

No. 707,617.

Patented Aug. 26, 1902.

J. L. McCULLOUGH.

TARGET.

(Application filed June 15, 1901.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 7

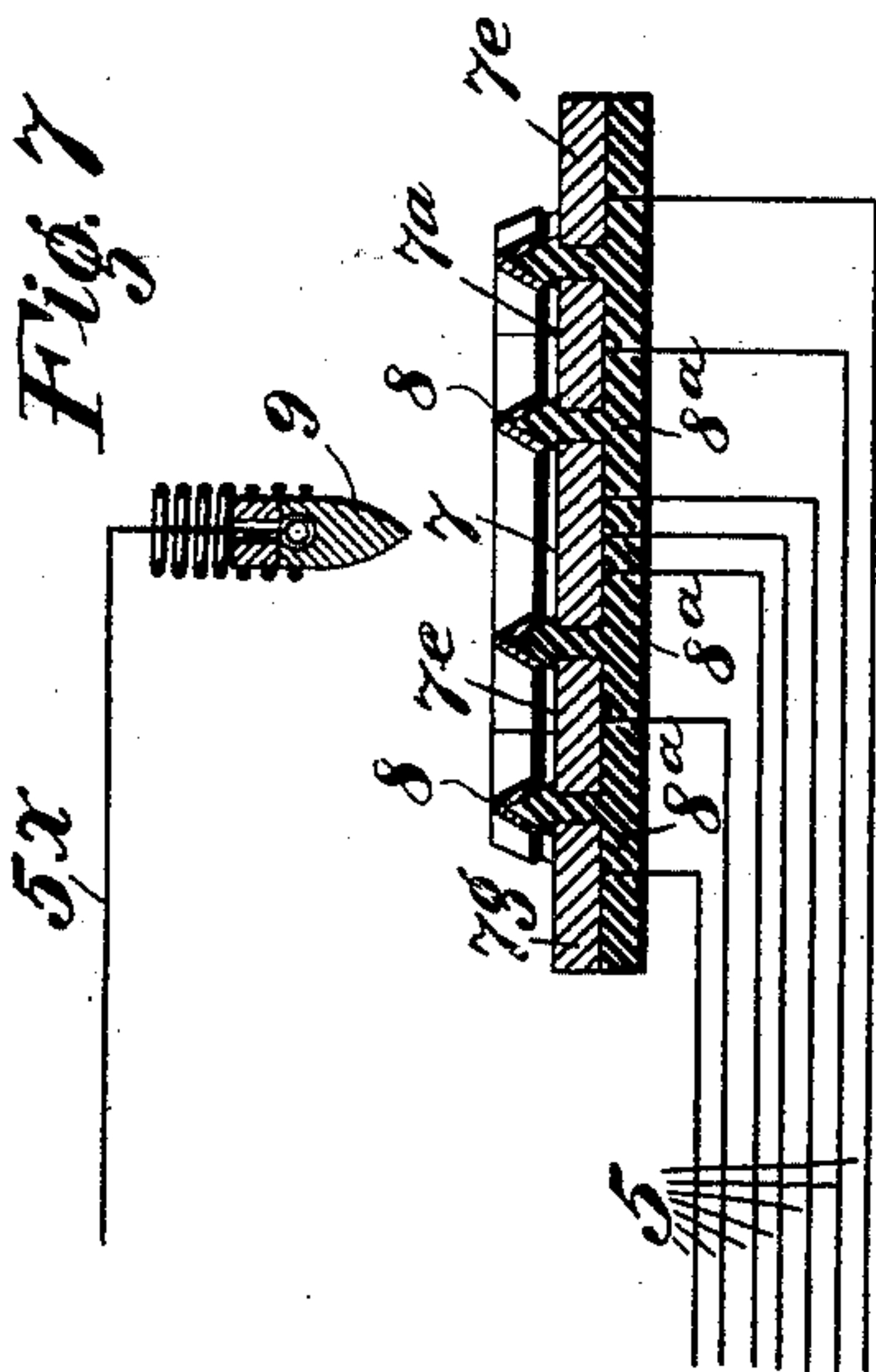


Fig. 6

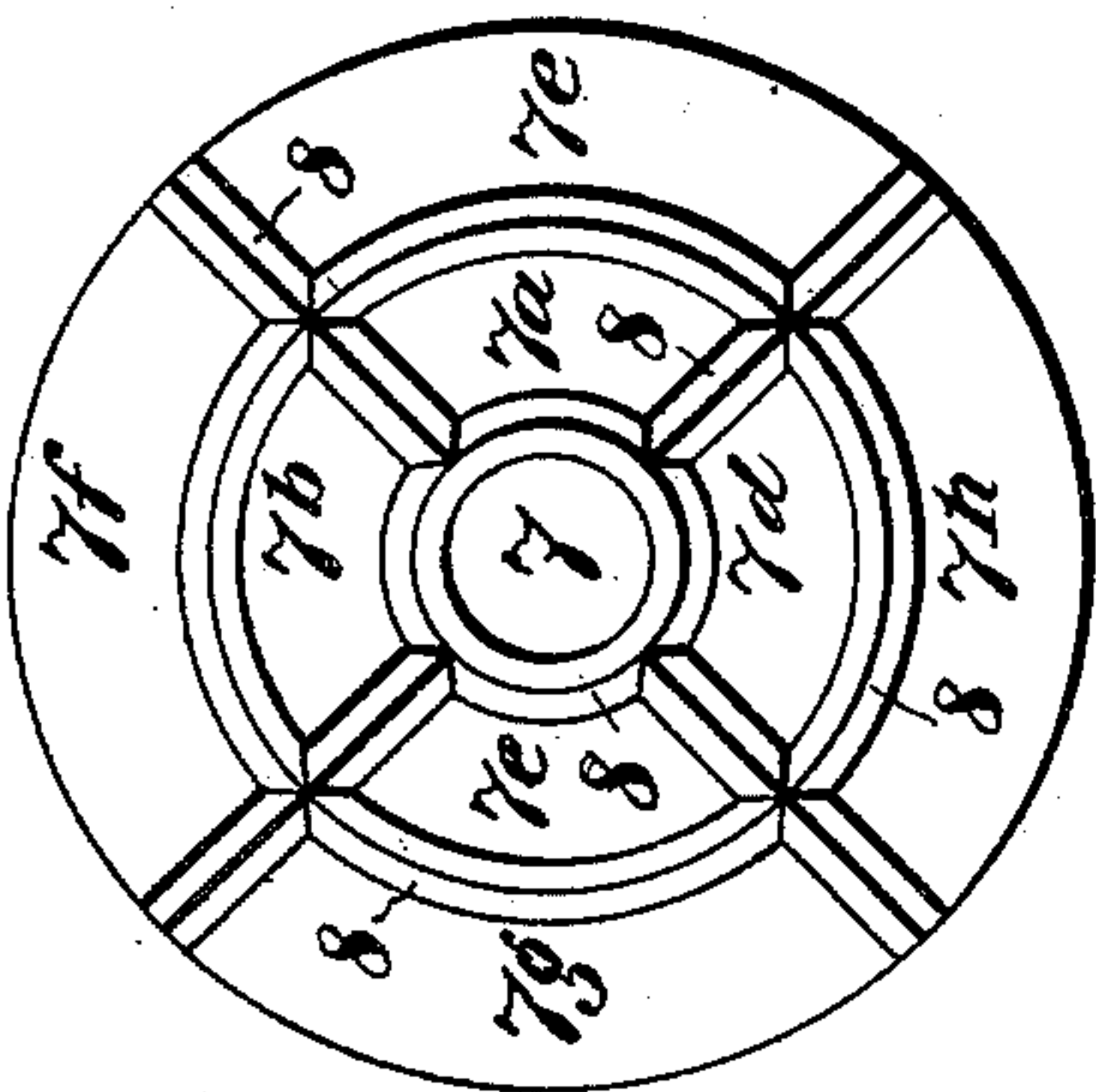
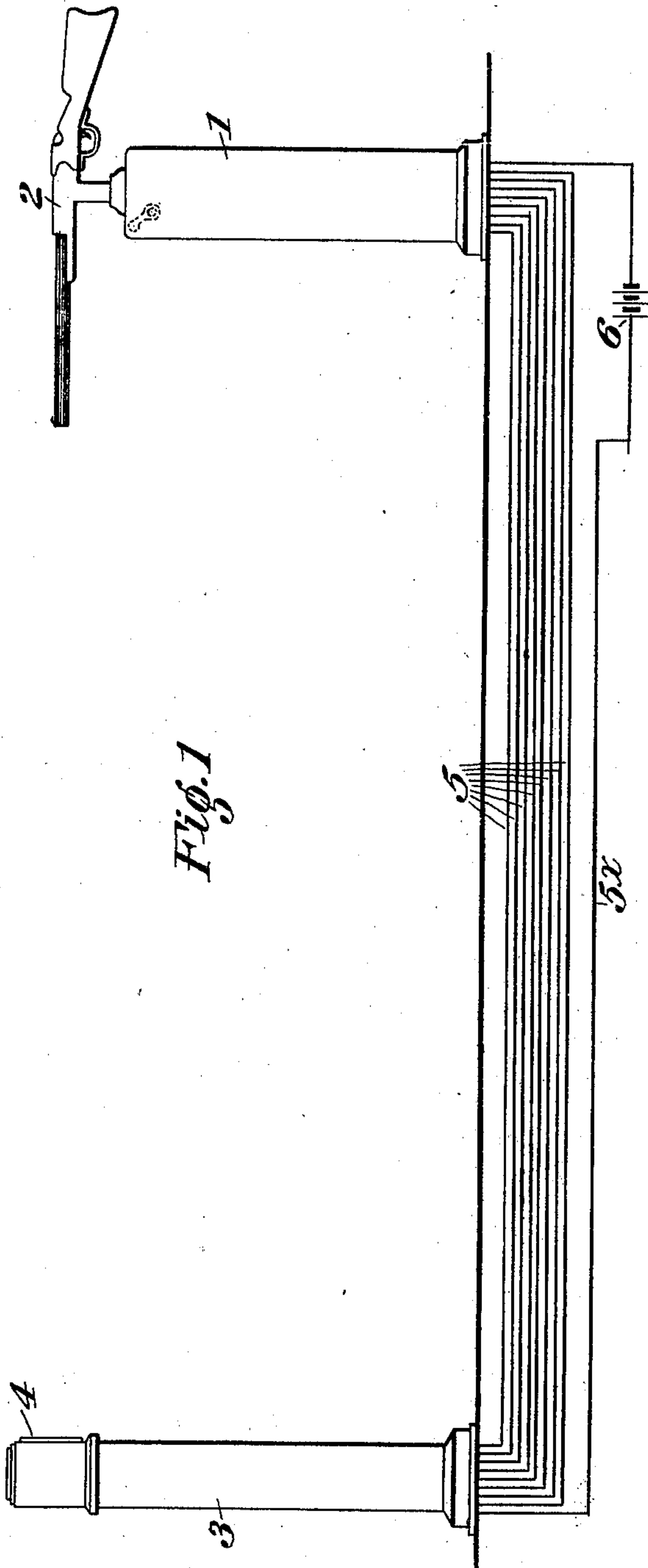


