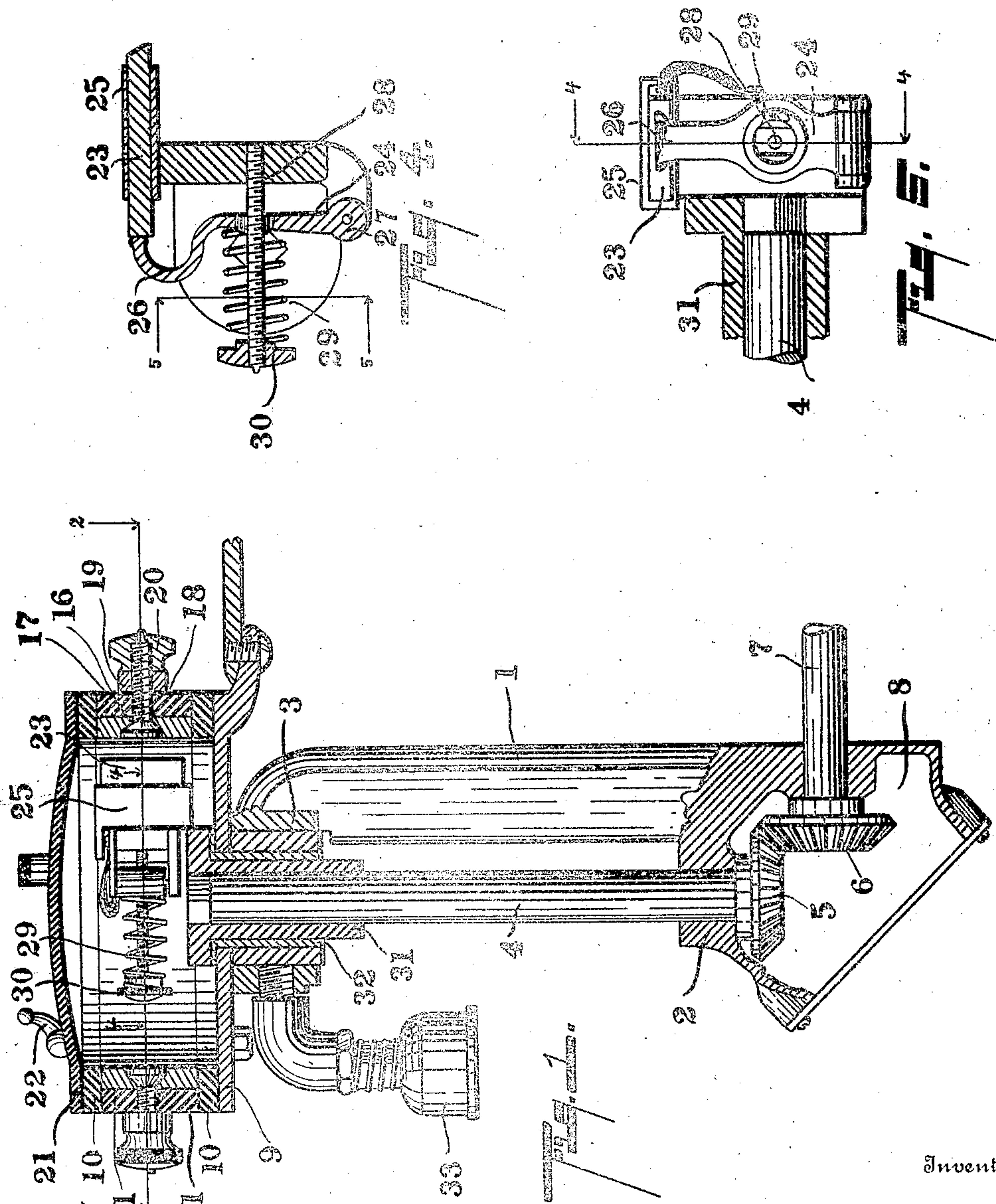


H. ROSE.  
 TIMER FOR IGNITERS OR SPARKERS.  
 APPLICATION FILED JUNE 18, 1908.

936,564.

