No. 682,377. Patented Sept. 10, 1901.

# T. H. WURMB & R. BAUMANN.

## ELECTROMAGNET.

(Application filed Apr. 9, 1900.)

(No Model.)

Fig. 1.

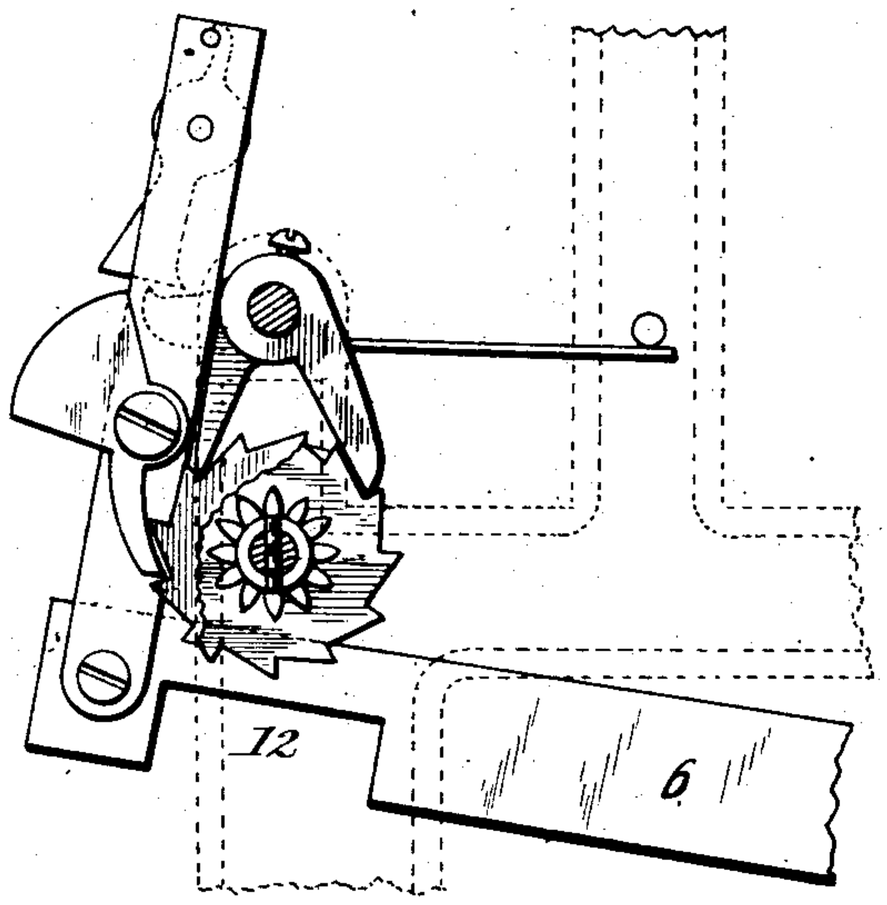



Fig. 2.

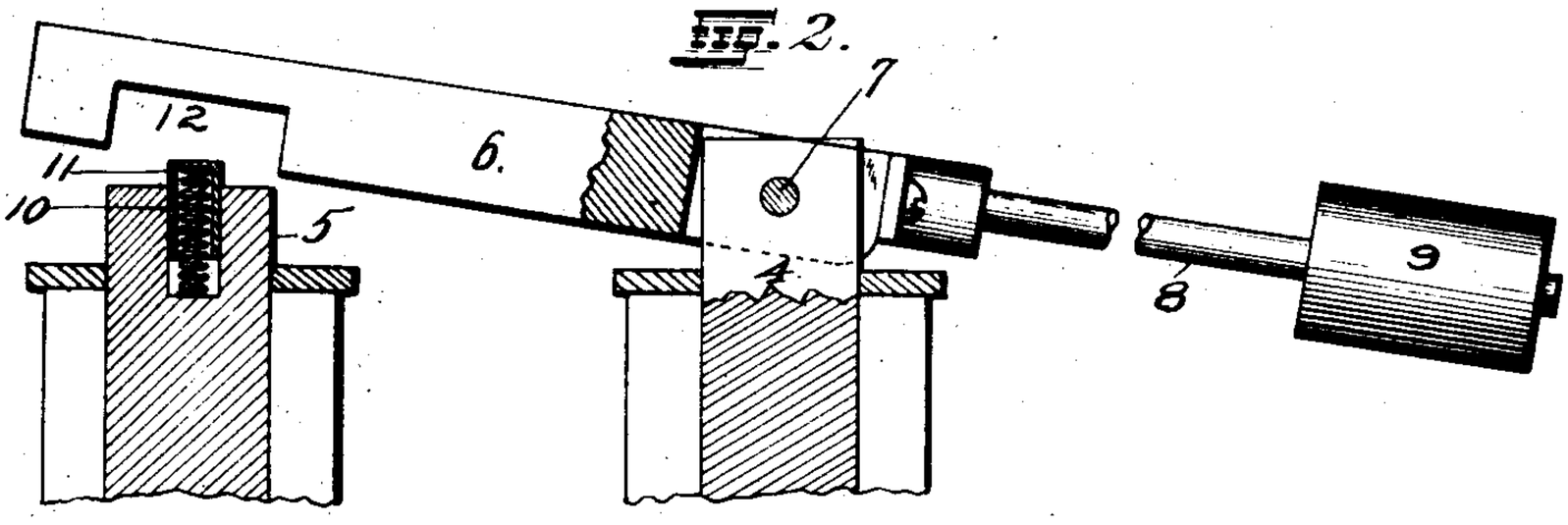
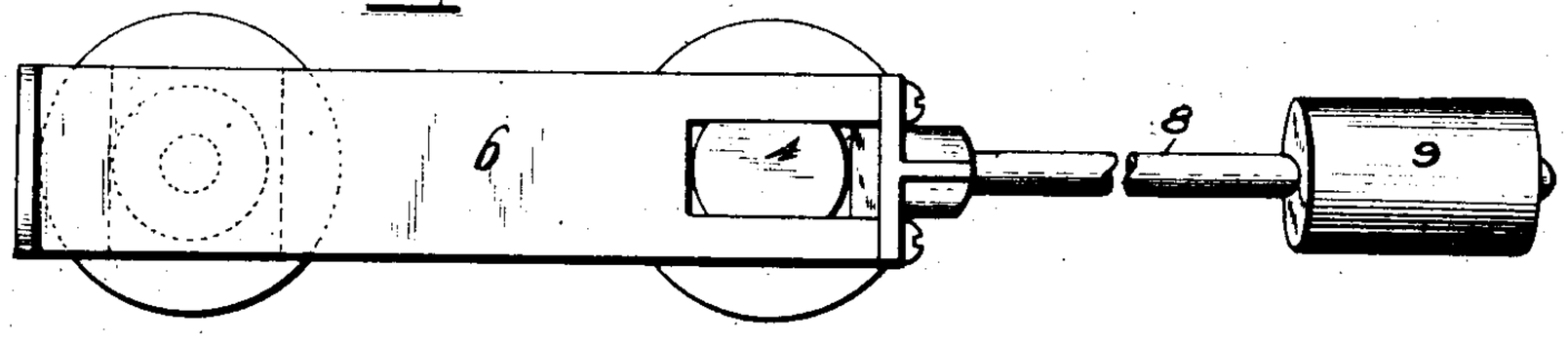