Fig. 1



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2 Sheets—Sheet 2.

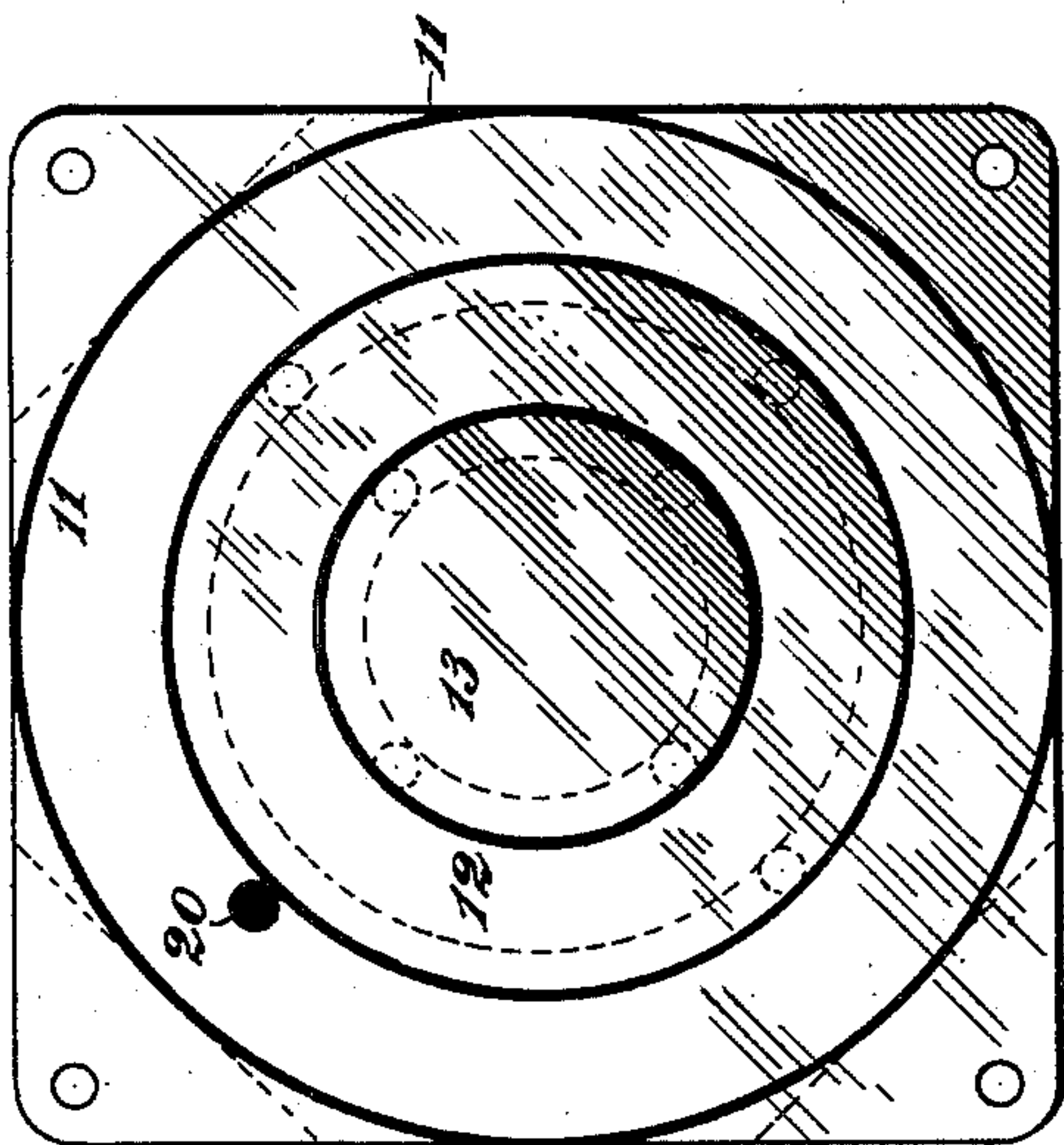


Fig. 3.

