No. 773,741. PATENTED NOV. 1, 1904.

M. G. HILPERT.

PULLEY BLOCK AND SPRING LATCH GATE.

APPLICATION FILED NOV. 4, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

FIG. 1

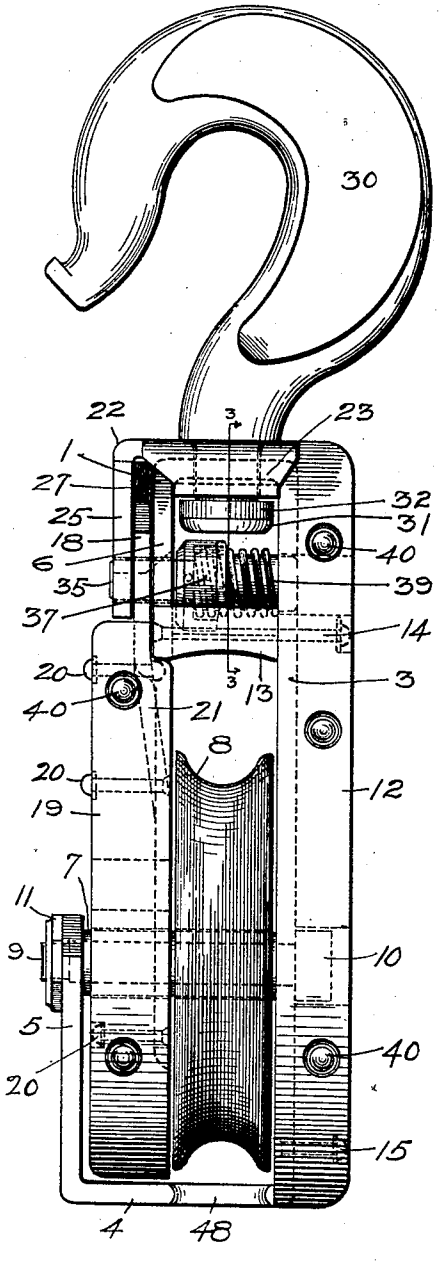
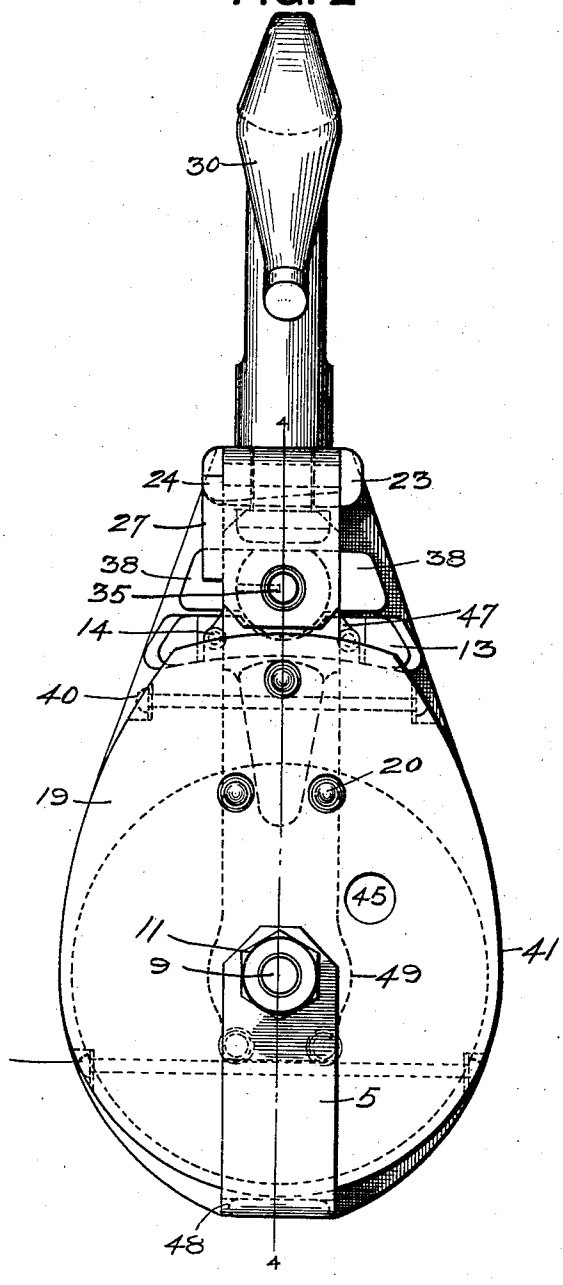


FIG. 2



WITNESSES.

