

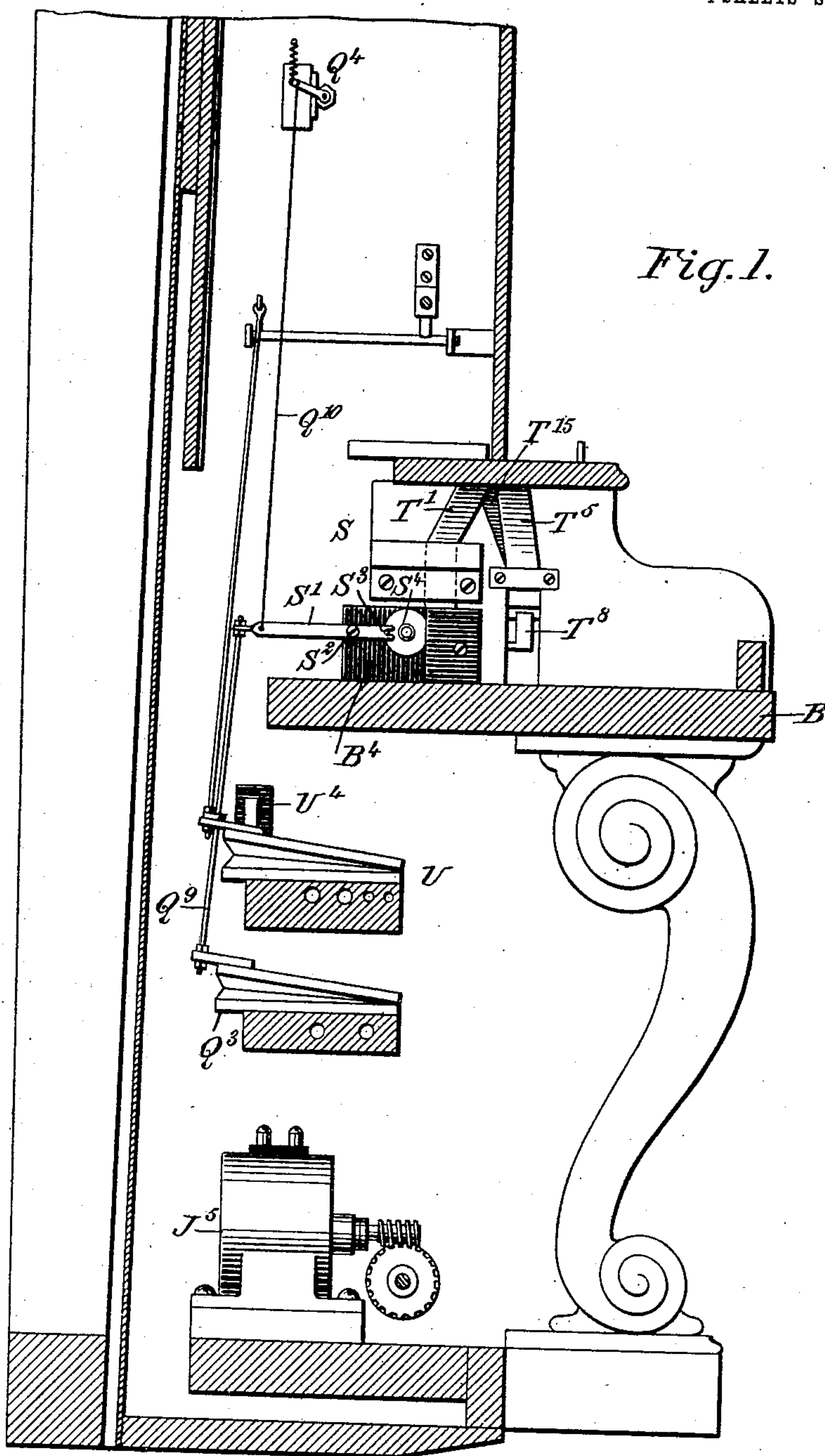
No. 879,827.

PATENTED FEB. 18, 1908.

H. MEYER.
COIN CONTROLLED APPARATUS.

APPLICATION FILED DEC. 23, 1905.

