

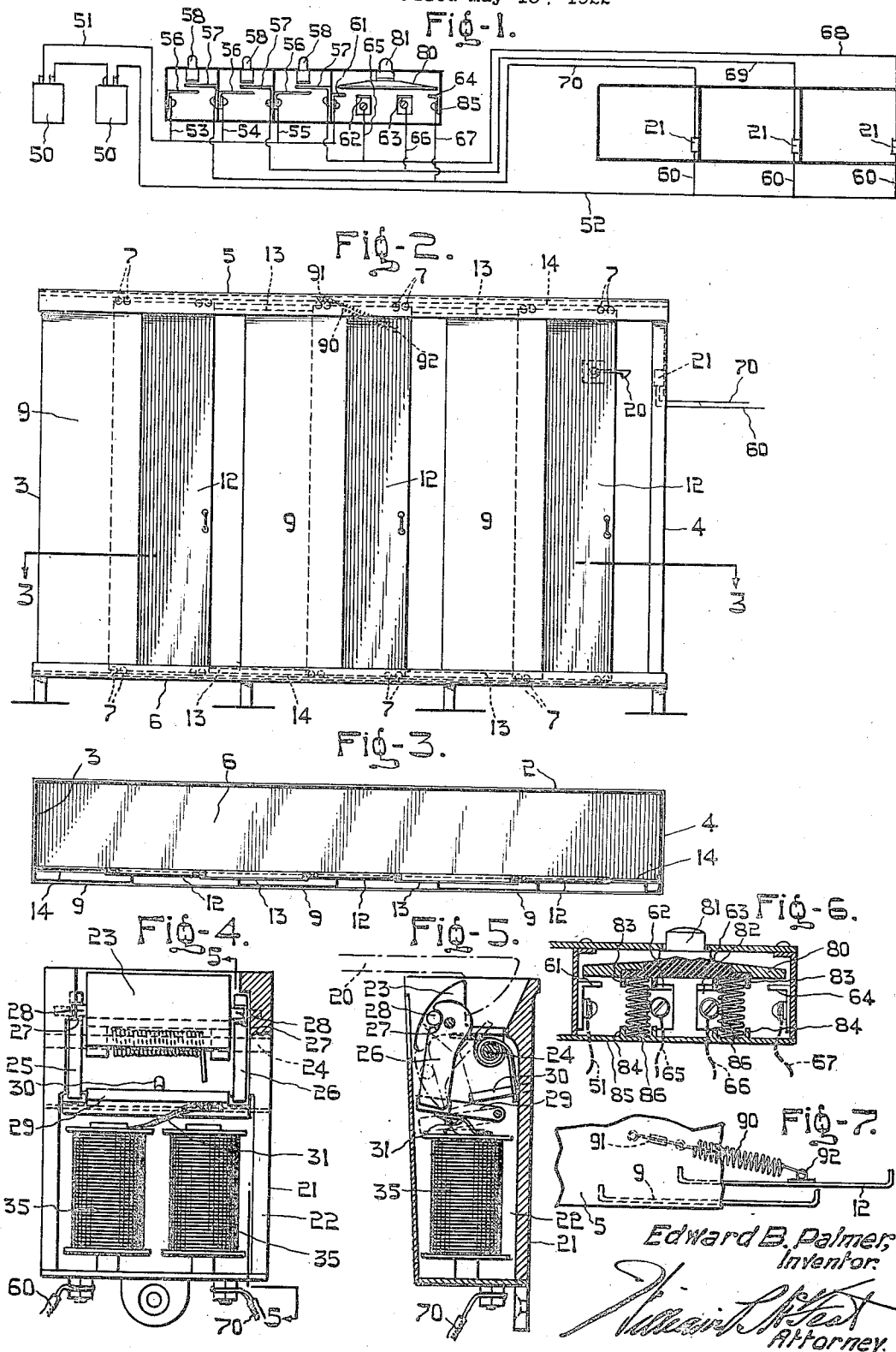
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LOCKER AND MEANS FOR LOCKING AND RELEASING THE SAME

Filed May 13, 1922



UNITED STATES PATENT OFFICE.

