

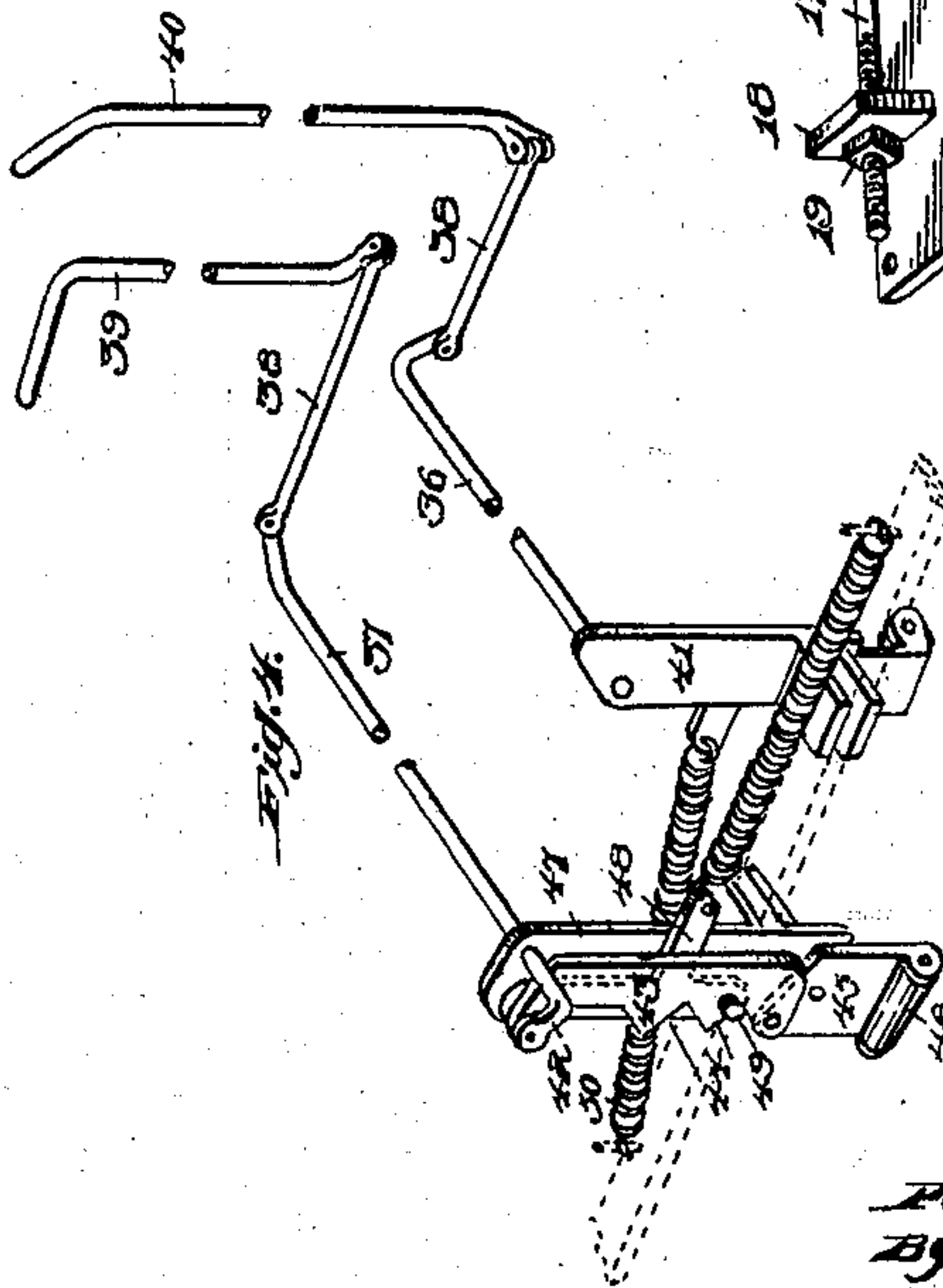
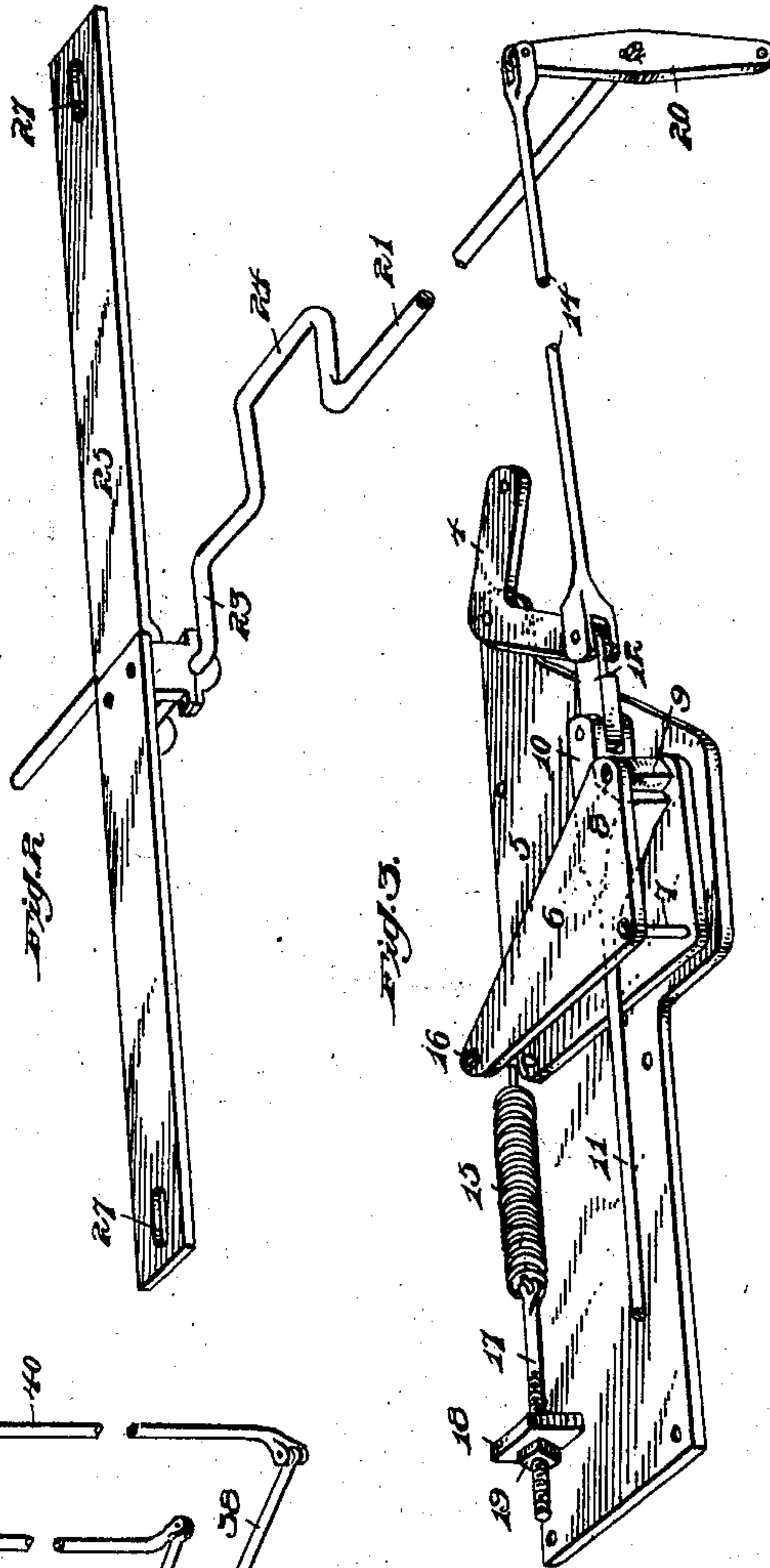