4 SHEETS—SHEET 1.



WITNESSES

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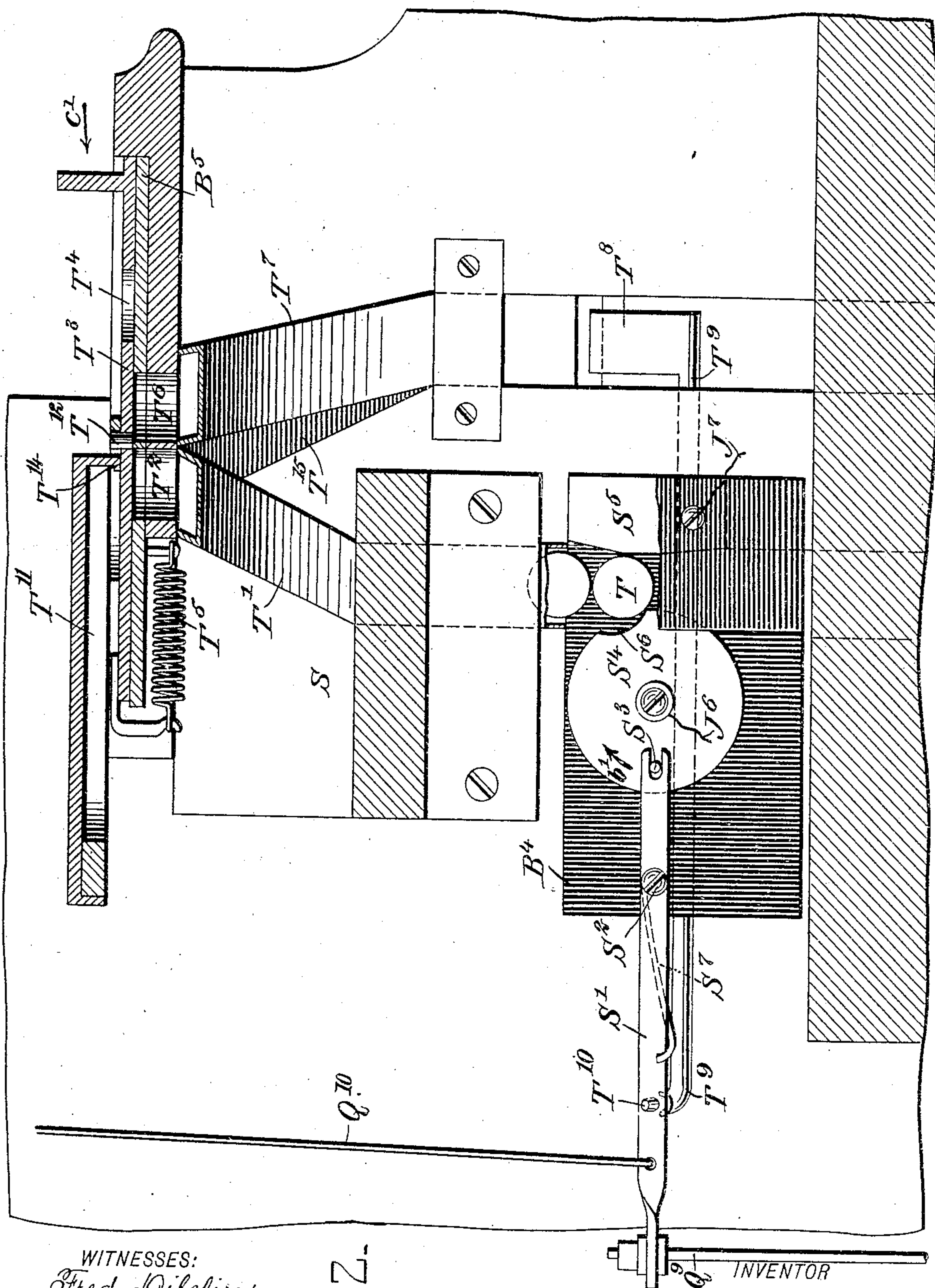
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Fig. 2.

