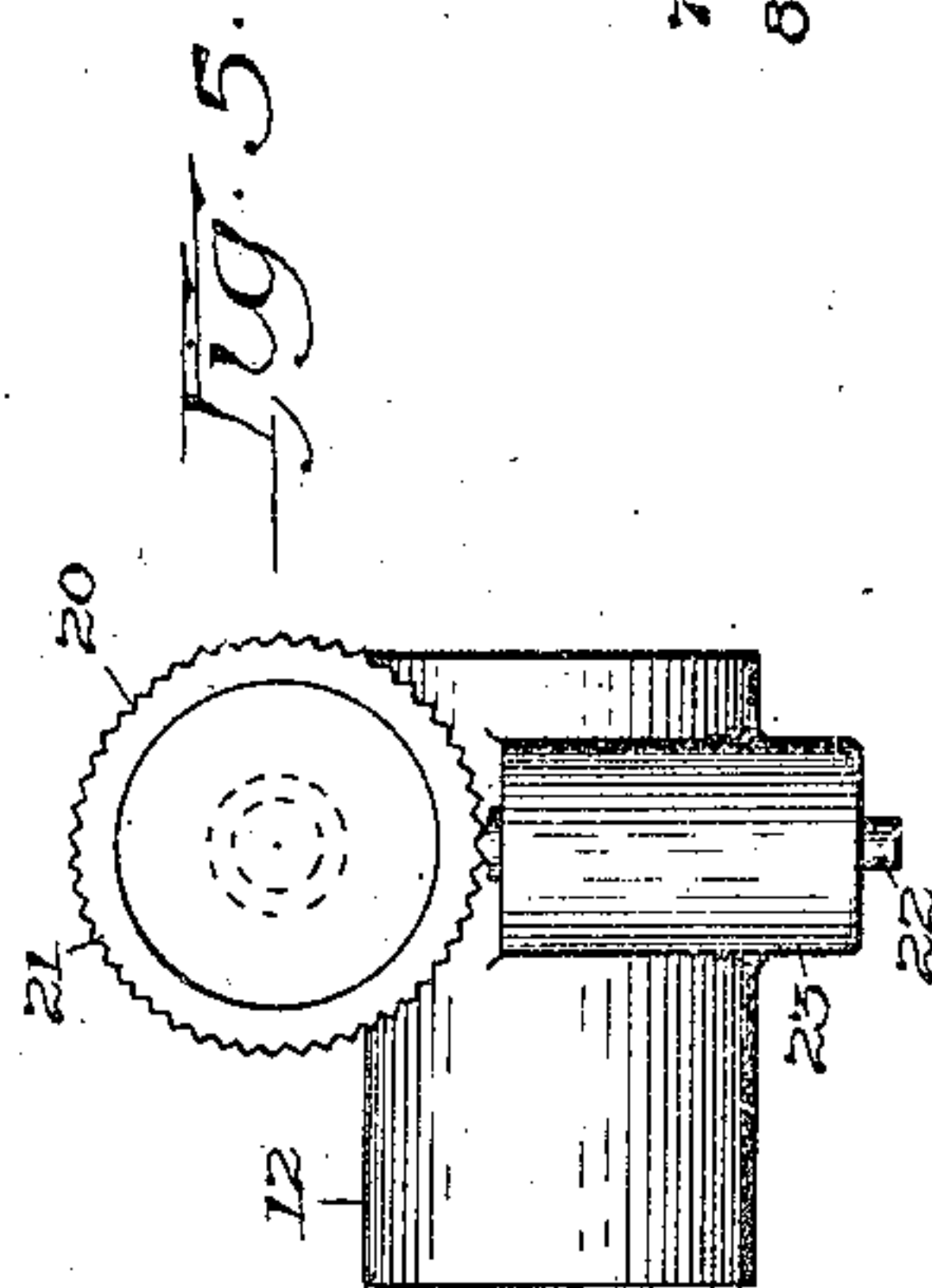
