

(No Model.)

2 Sheets—Sheet 1.

J. T. HAMBAY.

MECHANISM FOR OPERATING SIGNALS.

No. 408,616.

Patented Aug. 6, 1889.

FIG.1.

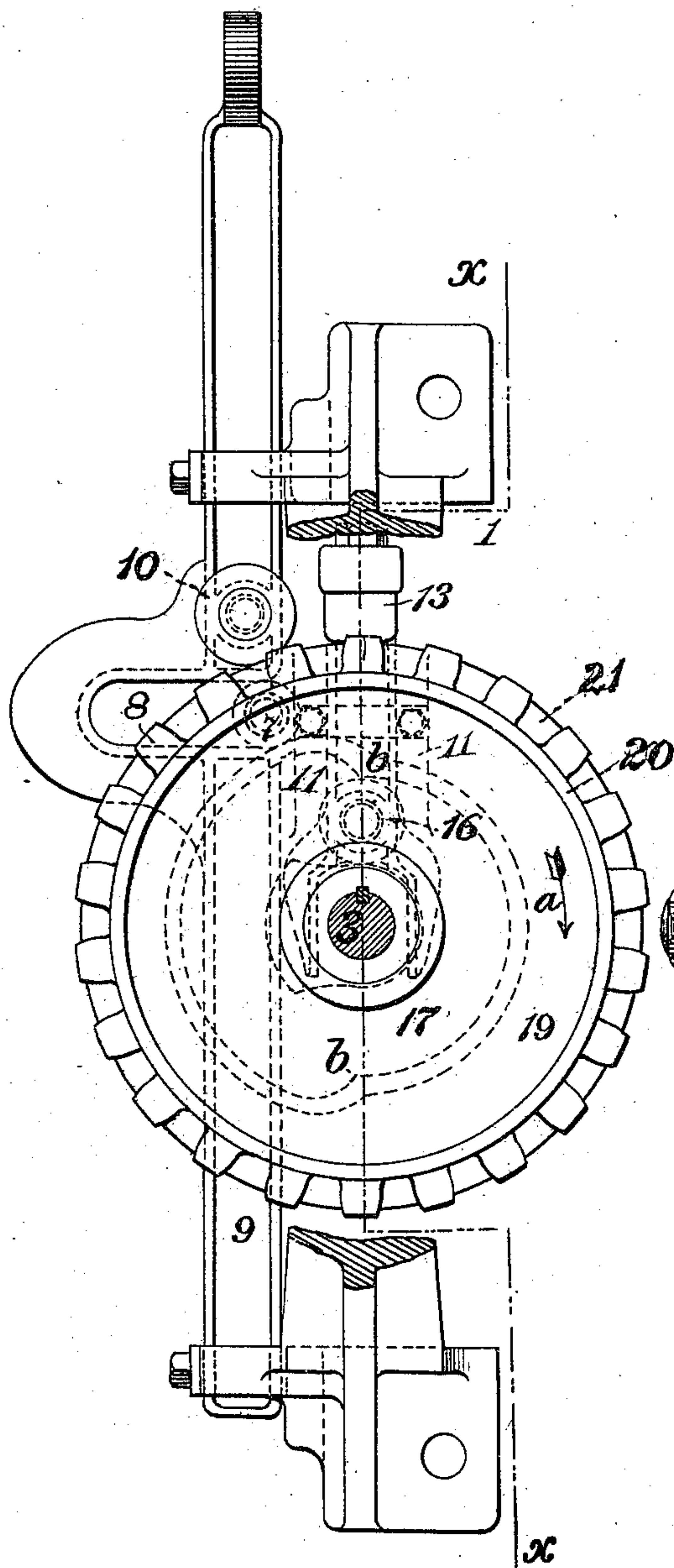
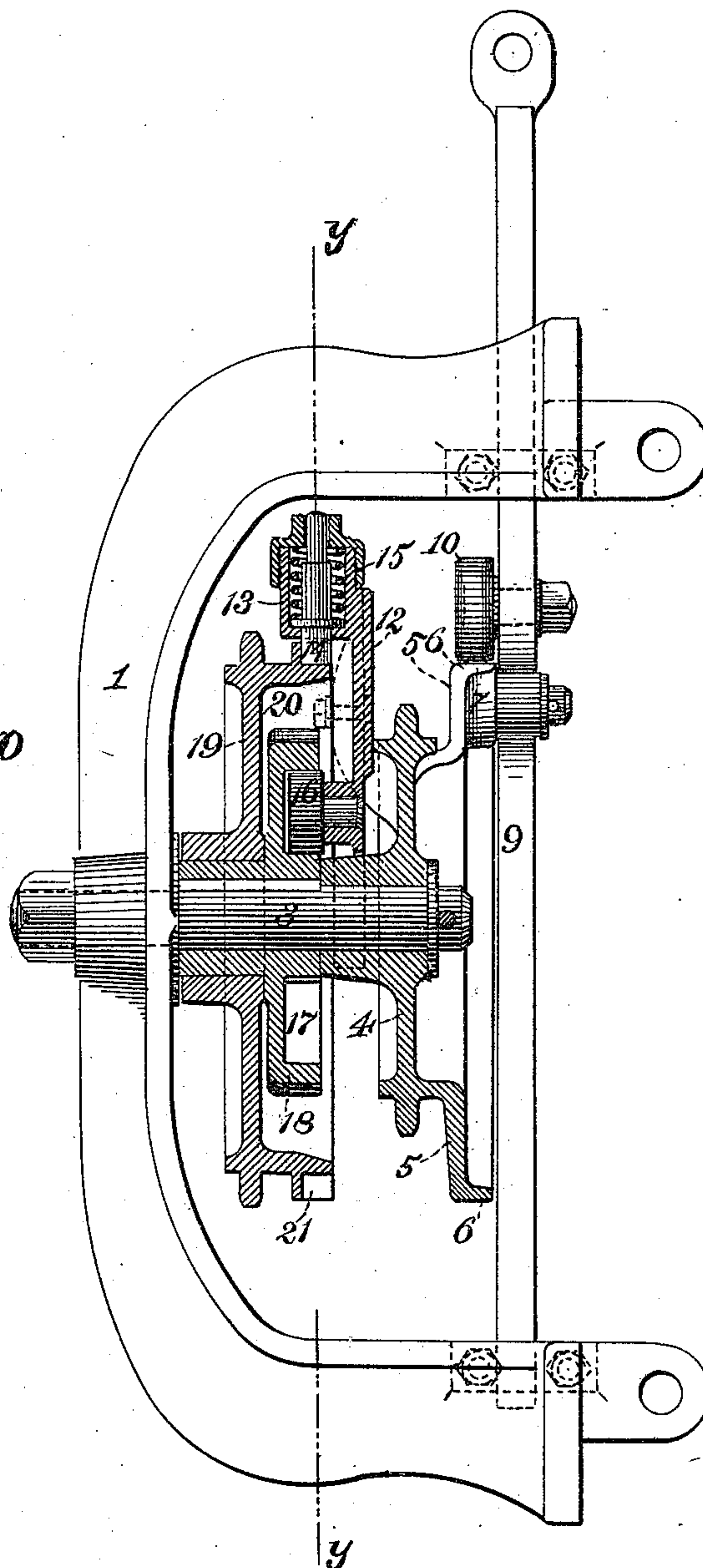


