

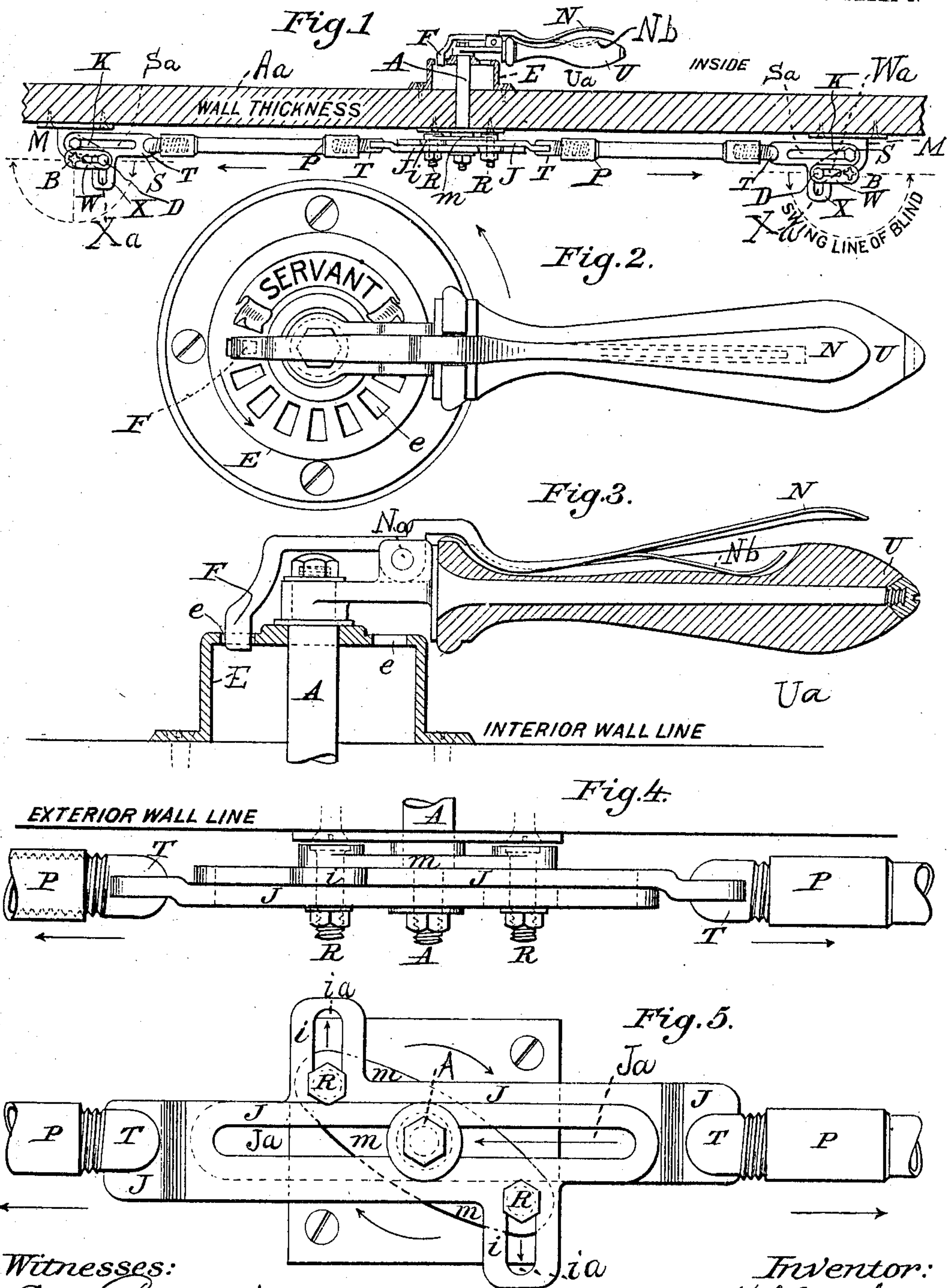
No. 871,609.

PATENTED NOV. 19, 1907.

