

No. 800,973.

PATENTED OCT. 3, 1905.

G. W. BLANK & W. G. RUSSELL.

SEMAPHORE ARM.

APPLICATION FILED JUNE 13, 1905.

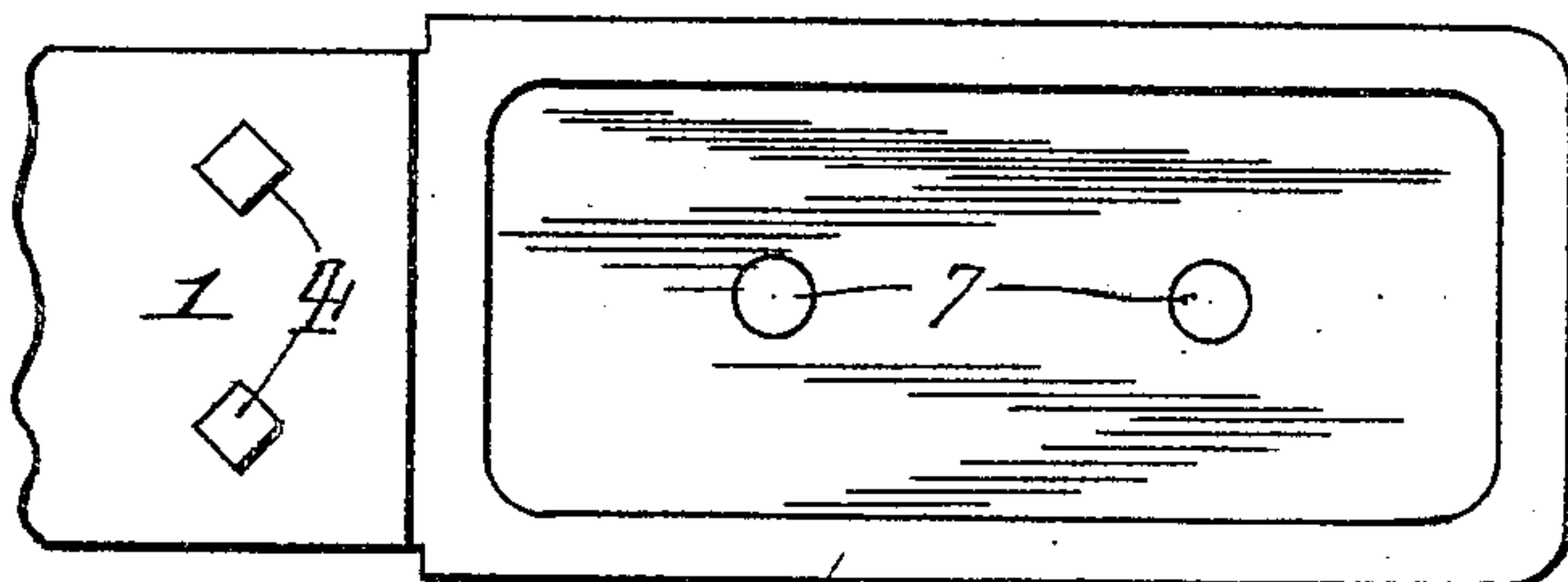


Fig. 1.