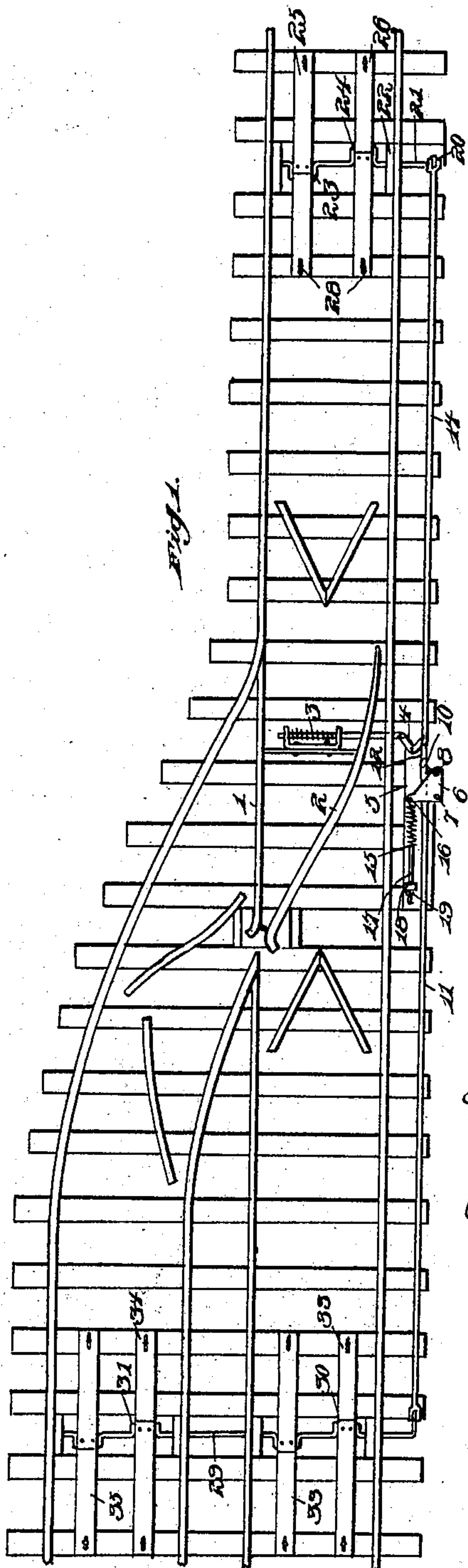
No. 693,185.