R. MOSKAU.
SHUTTER OPERATOR.

APPLICATION FILED DEC. 11, 1906.

2 SHEETS—SHEET 1.



Witnesses:

E. J. Bernstein
George W. Cull

Inventor:

Rudolph Moskau

By

Edward P. Thompson
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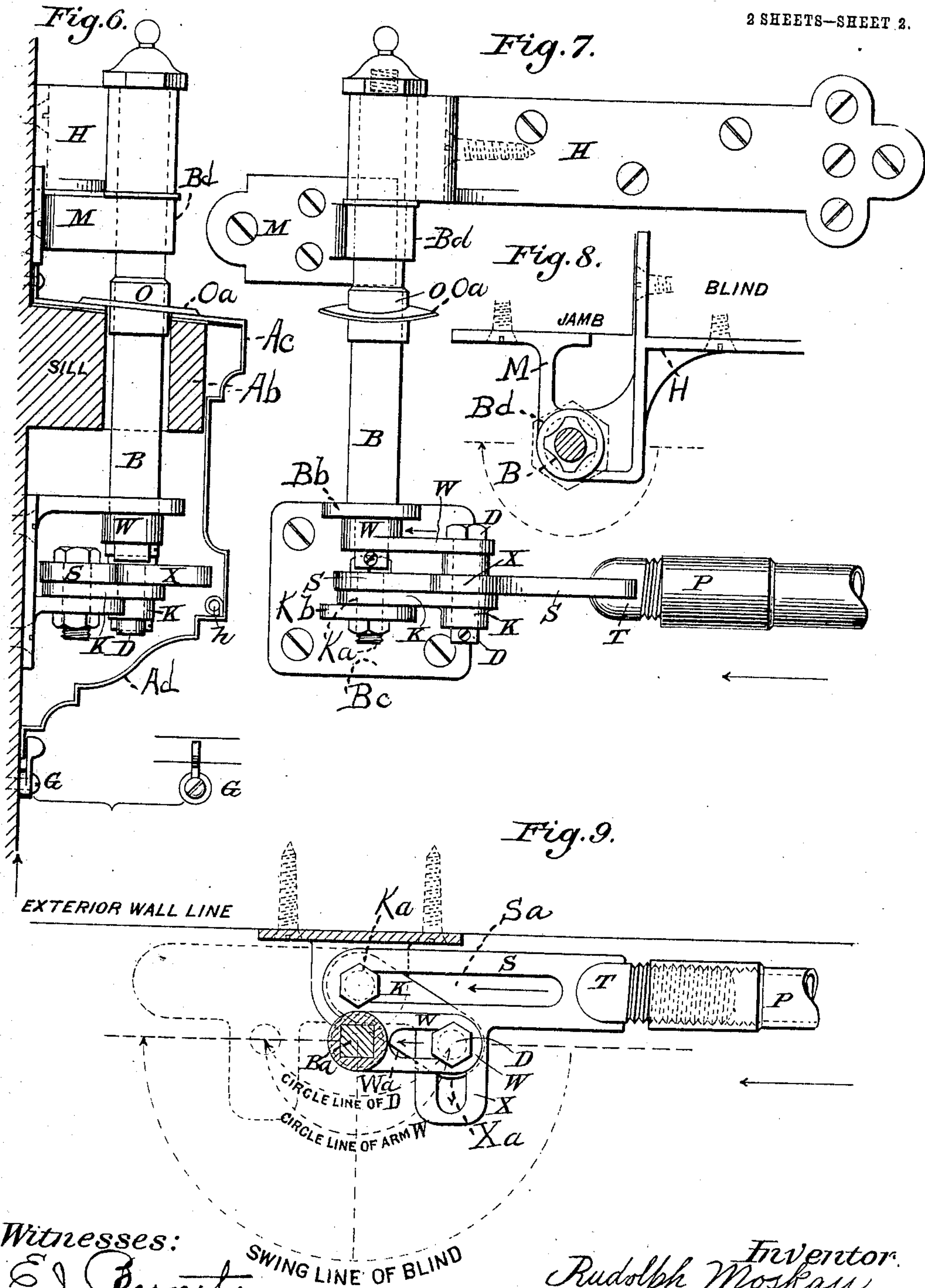
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UNITED STATES PATENT OFFICE.