FIG. 2.



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(No Model.)

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FIG. 3.

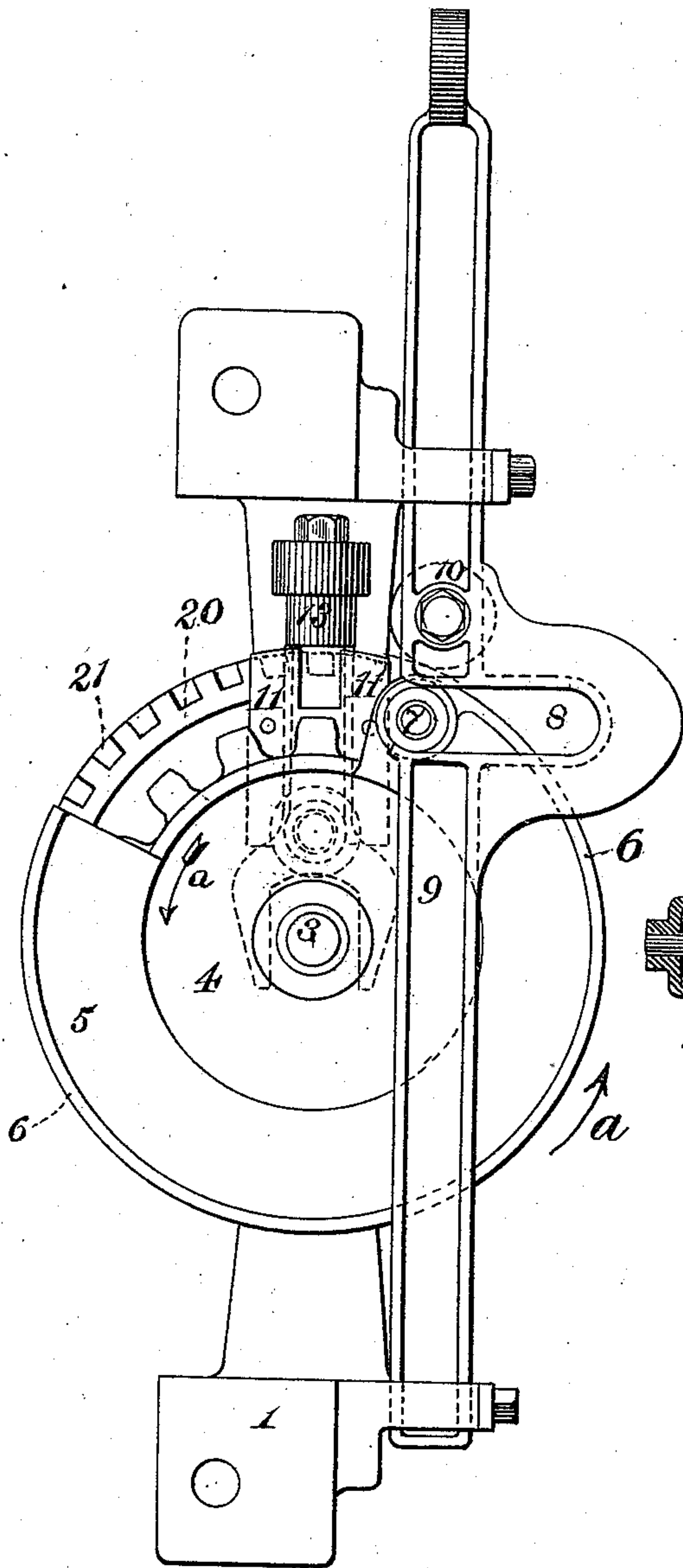
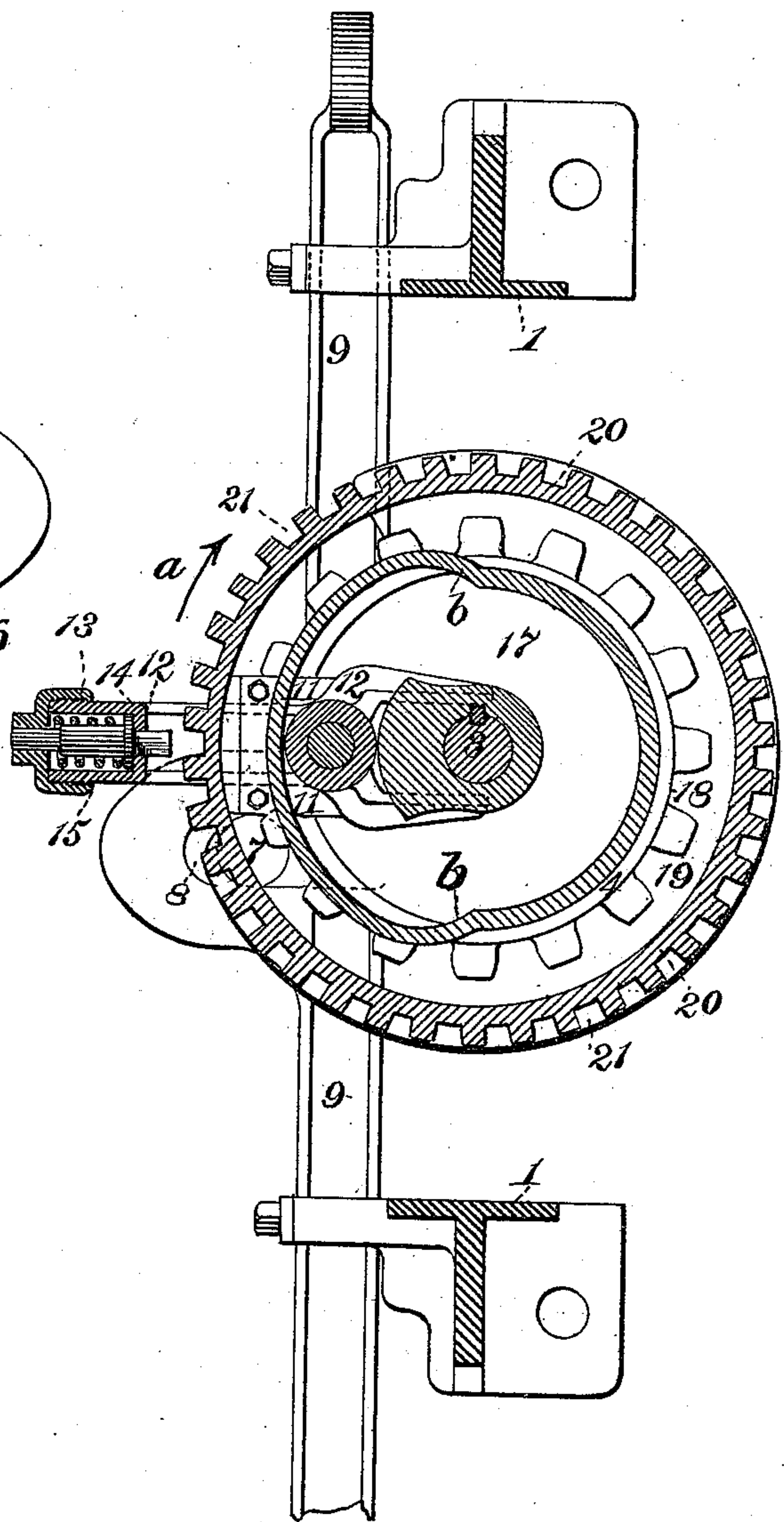


