

S. MROKOWSKI.
BLIND OR AWNING.
APPLICATION FILED FEB. 19, 1909.

960,230.

Patented May 31, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

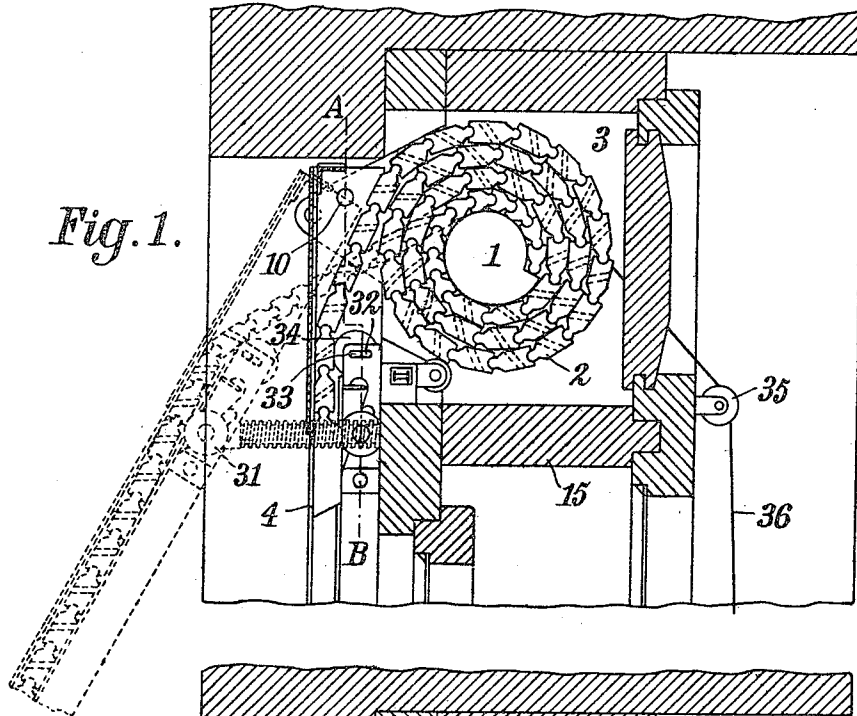
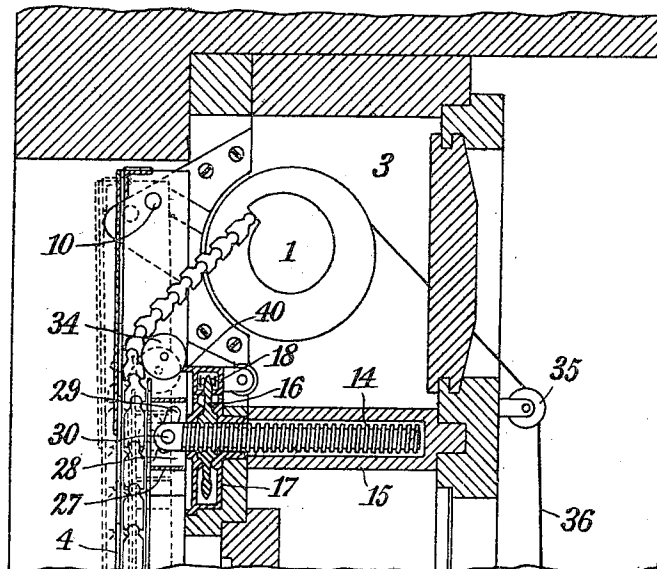