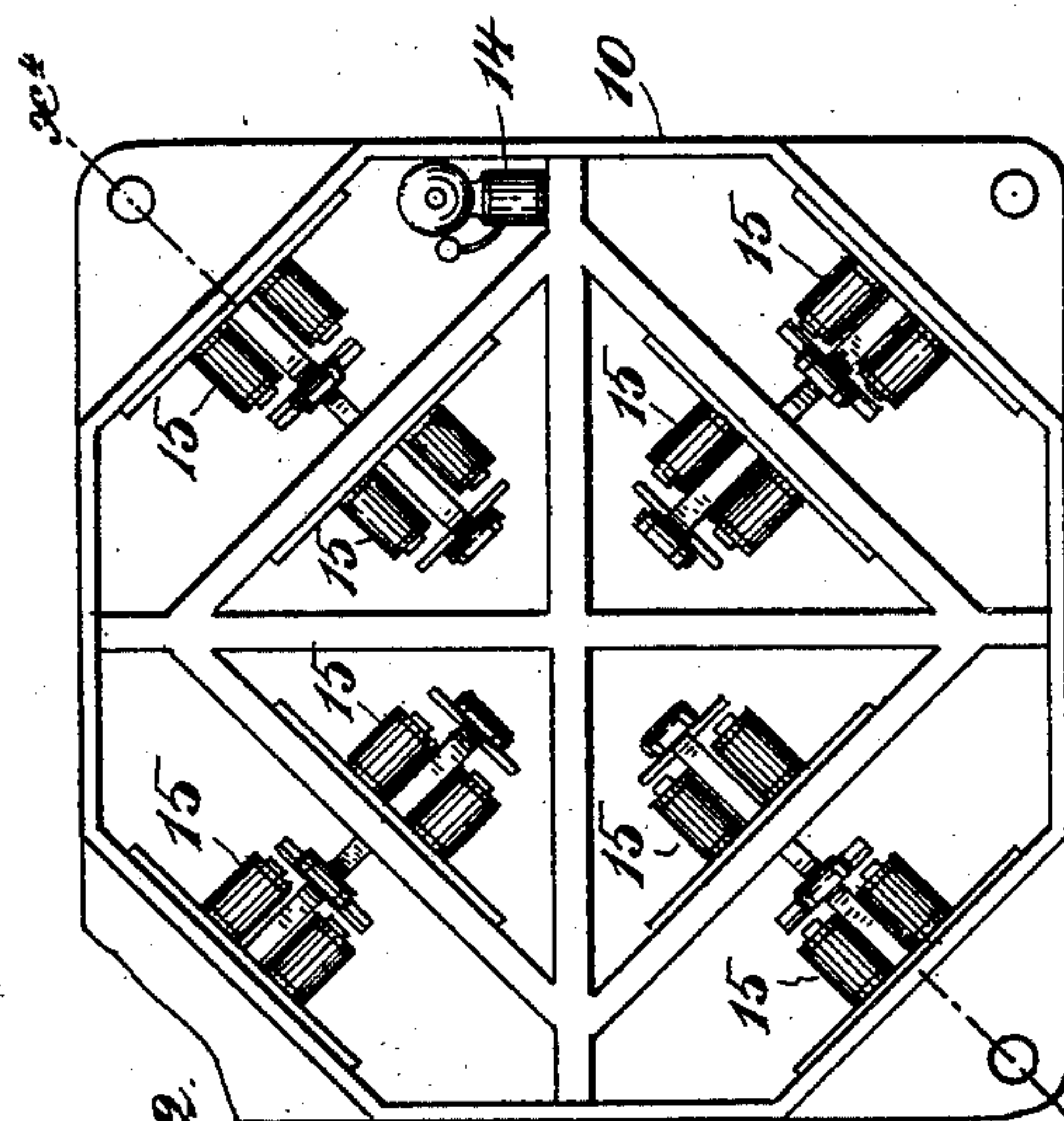


Fig. 2.