FIG. 4.



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UNITED STATES PATENT OFFICE.

JAMES T. HAMBAY, OF WILKINSBURG, ASSIGNOR TO THE UNION SWITCH AND SIGNAL COMPANY, OF PITTSBURG, PENNSYLVANIA.

MECHANISM FOR OPERATING SIGNALS.

SPECIFICATION forming part of Letters Patent No. 408,616, dated August 6, 1889.

Application filed March 30, 1889. Serial No. 305,343. (No model.)

To all whom it may concern:

Be it known that I, JAMES T. HAMBAY, a citizen of the United States, residing at Wilkinsburg, in the county of Allegheny and State of Pennsylvania, have invented or discovered certain new and useful Improvements in Mechanism for Operating Signals, of which improvements the following is a specification.

The invention described herein relates to certain improvements in mechanism for operating signals, and has for its object a construction of apparatus wherein the distant-signal is operated by or from the mechanism employed for shifting the home signal, the mechanism being so constructed as to insure the movement of the home signal to "safety" prior to clearing the distant signal and the return of the distant signal to "danger" prior to a corresponding movement of the home signal.

In general terms, the invention consists in the construction and combination of mechanical devices or elements, all as more fully hereinafter described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a view in front elevation of my improved mechanism, a portion of the frame being broken away. Fig. 2 is a sectional view, the plane of section being indicated by the line $x x$, Fig. 1. Fig. 3 is a view in rear elevation of the same; and Fig. 4 is a sectional view on the line $y y$, Fig. 2.

In the practice of my invention I secure a frame 1, by suitable bolts, to the home-signal post. On a pin 3 secured in the frame 1 is loosely mounted a sprocket-wheel 4, operated by a chain from the signal-cabin in the usual manner. On the rear side of the sprocket-wheel is formed a plate 5, provided with an outwardly-projecting flange 6, and to said plate is secured a pin 7, provided with a friction-roller, as shown in Figs. 2 and 3, and adapted to engage a horizontal slot 8 in the signal-bar 9 during a portion of the rotation of the sprocket-wheel 4. As shown in Fig. 3, the pin 7 is located at one end of the flanged plate 5, which does not extend entirely around the sprocket-wheel, a recess being formed in said plate for the reception of the roller 10, secured to the signal-bar and arranged to rest

upon the flange 6 and support the signal-bar in its raised position after the pin 7 has moved out of the slot 8, as will be more fully hereinafter set forth.

