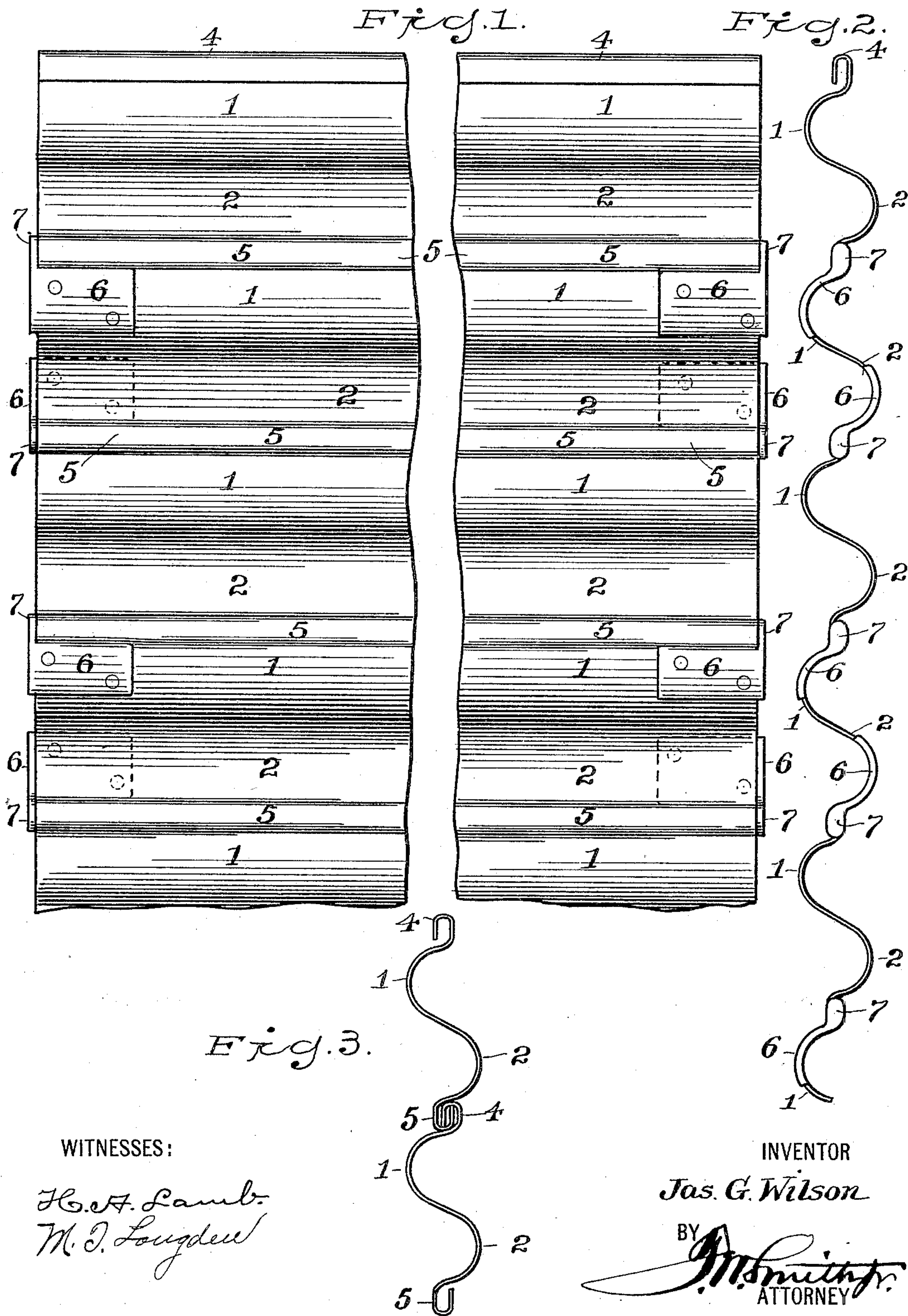


No. 682,304.

Patented Sept. 10, 1901.

J. G. WILSON.  
ROLLING METAL SHUTTER.  
(Application filed July 18, 1901.)

(No Model.)





# UNITED STATES PATENT OFFICE.

JAMES G. WILSON, OF NEW YORK, N. Y.

## ROLLING METAL SHUTTER.

SPECIFICATION forming part of Letters Patent No. 682,304, dated September 10, 1901.

Application filed July 18, 1901. Serial No. 68,818. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES GODFREY WILSON, a subject of Edward VII, King of Great Britain, residing at New York, in the county  
5 and State of New York, have invented certain new and useful Improvements in Rolling Metal Shutters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to certain improvements in rolling metal shutters, and has especial reference to the manner in which the  
15 slats are formed and secured together, with the end in view that the shutter shall be exceedingly strong and durable, while the friction and consequent wear against the sides and ends of the slats shall be reduced to a  
20 minimum.

In order that those skilled in the art to which my invention appertains may more fully understand the same, I will proceed to describe its construction and operation, referring by  
25 numerals of reference to the accompanying drawings, which form a part of this application, and in which—

Figure 1 is a front elevation showing a portion of a rolling shutter constructed in accordance with my improvement. Fig. 2 is a side elevation of the construction shown at Fig. 1; and Fig. 3 is a view similar to Fig. 2, except that the shields are removed.

