W. H. KLUGE.

AUTOMATIC COIN CONTROLLED LOCK.

APPLICATION FILED AUG. 30, 1909.

950,821.

Patented Mar. 1, 1910.

Fig. 1.

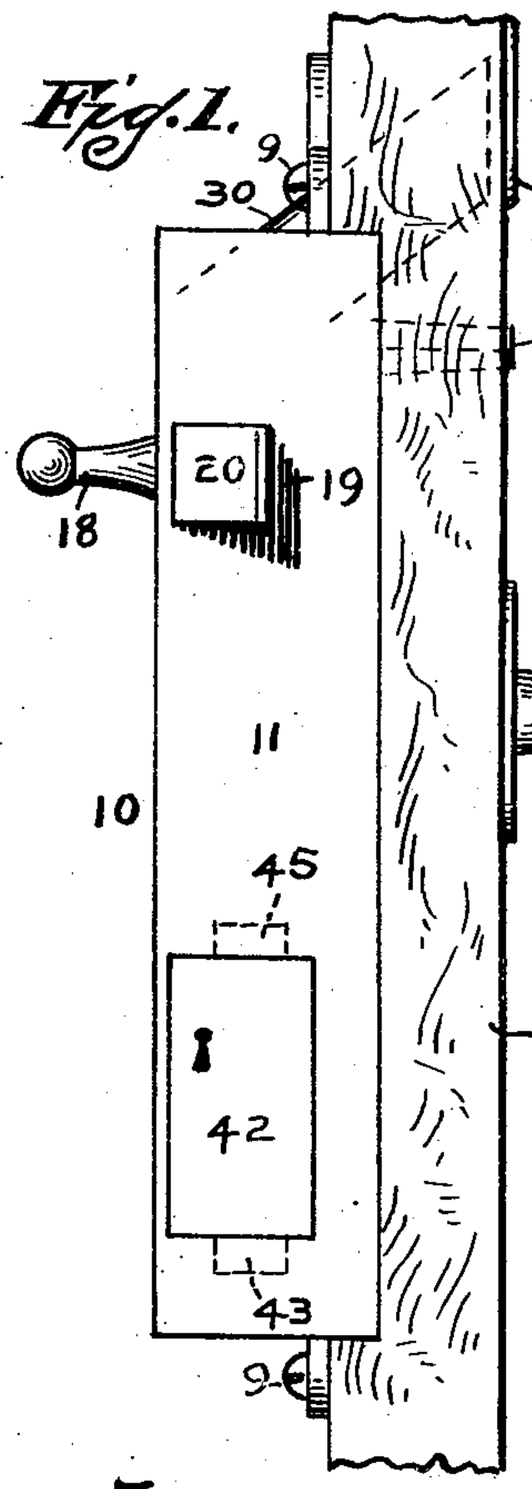


Fig. 2.