Patented Feb. 11, 1902.

P. L. SWANK.
SWITCH THROWING DEVICE.

(Application filed Oct. 17, 1901.)

(No Model.)



Witnesses:

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UNITED STATES PATENT OFFICE.

PETER L. SWANK, OF CONEMAUGH, PENNSYLVANIA.

SWITCH-THROWING DEVICE.

SPECIFICATION forming part of Letters Patent No. 693,185, dated February 11, 1902.

Application filed October 17, 1901. Serial No. 78,997. (No model.)

To all whom it may concern:

Be it known that I, PETER L. SWANK, a citizen of the United States of America, residing at Conemaugh, in the county of Cambria and State of Pennsylvania, have invented certain new and useful Improvements in Switch-Throwing Devices, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to certain new and useful improvements in switches, and while it is particularly adapted for use as a switch for steam-railroads, yet may be employed in connection with street-railways and the like.

15 The primary object of the invention is to construct a switch that may be conveniently operated from the locomotive or car; and to this end it consists in connecting the switch-tongues to rods arranged at the side of the track and connecting these rods to trans-
20 versely-extending shafts or cranks arranged underneath the rails of the track and having oppositely-disposed bell-cranks to which are connected depressible actuating-bars adapted
25 to be engaged by the throwing mechanism carried by the locomotive or car.