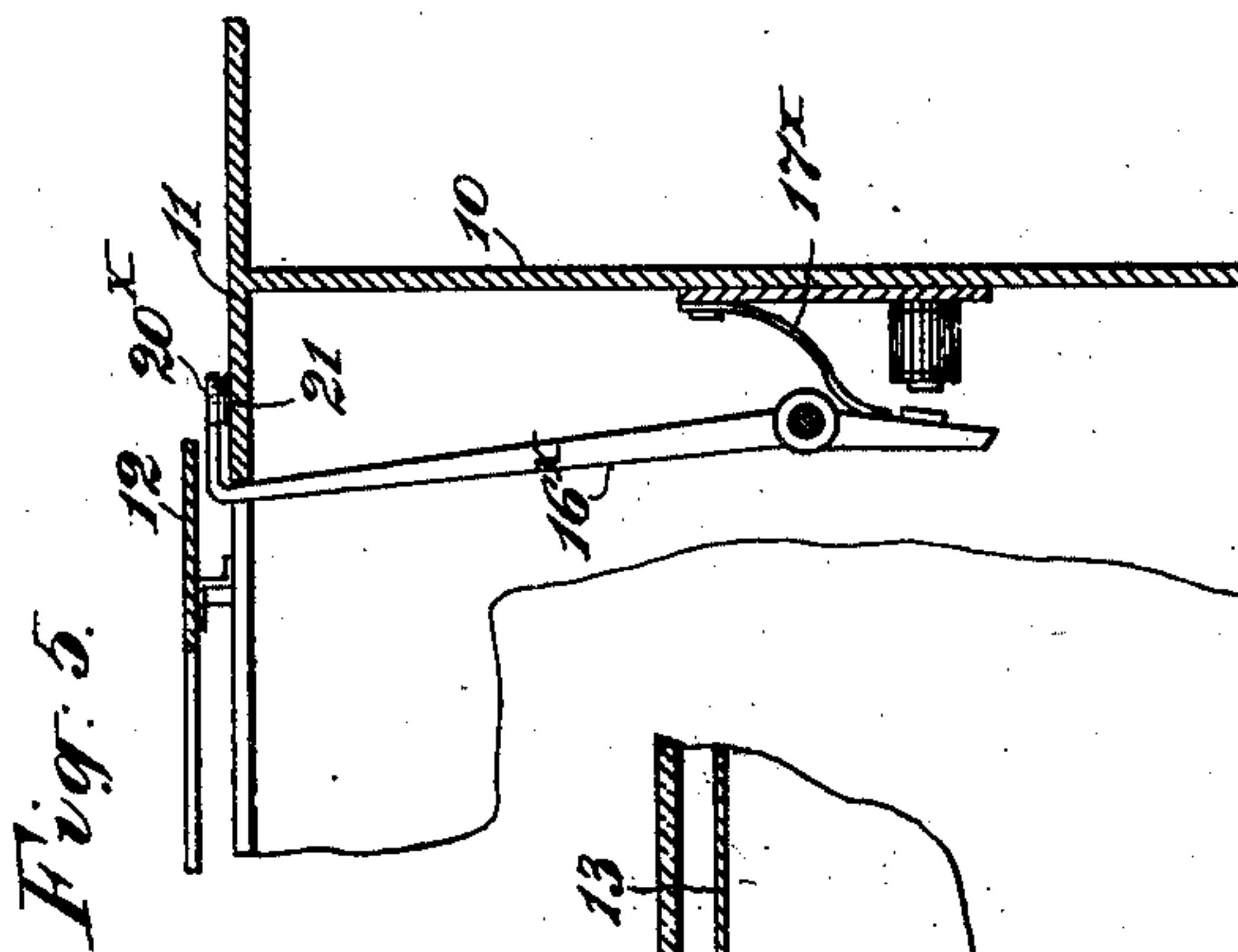


Fig. 5.