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LOCKER AND MEANS FOR LOCKING AND RELEASING THE SAME.

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To all whom it may concern:

Be it known that I, EDWARD B. PALMER, of the city of Montreal, Province of Quebec, Dominion of Canada, a subject of the
5 King of Great Britain, have invented certain new and useful Improvements in Lockers and Means for Locking and Releasing the Same; and I do hereby declare that the following is a full, clear, and exact description thereof.

For full comprehension, however, of my invention, reference must be had to the accompanying drawings in which similar reference characters indicate the same parts,
15 and wherein:

Figure 1 is a diagrammatic view of a series of groups of lockers and an electric system to be utilized in conjunction therewith in carrying out my invention;

20 Figure 2 is a front elevation of a group or section of lockers, constructed according to my invention;

Figure 3 is a horizontal sectional view taken on line 3—3 Figure 2;

25 Figure 4 is a detail view of one of the locks;

Figure 5 is a detail sectional view taken on line 5—5 Figure 4;

30 Figure 6 is a detail view of the master switch for releasing a plurality of lockers; and

Figure 7 is a detail fragmentary sectional view illustrating the means for automatically opening the doors when released.

35 Heretofore in schools, factories, departmental stores and other large institutions providing lockers for the scholars or employees, great difficulty has been experienced in preventing access of unauthorized persons to the lockers particularly during class or business hours, with the result that the personal effects of the scholars or employees have been stolen or damaged.

40 The object of the present invention is to overcome this evil by providing lockers which will be locked during class or business hours and which cannot be unlocked without the sanction of the teacher or head of the department in which they are located. The releasing means being preferably accessible
50 only to such teacher or department head.

A further object is to provide means which will enable the locks of a plurality of lockers or of groups of lockers to be electrically released individually or collectively.

The accompanying drawings illustrate the preferred embodiment of my invention which consists of a plurality of particularly constructed groups of lockers, each locker having a door opening and a door
60 for closing said opening; means for locking the door in closed position and an electrical system including means whereby the lockers of one group may be released independently of those of the other groups and
65 means whereby the locks of all the groups may be released simultaneously.

Each group or section of lockers consists of a metal casing of box form the dimensions of which may be varied to meet requirements. This casing comprises a rear wall 2, end walls 3 and 4, top 5, bottom 6 and a front constituted by a plurality of fixed panels 9 extending from the top to the bottom of the casing and permitting access
70 to the lockers. These door openings are adapted to be simultaneously closed or opened by a door unit consisting of a plurality of door panels 12 of corresponding dimensions to the fixed panels and united
75 at their top and bottom edges as at 13. This door unit is slidably mounted in position within the casing immediately in the rear of the fixed panels and is provided with ball bearings 7 which are adapted to run upon
80 tracks 14 at its top and bottom edges, the spacing of the doors corresponding to the spacing of the fixed panels so that when the unit is moved to open position, simultaneously opening all of the door openings,
85 each door will be located behind its adjacent fixed panel and consequently will be concealed from view and will occupy minimum space.

The means for locking each door unit in position closing the door openings consists of a gravity latch 20 mounted upon the door panel nearest the end wall 4 and adapted to coact with an electrically controlled lock
90 21 mounted upon the inner side of such wall.

This lock comprises a case 22 containing a spring actuated locking member 23 hinged as at 24 in the case and adapted to engage the latch, a pair of detent members 25 and 26 hinged upon the case at opposite ends of the locking member and each having a notch 27 adapted to receive a stud 28 on the adjacent portion of the locking member for the purpose of retaining the latter in
100 locking position; a pair of magnetic coils
105 110

35 and a flat metal bar 29 hinged upon the case in position within the magnetic field of the coils and adapted to normally assume a position in rear of the detent members, upward movement of the bar being limited by a stud 30 and downward movement being resisted by a flat spring 31.

In the operation of this lock when the coils are energized the bar 29 is attracted thereto and consequently moved to position clear of the detent members and permitting the latter and the locking member 23 to be swung to position releasing the latch.