On the front side of the sprocket-wheel 4 I form or fix guideways 11 for the reception of a slide 12, having a socket 13 at its outer end for the reception of the latch 14, which is held in normal position by a spring 15 interposed between a shoulder on the latch and a cap on the socket 13. The slide 12 is shifted radially by means of a friction-roller 16 on the lower end of the slide and a cam-groove 17 formed in the face of a stationary disk 18, secured, as shown, upon the pin 3. On the hub of the disk 18, or directly upon the pin 3, is loosely mounted a sprocket-wheel 19, around which is passed a chain leading to the distant signal. On the rear face of the sprocket-wheel 19 I form a rim 20, having a series of pockets or recesses 21 for the reception of the latch 14, as will be hereinafter described.

In Fig. 4 the apparatus is shown in normal position. If now the sprocket-wheel 4 be rotated in the direction of the arrow a , the pin 7, engaging the slot 8 in the signal-bar, will raise the latter, thereby shifting the signal to "safety." It will be observed that during this rotation of the sprocket-wheel and the consequent upward movement of the signal-bar the friction-roller 10 on said bar will enter the recess in the plate 5, and that during said movements the roller is gradually raised out of the recess, and that as the pin 7 moves out of engagement with the slot 8 the flange 6 passes under the roller 10 and supports the same during the further rotation of the sprocket-wheel 4.

By reference to Fig. 4 it will be seen that during the movement of the sprocket-wheel 4 the slide 12, carried by the sprocket-wheel, is not shifted radially, the disk 18, with its groove 17, being constructed and adjusted to that end; but as soon as the sprocket-wheel 4 reaches that point in its rotation before referred to, where the pin 7 leaves the slot 8 and the flange 6 passes under the roller 10, the roller 16 engages the inclined portion b of the outer wall of the groove 17 in the stationary disk 18 and is forced inwardly, and

with it the slide 12 and latch 14, the latter into engagement with one of the pockets 21 in the rim 20 of the sprocket-wheel 19, thereby locking the sprocket-wheel 19 to and causing it to rotate with the sprocket-wheel 4. The sprocket-wheel 19 being connected by a chain or otherwise with the distant signal, the latter is thus shifted to "safety." By reference to Figs. 1 and 4 it will be observed that the groove 17 of disk 18 is so constructed that after the slide 12 has been drawn in by the shoulder *b* it is held in such position during the further rotation of the sprocket-wheels.

It sometimes happens that as the slide 12 is moved inwardly the latch strikes upon the partition between adjacent pockets; hence, in order to prevent the latch taking so firm bearing upon such partition as will cause the sprocket-wheel 19 to move around, the spring 15 is employed to hold the latch yieldingly in normal position, and permit of its sliding off of the partition into one of the pockets.

I claim herein as my invention—

1. In a mechanism for shifting home and distant signals, the combination of a wheel provided with means for operating the home-signal, a wheel provided with means for operating the distant signal, and a lock for so connecting said wheels as to cause them to rotate together, substantially as set forth.

2. In a mechanism for shifting home and distant signals, the combination of a wheel

provided with means for operating the home signal, a wheel provided with means for operating the distant signal, and a lock operated by the home signal wheel for locking said wheels together, substantially as set forth.

3. In a mechanism for shifting home and distant signals, the combination of a horizontally-slotted signal-bar having a friction-roller 10 mounted thereon, a wheel provided with a pin for engaging the slot in the signal-bar and with a flange for engaging the friction-roller 10, a wheel provided with means for operating the distant signal, and a lock for connecting said wheels, substantially as set forth.

4. In a mechanism for shifting home and distant signals, the combination of a wheel for operating the home signal, a radially-moving slide having a latch mounted on said wheel, a stationary disk having a cam-groove formed therein adapted to engage and operate the slide, and a sprocket-wheel for operating the distant signal having pockets for the reception of the latch, substantially as set forth.

In testimony whereof I have hereunto set my hand.

JAMES T. HAMBAY.

Witnesses:

DARWIN S. WOLCOTT,

W. B. CORWIN.