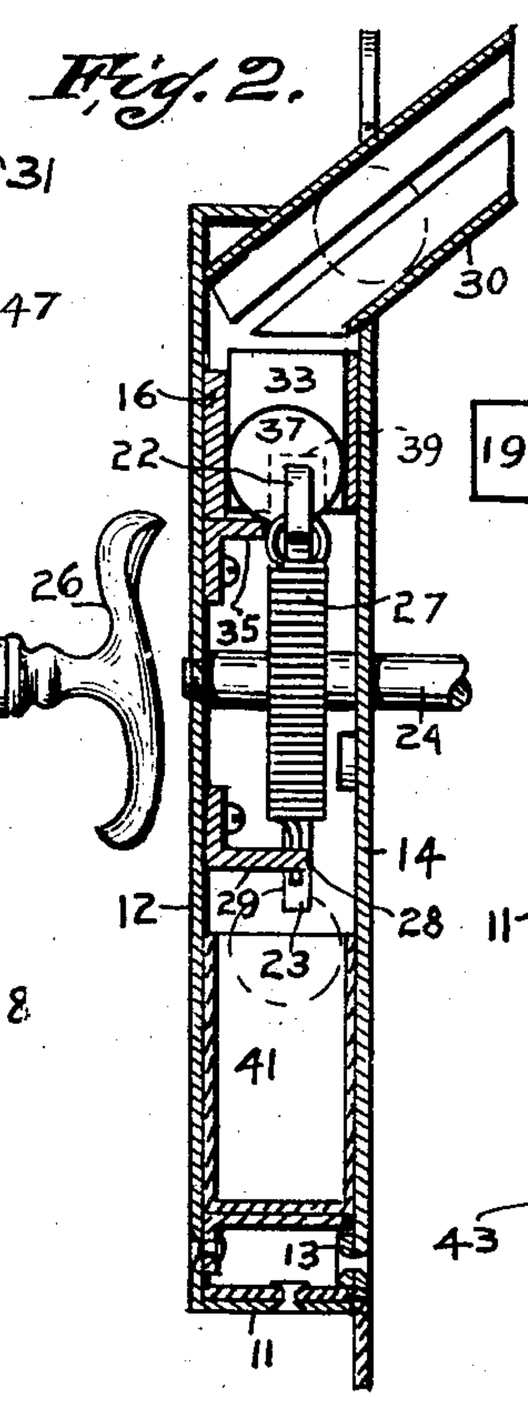


Fig. 3.

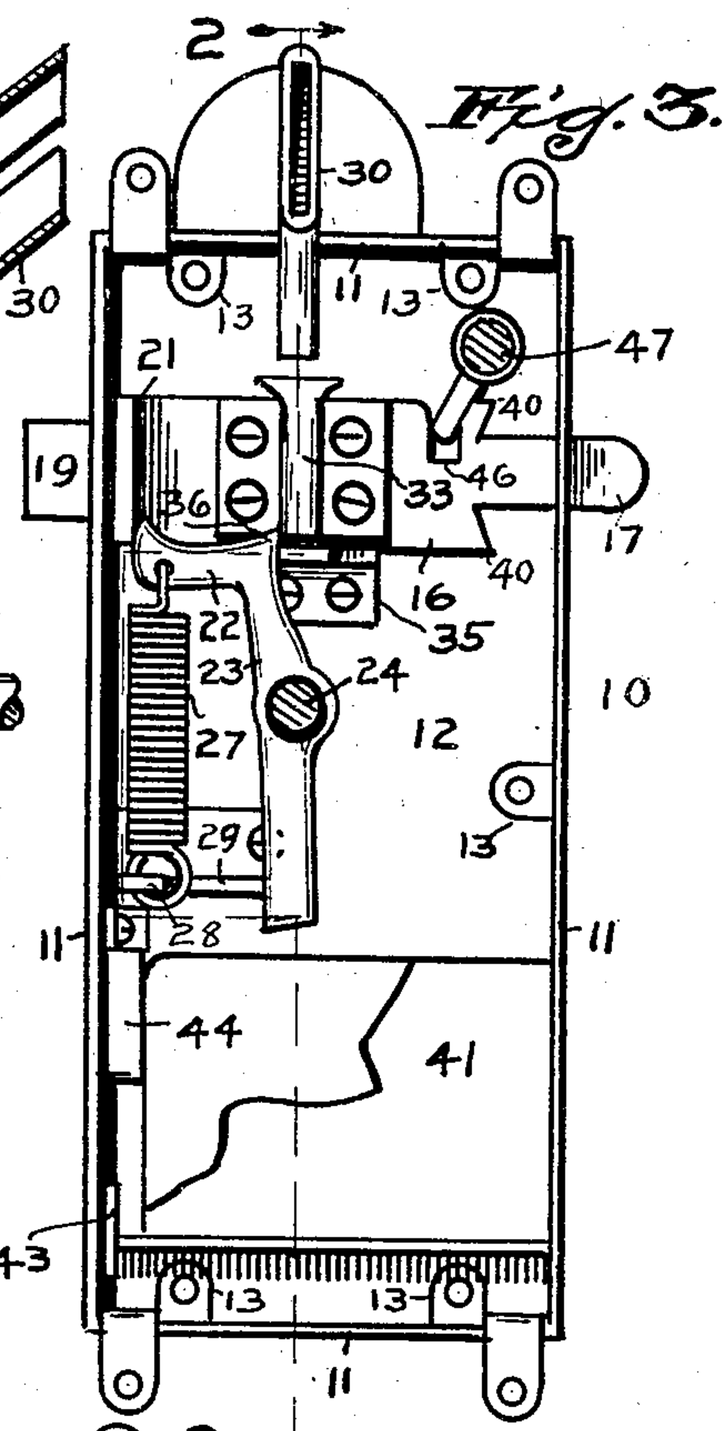


Fig. 5.