Patented Oct. 12, 1909.

2 SHEETS—SHEET 1.



Witnesses

Lulu Greenfield  
 Clara E. Braden

By

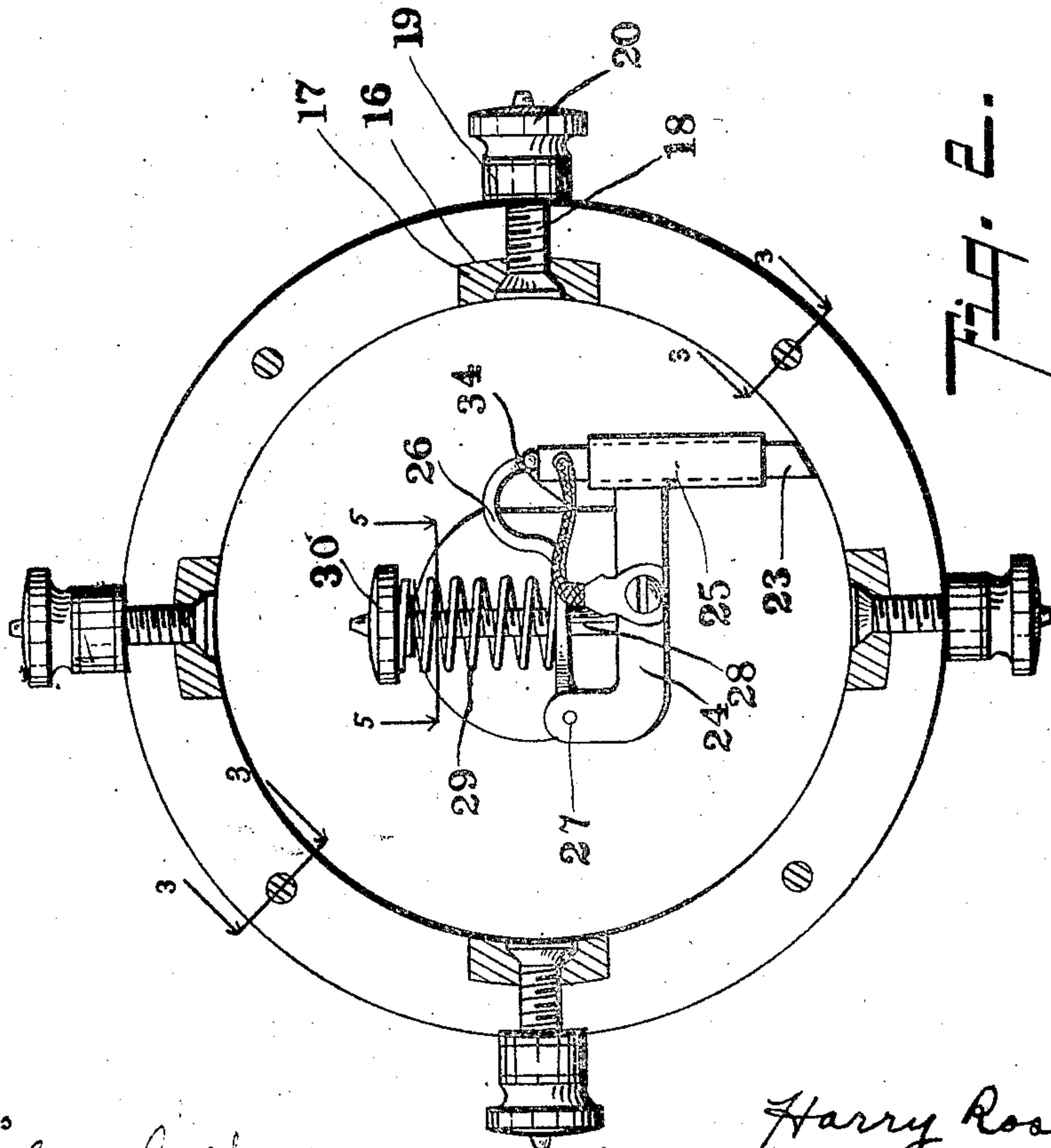