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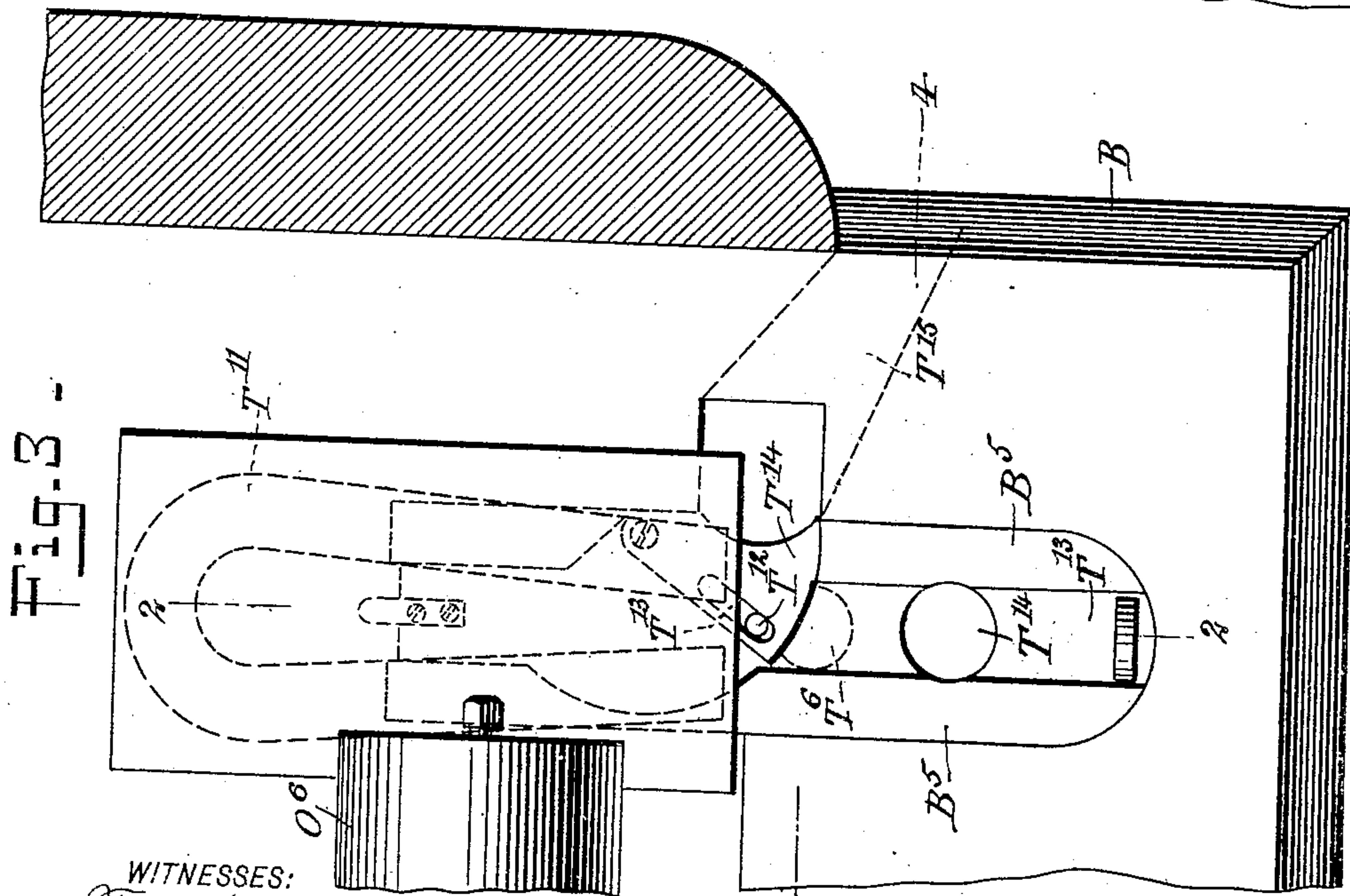