RUDOLPH MOSKAU, OF JERSEY CITY, NEW JERSEY.

SHUTTER-OPERATOR.

No. 871,609.

Specification of Letters Patent.

Patented Nov. 19, 1907.

Application filed December 11, 1906. Serial No. 347,332.

To all whom it may concern:

Be it known that I, RUDOLPH MOSKAU, Russian subject, residing at 57 Hutton street, Jersey City, State New Jersey, have invented a new and useful Shutter-Operator, of which the following is a specification.

My invention relates to a shutter operator for opening and closing, or partly opening and closing shutters or blinds at the outside of a window, by the manual operation of a handle inside of the house, without being obliged to open the window, and leaning out with danger of falling; and further, cold air, or flies and mosquitoes, or dust may be prevented from entering the house while closing and opening the blinds. The blinds are automatically held fixed in any position within about one hundred and eighty degrees, and yet will not be moved by the wind.

The exact construction is set forth in the drawings, while the general nature and scopes of invention are stated in the claims herein.

Figure 1 is a plan of the whole shutter worker on a reduced scale, the sectional portion being the wall of the building to which the worker is attached. The remaining figures are on a larger scale. Fig. 2 is a front elevation of the handle and those adjuncts which are inside of the building. Fig. 3 is a central horizontal section of what is shown in Fig. 2. Fig. 4 is a fragmentary plan showing the central portion of the shutter worker. Fig. 5 is a front elevation of what is seen in Fig. 4. Fig. 6 is a fragmentary view looking from the left of Fig. 1, the sectional portion being a part of the sill. Fig. 7 is a front elevation of what is seen in Fig. 6, the sill being omitted. Fig. 8 is a plan, partly in section, of the portion at one of the hinges of the shutter. Fig. 9 is a plan of the lower portion of one end of the shutter worker, partly in section.

The organization consists of a spindle A, passing through the wall Aa, a handle U, fixed to the spindle A, and having a supplementary handle N, pivoted at Na to the handle U, for raising and lowering a catch F from any one of the holes e, arranged concentrically to the spindle A, in a hollow bearing E, which is shown screwed to the wall Aa, and standing out from the wall far enough to hold the handle U away from the wall so that there will be enough space at Ua for the operator's fingers. The operation of this portion of the device thus far shown consists in

grasping both handles U and N, to lift the catch F from that hole e in which it is located, and turning the handle U to the angle at which it is desired the handle shall rest and then letting the catch F spring into another hole e by the action of the retractile spring Nb. The handle may be swung through an angle 90 degrees, and held approximately at any intermediate angle.

The device consists further of a beam m fixed to the spindle A on the other or outside of the wall Aa, the handle U being inside of the building; pins R at the outer ends of the beam m, connecting rods P, having, at one pair of ends, pieces J transverse slots la in projections i, through which said pins R extend, said pins being for reciprocating the rods P, when the beam m is vibrated, and having a longitudinal slot Ja, through which the spindle A passes to act both as a support and a guide for the ends J, and said rods each having in its end S a transverse slot Xa in an extension X and each having a longitudinal slot Sa, cranks W, rotary with, and for rotating the respective blinds, and each crank W having a radial slot Wa, the cranks W having a square hole containing the square shanks Ba, which are rigid with the rotary butts H of the blind hinges M, being the fixed members of the hinges, the square shanks Ba being a part of the spindle B, which has a bearing Bb, on the base plate Bc, and a bearing Bd on the fixed member M. The movable members H are fixed to the spindles B, so that when the latter are rotated the hinge butts H also rotate. There are cranks K whose axes of rotation are eccentric to the axes of rotation of the blinds or spindle B. Each crank K, has a crank pin D which passes through one of the slots Xa and through one of the slots Wa.