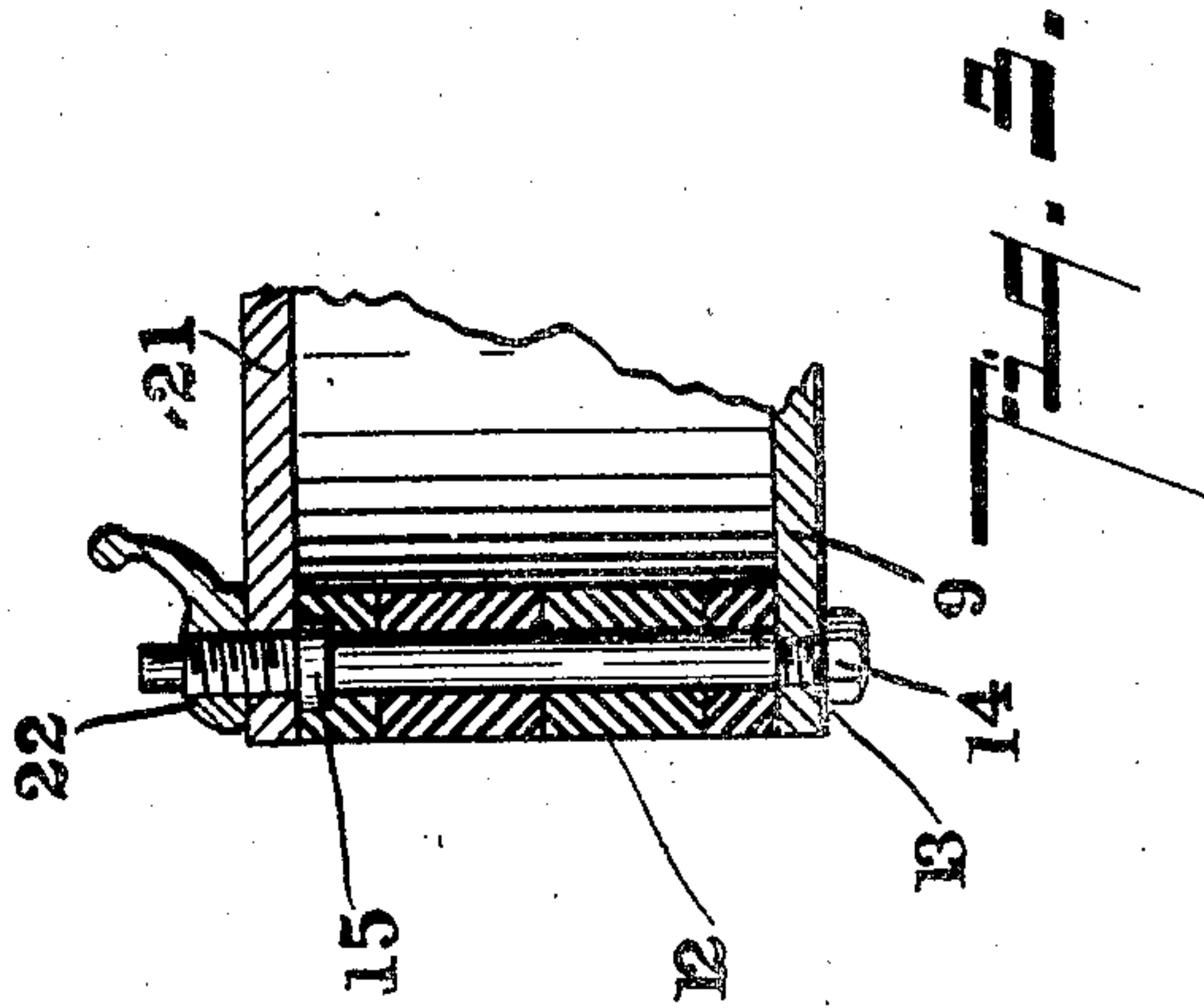
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# UNITED STATES PATENT OFFICE.