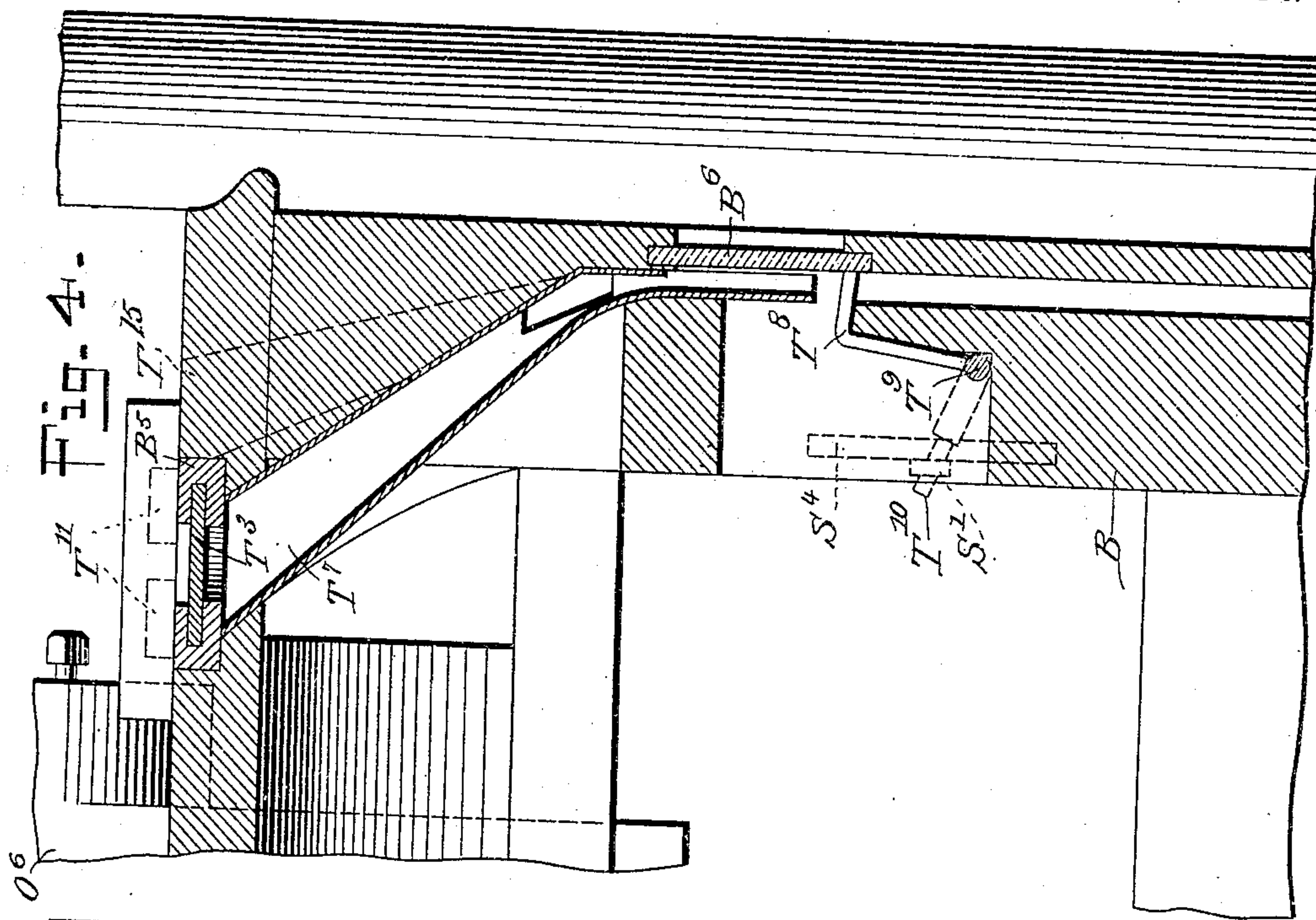
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4 SHEETS—SHEET 3.