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

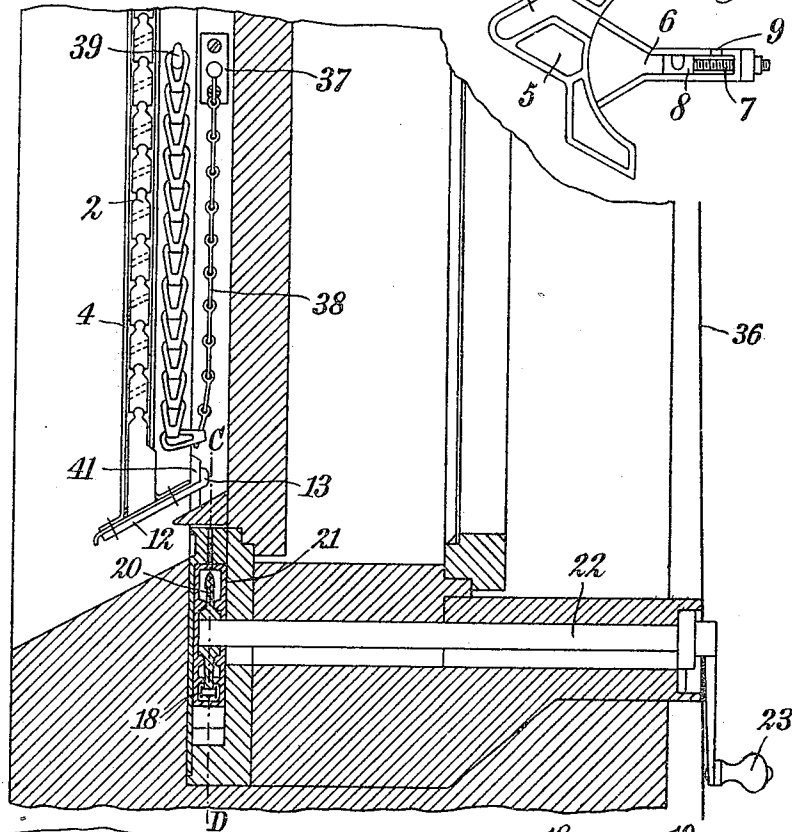


Fig. 6.

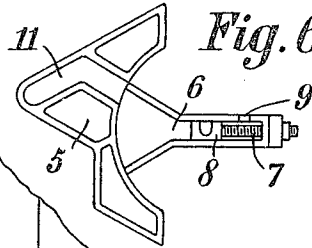


Fig. 4.

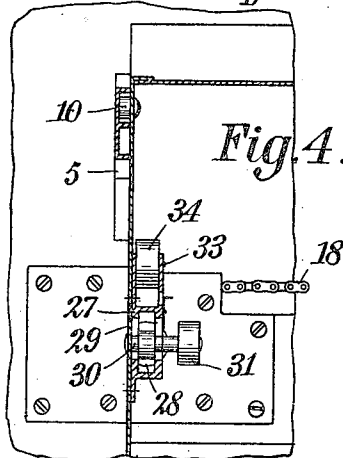
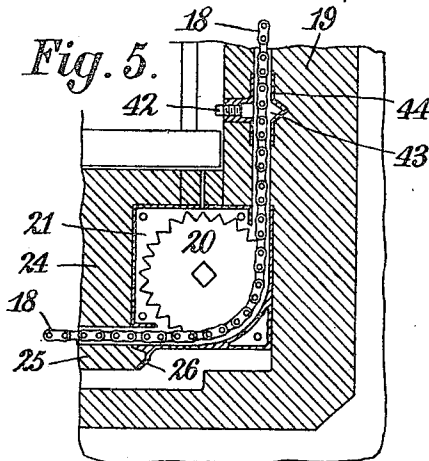


Fig. 5.



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UNITED STATES PATENT OFFICE.

STEFAN MROKOWSKI, OF SOSNOWICE, RUSSIA.

BLIND OR AWNING.

960,230.

Specification of Letters Patent.

Patented May 31, 1910.

Application filed February 19, 1909. Serial No. 478,760.

To all whom it may concern:

Be it known that I, STEFAN MROKOWSKI, a subject of the Czar of Russia, and residing at Sosnowice, in the Empire of Russia, have invented certain new and useful Improvements in Blinds or Awnings, of which the following is a specification.