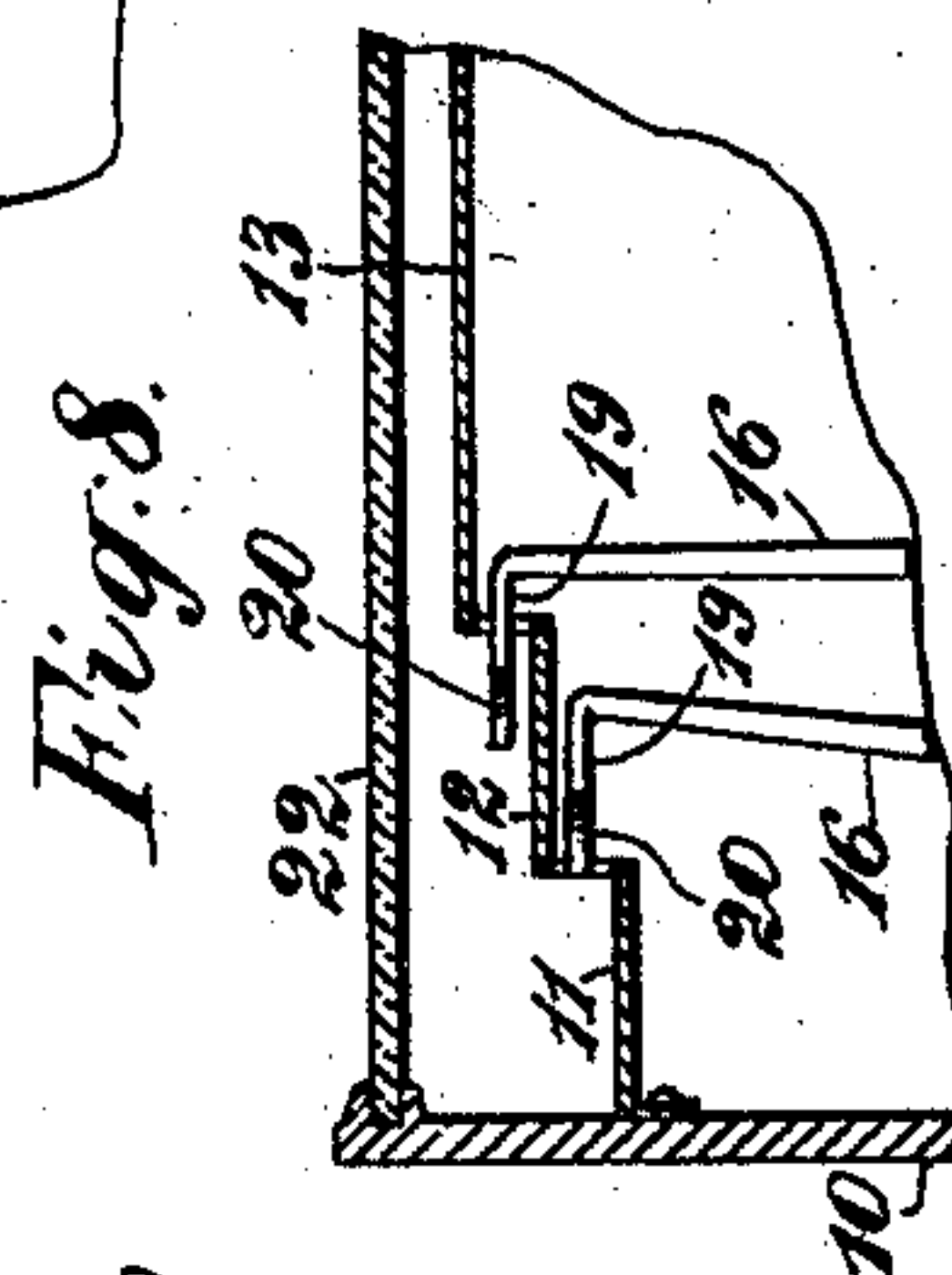


Fig. 8.

