

No. 865,866.

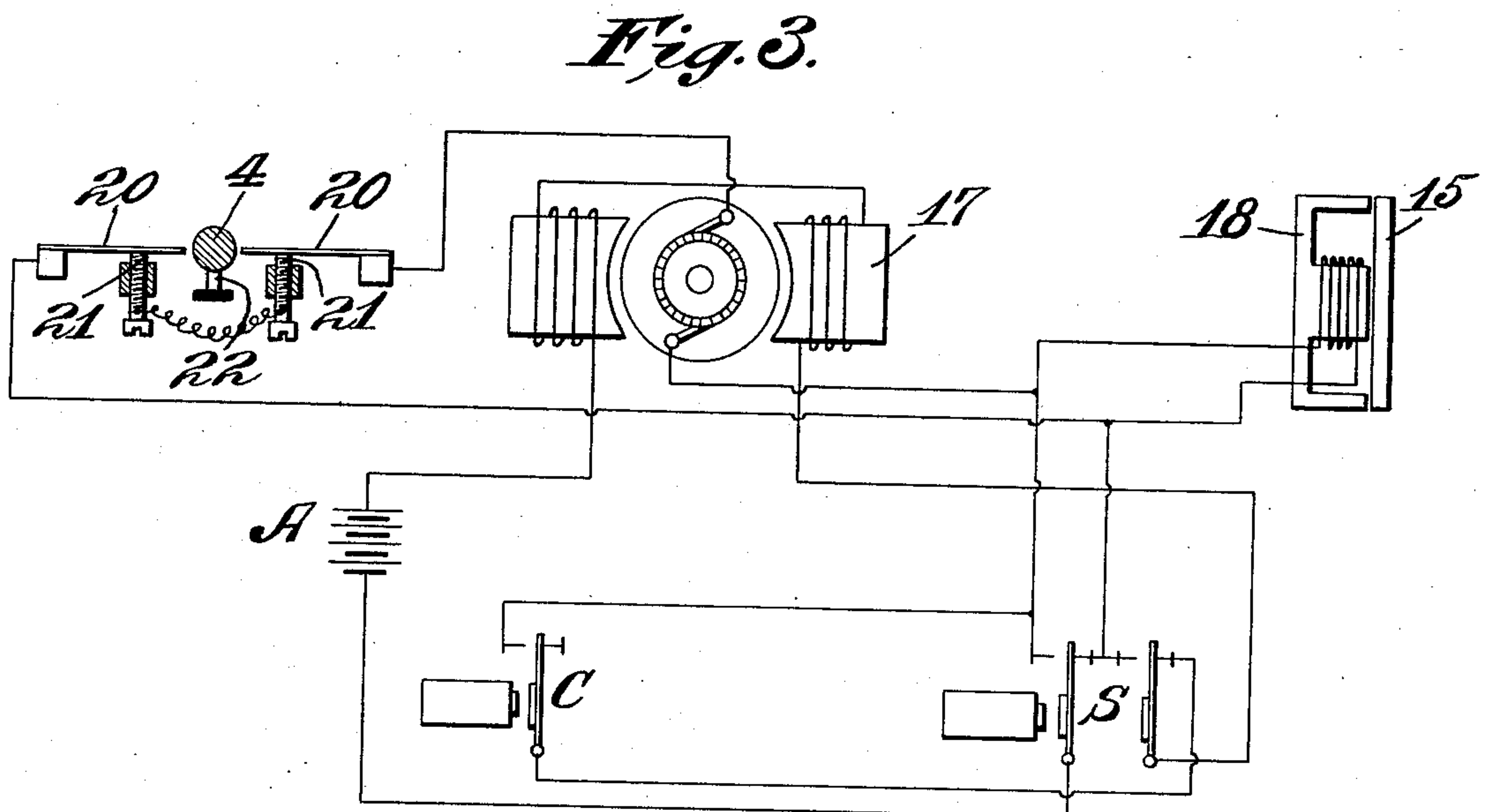
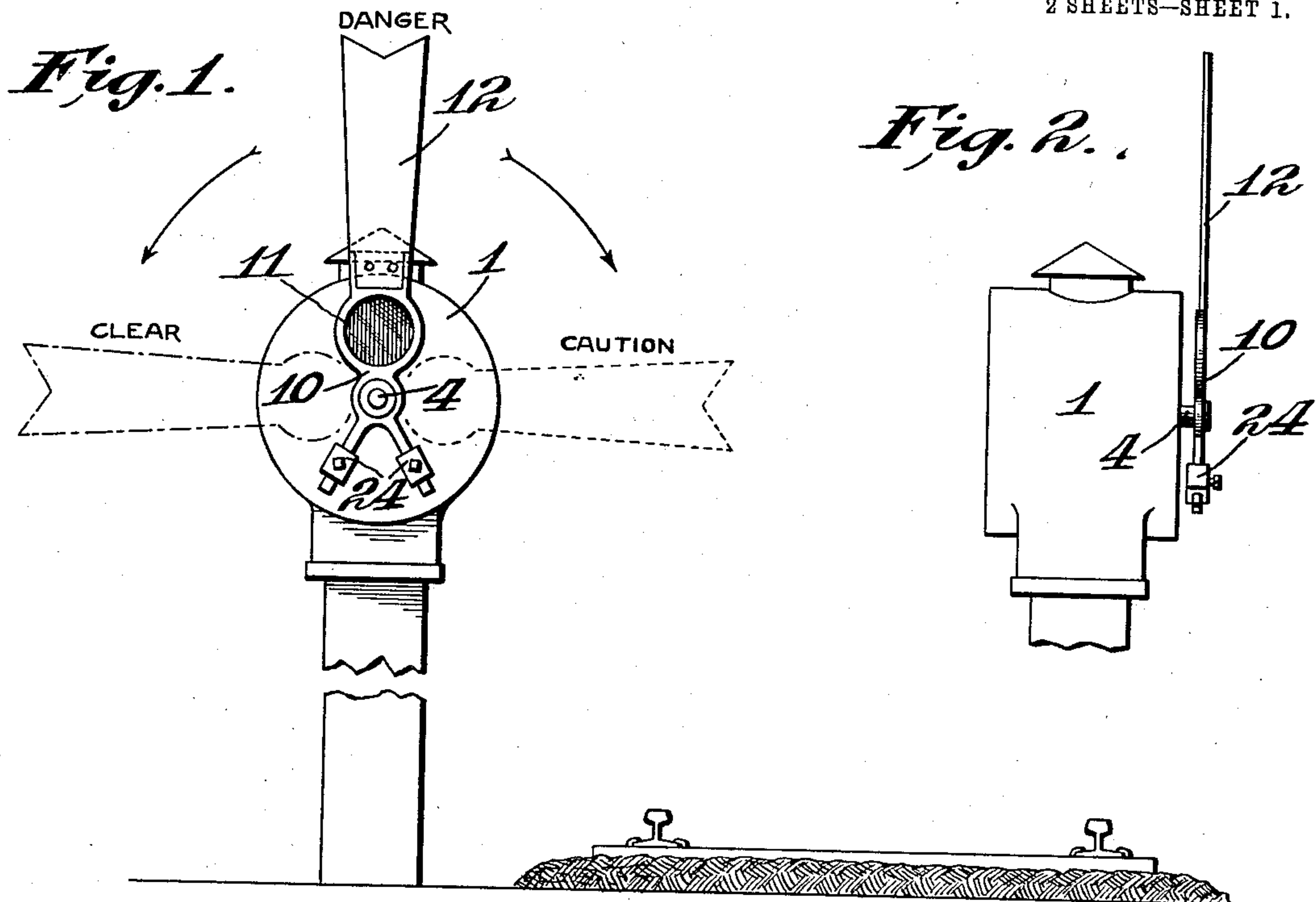
PATENTED SEPT. 10, 1907.