HARRY ROSE, OF THREE RIVERS, MICHIGAN, ASSIGNOR TO SHEFFIELD CAR COMPANY,  
OF THREE RIVERS, MICHIGAN.

TIMER FOR IGNITERS OR SPARKERS.

936,564.

Specification of Letters Patent.

Patented Oct. 12, 1909.

Application filed June 13, 1903. Serial No. 433,211.

*To all whom it may concern:*

Be it known that I, HARRY ROSE, a citizen of the United States, residing at Three Rivers, Michigan, have invented certain new and useful Improvements in Timers for Igniters or Sparkers, of which the following is a specification.

This invention relates to improvements in timers for igniters or sparkers.

The main objects of this invention are: first, to provide an improved timer in which the contact parts are comparatively large and substantial, and, at the same time, produce a structure which is simple and compact; second, to provide an improved timer for sparkers or igniters which is very durable, also one in which the parts can be readily replaced when worn; third, to provide an improved timer in which the contact members are fully protected from dust, moisture, and the like.

Further objects, and objects relating to details of construction, will definitely appear from the detailed description to follow.

I accomplish the objects of my invention by the devices and means described in the following specification.

The invention is clearly defined and pointed out in the claims.

A structure embodying the features of my invention is clearly illustrated in the accompanying drawing, forming a part of this specification, in which:

Figure 1 is a detail vertical section of a structure embodying the features of my invention, the shaft and driving connections therefor being shown in full lines, also parts of the supporting bracket; Fig. 2 is a cross section taken on a line corresponding to line 2—2 of Fig. 1, the movable contact member and its holder being shown in full lines, also the securing means for the fixed contact members; Fig. 3 is an enlarged detail section taken on a line corresponding to the lines 3—3 of Fig. 2; Fig. 4 is an enlarged detail section through the movable contact member and holder, taken on a line corresponding to line 4—4 of Figs. 1 and 5; Fig. 5 is a detail section taken on a line corresponding to line 5—5 of Fig. 4.

In the drawings, similar reference characters refer to similar parts throughout the several views, and the sectional views are taken looking in the direction of the little arrows at the ends of the section lines.

Referring to the drawing, I preferably provide a bracket 1 having bearings 2 and 3 therein for the shaft 4. On the lower end of the shaft is a beveled gear 5 which is arranged to mesh with the gear 6 on the driving shaft 7. The bracket 1 is provided with a chamber 8 adapted to receive these gears, as clearly appears from the drawings. The fixed contact holder is cylindrical in form and preferably consists of a metal end plate 9 and a circumferential wall composed of rings 10 and 11 which are secured together by tie rods 12, the tie rods having threaded ends 13 arranged through the end plate 9 and secured by means of the nuts 14. The rods 12 are provided with collars 15 which engage the outer ring 10, thereby clamping the rings together upon the end plate 9. The rings 11 are cut away on the inside to form seats 16 for the fixed contact members or blocks 17. The ends of these blocks are engaged by the outer rings 10, and their inner faces are curved to correspond to the curvature of the rings, as clearly appears from the drawings. The contact blocks 17 are held in their seats by means of the screws or threaded bolts 18 which are arranged therethrough and through the rings provided with nuts 19 on their outer ends. These securing bolts also preferably serve as binding posts, suitable clamping nuts 20 for the circuit wires being provided. The holder is closed by an end plate 21, preferably of insulating material, such as hard rubber or fiber, the plate being perforated to receive the ends of the tie rods on which they are detachably secured by means of the winged nuts 22. The movable contact member or brush 23 is mounted in the holder, preferably consisting of a bracket 24 having a socket 25 therein to receive the brush, the brush being arranged through the socket, as clearly appears from Fig. 2 of the drawing. The end of the brush bears against the wall of the holder and travels over the same and over the fixed contact members. It is held yieldingly in engagement by means of the arm 26, which is pivoted at 27 on the bracket 24. A screw 28 is arranged through the arm, and on this screw I arrange a coiled spring 29, the tension of which is adjusted by means of the nut 30. By adjusting this nut, the pressure of the brush is regulated and it is accurately adjusted to secure the desired amount of bearing friction and feed up