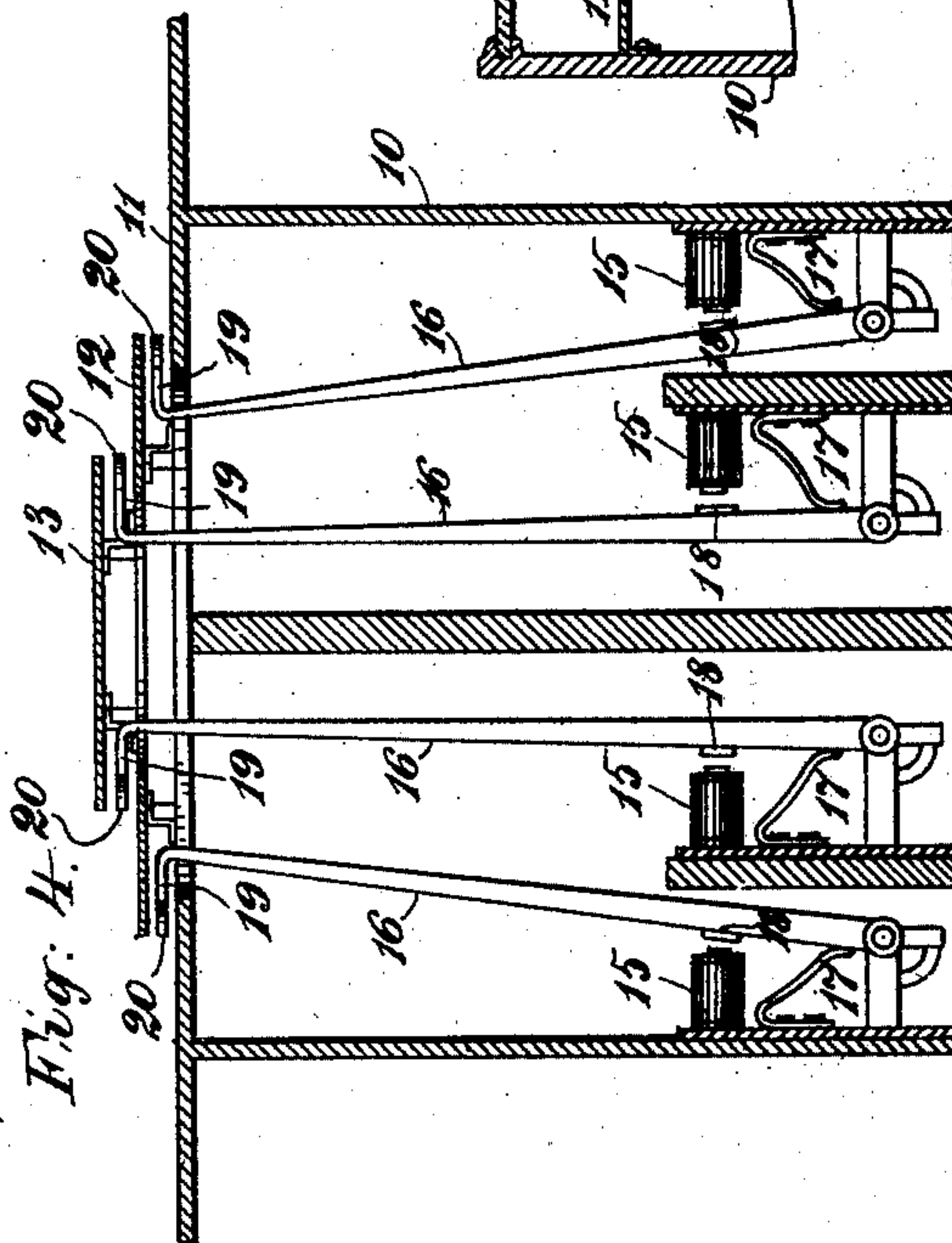


Fig. 4.

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UNITED STATES PATENT OFFICE.

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TARGET.

SPECIFICATION forming part of Letters Patent No. 707,617, dated August 26, 1902.

Application filed June 15, 1901. Serial No. 64,635. (No model.)

To all whom it may concern:

Be it known that I, JOHN L. McCULLOUGH, a citizen of the United States, residing in the city of New York, borough of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Targets, of which the following is a specification.

This invention relates to a target for a target apparatus especially adapted for use with an electric target apparatus, such as that embodied in my United States Letters Patent No. 679,325, dated July 30, 1901; and the object of the invention is to provide a target adapted to operate by magneto-mechanical means for indicating the point on the target aimed at by the person firing the gun. By the word "firing" as herein used is meant the closing of the operating-circuit through the medium of a trigger by the person who is aiming the gun at the target and who will be herein designated as the "marksman." In a target apparatus of the kind described in my said application the gun (which is a device simulating an ordinary gun) is mounted on universal bearings, so that it may be aimed at any point on or segment of a target. When a coin is inserted and the handle of the coin-controlled apparatus is operated, the gun may be cocked. The marksman then aims at the target and pulls the trigger. Now in aiming he shifts a contact over a contact-plate, which is divided up into segments or parts corresponding to segments or parts of the target, and as there is a circuit including a generator and an electromagnet for each segment of the target and contact-plate it follows that when he pulls the trigger the shifting contact will close the proper circuit and the corresponding magnet at the target will be energized or excited, and this will have the effect through proper mechanism at the target to indicate to the marksman the segment of the target at which he has aimed. In my said application I have shown and described, but have not specifically claimed, a target of substantially the character herein shown.

In the accompanying drawings, Figure 1 is a side elevation, on a small scale, of the entire target apparatus, designed merely to illustrate the practical utility of the target. Figs. 2, 3, 4, and 5 are views of the target on a larger scale than Fig. 1. Fig. 2 is a rear elevation; Fig. 3, a front elevation; Fig. 4, a

section at line x^4 in Fig. 2; and Fig. 5, a view illustrating a slight departure in construction from Fig. 4. Fig. 6 is a plan view, and Fig. 7 a transverse section, of the contact-plate which operates in connection with the target. Fig. 8 is a sectional view illustrating a modified construction of the plates of the target.

Referring to Fig. 1, 1 designates the gun-stand; 2, the gun mounted on universal bearings in the stand; 3, the target-stand; 4, the target mounted thereon; 5, the various circuit-conductors leading from the gun-stand to the target; 5^x, the common return-conductor, and 6 the battery or generator. Inside the gun-stand is situated the contact-plate seen (on a larger scale than Fig. 1) in Figs. 6 and 7. This plate comprises segments 7, 7^a, 7^b, 7^c, 7^d, 7^e, 7^f, 7^g, and 7^h, which correspond and relate to certain parts of the target to be hereinafter described. The segments of the contact-plate are insulated from each other by insulating material 8^a under and between the segments, and deflecting-guides 8 above the surface of the contact-plate are employed to deflect the contact-point 9 (seen in Fig. 7) should it not descend directly upon one of the segments. The contact-point 9 is flexibly mounted, and when it descends upon one of the guides 8 it slides off onto the adjacent segment of the contact-plate and closes the circuit.