J. R. Keller

Robt C Totten

INVENTOR.

Meier G. Hilpert

By Kay Totten & Winter

Attorneys

PHOTO LITHOGRAPHED BY SACKETT & WILHELMS LITHO. & PTG. CO. NEW YORK.

No. 773,741. PATENTED NOV. 1, 1904.

M. G. HILPERT.

PULLEY BLOCK AND SPRING LATCH GATE.

APPLICATION FILED NOV. 4, 1903.

NO MODEL. 2 SHEETS—SHEET 2.

FIG. 4

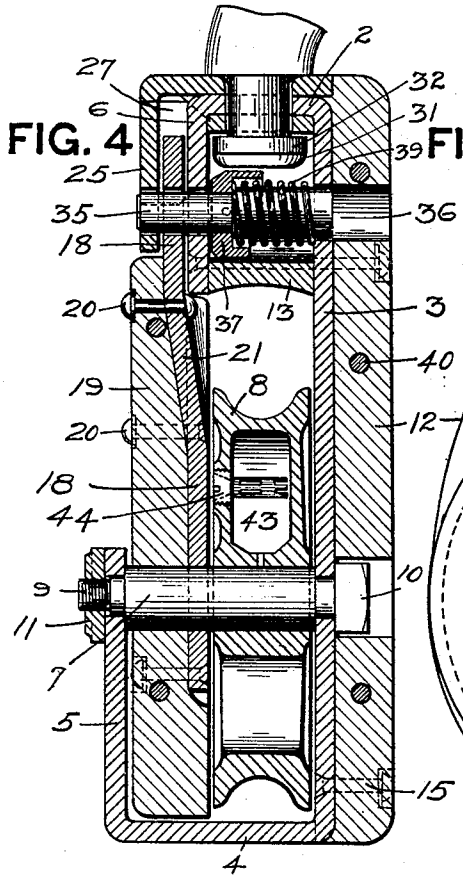


FIG. 3

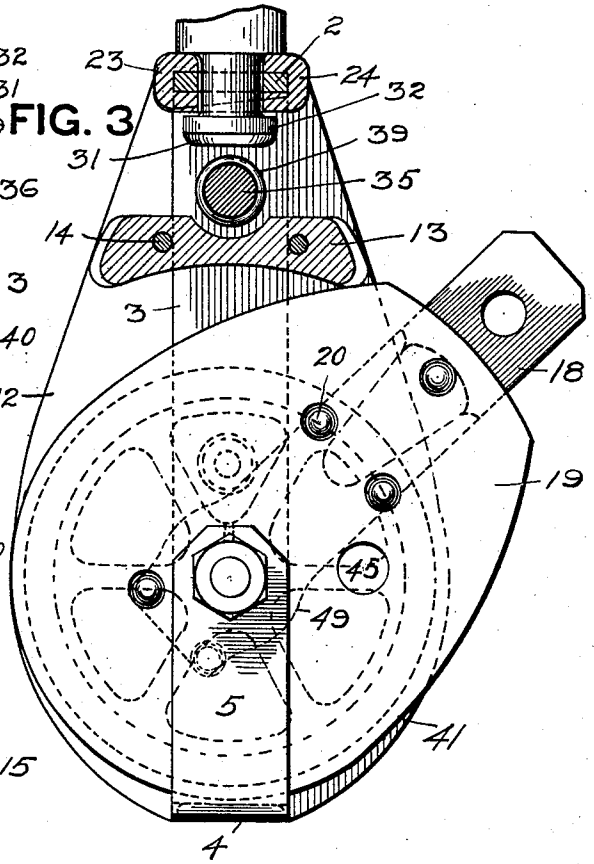


FIG. 6

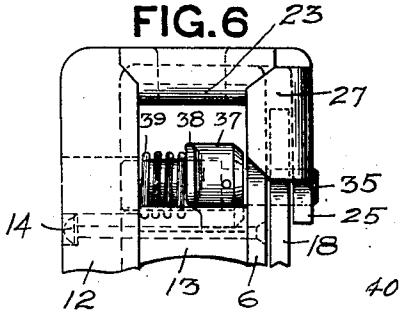
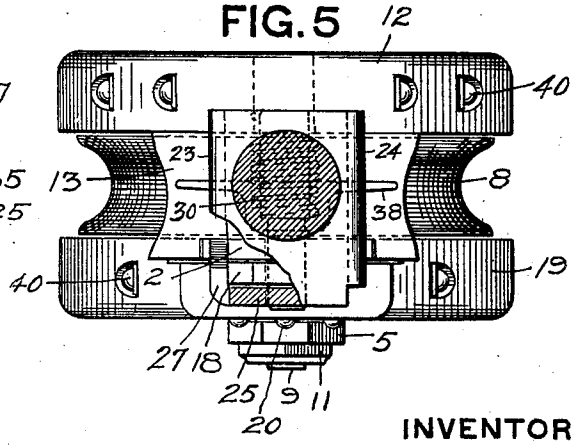


FIG. 5



WITNESSES.

J. R. Kellen

Robt C Totten

INVENTOR.

Marie G. Hilpert

By Kay Totten & Hunter

Attorneys

PHOTO-LITHOGRAPHED BY SACKETT & WILHELMS LITHO. & PTG. CO. NEW YORK.

No. 773,741. Patented November 1, 1904.

UNITED STATES PATENT OFFICE.

MEIER G. HILPERT, OF PITTSBURG, PENNSYLVANIA.

PULLEY-BLOCK AND SPRING-LATCH GATE.

SPECIFICATION forming part of Letters Patent No. 773,741, dated November 1, 1904.

Application filed November 4, 1903. Serial No. 179,844. (No model.)

To all whom it may concern:

Be it known that I, MEIER G. HILPERT, a resident of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Pulley-Blocks with Spring-Latch Gates; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to pulley-blocks, and more especially to that class of blocks provided with a gate or shutter, so as to permit the rope—that is, the bight—to be thrown off and onto the sheave, and commonly known as "snatch-blocks."

The object of my invention is to provide a block of this character which is strong and durable and yet light, which is cheap and easy to construct, which has a minimum of wooden pieces, and which is simple and reliable of operation.