Fig. 3.




Witnesses
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# UNITED STATES PATENT OFFICE.

THEODORE H. WURMB AND ROBERT BAUMANN, OF ST. LOUIS, MISSOURI.

## ELECTROMAGNET.

SPECIFICATION forming part of Letters Patent No. 682,377, dated September 10, 1901.

Application filed April 9, 1900. Serial No. 12,212. (No model.)

*To all whom it may concern:*

Be it known that we, THEODORE H. WURMB and ROBERT BAUMANN, of the city of St. Louis, State of Missouri, have invented certain new and useful Improvements in Electromagnets, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

This invention relates to electromagnets; and it consists of the novel construction, combination, and arrangement of parts hereinafter described and claimed.

The object of this invention is to provide an electromagnet consisting of an armature pivotally carried by one of the cores of the magnet and adapted to operate upon the other core, within which is carried a spring-actuated pin for overcoming the residual current and detaching the armature.

Figure 1 is a view showing our improved armature connected to a mechanism to be operated thereby. Fig. 2 is a view, partly in section, showing the features of construction of our improved armature. Fig. 3 is a top view showing the manner in which the armature is pivoted to the core of one of the magnets.

Referring to the drawings in detail, 4 denotes the core of the magnet which carries the armature, and 5 indicates the other core, upon which the armature operates. As shown, the core 4 is extended above the body of the magnet, and pivotally attached to the projecting end thereof is the bifurcated end of the armature 6, the same being mounted upon a pivot-pin 7. Extending rearwardly from the bifurcated end of the armature is a rod 8, upon which is adjustably carried a weight 9, the purpose of which is to overbalance the weight of the armature and hold the same in its normal position, as shown in Fig. 2. Within the upper extremity of the core 5 is formed a depression in which is located a spring 10, and over the said spring is a cap or pin 11, the purpose of which is to receive the impact of the armature when drawn downward by magnetic attraction and also to counteract the effect of the residual current. This pin when depressed by the closing of the armature projects above the core just enough to prevent actual contact between the armature and the pole. It is apparent that this arrangement of electromagnet reduces the air-gap to a minimum throughout the entire motion of the armature, resulting in the highest possible efficiency in the attractive power. The core 5 projects a distance equal to the range of the motion of the armature, the said armature being provided with a groove 12 to receive the projection without coming in actual contact therewith.

In Fig. 1 is shown a bar or connection adapted to connect the armature to the mechanism to be operated thereby; but it is not necessary to describe these parts in detail, since they are no part of our present invention, which lies wholly in the electromagnet above described.

An electromagnet constructed in accordance with the above principles has been found to make an economical use of the electric current supplying the power and also to give a nearly equal pull of the armature over its entire range of motion. The electromagnet above described has by practical tests been found to fulfil these requirements more completely and satisfactorily than any known form of electromagnet.

We claim—

An electromagnet having elongated cores, an armature pivotally carried by one of the cores and provided with a groove or recess and being adapted to operate upon the other core of the magnet, which core is formed with a depression in its upper end, a spring-actuated pin carried within said depression and projecting above the top of the core for overcoming the residual current and detaching the armature, and a counterbalance-weight carried by the rear end of said armature, substantially as specified.

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

THEODORE H. WURMB.
ROBERT BAUMANN.

Witnesses:
ALFRED A. EICKS,
JOHN D. RIPPEY.