Referring now to Figs. 2, 3, and 4, which illustrate the specific construction of the target, 10 is any suitable casing having a face-plate 11, on which are mounted superposed plates 12 and 13, the three plates being separated by spaces, as clearly shown in Fig. 4. These several plates form together the target proper, the main plate 11 being the outer zone of the target, the plate 12 the inner zone, and the plate 13 the bull's-eye. Each of the plates 11 and 12 is supposed to be divided into four segments or fields, which, with the bull's-eye 13, make nine fields, corresponding in position to the nine segments or parts of the contact-plate, Fig. 6, at the gun-stand. It should be understood that there are no visible markings on the plates 11 and 12 dividing them into four fields or segments. The lines of division are purposely left invisible. Back of the target proper and within the casing 10, as herein shown, are mounted the indicating devices, which will now be described. For

each segment of the target there is an indicating device. That for the bull's-eye consists or may consist of an electric bell 14, which will ring whenever the circuit is closed while the gun is aimed at the bull's-eye. That for each of the eight segments of the plates 12 and 13 consists of an electromagnet 15 in its appropriate circuit, an armature-lever 16, its spring 17, an armature 18, and an indicator of some kind carried on the free end of the lever 16. The latter lever projects out through an aperture in the plate and carries on a short slender stem 19, located between the superposed plates, a disk 20. Normally these disks are concealed behind the plate exterior; but when the magnet 15 is excited it attracts its armature, operates the armature-lever, and through it protrudes the indicating-disk 30 into view. In Fig. 3 all of the disks 20 but one are represented in dotted lines as concealed behind the plates. The one protruded is seen at the upper left-hand side in Fig. 3. The disks 20 and the plates 11 and 12 will contrast in color—that is, the plates may be white, for example, and the indicating-disks black. However, this arrangement may be reversed, as indicated in Fig. 5. In this construction the spring 17^x of the armature-lever 16^x keeps the disk 20^x normally protruded, and the excitation of the magnet withdraws the disk out of sight under the plate. In this construction the disk 20^x will be of the same color or tint as the plate of the target—white, for example—and under it will be placed a disk or spot 21 of contrasting color, (as black,) so that when the magnet 15 is excited the spot 21 will be uncovered by the withdrawal of the disk 20^x. In any case the spring of the armature-lever will obliterate the indication as soon as the operating-circuit shall be broken.

Obviously many ways of displaying an indicating disk or spot on the target through electromechanical means will suggest themselves to any one skilled in the art, and I do not limit myself in that respect. The construction may also be varied in other ways without departing from my invention. For example, the superposed plates 11, 12, and 13 may be integrally connected, as shown in Fig. 8, the disks 20 playing through slots, and the face of the target may be covered with a glass 22.

The operation of my target is fully described in connection with a gun (which must of necessity be used with it) in my before-mentioned patent, No. 679,325, and therefore the operation need only be briefly described here. In the aiming of the gun 2 at the target 4 the contact 9 will move about above the contact-plate. If the gun be aimed at the bull's-eye 13, for example, the contact-point 9 will be directly over the segment 7 of the contact-plate. When the trigger of the gun is pulled by the marksman, the contact-point 9 drops into electrical contact with the segment 7. This completes an electric circuit through the

magnet of the bell 14 and the bell rings. If the contact-point 9 happens when the trigger of the gun is pulled to be over one of the segments 7^a to 7^h of the contact-plate, the circuit will be completed through the corresponding electromagnet 15 at the target, and the excitation of this magnet will, through the means already described, cause the proper disk or marker to appear on the target. When the circuit through the magnet 15 is broken, the spring 17 returns the disk or marker to its first position automatically. The circuit is broken automatically at the gun, as explained in my said patent. The magnet 15 and spring 17 make the marker visible and non-visible to the marksman.

Being the first, as I believe, to operate a plurality of markers or disks on the face of a target by electromechanical means to indicate to the marksman the part of the field on the target at which he aimed when the trigger was pulled, I do not wish to limit myself to any specific means for effecting the same.

Having thus described my invention, I claim—

1. A target for a target apparatus having a face-plate, a movable indicator adapted to move in and out from behind said plate, a lever which actuates said indicator, means for holding said indicator out of sight, normally, behind said face-plate, and an electromagnet which moves the lever in the direction to expose said indicator to view, substantially as set forth.

2. A target having superposed plates with spaces between them, an electromagnet, its armature, its armature-lever, its spring, and a disk carried by said armature-lever and adapted to move into and out of view in a space between said plates by the movements of said lever and its spring, substantially as set forth.

3. A target having a face-plate, a movable disk adapted to move in and out from behind said plate, a lever which actuates said disk, a spring which moves said lever in one direction, and an electromagnet which moves it in the opposite direction, substantially as set forth.

4. A target for a target apparatus comprising the superposed and separated face-plates 11, 12 and 13, a frame supporting same, electromagnets mounted in the frame back of said plates, the armatures, armature-levers of said magnets, the springs of said levers, and indicators carried by the respective armature-levers and held normally behind the respective face-plates by said springs and the electromagnets adapted to move the indicators into view, substantially as set forth.

In witness whereof I have hereunto signed my name, this 14th day of June, 1901, in the presence of two subscribing witnesses.

JOHN L. McCULLOUGH.

Witnesses:

HENRY CONNETT,
PETER A. ROSS.