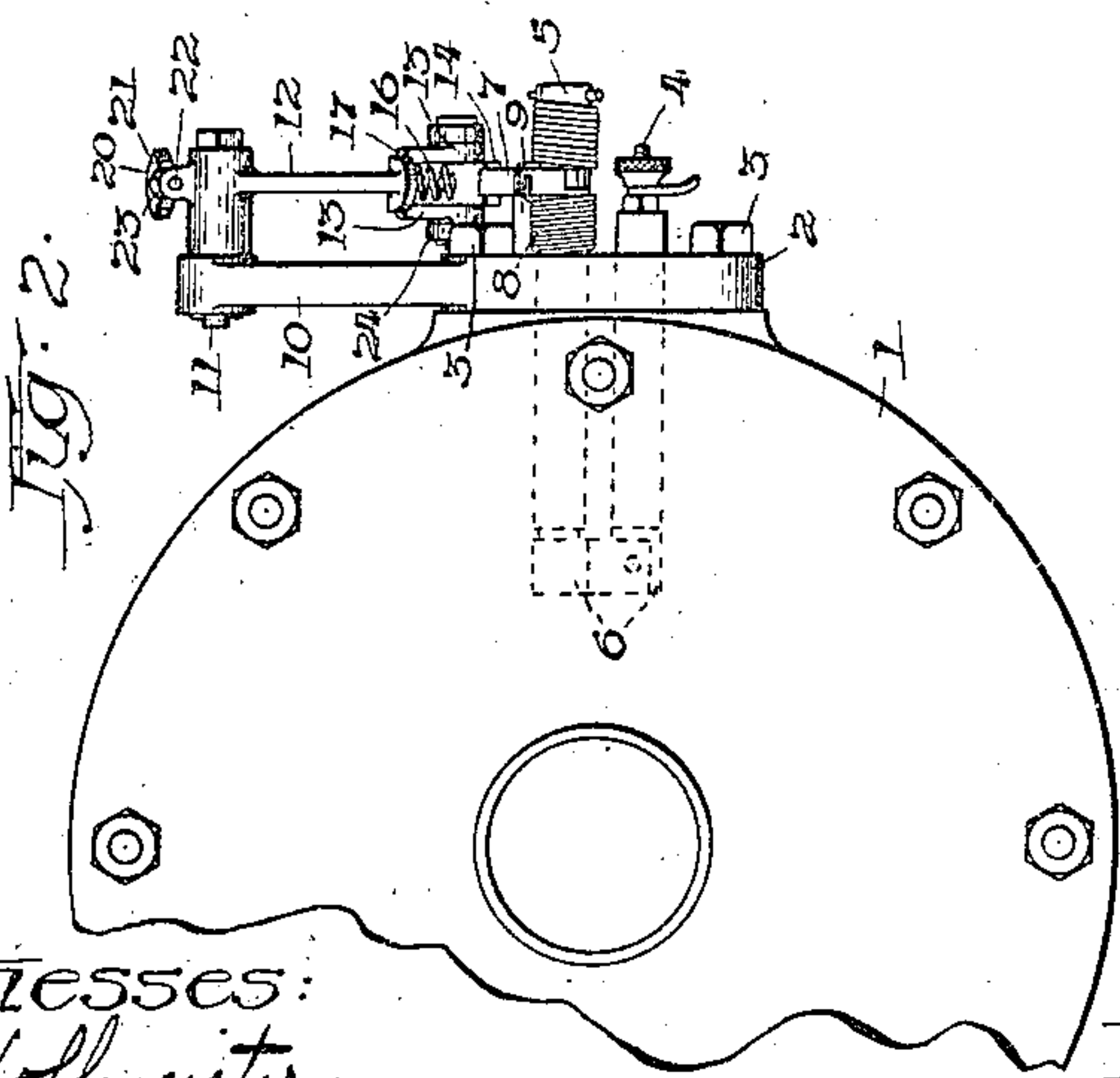