In describing the invention in detail reference is had to the accompanying drawings, forming a part of this specification, and
30 wherein like numerals of reference indicate corresponding parts throughout the several views, in which—

Figure 1 is a top plan view of my improved switch applied in position in the track. Fig.
35 2 is a detail perspective view of one of the pivoted actuating-bars and a part of one of the actuating shafts or cranks to which the bars are connected. Fig. 3 is a detail perspective view of the locking mechanism ar-
40 ranged adjacent to the switch-tongue and to which the throwing-rods are connected. Fig. 4 is a detail perspective view, partly broken away, of the trip mechanism which is adapted to be connected to the locomotive or car.

45 In the accompanying drawings, showing my invention, I employ the ordinary switch-rails 1 and 2, which are pivoted at their one end in the usual manner, and in Fig. 1 these switch-rails are shown in a closed position, the main track being open. The rails are
50 connected together by means of a bridle 3, the extending rod of which is connected at

its outer end to a bell-crank 4, pivoted at one end to the plate 5, which is mounted upon the cross-ties outside of the rails. This plate 55
5 has pivoted thereon a locking device which consists of a substantially triangular-shaped keeper 6, composed of two plates spaced apart at the corners by studs or rivets, one of which—
60 that indicated by the numeral 7—acts as a pivot for the keeper by being extended into the plate 5. The stud or pin 8 at one corner of this keeper carries a bushing 9, which is substantially triangular in cross-section and is adapted to be engaged by the dog 10. This
65 dog 10 has an operating-rod 11 connected to its one end and at its other end carries a short link 12, which fastens onto the one end of the bell-crank 4, together with the end of the operating-rod 14. The keeper 6 is held in its
70 normal position by means of a spring 15, having a hook on one end which engages in the stud 16 at the corner of the keeper, and the other end of this spring is connected to an adjusting-bolt 17, which passes through the
75 lug 18, carried by the plate 5. This rod 17 is threaded and has a nut 19 mounted thereon, so as to adjust the tension of the spring 15. The rod 14 extends outwardly a slight
80 distance and has a bifurcated end which is pivotally connected to the rock-arm 20 and is mounted upon the end of the rod or shaft 21. This rod or shaft 21 extends underneath the
85 rails of the track and is suitably journaled in bearings 22. It is provided with oppositely-disposed bell-cranks 23 24, to which the depressible actuating-bars are pivotally connected. These actuating-bars 25 26 are each
90 formed in two sections hinged together, with slots 27 near the outer ends of the sections, these slots receiving the headed pins or screws 28, which are secured in the cross-ties. The rod 11 is bifurcated at its outer end and is connected to the rod or shaft 29, which extends underneath the rails of both the main
95 and side track. This rod has oppositely-disposed bell-cranks 30 located on that portion of the rod that is between the rails of the main track and, like bell-cranks 31, on that portion of the rod that is between the rails
100 of the side track. The bell-cranks 30 have connected thereto depressible actuating-bars 32 33, and the bell-cranks 31 have connected thereto like actuating-bars 34 35, these bars

32, 33, 34, and 35 being identical in construction with the bars 25 26, as shown in detail in Fig. 2 of the drawings. The rod or shaft 29 is journaled in bearings 22, located between the cross-ties in the same manner as the rod or shaft 21.