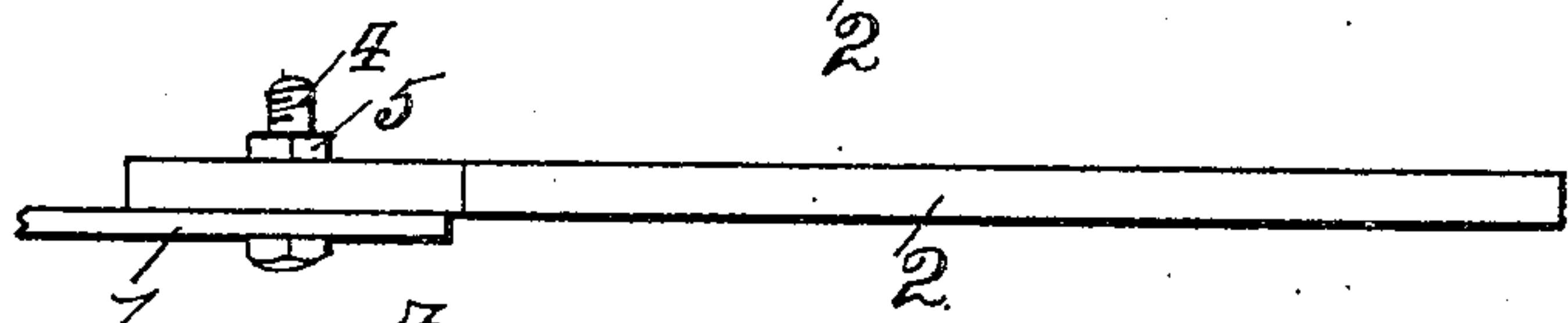


Fig. 2.

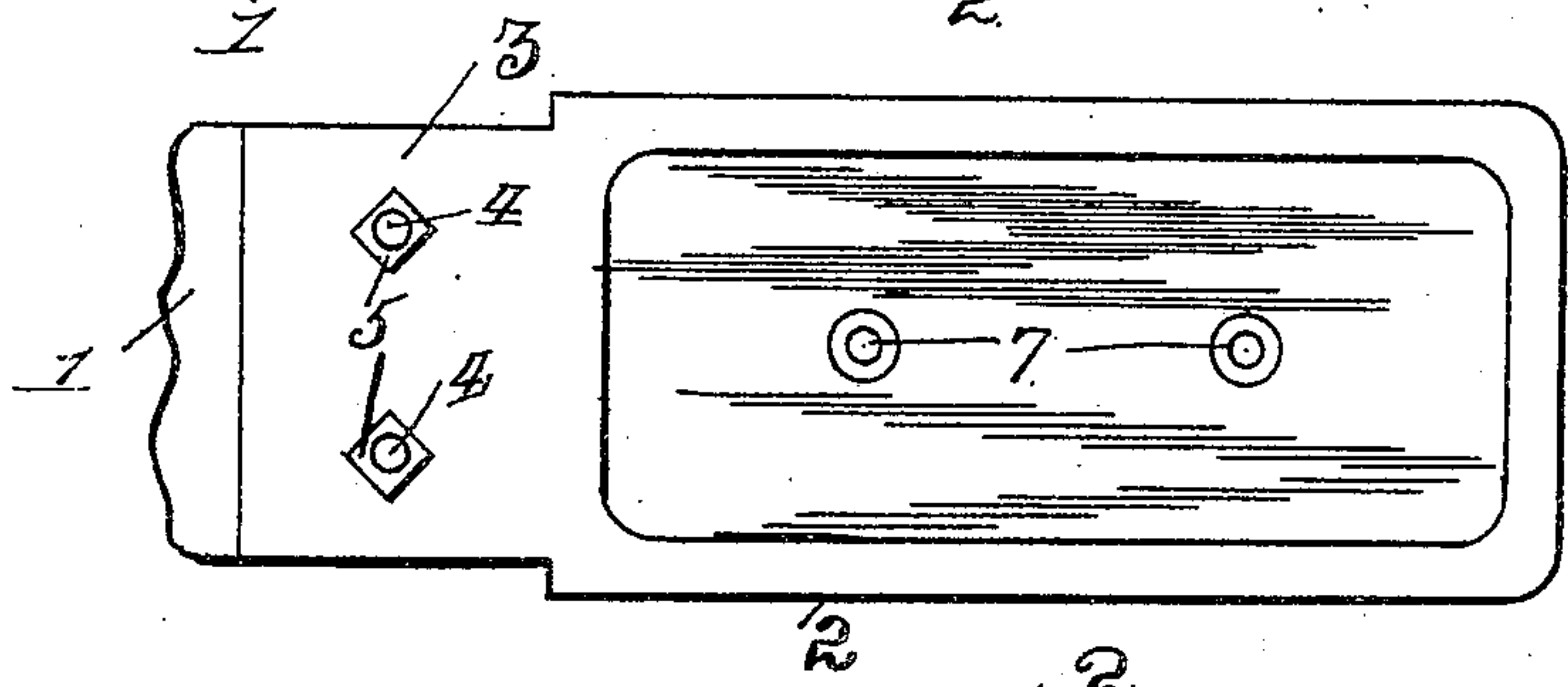


Fig. 3.