The present invention has for its object a device which enables roller blinds or awnings to be swung outward and drawn back at will from the interior of the room. In the known devices for attaining this object a bar is provided in the middle post of the window frame and is furnished at its lower end with gearing which can be operated from the inside of the room by means of a crank or handle. At its upper part this bar carries a cam which upon the rotation of the bar acts upon the roller blind and thereby, moves the blind or the guide frame in which the blind is displaceable upward or downward, either outward or inward according to the direction of rotation. With this arrangement, however, the blind or its frame is only supported in the middle and its weight rests on this point of support. Experience with such roller blinds has shown that when swung outward they are very readily lifted by the wind so that they are liable to be damaged.

The present invention constitutes an important improvement in these devices because in accordance therewith the roller blind or its guide frame is rigidly connected in every position with the mechanism serving to swing it outward and inward in such a manner that neither the wind nor any other cause can produce a lifting or falling movement of the blind or its guide frame, so that such a device is much safer than the known devices. This object is attained owing to the fact that on each side of the guide frame for the blind a screw is fixed and by means of chain wheels mounted thereon and driven by an endless chain (which is acted upon by a crank inside the room) these screws rotate backward or forward according to the way the crank is turned and carry the frame and the blind with them. As the screws cannot be displaced merely by pressure in the axial direction the guide frame and the blind must remain in the position that they occupy and the time being so long as the wheels are not rotated and the chain displaced.

In combination with this main feature of the present invention there are a number of other improvements, as will appear from the following description.

An embodiment of the invention is illustrated in the accompanying drawing, in which:—

Figure 1 is a vertical section of the upper part of a window provided with the novel device, showing the roller blind rolled up. Fig. 2 is a similar view with the blind unrolled, the section being taken on another vertical plane. Fig. 3 is a vertical section of the lower part of the window with the blind unrolled and resting against the window. Fig. 4 is a section on the line A—B in Fig. 1. Fig. 5 is a section of the window sill on the line C—D in Fig. 3. Fig. 6 is a detail view.

In order to swing out the roller blind which slides in a rocking frame, in accordance with the present invention as in the known device the roller 1 upon which the blind 2 is wound is arranged in a box 3 at the upper part of the window. In the known arrangements the guide frame was adapted to rock about the same axis as that upon which the winding roller 1 rotated, but in accordance with the present invention these two points are separate, with which object a special supporting piece 5 is provided on each side of the box 3. The ends of the winding roller 1, which are preferably provided with roller bearings, are mounted in a bearing block 8 arranged in the groove 6 in the supporting piece 5 and adjustable by means of screws 7 after the ends of the shaft have been sunk into the bearing block 8 through a slot 9. When the spindles have been arranged in the bearing blocks 8 the winding roller 1 can be properly adjusted by adjusting these blocks by means of the screws 7. An oblique groove 11 is provided in the bearing pieces 5 for mounting the rockable guide frame 4 which is likewise provided with roller bearings at its upper end. The two lateral guide frames 4 which are F-shaped in cross section, are connected at their lower part by cross piece 12 (Fig. 3) provided at their rear edge with locking noses 13.

The means for moving the guide frame 4 backward and forward together with the roller blind 2, consist broadly of two screws 14 arranged in an appropriate recess in the

lower wall of the window casing 3. A chain wheel 16 is mounted on each of the two screws 14 and each of them is secured in the position that it occupies for the time being by a frame 17 in two parts which is likewise fixed in an appropriate manner in proximity to the lower wall 15 but in such a manner that said chain wheel is free to rotate. An endless chain 18 runs over the two chain wheels 16; this chain is free inside the casing 3, is then carried down the side walls of the window frame being located if desired in grooves which are covered by strips 19 (Fig. 5) and finally passes over two chain wheels 20 arranged beneath the window sill and mounted in the two angles of the window in appropriate boxes 21 in two parts. One of these chain wheels 20 is connected with a crank 23 by means of a shaft 22 arranged beneath the window sill, so that by rotating the crank in one direction or the other the corresponding chain wheel is rotated and the chain 18 driven, the result being that the upper chain wheels are likewise rotated and the screws 14 moved outward or backward in the axial direction according to the direction of rotation. At the lower part, beneath the window sill, the chain 18 is carried in a slot formed on the one hand by the board of the window sill and on the other hand by a ledge 25 which is carried by projections 26 from the casing 21 for the lower chain wheels.