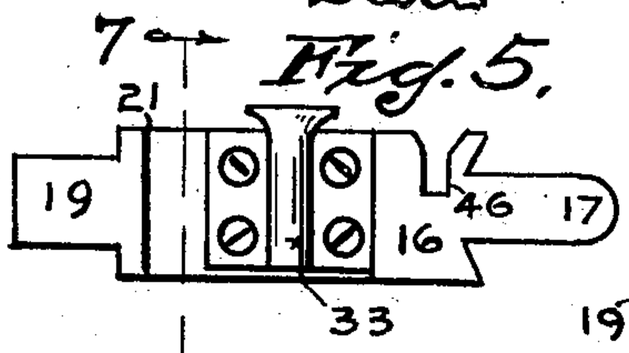


Fig. 6.

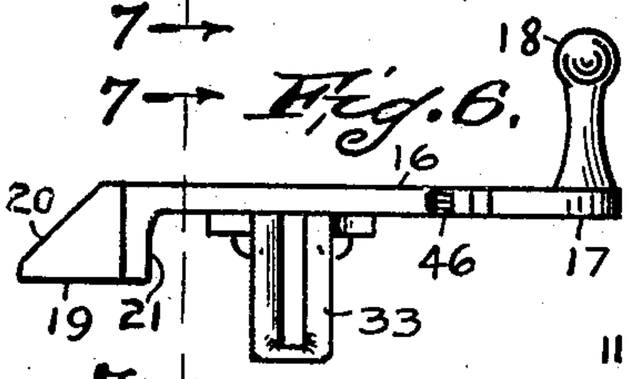


Fig. 4.

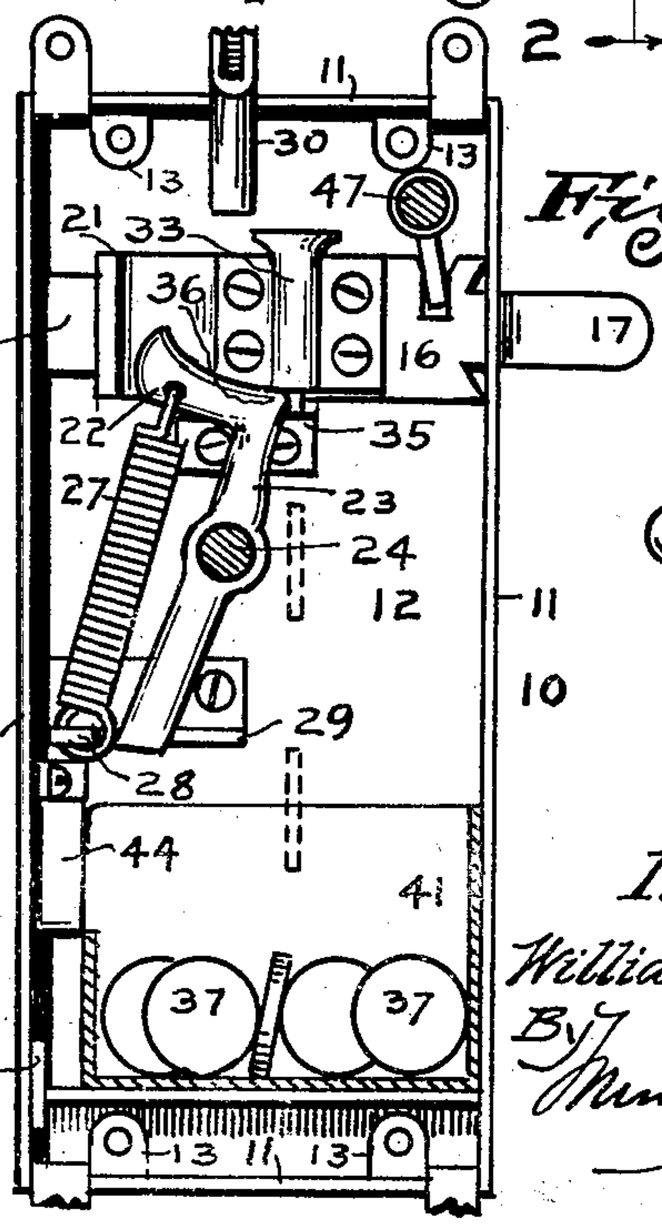
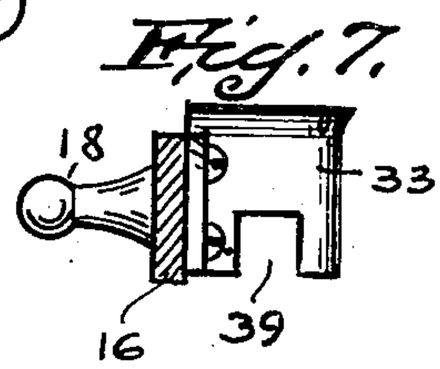