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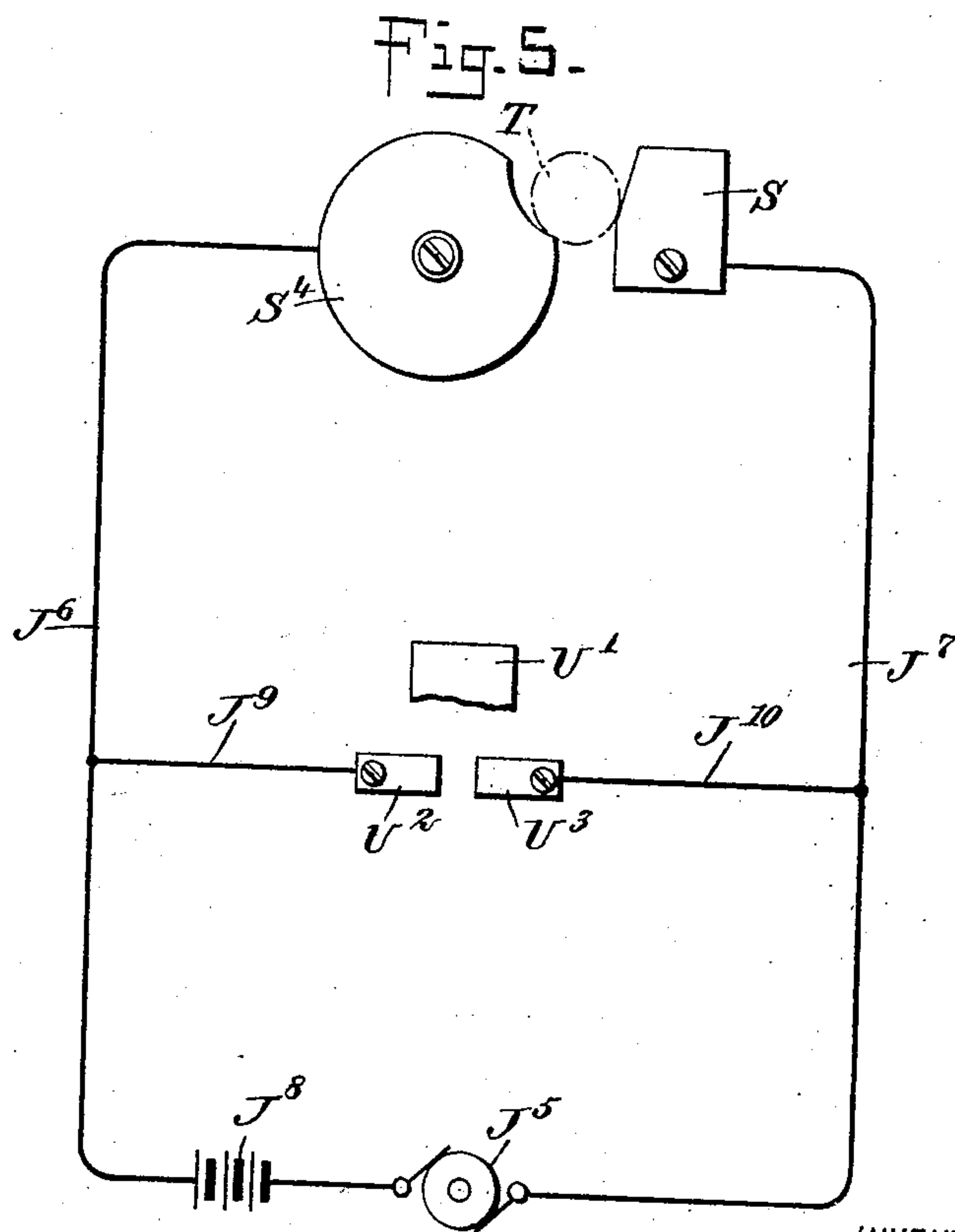
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4 SHEETS—SHEET 4.