P. I. CHANDEYSSON.

BLOCK SIGNAL.

APPLICATION FILED DEC. 23, 1905.

2 SHEETS—SHEET 1.



Witnesses:

G. A. Pennington
John F. Wixford.

Inventor:
Pierre J. Chaudysson,
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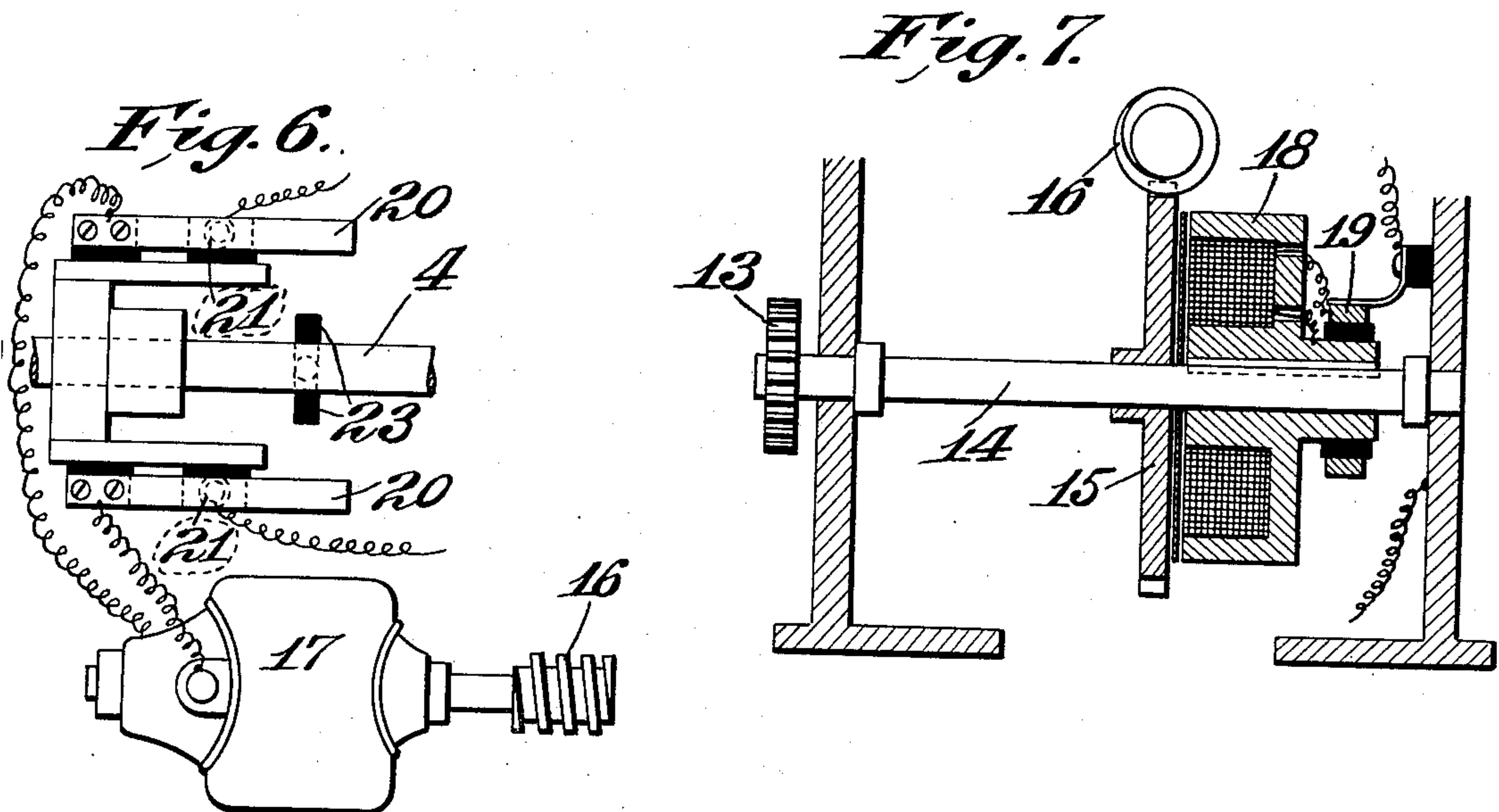
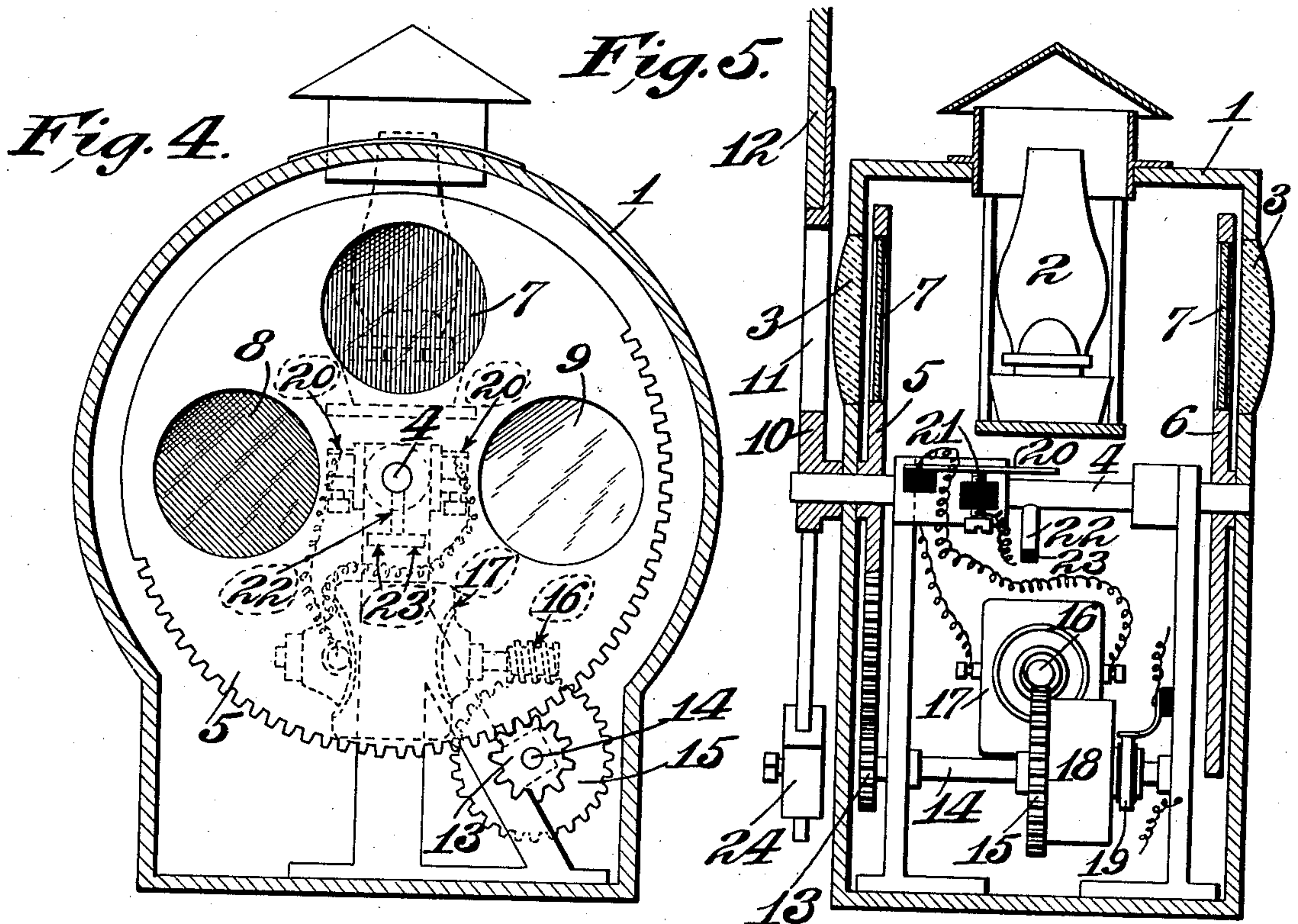
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2 SHEETS—SHEET 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