Fig. 7.



Witnesses;

L. B. Woerner

Wm Hurte.

Inventor;

William Herman Kluge.

By Minturn & Woerner

Attorneys

UNITED STATES PATENT OFFICE.

WILLIAM HERMAN KLUGE, OF INDIANAPOLIS, INDIANA.

AUTOMATIC COIN-CONTROLLED LOCK.

950,821. Specification of Letters Patent. **Patented Mar. 1, 1910.**

Application filed August 30, 1909. Serial No. 515,283.

To all whom it may concern:

Be it known that I, WILLIAM HERMAN KLUGE, M. D., a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Automatic Coin-Controlled Locks, of which the following is a specification.

This invention relates to improvements in coin-controlled locks for toilet rooms, telephone booths, lockers and the like of a quasi public character to which it is desired to allow admission upon the payment of a stipulated charge, and the object of the invention is to provide a lock in which this admission fee deposited in the lock in the shape of a coin will render the same operable to the person depositing the coin.

A further object of the invention is to provide a lock of simple and durable construction which cannot be easily tampered with and opened without first depositing a coin of predetermined size and value therein, in the manner provided for by the construction of said lock.

I accomplish the objects of the invention by the mechanism illustrated in the accompanying drawing, in which—

Figure 1 is an edge-view of a portion of a door bearing my improved lock. Fig. 2 is a vertical section of my improved lock separate from the door, on the line 2—2 of Fig. 3. Fig. 3 is a front inside view of the lock with the inner plate of the case or housing removed, the view showing the bolt and its associated parts in the locked position of the bolt. Fig. 4 is a like view showing the bolt in its drawn or unlocked position. Fig. 5 is a view of the bolt similar to that shown in Figs. 3 and 4 as it appears when removed from the casing and other parts of the lock. Fig. 6 is a top plan view of the bolt shown in Fig. 5, and Fig. 7 is a section of the bolt on the line 7—7 of Figs. 5 and 6.

Like characters of reference indicate like parts throughout the several views of the drawing.

8 represents a door of any usual and suitable construction to the room, booth or receptacle to be locked, and my improved lock is shown here as a rim lock which is secured to the inner side of the door by means of the screws 9.

The lock mechanism is contained within a sheet-metal casing 10 which comprises sides and ends 11 at right angles to and preferably integral with a plate 12. The sides and ends 11 have inwardly projecting lugs 13 which afford means for the attachment of a plate 14 which closes the casing of the lock.

16 represents the bolt, the body of which is flat and comparatively thin and rests against the inner side of the plate 12. One end of the bolt is reduced in width to form a part 17 which projects through a suitable opening in the side 11 and this extended portion is provided with a hand-knob 18 which is accessible to a person on the inner side of the door for moving the bolt. The opposite end of the bolt is also reduced in width to form shoulders to arrest the movement of the bolt in that direction. This portion is thickened however in the opposite direction to form the part 19 which passes through the adjacent side 11 of the casing and is the part of the bolt which engages a striking plate (not shown) of usual construction on the frame of the door and locks against said striking plate in the usual manner. To cause the bolt to be shot in an inward direction automatically by the closing of the door this thickened portion 19 is beveled as shown at 20.