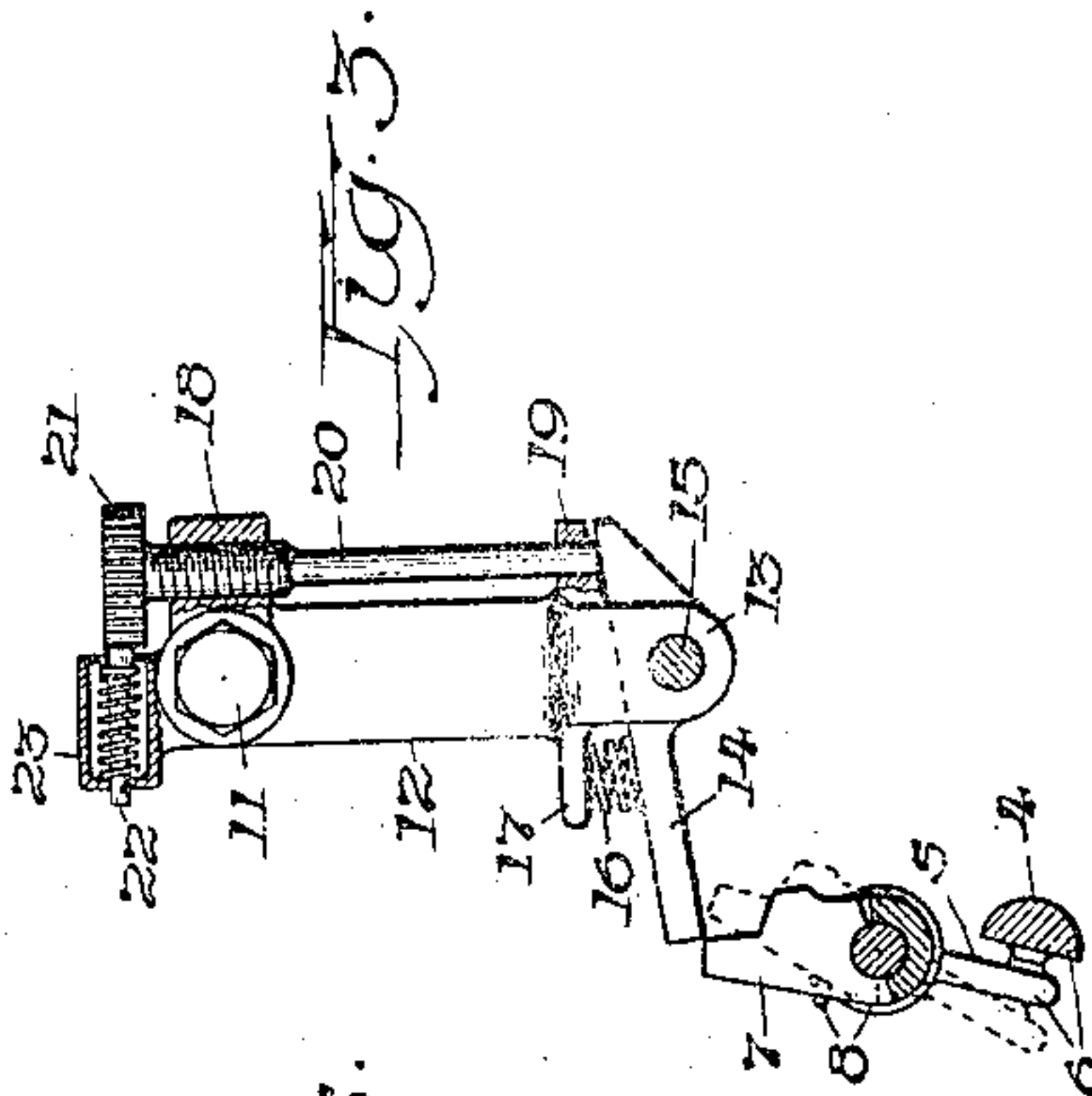