PIERRE I. CHANDEYSSON, OF ST. LOUIS, MISSOURI.

BLOCK-SIGNAL.

No. 865,866.

Specification of Letters Patent.

Patented Sept. 10, 1907.

Application filed December 23, 1905. Serial No. 293,144.

To all whom it may concern:

Be it known that I, PIERRE I. CHANDEYSSON, a citizen of the United States, and a resident of the city of St. Louis and State of Missouri, have invented a new and useful Improvement in Block-Signals, of which the following is a specification.

My invention relates to an improvement in semaphore signals for railways and consists in the construction and arrangement of parts hereinafter set forth.

10 The objects of the invention are to produce a semaphore comprising an arm or blade for displaying the proper signal by day and a signal light for indication during darkness; to provide an electrically actuated motor for operating the signal; to provide a suitable cut-out for the motor circuit; and to provide a magnetic clutch in the operating mechanism; the whole combination being especially adapted for use in an automatic signaling system controlled by a train or trains passing over the blocks or sections of the system, for example, 15 such as set forth in an application for Letters Patent filed by me December 23, 1905, Serial No. 293,145.

In the accompanying drawing, which forms part of this specification, and wherein like symbols refer to like parts wherever they occur, Figure 1 is a view of the signal showing its position relative to the track; Fig. 2 is a fragmentary side view; Fig. 3 is a diagram showing the plan of wiring; Fig. 4 is a view with the front of the casing removed; Fig. 5 is a sectional view; Fig. 6 is a detail view of the motor circuit cut-out; and, Fig. 7 is 25 a detail of the magnetic clutch.