The switch-rails have been placed in the closed position (shown in Fig. 1) by the depressing of either the bar 26 or bar 32, according to the direction in which the train was moving on the main track. These bars are adapted to be engaged, so as to be depressed, by suitable mechanism suspended from the locomotive or car, and a convenient and practical device for operating the bars is shown in detail in Fig. 4 of the drawings. This consists of two rods 36 37, connected at their one end by links 38 to throwing-levers 39 40, which are adapted to extend upwardly into position where they may be operated by the engineer or motorman. The rod 36 has its other end journaled in a standard 41, suitably connected to the framework of the locomotive or car. The rod 37 has a crank end 42, which carries a crank-pin for supporting a catch 43, having notches 44 at its one edge. This catch is pivotally connected to a throwing-dog 45, the lower end of which may be provided with a roller 46, as shown in Fig. 4. The throwing-dog is pivoted to a standard 47, through which the rod 37 extends. An L-shaped lever 48 is pivotally suspended from the standard 47 and carries a pin 49, adapted to engage the notches 44 of the lever 43. When the lever 39 is operated, the crank end 42 of the rod 47 being thrown upwardly into position shown in Fig. 4 draws the catch 43 upwardly and throws the dog 45 downward in the position shown in Fig. 4, so that the same may engage with one of the actuating-bars located in the bed of the track. The L-shaped lever 48 is connected by a spring 50 to the pin or stud suitably located on the truck of the locomotive or car. The standard 41 carries a throwing-dog similar to that above described and is adapted to be operated by the lever 40 and rod 36 so as to be moved in a vertical position or in a horizontal position in the same manner as the throwing-dog 45. Assuming the train to be passing toward the left upon the main track, with the switch in position shown in Fig. 1, the dog 45 will be moved to the vertical position, as shown in Fig. 4, so as to engage with the actuating-bar 25. When this dog engages this bar, the latter is forced downwardly into engagement with the cross-ties, thus operating the shaft or rod 21, and through the connections of the rod 14 the crank 4, with the bridle, actuates the switch-tongues, so as to open an entrance to the switch.

It will be observed that one of the dogs 45 is adapted to engage the bars 26 and 32, while the other dog is adapted to engage the bars 25 33 in the main track, and in the side track one of the dogs engages the bar 34 and the

other dog the bar 35. By the bell-cranks being set opposite it will be observed that when either the bars 26, 32, or 34 are depressed bars 25, 33, and 35 will be elevated, and vice versa. It will also be observed that various forms of devices can be constructed for attachment to the locomotive or car for operating the depressible bars so as to throw the switch open, the illustration in this application, however, being a practical form of construction, and in the practice of the invention it will be noted that various changes may be made in the details of construction without departing from the general spirit of my invention.

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

1. In a switch, the combination with the movable switch-tongues having a bridle connected thereto, of depressible actuating-bars, each composed of two sections hinged together at their meeting ends, said bars being arranged in pairs between the rails of the track, the other ends of each of said sections having slots therein, headed pins carried by the ties for engagement in said slots, means for mounting said bars whereby when one bar is depressed the other bar will be raised, a bell-crank carried by the bridle, a connection between said bell-crank and said means, spring-pressed locking means connected to said connection, and means for actuating said bars from a moving train or car, substantially as described.

2. In a switch, the combination with the movable switch-tongues having a bridle connected thereto, of depressible actuating-bars arranged in pairs at each end of the side track, each of said actuating-bars being composed of two sections hinged at their one ends and having slots formed in their other ends with headed pins operating in the slots, each pair of said bars being mounted on oppositely-disposed bell-cranks, a connection between said bell-cranks, and said bridle, a plate having a spring-pressed locking device pivotally mounted thereon, and a connection between the bell-cranks of the bars on the opposite end of the main tracks and the side track with the first-named connection for engaging said locking device, substantially as described.

3. In a switch, the combination with the main and the side track and movable switch-tongues connected to a bridle, of actuating-bars arranged in pairs at opposite ends of the main track and one pair in the side track, each of said bars comprising two sections hinged together at their one ends and having slots in their other ends, headed pins carried by the cross-ties and engaging in said slots, oppositely-disposed bell-cranks upon which each of said pair of bars are mounted, a bell-crank connected to said bridle, connections between said oppositely-disposed bell-cranks

on the side and main tracks and said bell-
crank, a spring-pressed pivoted locking de-
vice, a dog carried thereby, a bushing car-
ried by the said locking device for engage-
5 ment with said dog, and means for actuating
said bars from a moving train or car, sub-
stantially as described.

In testimony whereof I affix my signature
in the presence of two witnesses.

PETER L. SWANK.

Witnesses:

JOHN NOLAND,
E. E. POTTER.