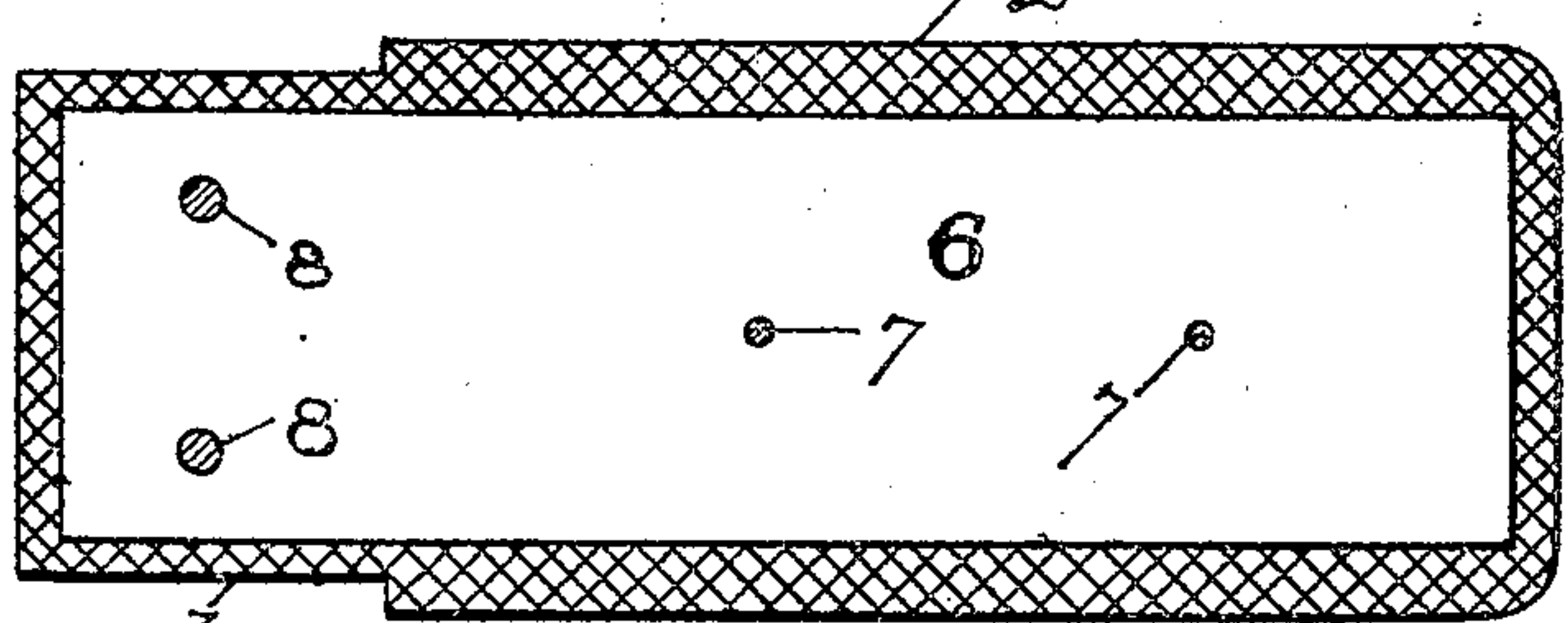


Fig. 4.