In the accompanying drawing 1 indicates a casing provided with openings to permit the passage of light from a lamp 2 suitably suspended in the upper portion of the casing. The openings are closed by glasses or 35 lenses 3, 3. Mounted tightly on the ends of a shaft 4 and in close proximity to the sides of the casing are disks 5, 6. These disks are provided with openings in which are inserted glasses 7, 8 and 9, which are colored red, green and white, respectively. These openings, 40 when the disks are properly rotated, register with the openings in the casing 1, and permit the proper color to be indicated by the lamp. Fixed on one end of the shaft 4, outside of the casing 1, is a casting 10 provided with an opening 11. To this casting is secured a semaphore arm or blade 12, whose positions indicate the proper signal by day. As shown in Fig. 1, the upright position indicates "danger", and while in this position the opening 11 registers with the opening in the casing, so that the signal light will not be blinded or hidden 45 from view. When the blade 12 is dropped to a position

toward the track, "caution" is indicated; while the opposite position, or away from the track indicates "clear". The disks 5, 6 are so fixed upon the shaft 4 with relation to the arm 12 that they move in unison therewith and display simultaneously a "color" signal 55 equivalent to the "position" signal.

One of the disks, 5, is formed with teeth on its periphery for a portion of its distance sufficient to permit approximately a quarter turn in either direction. In mesh with the teeth on the disk 5 is a small gear or pin- 60 ion 13 fixed on the end of a shaft 14. Loosely mounted on the shaft 14 is a worm gear 15 adapted to be driven by a worm screw 16 on the shaft of a motor 17.

Fast upon the shaft 14 is a magnetic clutch member 18 one of whose coil terminals is grounded on the hub 65 portion of the clutch member and through the same to the supporting frame which is in an electrical operating circuit controlled by the movement of a train. The other terminal of the clutch coil is connected to a ring 19 insulated from the hub portion, said ring having a 70 brush connection with the above-mentioned operating circuit. Mounted on each side of the supporting frame and adjacent to the shaft 4 are brushes 20, said brushes being normally in contact with adjustable contact points 21 and located in the motor circuit which is 75 also operated by the passing train.

In the operation of the semaphore a train in passing into and along a block or section of the system, will, through suitable electrical contrivances, close the motor and clutch circuits simultaneously, and according 80 to the direction of the current, the motor, which is of the reversible type, will operate to throw the signal to "caution" or "clear" position as the case may be. As the magnetic clutch holds the worm gear tightly to the shaft 14, a continued movement of the motor 17, causes 85 the shaft 14 and its gears 13 and 15 to turn, thereby rotating disk 5 and its shaft 4 carrying the semaphore blade 12. The motor 17 will continue to operate until the disk 5 has made a quarter turn, at which instant the motor circuit is broken and the motor ceases to operate. 90 A convenient form of circuit breaker is shown in the drawings as comprising a stud 22 normally projecting downward from shaft 4 and is provided with angular insulated extensions 23 which are adapted to engage and lift one of the brushes 20 from its contact 21 when 95 the shaft 4 has made a quarter turn in either direction. The operating parts having thus come to a position of rest, the signal is held from returning to its normal position by the magnetic clutch which remains energized until its circuit is broken. As soon as the clutch cir- 100

cuit is broken, the worm gear 15 is released from its intimate connection with the shaft 14 whereby said shaft is now free to rotate and the parts restored to normal position by the balance weights 24 on projections on the
5 casting 10.

Referring to Fig. 3, wherein is illustrated a diagram of the wiring, A indicates a battery, C indicates what I term the caution relay and S the safety relay.

Obviously, my invention admits of considerable
10 modification within the scope of my invention, and therefore I do not wish to be limited to the specific construction shown and described.

What I claim as my invention and desire to secure by Letters Patent is:

A semaphore signal comprising a casing having a display opening, a lamp within said casing, a rotatable shaft, a color disk on said shaft intermediate the lamp and display opening, a semaphore arm on said shaft, mechanism for rotating said disk, a motor for actuating said disk operating mechanism, a circuit breaker on said rotatable shaft, and a magnetic clutch between said motor and said disk-operating mechanism. 15 20

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Witnesses:

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