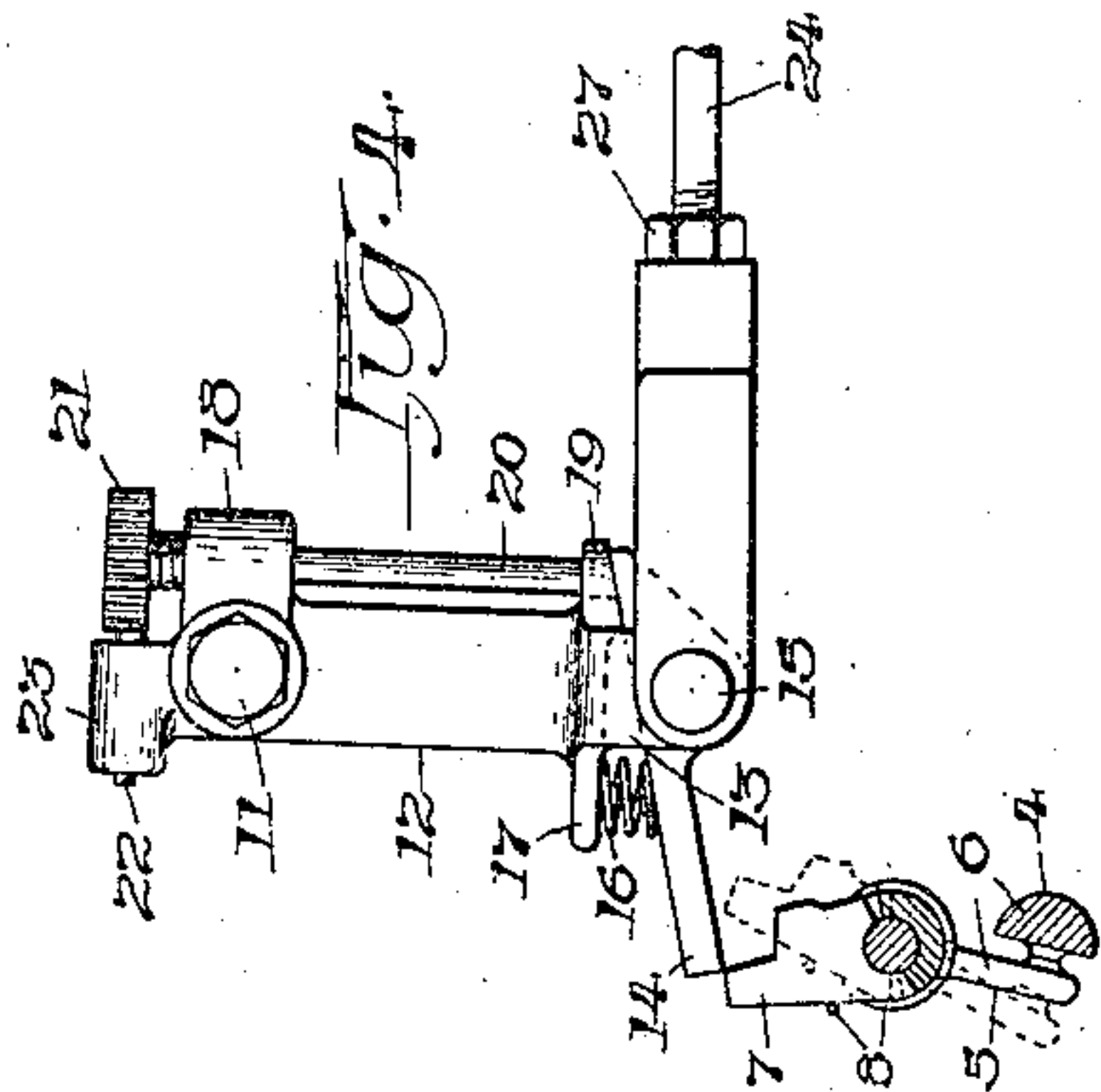