the brush as it is worn away. The holder is provided with a sleeve 31, in which the shaft 4 is arranged and secured. This sleeve is surrounded by a suitable bushing 32 to which  
 5 lubricant is supplied by means of the oil cup 33. The brush is preferably connected to the holder by the wires 34 to insure a perfect electrical connection. By this arrangement of parts, I am enabled to employ contact parts which are comparatively large  
 10 and substantial, the fixed contact members being of copper and the brush of carbon, which is, as is well known, the most effective for the purpose, and while the parts are of  
 15 comparatively large size, the structure is, at the same time, quite compact. A smooth bearing surface is secured for the brush, and as the contact members are entirely inclosed, they are not affected by dust or moisture.  
 20 The wear on the parts on account of their large size and the arrangement of their parts and the danger of injurious arcing is reduced to a minimum, and on account of this large size and the large bearing surface of  
 25 the parts upon each other, the heat is so distributed that it is not injurious.

I have illustrated and described my improved timer in detail in the form preferred by me on account of structural simplicity  
 30 and economy. I am aware, however, that it is capable of considerable variation in structural details without departing from my invention, and I desire to be understood as claiming the same specifically, as illustrated,  
 35 as well as broadly.

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

1. The combination with a shaft; a cylindrical contact holder, the circumferential wall of said holder being of insulating material; contact members seated in said circumferential wall, the inner faces of said contact members being curved to correspond  
 40 to said wall and flush therewith; binding posts arranged through said wall and contact members, said binding posts being adapted to secure the said contact members in their seats; a brush; a brush holder  
 45 mounted on said shaft within said contact holder, comprising a socket in which said brush is adjustably arranged; a pivoted arm on said holder arranged to engage the inner end of the brush; a screw arranged through  
 50 said arm; a spring arranged on said screw to engage said arm; a nut on said screw adapted to be adjusted to regulate the tension of said spring; and a removable end plate for said contact holder.  
 55

2. The combination with a shaft; a cylindrical contact holder, the circumferential wall of said holder being of insulating material; contact members seated in said circumferential wall, the inner faces of said contact members being curved to correspond  
 60 to said wall and flush therewith; a brush; a brush holder mounted on said shaft within said contact holder, comprising a socket in which said brush is adjustably arranged; a pivoted arm on said holder arranged to engage the inner end of the brush; a screw arranged through  
 65 said arm; a spring arranged on said screw to engage said arm; a nut on said screw adapted to be adjusted to regulate the tension of said spring; and a removable end plate for said contact holder.

to said wall and flush therewith; a brush; a brush holder mounted on said shaft within said contact holder, comprising a socket in which said brush is adjustably arranged; a pivoted arm on said holder arranged to engage the inner end of the brush; a screw arranged through said arm; a spring arranged on said screw to engage said arm; a nut on said screw adapted to be adjusted to regulate the tension of said spring; and a removable end plate for said contact holder.  
 70 75

3. The combination with a shaft; a cylindrical contact holder, the circumferential wall of said holder being of insulating material; contact members seated in said circumferential wall, the inner faces of said contact members being curved to correspond to said wall and flush therewith; binding posts arranged through said wall and contact members, said binding posts being adapted to secure the said contact members in their seats; a brush; a brush holder mounted on said shaft within said contact holder, comprising a socket in which said brush is adjustably arranged; a pivoted arm on said holder arranged to engage the inner end of the brush; a screw arranged through said arm; a spring arranged on said screw to engage said arm; and a nut on said screw adapted to be adjusted to regulate the tension of said spring.  
 80 85 90 95