The difference in thickness between the body 16 of the lock and the end 19 forms a shoulder 21, and bearing against the shoulder 21 is the upper bent end 22 of a lever 23. A shaft 24 is mounted in the two plates 12 and 14 of the casing and the lever 23 is mounted in a fixed manner on said shaft so as to be oscillated by a rocking movement of the shaft. The diameter of the shaft 24 for that portion of the shaft which lies between the plates 12 and 14 is larger than the extensions of the shaft in either direction whereby shoulders are formed to prevent longitudinal movement of the shaft. This shaft 24 extends through the door 8 and is provided with a handle 26 on the outside of the door for the manual rocking of the shaft. The bent end 22 of the lever 23 is attached to one end of a spring 27, the opposite end of said spring being attached to a lug 28 which is a part of a bearing plate 29 supported by the plate 12 of the casing. The edge of the plate 29 acts as a guide and support for the lower end of the lever 23 and the lug 28 acts as a stop to limit the outward swing of said lower end and con-

sequent movement of the lever 23 and handle 26.

Supported by the upper end 11 of the lock-casing is a coin chute 30 the lower end of which discharges within the casing above the bolt 16. The chute extends obliquely out through the casing and through the door 9 and is indicated and protected by means of a suitable metal escutcheon 31 which will be slotted and may be provided with a suitable legend directing the deposit of a coin therein. Mounted on the bolt 16 directly under the discharge end of the chute 30, when the bolt is shot in its locked position is a continuation 33 of the chute, and the upper end of the part 33 is expanded into a funnel shape to catch and insure the delivery of a coin from the chute 30 to the extension 33. An angle plate 35 is secured to the plate 12 of the lock-casing and the upper horizontal member of the angle plate projects across the discharge end of the chute extension 33 far enough to prevent a coin from entirely dropping out of said chute extension when the bolt is in its locked position. The upper end of the lever 23 has an angular corner 36 which comes in contact with the coin 37 resting in the chute extension 33 on the bracket 35 when the lever is moved toward the coin by manipulation of handle 26 on the rock shaft 24. Contact between the lever and coin when above situated is permitted by a notch 39 (see Fig. 7). This notch allows the upper end of the lever 23 to pass through the chute extension 33 without disturbing the position of the part 33 and its attached bolt 16, but when the notch 39 is filled by the presence of a coin therein, as above described, and as shown in Fig. 2, the lever will shoot the bolt 16 inwardly of the casing and thereby unlock the door. As soon as the chute extension 33 is moved far enough to cause the coin to pass the end of the angle-plate bracket 35 the coin will be free to drop down by gravity as shown by dotted lines in Fig. 4. The inward movement of the bolt 16 is arrested by contact of shoulders 40 with the sides 11 of the casing, and the person manipulating the handle 26 will almost invariably release the handle upon the arrest of bolt 16 by this contact of the shoulders 40 so that, if the coin has not been previously released it will be released on this occurrence and will drop to the bottom of the lock-casing into a coin receptacle 41 there placed to receive it. A portion 42 of the side 11 of the casing will be removable to allow access to the coin receptacle 41 whereby the latter may be taken from the casing to permit the removal of the accumulation of coins therein. This removable plate 42 will have a lower lug 43 to engage the inner side of the part 11 to prevent the removal of plate 42, and secured to the inner side of the plate 42 is a lock 44 having a bolt 45 which is shot upwardly against the inner side of part 11 to prevent the removal of the portion 42 while the bolt of lock 44 is in its outer position.

In some instances it is desirable to provide means for retracting the bolt 16 to unlock the door without depositing a coin in the slot as above described. This occurs, for example, where the lock is used on toilet room doors and it is necessary for a porter or attendant to enter the toilet room frequently for the purpose of cleaning the interior of the room. This contingency I provide for by forming a notch 46 in the bolt 16 to receive the ward of a key 47. This key 47 is mounted in the lock-casing so as not to be removed therefrom and has its stem extending out through the door 8 and squared to fit the socket of a removable extension carried by the person who desires to enter the room. This auxiliary key may be omitted if desired.

The operation of my device is as follows. When the door is locked and it is desired to unlock same a coin of the designated size is introduced into the chute 30 and falling by gravity is arrested by the shelf 35 in the path of the upper end of lever 23. The person depositing the coin grasps the handle 26 immediately after making his deposit and by means of the handle rocks the shaft 24 to move the upper end of lever 23 against the coin and by continued pressure shoots the bolt 16 inwardly of the lock thereby unlocking the door. When the person on the inner side of the locked door desires to unlock the door he is enabled to do so by grasping the knob 18 and moving the bolt back by a proper pressure.

