moved in an opposite direction into the path of said teeth. Also fixed to shaft 38 are a series of arms or fingers 45, whose free ends overlie the sprocket-wheels 11 12. The arms 45 are here shown as three in number, two for the large chain 2 and one for the small chain 4. During the normal operation of the dobby the ends of the arms 45 rest on or near the peripheries of the sprocket-wheels 11 12, between the teeth of which the bars 8 8 of the chains are lodged, and the cam 40 and dog 30 have the positions represented in Figs. 1 and 5, the dog 30 being out of the path of the teeth on sleeve 27 and the projection 28 being lodged in the recess 26, as shown in Fig. 8.

The key 20 will then be engaged with gear 15 and the pattern-chains will be rotated in a forward direction. If for any reason the chains become radially displaced on the pattern-cylinders, causing the rods 8 to rise out of their proper positions, the ends of the arms 45 will be elevated and the dog 30 will be swung into the path of the teeth 32 on sleeve 27, as shown in Figs. 4, 6, and 13. This will cause the arrest of sleeve 27, and the continued rotation of the collar 25 will force sleeve 27 outwardly and bring the key 20 into its intermediate position, (shown in Fig. 11,) thereby disconnecting gear 15 from shaft 14 and causing the pattern-cylinders to stop rotating. This action takes place immediately and before any of the other parts of the dobby can become deranged. It is also timed by a proper relation of the teeth 32 to the dog 30 and its operating parts so as to occur between the cycles of the loom and when none of the harnesses or other parts are in the midst of an incomplete movement. At any time when it is desired to do so the key 20 may be pulled out by hand with the knob or handle 29 to the intermediate position, so as to stop the pattern-chains, and by still further pulling it out to the outer position (shown in Fig. 12) the reverse-gear may be thrown in and the chains run backward.

The term "pattern-chain" employed in the claims includes any pattern-surface composed of links or having the general nature of a chain.

I claim—

1. In loom shedding mechanism, the combination of a pattern-cylinder, a pattern-chain mounted thereon, and a device movable by radial displacement of the chain on the cylinder for stopping said chain.

2. In loom shedding mechanism, the combination of a pattern-chain having a series of selectors, a rotary propelling-support therefor, a series of feelers coacting with the chain opposite said support, and a device movable by displacement of the chain on said support for stopping the chain.

3. In loom shedding mechanism, the combination of a pattern-chain, chain-propelling mechanism, a member movable to throw said mechanism out of action, an oscillating finger movable by displacement of the chain, a cam on the axis of said finger, and a sliding rod operated by said cam and operatively connected to said member.

4. In loom shedding mechanism, the combination of a pattern-chain, chain-propelling mechanism, a normally rotating member adapted, when arrested, to throw said mechanism out of action, an arresting member, and a device movable by displacement of the chain for throwing said arresting member into arresting position.

5. In loom shedding mechanism, the combination of a pattern-chain, a driving-shaft, a chain-propelling gear thereon, a key movable to connect said gear with and disconnect



it from the shaft, and means operated by displacement of the chain for throwing said key into disconnecting position.

5 6. In loom shedding mechanism, the combination of a pattern-chain, a driving-shaft, a chain-propelling gear thereon, a key movable longitudinally of the shaft to connect said gear with and disconnect it from the shaft, a cam member fixed to the shaft, a complementary normally rotating cam-sleeve loose on the shaft and adapted when arrested to slide the key into disconnecting position, and means operated by displacement of the chain for arresting said sleeve.

15 7. In loom shedding mechanism, the combination of a pattern-chain, a unidirection driving-shaft, two gears thereon adapted to propel the chain in opposite directions, a sliding key having two extreme positions in which it connects the respective gears to the shaft and an intermediate position in which it dis-

connects both of said gears from the shaft, a handle on said key whereby it may be moved manually into position to connect the reversing-gear and means operated by displacement of the chain for moving the key into position to disconnect the other gear. 25

8. In a loom shedding mechanism, the combination of a pattern-chain, mechanism to operate the same, and a device for stopping the chain, said device being unmoved during the normal running of the chain, but adapted to be moved by the engagement of the chain therewith so as to stop the chain when the latter is displaced with respect to its operating mechanism. 30 35

In testimony whereof I have affixed my signature in presence of two witnesses.

JOHN WALTER PLATT.

Witnesses:

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