Similar numbers of reference denote like  
35 parts in the several figures of the drawings.

Heretofore it has been common to make rolling shutters from a rigid piece of corrugated steel. Also rolling shutters have been constructed from scroll-shaped slats, whose  
40 upper and lower edges were curled around, so as to afford interlocking parts, whereby the slats may be connected together. Also it has been common to provide shields on portions of the face of the rigid corrugated steel  
45 shutter for the purpose of taking up the wear against said face, and it has also been common to interlock the curled edges of shutter-slats and to provide ears which extend across the ends of these interlocking portions, so as  
50 to prevent the latter from becoming disengaged.

My improvement aims to provide a shutter

which shall possess all the advantages of the constructions above referred to, and in addition thereto shall be protected as against  
55 wear in a novel and efficient manner, as will be evidenced from the description to which attention is now called.

The slats of my improved shutter are S-shaped in that they have two concavo-convex portions 1 2, which extend in reverse directions and which are joined at the center of the slat. The upper and lower edges of the slat are curled, so as present hook-like formations 4 5, whose free ends point toward  
60 each other and are adjacent, respectively, to the convexities of the parts 1 2 at the points where said convexities at the top and bottom of the slat begin. It will therefore be clear that the concavo-convex portions 1 2 are  
65 wholly contained between the horizontal planes of the free ends of these hooks, and accordingly when the slats are interlocked in the manner shown in the drawings there can be no cramping, nor can there be any ob-  
70 struction to the free movements of the slats at their joints and the full benefit of the corrugation is obtained. Upon the convex surfaces at the ends of alternate slats of the shutter are secured shields 6, which are metal  
80 pieces of suitable form and thickness that are riveted or otherwise fastened upon said surfaces. From these shields ears 7 extend immediately across the ends of the interlocking hooks of the slats, so as to prevent the  
85 latter from becoming disengaged. As before stated, the slats are joined or hinged together by sliding one hook element lengthwise into the hook element of another slat, and therefore it will be clear that when these  
90 shields are in position with the ears extending immediately across the ends of the interlocked portions of the slat the latter cannot possibly become disengaged, while at the same time the friction of the shutter in the  
95 groove of a door or window casing at the sides is greatly lessened, since only one-half of the slats touch the walls of these grooves. Also when the shutter is rolled up the wear is wholly sustained by alternate slats, and as  
100 the latter are protected in the manner heretofore explained it follows that my improved shutter is not only light and durable, but may be very easily operated, owing to the fact that



I have reduced the friction to a minimum. It is absolutely necessary that the shields should be affixed to the convex surfaces, since if they were fastened to the concave surfaces they would perform no useful function whatever and would simply make the shutter heavier without any attending benefits.

I do not wish to be understood as laying any claim whatever to the manner of joining the slats together, since this is very common and has been practiced for a great many years by various manufacturers in this country and abroad; but I do wish to emphasize the fact that I believe myself to be the first to utilize a corrugated shutter in the form of slats hinged together, so that pronounced corrugations in each slat are wholly contained between the horizontal planes of the hinging or interlocking at the top and bottom of the slat. Furthermore, I also desire to call especial attention to the fact that I believe myself to be the first to reduce the wear to a minimum and to secure the interlocked slats by providing alternate slats only with shields on the two convex surfaces of each slat and by extending from these shields ears, which lie across the ends of the interlocked portions.

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

1. A rolling shutter composed of a series of metal slats **S**-shaped in cross-section and having their extremities at the top and bottom formed into hook-like elements capable of interlocking, substantially as set forth.

2. A rolling shutter composed of a series of metal slats **S**-shaped in cross-section and having their extremities at the top and bottom formed into hooks capable of interlocking, the free ends of which hooks extend toward

each other while the concavo-convex portions of the **S**-shaped slats are contained wholly between the horizontal planes of said free ends, substantially as set forth.

3. A rolling shutter composed of a series of metal slats, each slat having two reversely-disposed concavo-convex portions which are joined together at the center of the slat, the ends of each slat at the top and bottom being formed into hooks capable of interlocking, the free ends of which hooks extend toward each other and are in horizontal planes which inclose the reversely-disposed concavo-convex portions, substantially as set forth.

4. A rolling shutter composed of a series of metal slats, each slat having reversely-disposed concavo-convex portions, the upper and lower edges of each slat being formed into hooks capable of interlocking, while the convex surfaces of alternate slats are provided with metal shields having ears which extend across the ends of the interlocking hook elements, substantially as set forth.

5. A rolling shutter composed of a series of metal slats hinged together, each slat having reversely-disposed concavo-convex portions whereby an **S** shape is presented in cross-section, the convex surfaces of alternate slats at the ends thereof being provided with metal shields which latter also extend beyond the ends of said alternate slats and overlap the ends of the hinged portions, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JAS. G. WILSON.

Witnesses:

LESTER GODFREY WILSON,  
HOWARD M. BOYD.