4. The combination with a shaft; a cylindrical contact holder, the circumferential wall of said holder being of insulating material; contact members seated in said circumferential wall, the inner faces of said contact members being curved to correspond to said wall and flush therewith; a brush; a brush holder mounted on said shaft within said contact holder, comprising a socket in which said brush is adjustably arranged; a pivoted arm on said holder arranged to engage the inner end of the brush; a screw arranged through said arm; a spring arranged on said screw to engage said arm; and a nut on said screw adapted to be adjusted to regulate the tension of said spring.  
 100 105 110

5. The combination with a cylindrical contact holder comprising a metal end plate; a plurality of rings of insulating material, the inner rings being cut away on their inner faces to form seats for the contact blocks, the outer rings being arranged to engage the ends of the contact blocks arranged in said seats; tie rods arranged through said rings and end plate, said tie rods having collars thereon adapted to engage the outer rings whereby they are secured to said end plate; an end plate perforated to engage said tie rods; clamping nuts therefor; contact blocks arranged in said seats, said contact blocks being curved on their inner faces to correspond to the curve of said rings and being flush therewith; screws arranged  
 115 120 125 120



through said contact blocks; nuts on the outer ends of said screws for securing said blocks in their seats; and a revolving brush arranged within said contact holder.

5 6. The combination with a cylindrical contact holder comprising a metal end plate; a plurality of rings of insulating material, the inner rings being cut away on their inner faces to form seats for the contact blocks, 10 the outer rings being arranged to engage the ends of the contact blocks arranged in said seats; tie rods arranged through said rings and end plate, said tie rods having collars thereon adapted to engage the outer rings 15 whereby they are secured to said end plate; an end plate perforated to engage said tie rods; clamping nuts therefor; contact blocks arranged in said seats, said contact blocks being curved on their inner faces to correspond to the curve of said rings and being 20 flush therewith; and a revolving brush arranged within said contact holder.

7. The combination with a cylindrical contact holder comprising a metal end plate; 25 a plurality of rings of insulating material, the inner rings being cut away on their inner faces to form seats for the contact blocks, the outer rings being arranged to engage the ends of the contact blocks arranged in said 30 seats; tie rods arranged through said rings and end plate; contact blocks arranged in said seats, said contact blocks being curved on their inner faces to correspond to the curve of said rings and being flush therewith; screws arranged through said contact 35 blocks; nuts on the outer ends of said screws for securing said blocks in their seats; and a

revolving brush arranged within said contact holder.

8. The combination with a cylindrical contact holder comprising a metal end plate; a 40 plurality of rings of insulating material, the inner rings being cut away on their inner faces to form seats for the contact blocks, the outer rings being arranged to engage the 45 ends of the contact blocks arranged in said seats; tie rods arranged through said rings and end plate; contact blocks arranged in said seats, said contact blocks being curved on their inner faces to correspond to the 50 curve of said rings and being flush therewith; and a revolving brush arranged within said contact holder.

9. The combination with a shaft; a cylindrical contact holder; contact members arranged in the walls of said contact holder; a 55 brush; a brush holder mounted on said shaft within said contact holder comprising a socket in which said brush is adjustably arranged; a pivoted arm on said holder arranged to engage the inner end of said 60 brush; a screw arranged through said arm; a spring arranged on said screw to engage said arm; and a nut on said screw adapted to be adjusted to regulate the tension of said 65 spring.

In witness whereof, I have hereunto set my hand and seal in the presence of two witnesses.

HARRY ROSE. [L. s.]

Witnesses:

M. F. EAST,

WM. F. HASKEL.