Having thus fully described my invention what I claim as new and wish to secure by Letters Patent of the United States, is—

1. In a coin-controlled lock, the combination of a casing, a coin chute discharging within said casing, a bolt under the discharge end of the chute having a shoulder and also a chute extension which latter alines with the first chute when the bolt is in its outer shot position, means including a stop to expose a coin at the lower end of said chute extension and an arm adapted to be moved to shoot the bolt inwardly by contact with said exposed coin and outwardly by contact with the shoulder on the bolt.

2. In a coin-controlled lock, the combination of a casing, a coin chute discharging within said casing, a bolt under the discharge end of the chute having a shoulder and also a chute extension which latter alines with the first chute when the bolt is in its outer shot position, means including a stop to expose a coin at the lower end of said chute extension, an arm adapted to shoot the bolt inwardly by contact with said exposed coin, and a spring to move the

arm in an opposite direction to shoot the bolt outwardly by contact with said shoulder.

3. In a coin-controlled lock, the combination of a casing, a coin chute discharging within said casing, a bolt under the discharge end of the chute having an end projecting outside of the casing and provided with a knob said bolt also having a shoulder and a chute extension which latter alines with the first chute when the bolt is in its outer shot position, resilient means for normally moving the bolt to this outer shot position, means including a stop to expose a coin at the lower end of said chute extension, and an arm adapted to shoot the bolt inwardly by contact with said exposed coin and outwardly by contact with the shoulder on the bolt.

4. In a coin-controlled lock, the combination of a casing, a coin chute discharging within said casing, a bolt under the discharge end of the chute having a chute extension which alines with the first chute when the bolt is in its outer shot position and a shoulder, said chute extension having an under side notch; an arm adapted to contact normally with said shoulder and move the bolt outwardly and to be moved through the notch in said chute extension, and a stop to arrest a coin in the path of said arm to cause the arm to shoot the bolt inwardly.

5. In a coin-controlled lock, the combination of a casing, a coin chute discharging within said casing, a bolt under the discharge end of the chute having a chute extension which alines with the first chute when the bolt is in its outer shot position, said chute extension having an under side notch and said bolt having a shoulder remote from said chute extension, an arm or lever adapted to oscillate through the notch in said coin extension and having a bent end to bear against the shoulder on the bolt, a spring to move the arm or lever into contact with the shoulder on the bolt and a stop to arrest a coin in the path of said arm to cause the arm to shoot the bolt inwardly of the lock-casing.

6. In a coin-controlled lock, a casing having a lug and also having a coin-receptacle at its lower end, a locked closure in the wall of the casing to permit access to said coin-receptacle, a coin chute leading obliquely into the upper end of the casing and discharging within the casing, a bolt under the discharge end of the chute having an end extending outside of the casing and provided with a knob, said bolt also having a chute extension which alines with the first chute when the bolt is in its outer shot position said chute extension having an under side notch and said bolt having a shoulder remote from said chute extension, a shaft extending through the casing to the outside of the door and terminating with a handle, an arm mounted on said shaft and adapted to oscillate through the notch in said chute extension and having a bent end to bear against the shoulder on the bolt, said arm having an extension below the shaft to contact with said lug of the casing and limit the movement of the arm in one direction, a spring to hold the arm normally in contact with the shoulder of the bolt and a stop to arrest a coin in the path of said arm to cause the arm to shoot the bolt inwardly by contact with said coin.

7. In a coin-controlled lock, the combination of a casing having a lug, a coin chute discharging within said casing, a bolt under the discharge end of the chute having a chute extension which alines with the first chute when the bolt is in its outer shot position, said bolt having a notch, a key mounted in the casing having a guard entering the last notch the stem of said key extending outside through the door and terminating with a squared end, means including a stop to expose a coin at the lower end of said chute extension, a shaft mounted in the lock and extending out through the door and terminating with a handle, and an arm mounted on the shaft adapted to shoot the bolt inwardly by contact with said exposed coin, said arm having an extension below the shaft to contact with said lug of the casing and limit the movement of the arm in one direction, and resilient means for returning the arm and bolt to the locked position of the bolt.

In witness whereof, I, have hereunto set my hand and seal at Indianapolis, Indiana, this, 20th day of August, A. D. one thousand nine hundred and nine,

WILLIAM HERMAN KLUGE. [L. S.]

Witnesses:

F. W. WOERNER,

L. B. WOERNER.