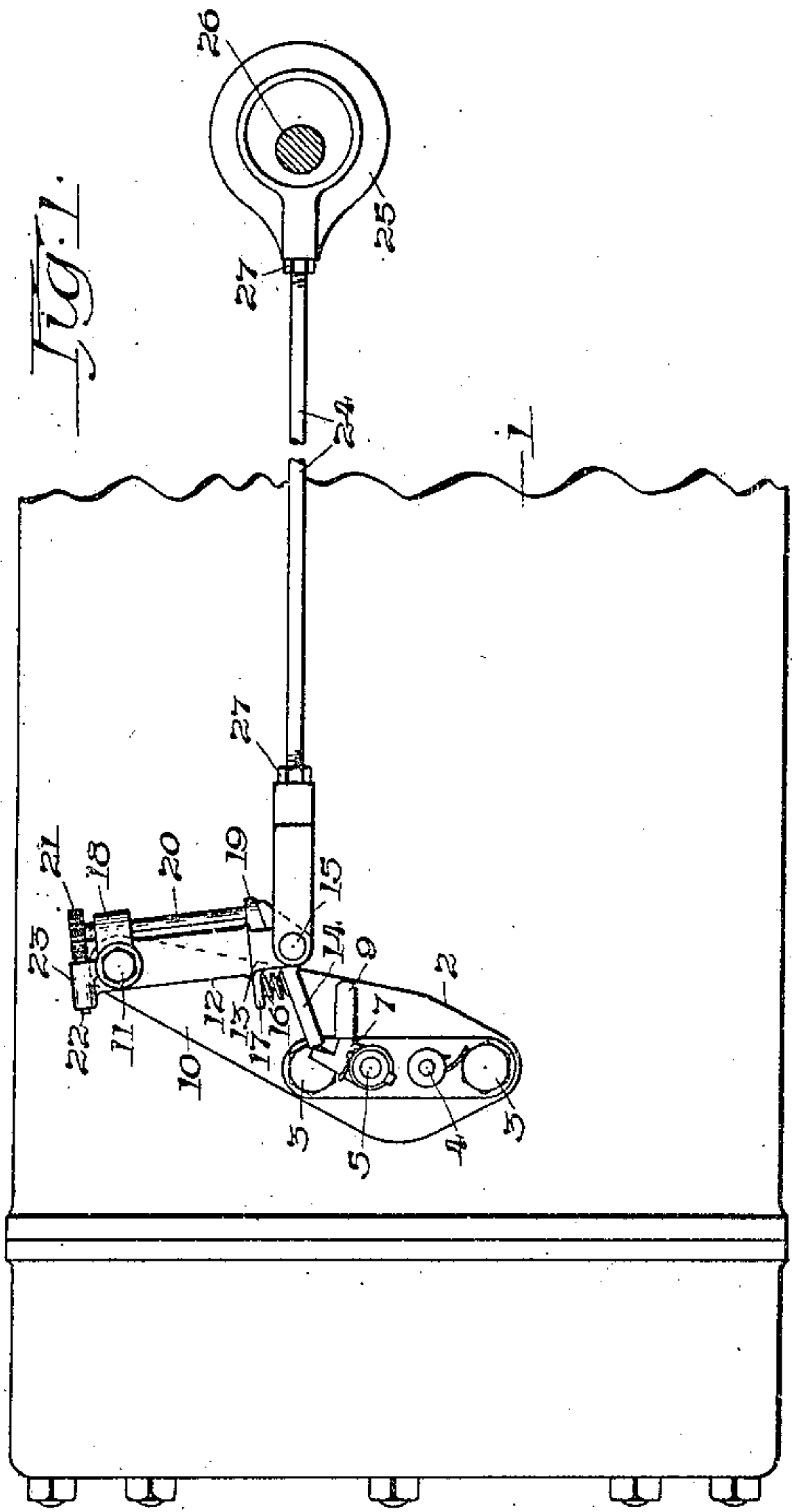