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UNITED STATES PATENT OFFICE.

HERMANN MEYER, OF NEW YORK, N. Y.

COIN-CONTROLLED APPARATUS.

No. 879,827.

Specification of Letters Patent.

Patented Feb. 18, 1908.

Original application filed August 3, 1905, Serial No. 272,499. Divided and this application filed December 23, 1905. Serial No. 293,078.

To all whom it may concern:

Be it known that I, HERMANN MEYER, a citizen of the United States, and a resident of the city of New York, borough of the Bronx, in the county and State of New York, have invented a new and Improved Coin-Controlled Apparatus, of which the following is a full, clear, and exact description, this being a division of the application for Letters Patent for an automatic or self-playing piano, Serial No. 272,499, filed August 3, 1905.

The object of the invention is to provide a new and improved coin-controlled apparatus, the same being especially designed for use on an automatic or self-playing piano, and arranged to allow the use of a single note sheet containing a number of pieces of music, only one of which is played at the introduction of a coin, the note sheet being automatically arranged at the end of the last piece of music, to start playing the first piece of music on the introduction of another coin.

The invention consists of novel features and parts and combinations of the same which will be more fully described hereinafter and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a cross section of the improvement as applied to a self-playing piano; Fig. 2 is an enlarged cross section of the improvement, the section being on the line 2—2 of Fig. 3; Fig. 3 is a plan view of the same; Fig. 4 is a sectional front elevation of the same on the line 4—4 of Fig. 3, and Fig. 5 is a diagrammatic view of the motor and the two motor circuits.

The self-playing piano on which the improvement is applied is more fully shown and described in the application above referred to, so that further detail description of the general construction of the instrument is not deemed necessary, it being sufficient to state that the instrument is provided with the usual strings adapted to be sounded by a piano action capable of being played either by hand or by mechanical means controlled by a note sheet traveling over a tracker board, controlling pneumatics connected with the piano action. The pneumatics are connected with valved chests connected with a suction chamber, from which the air is exhausted by a suction bellows actuated from the motor

J⁵, preferably of the electric type. In order to control the motor J⁵ for starting the instrument, a coin-controlled mechanism is provided, arranged in such a manner that the introduced coin closes the motor circuit, thus starting the motor J⁵ for actuating the suction bellows.

The suction bellows exhaust air from a pneumatic motor used for driving the winding up and rewinding mechanism for the note sheet, it being understood that when a coin is introduced and the electric motor J⁵ and the pneumatic motor are running, then the note sheet is wound up. The note sheet is provided with a number of pieces of music, only one of which is played on the introduction of a coin, and in order to stop the motor J⁵ automatically and hence the pneumatic motor at the end of each piece of music, a stopping pneumatic Q³ is provided, controlled by stop apertures in the note sheet, and controlling a coin-retaining and releasing device and also a counter Q⁴ for counting the coins introduced in the machine.

The movable member of the stopping pneumatic Q³ is connected by a rod Q⁹ with the lever S' of the coin-controlled mechanism S. The lever S' is fulcrumed at S² on an insulated plate B⁴ forming part of the main frame B, and the said lever S' engages, with its slotted end, a pin S³ on the member S⁴ operating in conjunction with a fixed member S⁵ for holding a coin T between the said members, as indicated in Fig. 2, to keep the motor-circuit closed for the time being. The member S⁴ is in the form of a disk mounted to turn on the plate B⁴, and the peripheral surface of the said member S⁴ is provided with a cut-out portion or notch S⁶, so that when the stopping pneumatic Q³ is collapsing and its rod Q⁹ pulls on the lever S', then the latter imparts a turning motion to the member S⁴ to turn the same in the direction of the arrow b' so that the cut-out portion S⁶ comes in contact with the peripheral edge of the coin T and thus allow the latter to move downward with the member S⁴ and finally drop out from between the members S⁴ and S⁵, thus to break the first or coin-controlled motor-circuit (see Fig. 5).

The lever S' is held in its normal position shown in Fig. 2 by a spring S⁷ to return the member S⁴ to the position shown in Fig. 4 as soon as a stop aperture of the note sheet has passed a tracker board opening. The lever S' is connected by a link Q¹⁰ with the counter