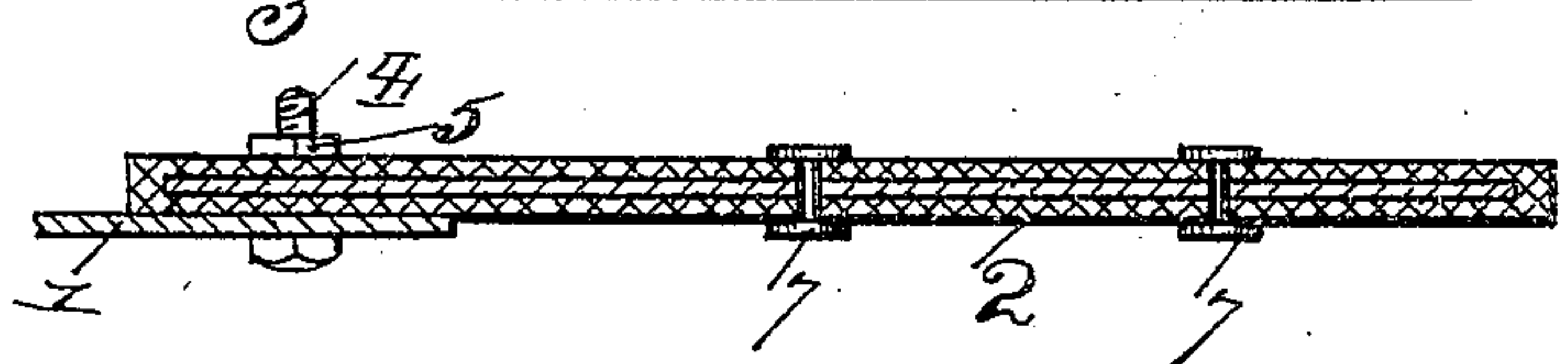


Fig. 5.

Witnesses.
C. A. Rudolph
J. H. Butler,

Inventors
G. W. Blank; W. G. Russell.
By H. C. Ewert & Co.
Attorneys.

UNITED STATES PATENT OFFICE.

GEORGE W. BLANK, OF WILKINSBURG, AND WILLIAM G. RUSSELL, OF
EDGEWOOD, PENNSYLVANIA.

SEMAPHORE-ARM.

No. 800,973.

Specification of Letters Patent.

Patented Oct. 3, 1905.

Application filed June 13, 1905. Serial No. 265,045.

To all whom it may concern:

Be it known that we, GEORGE W. BLANK, residing at Wilkinsburg, and WILLIAM G. RUSSELL, residing at Edgewood, in the county of Allegheny and State of Pennsylvania, citizens of the United States of America, have invented certain new and useful Improvements in Semaphore-Arms, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in semaphore-arms, and relates more particularly to that type of arm employed in connection with dwarf signals. Our invention aims to provide a semaphore-arm of the above type that will be flexible, strong, and durable, comparatively inexpensive to manufacture, and free from all danger of being injured by constant use to which it is subjected. In this type of signal, which is mounted upon the ground or on a suitable support closely adjacent to the ground, the semaphore-arms have been constructed of a resilient material, as rubber, thereby providing a flexible arm. These arms have been oftentimes struck by a portion of a train or a trainman, which if they were not flexible would either break the arm and injure the signal or injure the person or object struck by said arm. In practice it has been the custom to use a rubber arm of sufficient flexibility, which is painted a desired color to protect the rubber and also afford a visible attractive signal. When these arms are subjected to constant use, such as the raising and lowering of the arm to the positions of "danger," "caution," and "clear," the rubber semaphore-arm secured to the casting of the signal has a tendency to crack and eventually break adjacent to the casting, the life of the arm not being very long when subjected to quite a number of movements.

Our invention aims to provide an arm which will be flexible and at the same time free from the danger of being broken by constant use, we having provided a stiffening rib or sheet adapted to be embedded within the resilient arm.

With the above and many other objects in view, which will more readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts, which

will be more fully described, illustrated, and claimed hereinafter.

The essential features of the present invention involved in carrying out the objects above specified are necessarily susceptible to structural change without departing from the scope of the invention; but the preferred embodiments are shown in the accompanying drawings, in which—

Figure 1 is a side elevation of a semaphore-arm constructed in accordance with our invention. Fig. 2 is a top plan view of the same. Fig. 3 is a view of the opposite side of the arm to that illustrated in Fig. 1 of the drawings. Fig. 4 is a vertical longitudinal sectional view of the semaphore-arm, and Fig. 5 is a horizontal longitudinal sectional view of the same.