E. A. JOHNSTON.
IGNITER MECHANISM FOR EXPLOSIVE ENGINES.
APPLICATION FILED JAN. 12, 1911.

993,528.

Patented May 30, 1911.



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UNITED STATES PATENT OFFICE.

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IGNITER MECHANISM FOR EXPLOSIVE-ENGINES.

993,528.

Specification of Letters Patent.

Patented May 30, 1911.

Application filed January 12, 1911. Serial No. 602,137.

To all whom it may concern:

Be it known that I, EDWARD A. JOHNSTON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Igniter Mechanism for Explosive-Engines, of which the following is a specification.

My invention relates to igniter mechanism, and in particular to that class commonly called "make and break," wherein the electrodes are first brought in contact with each other and then quickly separated, and consists in means for adjusting the tripping mechanism in a manner whereby the time at which the electric spark is produced may be varied during the operation of the engine; the object of my invention being to provide a mechanism having few parts, one that may be conveniently manipulated, and one that will be efficient in operation. These objects are attained by means of the mechanism illustrated by the accompanying drawings, in which—

Figure 1 represents a side elevation of part of an engine cylinder having my improved igniter tripping mechanism connected therewith; Fig. 2 represents an end elevation of Fig. 1; Fig. 3 is a side elevation of part of the tripping mechanism and showing the position of the movable and fixed electrodes during the make and break contact period; Fig. 4 is a similar view illustrating the manner of adjusting the throw of the tripping finger; and Fig. 5 is a top plan view of the adjusting screw and its associated retaining means.

The same reference numerals designate like parts throughout the several views.

1 represents an engine cylinder, 2 an igniter plug secured to the sides of the cylinder by means of cap screws 3, a carrying and fixed electrode 4, and a rocking electrode 5 of common form and having their contact points 6 within the explosion chamber of the cylinder, as shown by means of dotted lines in Fig. 2.

7 represents an arm mounted upon the outer end of the rocking electrode and adapted to have a limited independent rocking movement thereon, said arm being held yieldingly in a direction to cause the electrode to rock in a direction to separate the contact points by means of a coil spring 8 surrounding the stem of the electrode and

having one end engaging a fixed part of the engine and its opposite end with said arm in a common way. A stop lug 9 projects outward from the plug within the path of the arm and is adapted to limit the rocking movement thereon in one direction.

10 represents an upwardly extending bracket integral with the plug member 2, and 11 a stud secured to its upper end.

12 represents a swinging arm having its upper end journaled upon the stud 11 and its lower end provided with downwardly extending ear members 13 spaced apart in a manner to receive between them a tripping finger 14 that is adapted to rock about a cross pin 15 passing through the ears and finger intermediate the ends of the latter. The forward end of the tripping finger is adapted to engage with arm 7 and is held yieldingly in a direction to engage therewith by means of a pressure spring 16 operative between a forwardly projecting ear 17 integral with the swinging arm and the back of the finger.

18 and 19 represent rearwardly projecting ears integral with the swinging arm at its upper and lower ends, respectively, and 20 a regulating screw threaded at its upper portion in a manner to be adjustable through ear 18 and having its lower end adapted to contact with the rear end of the tripping finger 14, the upper end of the screw being provided with a disk-like head 21 provided with teeth upon its periphery with which a spring-pressed radially moving plunger 22, mounted in a barrel 23, is adapted to engage in a manner to yieldingly retain the screw in any desired position of adjustment.

24 represents a reciprocating trip operating rod having one end pivotally connected with the swinging arm 12 by means of the pin 15, and its opposite end with an eccentric 25 secured to an operative shaft 26 forming part of the engine mechanism, the rod being adjustable in length by means of its threaded portions and jam nuts 27 in the usual manner.

In operation the trip rod is given a continuous reciprocatory movement from the half speed shaft and transmits a forward and backward movement to the swinging arm, causing the tripping finger to engage with the arm of the movable electrode and rotate the latter in a manner to bring the contact points together, and a further swing

of the arm raises said finger and the contact points are permitted to separate, the time of their separation and the making of the electric spark being controlled by the period of time in which the tripping finger remains in contact with arm 7, and that period governed by means of the regulating screw, which may be manipulated in a manner to swing the operative end of the tripping finger toward or from the axis of the movable electrode and thus vary the time of its release from engagement with the arm.

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

15 An igniter mechanism for internal combustion engines including, in combination, a plug carrying a fixed and a rocking electrode, a bracket member integral with said plug, a swinging arm having one end pivotally connected with said bracket, its opposite end provided with longitudinally extending ear portions spaced apart, a tripping

finger pivotally received between said ear portions, having one end thereof adapted to engage with said rocking electrode, a laterally extending ear upon one side of said swinging arm adjacent said finger, a compression spring operative between said ear and finger in a manner to cause said finger to yieldingly engage with said rocking electrode, laterally extending ear portions upon the opposite side of said arm and at opposite ends thereof, an adjusting screw received by said last named ear portions and engaging with the opposite end of said finger, and a reciprocatory rod having one end pivotally connected with said arm coaxially with said tripping finger and its opposite end operatively connected with a moving part of the engine.

EDWARD A. JOHNSTON.

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