The operation will be explained by reference to only one of the rods P, by reference to Fig. 9, especially when this rod P is moved to the left the crank pin D also moves both to the left and downward, in an arc struck from the axis of the crank K, and therefore the crank W turns also through any angle from zero to 180 degrees thereby opening the blind. The crank K is pivoted on a stud ka, which is supported by a bearing Kb extending from the base plate, Bc. T represents screws which are screwed into the rods P, for connecting the ends S and J to the rods P. By this means my device is applicable to blinds for windows of different

widths. The sill of the window is at *Ab*, and to it is fastened a box *Ac*, having at its lower portion a lid *Ad*, with a fastening device *G*, for holding the lid closed, or for allowing it
 5 to be opened by rotation about the hinge *h*, for inspection of the device. The spindle *B* has an enlarged portion *O*, and surrounding this is an annular cover *Oa* resting on the box *Ac* for more effectively protecting
 10 the mechanism in the box from dust and rain.

I claim as my invention:—

1. In a shutter operator, the combination of a spindle adapted to be extended through
 15 the wall of a building, a handle within the building, and located on said spindle, means for locking the handle at any angle within ninety degrees, a beam *m*, outside of the building and fixed to said spindle, pins *R* at
 20 the respective ends of said beam connecting rods, having at one pair of ends transverse slots, through which said pins pass, for reciprocating said rods, and having a longitudinal slot through which said spindle passes
 25 to act as a support and guide for said rods; and said rods each having at the other pair of ends, a transverse slot *Xa*, and each having a longitudinal slot *Sa*, cranks *W*, rotary with and for rotating the respective blinds
 30 and each crank having a radial slot *Wa*, cranks *K* whose axes of rotation are eccentric to the axes of rotation of said blinds, and having crank pins *D*, one of which passes through one of the slots *Xa* and through one
 35 of the slots *Wa*, and the other crank pin *D*, passing through the slots *Xa* and *Wa*, the relative proportions, distances apart, and sizes of the above named elements being such that when the said connecting rods move lon-
 40 gitudinally away from each other by the action of the said spindle, the pins *D* will rotate the blinds to any angle between a fully closed position of the blinds and a fully open position.

45 2. In a shutter operator the combination of a spindle, means for rotating said spindle, rods *P* controlled by said spindle, hinge spindles *B*, cranks *W* attached thereto and hav-

ing radial slots, and cranks *K* pivoted eccentrically to the spindles *B* and having pins *D*,
 50 said rods *P* having longitudinal slots through which pass said pivots *Ka*, and having transverse slots through which pass said crank pins *D* respectively, which also pass through
 55 said radial slots.

3. In a shutter operator, the combination of a rotary butt *H*, a spindle *B* attached thereto, a crank *W* radiating from said spindle and having a radial slot, a crank *K*, a
 60 pivot *Ka* therefor, a crank pin *D* for said crank *K* passing through the slot in the crank *W*, a rod *P*, a screw *T* screwed into the rod *P*, and an extension *S* attached to said screw *T*, and having a longitudinal slot *Sa* through
 65 which passes the pivot *Ka*, and having a transverse slot *Xa* through which passes the pin *D*, said rod *P*, being manually movable longitudinally past the pivot *Ka* for moving
 70 the crank pin *D* radially inward along the crank *W* and at the same time away from the extension *S* along a slot *Xa* through an arc of 180 degrees about the center of the pivot *Ka*.

4. In a shutter operator the combination of a spindle *A* for passing through the wall of
 75 a house under the central portion of the window, means for turning said spindle to, and holding the same at different angles, a beam fixed to the spindle and adapted to be located on the outside of the house, pins *R*
 80 at the respective ends of said beam, rods *P*, end pieces *J* therefor, each having a longitudinal slot through which passes said spindle *A*, which acts as a support and guide for end pieces *J*, and each end piece having a trans-
 85 verse slot through which passes one of the pins *R*, the rods *P* being movable apart relatively by the action of the pins *R*, rotary hinge butts, and means between said butts and the outer ends of said butts for causing
 90 said butts to rotate by the movements of said rods.

RUDOLPH MOSKAU.

Witnesses:

JOHN APSOL,
 RICART WEIMANN.