Now in order that the guide frame 4 may be constantly connected with the device for forward and rearward displacement in accordance with the principle of the present invention as previously described for the purpose of preventing unintentional lifting of the guide frame by wind or otherwise, a casing 27 is arranged at the upper part of each of these lateral guide frames 4. These casings are each provided on their rear side with an opening 28 to permit of the entrance of the front end of the corresponding screw 14. Oblique slots 29 are likewise provided in the lateral walls of these casings 27 for the play of the bolt 30 which also passes through an appropriate opening on the front end of the screw 14. As shown in Fig. 4, a roller 31 is fixed on a projecting end of this bolt 30 and, as hereinafter described, this roller serves for stopping the roller blind which slides upward and downward in the guide frame, at any desired height when the frame is swung out. In addition there are provided in the side walls at the upper part of the casing 27 two short, horizontal elongated slots 32 (Fig. 1) in which a roller 34 is displaceable by means of its spindle 33; as hereinafter described this roller stops the blind at any desired height when the guide frame rests against the window.

Finally it should be mentioned that the

winding roller 1 for the roller blind can be rotated by means of a band 36 carried over a pulley 35 and wound onto a corresponding band pulley on the winding roller 1; this band serves for winding the blind up and down, that is to say for raising or lowering it. A chain 38 is fixed to the side wall of the window frame at 37; its other end is attached to a hook 39 on the lateral guide frame 4.

The device is operated and acts in the following manner:—Assume the roller blind to occupy the rolled-up position, that is to say to be raised, as shown in Fig. 1. If the guide frame rests against the window frame, even when the winding band 36 is released, it is impossible for the blind to descend, because in this position of the guide frame the spindle of the roller 34 is pressed forward that is to say toward the street in the horizontal slots 32 in the casing 27 by a projection 40 on the wheel casing 17 and thereby clamps the corresponding members of the roller blind inside the guide groove in the frame 4. The same thing of course happens, if the roller blind is at any other height, assuming that the guide frame is resting against the window frame. Consequently the roller blind can be fixed at any height. If it is desired to raise or lower the blind it is necessary to free the roller 34 from the influence of the projection 40 on the wheel casing 17. This is effected by pushing the guide frame slightly outward by rotating the crank 23 in the proper direction, thus, as already stated, causing the gear wheels 16 to participate in the rotation and by acting upon the screws to move them forward and owing to the pivotal connection between the screws 14 and the guide frame 4, by means of the roller 31 to cause the guide frame 4 at the same time to rock about its pivot 10 in the groove 11. Owing to this swinging outward of the guide frame the spindles of the rollers 34 are displaced in the horizontal slots 32 so that as these rollers are likewise withdrawn from the influence of the projection 40 on the wheel casing by the swinging outward of the frame guide frame, the roller blind can be lowered by releasing the band 36, the rollers 34 rotating.

If it be desired again to fix the roller blind in its new position, it is only necessary to re-adjust the screws 14 by rotating the crank 23 in the opposite direction, so that the rollers 34 are again acted upon by the projections 40 and pressed against corresponding members of the roller blind.

Similarly by merely rotating the crank 23 a number of times the guide frame 4 and with it the roller blind 2 can be fully swung out until they assume say the position indicated in Fig. 1 in broken lines. Even in this extended position of the guide frame

the roller blind can be fixed at any desired height in it, this being effected by means of the somewhat inclined slots 29 in the side walls of the casing 27.

5 As shown in Fig. 2, when the guide frame rests against the window frame, the bolt 30, which retains the front end of the screw 14 (but which on its free end carries a roller 31, Fig. 4) is located approximately in the middle of the slot 29. Accordingly, if the guide frame 4 is swung out, in this movement the slots 29 must gradually assume the horizontal position, the result being that the bolt 30, which was originally approximately at the middle of the slot 29, approaches more closely the lower, front end of the slot 29 until it assumes the lowest and most forward position, whereupon the guide frame occupies its outermost position. 20 Normally, that is to say when the guide frame rests against the window frame, the roller 31 of the bolt 30 is not in contact with the roller blind 2. Owing to the adjustment of the bolt 40 in the slots 29 which has just been referred to, the roller 31 is caused to approach the roller blind until finally it comes into contact with it and is therefore able to hold the blind even when the guide frame is swung outward.