The electrical system for energizing the coils of the locks individually and collectively consists of a plurality of circuits arranged in parallelism and of a number equal to the number of groups or sections of lockers employed and each including a push button switch and the coils of one of the locks, and a master circuit including a push button switch and the coils of all the locks.

In the diagram illustrated in Figure 1 in which three groups of lockers are illustrated a source of energy is indicated at 50 and two main leads 51 and 52 connected thereto and common to all the individual lock circuits. The latter lock circuits forming shunts of the main leads are indicated at 53, 54, and 55 and each includes a pair of normally open spring contacts 56 and 57 adapted to be closed by a push button 58 preferably located in a position in which it will be accessible only to the teacher of the class-room or head of the department to which the locker group has been allotted. Such circuit also includes the coils 60 of the lock of such group, so that by pressure on the push button the contacts are moved into relative engagement and the circuit closed energizing the coils and releasing the lock.

The master circuit includes a plurality of fixed contacts indicated at 61, 62, 63 and 64 respectively, the first mentioned contact being connected to the main lead 51 and the remainder connected to the main lead 52 through the medium of the individual lines 65, 66 and 67 connected to the respective lock circuit lines 68, 69 and 70 in such a manner that when the master circuit is closed the current will flow through lead 51 and be distributed by the contacts through the coils of the locks and returned through lead 52.

In order to close the master circuit, which of course is normally open, a circular contact 80 is located in position to simultaneously engage the contacts 61, 62, 63 and 64. This contact is preferably of annular form and is operated by a push button 81 forming an integral part of a disc 82 of insulation mounted centrally of the contact and provided at its inner side with spring seats 83 in alignment with similar seats 84, the whole being contained within a housing 85. Heli-

cal springs 86 bear between the spring seats and normally maintain the contact 80 out of engagement with the fixed contact.

From the foregoing description it will be seen that any number of groups of locks may be employed which may be released individually or collectively, the push button switches being located at any desired point.

In order to, provide means for automatically producing a slight opening movement of each door unit for the purpose of moving the latch 20 clear of the lock 21 when the latter has been released and to clearly indicate that the door unit is unlocked a spring 90 is provided which is adapted to be placed under tension when the door unit is closed so that when the lock is released such tension automatically pulls the unit to open position. The tension under which the spring is placed when the unit is closed may be varied to secure the desired extent of opening movement. The mounting of the spring is preferably carried out by flexibly securing one end to the top of the locker casing by means of a chain for instance as at 91 and connecting the opposite end to an adjacent portion of the door unit as at 92.

What I claim is as follows:—

1. The combination with a plurality of groups of metal receptacles of the class described each receptacle having a door opening and a door for closing said opening; of independent mechanisms for locking the doors of the groups in closed position and an electrical means for releasing the locking mechanism of one group independently of the other groups; means for simultaneously releasing the locking mechanisms of all the groups.

2. The combination with a plurality of metal receptacles each having a door opening and a door for closing said opening; of means for locking each door in closed position and electrical means for releasing the locks individually, said means consisting of a plurality of circuits arranged in parallelism and each circuit including a switch and a magnetic lock releasing device, and means for releasing the locks collectively and simultaneously consisting of a master circuit including a switch and a magnetic releasing device for each lock.

3. The combination with a plurality of lockers each having a door opening and a door for closing said opening; of means for locking each door in closed position and electrical means for releasing the locks individually said means consisting of a plurality of circuits arranged in parallelism and each circuit including a push-button switch and a magnetic lock releasing device, means for releasing the locks collectively consisting of a master circuit including a push button switch and a magnetic releasing device for each lock, said last-mentioned push-button

switch consisting of a plurality of fixed contacts, a movable contact of circular form adapted to simultaneously engage said fixed contacts, springs for normally maintaining
5 said movable contact out of engagement with the fixed contacts, and a push-button mounted centrally upon said movable contact.

In testimony whereof I have signed my name to this specification in the presence of 10 two witnesses.

EDWARD B. PALMER.

Witnesses:

GORDON G. COOKE,
HARRIETTE McDONALD.