Q⁴ previously mentioned, so that whenever the lever S' is actuated by the stopping pneumatic Q³, as above described, and the coin T is dropped from between the members S⁴, S⁵, then the counter Q⁴ is actuated to register the coin thus dropped. The coin is passed between the members S⁴ and S⁵ by way of a coin chute T', into the upper end of which opens an opening T², normally closed by a coin slide T³ mounted to slide in suitable bearings B⁵ forming part of the main frame B. The coin slide T³ is provided with an opening T⁴ for the reception of the proper coin, and the said slide is pressed on, at its inner end, by a spring T⁵ to hold the slide normally in the position shown in Fig. 2; that is, with the coin-opening T⁴ out of register with the drop opening T². In front of the drop opening T² is formed an opening T⁶ somewhat smaller than the opening T², to drop spurious coin into a chute T⁷ instead of carrying the spurious coin to the opening T² and the coin chute T'. Thus when a spurious coin is placed in the opening T⁴ and the slide T³ is pushed rearward by the operator in the direction of the arrow c' and against the tension of the spring T⁵, then the spurious coin drops through the opening T⁶ into the chute T⁷, and hence does not pass between the members S⁴ and S⁵. The spurious coin passing down the chute T⁷ is retained in the chute for the time being by a retaining arm T⁸ formed on one end of a shaft T⁹ mounted to turn in suitable bearings arranged on the frame B. The inner end of the shaft T⁹ is provided with an angular offset T¹⁰ engaging an aperture in the lever S', so that when the latter is actuated from the stopping pneumatic Q³, as previously explained, then the shaft T⁹ is turned and the retaining arm T⁸ releases the spurious coin, which then drops with the proper coin introduced subsequently to the spurious coin, but into a separate receptacle arranged within the machine. The spurious coin may be viewed while at rest on the retaining arm T⁸ through a glass pane B⁶ arranged in the side of the casing B (see Fig. 4).

In case a piece of iron of the size of the proper coin T is placed into the slide opening T⁴ and the slide is pushed rearward, then the piece of iron does not drop through the opening T² into the coin chute T', but is attracted by a magnet T¹¹ secured to the frame B and arranged directly over the rear portion of the slide T³. In order to move this piece of iron out of engagement with the under side of the magnet T¹¹, the following arrangement is made: On the slide T³ is secured an upwardly-projecting pin T¹² in engagement with an elongated slot T¹³ formed in a lever T¹⁴ fulcrumed on the guideway B⁵ and extending between the top of the slide T³ and the under side of the magnet T¹¹. When the slide T³ is pushed rearward, the lever T¹⁴

is swung in a like direction, and when the piece of iron is attracted by the magnet T¹¹ and lifted out of the opening T⁴, and the slide is allowed to return, then the lever T¹⁴ engages the rear edge of the piece of iron and pushes the same to the right into a chute T¹⁵ leading to the chute T⁷ a distance above the arm T⁸. Thus from the foregoing it will be seen that only when the proper coin T is placed into the opening T⁴ and the slide T³ is pushed rearwardly, then this proper coin drops down the coin chute T' between the members S⁴ and S⁵ to close the motor circuit to start the machine. When the piece of music has been played and the stopping aperture of the note sheet moves in engagement with the tracker board opening, then the coin T is released and the motor circuit is broken to stop the motor.

The circuit wires J⁶ and J⁷ (see Fig. 5) connect the motor J⁵ with the members S⁴ and S⁵, and the wire J⁶ contains a battery J⁸ or other suitable source of electric energy. When the coin T is in position between the members S⁴, S⁵ the circuit is closed, and when the coin T drops out of position between the members S⁴, S⁵ the circuit is broken and hence the motor J⁵ stops.

After the last piece of music of the note sheet is played, then the note sheet is automatically rewound, and for this purpose it is necessary to release the coin T by the action of the stopping pneumatic Q³ to break the motor circuit as described, and to again immediately close the motor circuit to keep the motor running during the rewinding operation, at the same time closing a valve for preventing the instrument from playing. For the purpose mentioned, use is made of a pneumatic U controlled by the simultaneous action of the stopping pneumatic Q³ and a pneumatic singly actuated whenever the mechanism is actuated which is employed for releasing the hammer rail from its rearward or half-stroke position, the same as if the soft pedal on an ordinary piano were released. The pneumatic U (see Fig. 1) is provided on top with a contact closing plate U' adapted to make contact with contact plates U² and U³ whenever the pneumatic U is collapsed, the said contact plates U² and U³ being secured on an insulated plate U⁴ attached to the main frame B; and the said contact plates U² and U³ are connected by branch wires J⁹ and J¹⁰ with the circuit wires J⁶ and J⁷, thus forming a second or pneumatically controlled motor circuit (see Fig. 1). As the motor J⁵ is kept running, owing to the closing of the second circuit, as above described, the note sheet is rewound.