30 In this construction it is important both when the guide frame is swung in and when it is swung out that the frame is supported on both sides by the screws 14 which are always pivotally connected to the guide frame, so that neither wind nor other cause can make the swung-out guide frame or the blind rise or fall. In order to secure the guide frame still further when occupying its swung-out position, the chains 38 can also be used; when the frame is swung out tension is exerted upon them until finally they become taut when they have a tendency to bend the guide frame, so that it represents an absolutely rigid structure upon which 45 the wind can exert no influence.

If it be desired to alter the height of the roller blind when the awning has been swung out, it is necessary first of all to rotate the crank 23 retractively to some extent and thereby adjust the screws 14 until the roller 31 ceases to contact with the roller blind. Then, just as described above, the blind can be raised and lowered by acting upon the band 36.

55 Finally, if desired the same roller blind can be used when completely lowered and resting against the window, as a shutter for the said window, so that it is impossible to lift or swing out the guide frame or to raise the roller blind inside its guide frame from the exterior. When the roller blind is completely lowered and the guide frame resting against the window, the blind cannot be raised because of the action of the rollers 65 34 under the influence of the projection 40

of the wheel casing 17, as above stated. In order to prevent the guide frame from being displaced a nose or hook 41 is provided at the lower part of the side walls of the window frame and this hook, in conjunction with the nose 13 on the transverse plate 12, locks the frame by slightly raising the entire frame, which is effected under the influence of the inclined groove 11 in the supporting pieces 5. When the screws 14 are completely withdrawn by the rotation of the crank 23, they carry the guide frame 4 with them, so that the frame and its supporting rollers 10 are caused to slide upward somewhat in the inclined grooves 11, the result being that the entire frame is slightly raised so that the noses 13 can come beneath the fixed noses 41, thereby rendering it impossible to displace the frame 4 from the outside. When the screws 14 are rotated in the opposite direction, that is to say outward, the bearing rollers 10 again descend in the inclined grooves 11 in the supporting pieces 5, until they reach the lower end of the groove and then enable the frame to be swung outward.

It will be obvious from the foregoing that the construction described permits of any desired adjustment of the roller blind and of the guide frame and at the same time this construction also provides absolute security against unauthorized entrance to the room through the window when the blind is lowered and the frame resting against the window, and this without any special manipulation being necessary.

Finally, if it be desired to render inoperative the means for swinging the guide frame 1 outward and inward, this can be effected in a simple manner by the provision of screws 42 on the side walls of the window frame immediately above the window sill; when screwed in these screws press two links of the chain 18 into an angular recess 43 in a small frame 44 and thus hold the chain.

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

1. The combination, with a window frame, of a roller blind, a pivoted guide frame therefor, and longitudinally movable screws mounted in the window frame and pivotally connected to said guide frame whereby the latter is positively secured to the former and may be adjusted at various angles thereto.

2. The combination, with a window frame, of a roller blind, a pivoted guide frame therefor, screws mounted in the window frame and pivotally connected to said guide frame whereby the latter is positively secured to said window frame, and rotary members having screw connection with said screws whereby the latter may be moved longitudinally to adjust the guide frame at

various angles with respect to the window frame.

3. The combination, with a window frame, of a roller blind, a pivoted guide frame therefor, screws pivotally connected to said guide frame near the lateral edges thereof, revoluble sprocket wheels mounted around said screws, casings secured to the window frame and containing said sprocket wheels, and chains engaging said wheels for the purpose of adjusting said guide frame at various angles with respect to said window frame.