In the accompanying drawings we have illustrated a portion of a signal-casting, (designated 1,) this casting being adapted to support a signal-arm 2. Our improved arm conforms in shape substantially to the present type of arm used in connection with dwarf signals, the arm proper being substantially rectangular in top plan view and having a slightly-contracted end 3, which is secured to the casting 1 by bolts 4 4 and nuts 5 5. We preferably construct the signal-arm of a resilient material, such as rubber, which is molded into the desired shape. In molding the signal-arm we provide the same with a strengthening rib or sheet 6 of spring-steel or like resilient metal. This rib or sheet is preferably molded into the rubber arm, being embedded centrally therein, as illustrated in Figs. 4 and 5 of the drawings.

To retain the metal rib or sheet within the rubber and prevent it from coming through said rubber, we employ suitable means for fastening the sheet within the arm, such as rivets 7 7, preferably arranged centrally of the arm.

In order to establish a rigidity between the outer end of the arm and the casting 3 that will not be susceptible to a vertical movement of the arm, we provide the inner end of the steel rib or sheet with apertures 8 8, through which the bolts 4 4 of the casting 1 pass, these bolts serving to secure the inner end of the steel rib or sheet to the casting, as well as the rubber arm. By this construction a metallic connection is provided between the casting and the outer end of the arm 2, and as the

strengthening rib or sheet is made of spring-steel the arm will have as much resiliency as if the sheet of metal had not been used.

As the sheet of metal is embedded within the rubber arm and secured therein by suitable means, it will be impossible for any reciprocating movement of the casting 1 to affect the arm 2 on account of the metallic connection between the casting and the arm, which serves to prevent the rubber of said arm from cracking and eventually becoming severed from the casting.

We do not care to confine ourselves to the size of the arms in connection with which our improved strengthening rib or sheet may be used or to the manner of securing the strengthening-sheet to the arm.

It is thought from the foregoing that the construction, operation, and advantages of the herein-described semaphore-arm will be apparent without further description, and various changes in the form, proportion, and minor details of construction may be resorted to without departing from the spirit of the invention or sacrificing any of the advantages thereof.

What we claim, and desire to secure by Letters Patent, is—

1. The combination with a casting of a dwarf signal, of a resilient semaphore-arm, a sheet of resilient metal embedded within said arm and secured to said casting and said arm, substantially as described.

2. The combination with the casting of a signal, of a resilient semaphore-arm adapted to be secured to said casting, said arm being formed of rubber having a resilient sheet of metal embedded therein, and means to secure said sheet to said rubber and to said casting, substantially as described.

3. The combination with a resilient semaphore-arm, of a resilient sheet of metal and means to secure said sheet to said arm, substantially as described.

4. A semaphore-arm embodying a sheet or

a plate of resilient material, and a thin flexible sheet of metal firmly affixed thereto.

5. The combination with a casting, of an arm formed of rubber, a sheet of metal embedded within said rubber, and secured to said casting, substantially as described.

6. A semaphore-arm formed of rubber, and having a sheet of metal embedded therein, and means to secure said sheet of metal to said rubber, substantially as described.

7. As a new article of manufacture, a resilient semaphore-arm having a strengthening-rib embedded therein.

8. As a new article of manufacture, a resilient semaphore-arm having a metallic resilient sheet embedded therein.

9. As a new article of manufacture, a rubber semaphore-arm having a sheet of steel embedded therein.

10. The combination with a casting and a resilient semaphore-arm, of means carried by said arm to strengthen the connection between said casting and said arm, substantially as described.

11. A semaphore-arm for signals embodying a sheet or plate of rubber, of a thin sheet or plate of metal of less area than the sheet or plate of rubber.

12. A semaphore-arm for signals, embodying a sheet or plate of resilient material, and a resilient stiffening-sheet of different material firmly affixed thereto.

13. A semaphore-arm for signals, embodying an elastic sheet or plate, and a thin resilient stiffening-sheet of different material.

14. A semaphore-arm for signals, embodying an elastic sheet or plate, and a resilient stiffening sheet or plate embodied therein.

In testimony whereof we affix our signatures in the presence of two witnesses.

GEORGE W. BLANK.

WILLIAM G. RUSSELL.

Witnesses:

K. H. BUTLER,

E. E. POTTER.