The operation is as follows: When a coin is passed by the slide T³ and chute T', between the members S⁴, S⁵ of the coin-controlled mechanism S, then the motor circuit is closed by the coin T, whereby the motor

is started and while running actuates the suction bellows to start the pneumatic motor employed for winding up the note sheet to draw the latter over the tracker board. When the first piece of music is played, the stop apertures in the note sheet register with corresponding tracker board openings, so that the pneumatic Q^3 is caused to collapse, thus turning the member S^4 to cause the coin T to pass out from between the members S^4 and S^5 , thus breaking the motor circuit and thereby bringing the motor J^5 to a stop. When the next coin is introduced the above described operation is repeated, and in a like manner the several pieces of music on the note sheet are played in succession whenever a coin T is introduced. When the end portion of the note sheet passes over the tracker board at the end of the last piece of music on the note sheet, then the pneumatics Q^3 and U are collapsed. The collapsing of the pneumatic Q^3 causes a release of the coin T between the members S^4 , S^5 , and hence the first motor circuit is broken, but as the pneumatic U also collapses it is evident that the second motor circuit is immediately closed to keep the motor going without the coin T being between the members S^4 , S^5 . The pneumatic U controls the shifting device for the driving mechanism for the note sheet, so that the latter is rewound. When the pneumatic U is subsequently inflated its contact plate U' moves out of contact with the contact plates U^2 , so that the second circuit is broken and the motor J^5 ceases running, thus also causing the pneumatic motor to come to a standstill at the time the note sheet is completely rewound.

From the foregoing it will be seen that if the proper coins are introduced the several pieces of music on the note sheet are played in succession, and when the last piece of music is finished the note sheet is automatically rewound.

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

1. A coin controlled apparatus comprising two electric circuits having a part common to both circuits, a motor in both circuits, a coin controlled switch for closing and opening one of the circuits, a pneumatically controlled switch for opening and closing the other circuit, and pneumatic means for actuating the said coin controlled switch to release the coin and break the coin controlled circuit immediately previous to closing the other circuit by the pneumatically controlled switch.

2. A coin controlled apparatus comprising two electric circuits having a part common to both circuits, one of the circuits being coin controlled and the other pneumatically controlled, a motor in both circuits, a coin con-

trolled switch having a fixed and a movable member, the members being adapted to be electrically connected with each other by a coin, pneumatic means for actuating the said movable member of the coin controlled switch to retain or release the coin, a pneumatically controlled switch for opening and closing the pneumatically controlled circuit, and pneumatic means for actuating the said pneumatically controlled switch immediately after the said movable switch member releases the coin and breaks the said controlled circuit.

3. A coin controlled apparatus provided with an electric motor, two electric circuits having a part common to both circuits and both circuits being connected with the said electric motor, one of the circuits being coin controlled and the other being pneumatically controlled, a coin controlled switch having a fixed member, a disk mounted to turn and a spring pressed lever for turning the said disk, the said disk and the said fixed member forming terminals for the said coin controlled circuit to close the latter on the introduction of a coin between the said fixed member and the said disk, a pneumatic connected with the said lever for actuating the latter to turn the disk to release the coin, a switch for the said pneumatically controlled circuit, and another pneumatic for actuating the switch for the said pneumatically controlled circuit immediately after the coin is released by the turning of the said disk.

4. A coin controlled apparatus provided with an electric motor, two electric circuits having a part common to both circuits and both circuits being connected with the said electric motor, one of the circuits being coin controlled and the other being pneumatically controlled, a coin controlled switch having a fixed member, a disk mounted to turn and a spring-pressed lever for turning the said disk, the said disk and the said fixed member forming terminals for the said coin controlled circuit to close the latter on the introduction of a coin between the said fixed member and the said disk, a pneumatic connected with the said lever for actuating the latter to turn the disk and release the coin, a switch for the said pneumatically controlled circuit, another pneumatic for actuating the switch for the said pneumatically controlled circuit immediately after the coin is released by the turning of the said disk, and means driven by the said motor for actuating the said pneumatics in the proper sequence.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HERMANN MEYER.

Witnesses:

THEO. G. HOSTER,
EVERARD B. MARSHALL.