4. The combination, with a window frame, of a roller blind, a pivoted guide frame therefor, adapted to swing outward, longitudinally movable screws to adjust said guide frame at various angles with respect to the window frame, and means to automatically lock said blind in said guide frame when the latter is swung outward to a certain angle.

5. The combination, with a window frame, of a roller blind, a pivoted guide frame therefor, adapted to swing outward, longitudinally movable screws to adjust said guide frame at various angles to the window frame, means to automatically lock said blind in said guide frame when the latter is swung outward to a certain angle, and means to automatically lock said guide frame to the window frame when the former is closed.

6. The combination, with a window frame, of a roller blind, a pivoted guide frame therefor, adapted to swing outward, means to adjust said guide frame at various angles to the window frame, means to automatically lock said blind in said guide frame when the latter is closed, means to automatically lock said blind in said guide frame when the latter is swung outward to a certain angle, and means to automatically lock said guide frame to the window frame when the former is closed.

7. The combination, with a window frame, of a roller blind, a pivoted guide frame therefor having downwardly and outwardly inclined slots therein, screws on the window frame, cross pins on said screws, the latter being pivotally connected to said guide frame near the lateral edges thereof by said pins engaging said inclined slots in the guide frame, revoluble sprocket wheels mounted around said screws, casings secured to the window frame and containing said sprocket wheels, means to rotate said wheels for the purpose specified, and rollers on the ends of said cross pins, said rollers being arranged out of contact with the blind when the guide frame is closed but being advanced to engage and hold said blind when said guide frame is swung outward by reason of said cross pins working in said oblique slots.

8. The combination, with a window frame, of a roller blind, a pivoted guide frame therefor, means for swinging said guide frame outward, a bracket secured to said guide frame and having horizontal slots therein, a fixed stop on the window frame, and a roller having its bearings in said slots and normally held in clamping engagement with the blind by said stop when the guide frame is down, said roller being adapted to move along said slot out of contact with said blind when said guide frame is swung outward.

9. The combination, with a window frame, of a roller blind, a pivoted guide frame therefor, screws pivotally connected to said guide frame near the lateral edges thereof, revoluble sprocket wheels mounted around said screws, casing secured to the window frame and containing said wheels, means to rotate said wheels for the purpose specified, stops on said casings, brackets on the guide frame and having horizontal slots therein, rollers having their bearings in said slots and normally held in clamping engagement with the blinds by said stops when the guide frame is down, said rollers being adapted to move along said slots out of contact with said blind when said guide frame is swung outward.

10. The combination, with a window frame, of brackets secured thereto and having upwardly and inwardly inclined slots therein, a roller blind, a guide frame therefor having its bearings in said slots, means for swinging said guide frame outward, a nose on the window frame and a nose on the lower end of the guide frame adapted to engage the other nose when said guide frame is closed by reason of the latter moving upward in said slots.

11. The combination, with a window frame, of brackets secured thereto and having horizontal slots therein, each bracket also being provided with a vertical slot leading down to its horizontal slot, bearing blocks mounted to slide in said horizontal slots, a blind having its bearings introduced into said bearing blocks through said vertical slots, a flexible blind mounted on said roller, means to adjust said bearing blocks in said horizontal slots, a guide frame for said blind also pivoted to said brackets and means to adjust said guide frame at various angles with respect to the window frame.

12. The combination, with a window frame, of a roller blind, a pivoted guide frame therefor, screws pivotally connected to said guide frame, revoluble sprocket wheels mounted around said screws, casings secured to the window frame and containing said sprocket wheels, chains engaging said wheels for the purpose specified, other sprocket wheels arranged near the base of the window frame and also engaged by said

chains, means to revolve the sprocket wheels
from the inside of the window frame, said
window frame also having recesses therein,
and adjustable screws fitting in the window
5 frame and adapted to lock said chains by
pressing portions thereof into said recesses
in said window frame.

In testimony, that I claim the foregoing

as my invention, I have signed my name in
presence of the subscribing witnesses.

STEFAN MROKOWSKI.

Witnesses:

WITOLD FUCHS,
CYRIL TREDWICKI,
ALEXANDER KOBUSZEWSKI.