The particular features of construction whereby the above objects may be secured will be hereinafter specifically described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a side view of my improved block. Fig. 2 is a face view of the same. Fig. 3 is also a face view, having the upper part sectioned on the line 3 3, Fig. 1, and the gate moved to one side. Fig. 4 is a vertical section through the block on the line 4 4, Fig. 2. Fig. 5 is a plan view of the block, partly in section; and Fig. 6 is a rear side view of the upper portion of the block.

In the construction of my pulley-block I provide a metallic hanger, frame, or yoke 1, which is formed of a bar of metal bent into the shape of a modified rectangle open on one side and preferably wider at its lower end than at its upper end. This yoke is provided with the upper horizontal or suspending portion 2, the rear vertical member 3, the bottom horizontal member 4, the bottom upwardly-projecting member 5, and the top downwardly-projecting member 6. The last two members are parallel to the rear vertical member 3; but preferably the bottom member is spaced farther from the rear member than is the top member 6.

Between the lower parallel members 5 and 3 is interposed a spacing member 7, which forms the axle of the sheave 8. This spacing member may be a solid axle; but preferably it will be a sleeve held in place by means of a bolt 9, passing through the same and through openings in the parallel members 3 and 5 and provided on one end with a head 10 and on its opposite end with a nut 11, by means of which the sleeve 7 is clamped firmly in place, preferably so that the sleeve-bolt cannot turn. Afterward the end of the bolt 9 is slightly upset to keep the nut in position. This spacing member, in conjunction with the lower member 4 and parallel members 5 and 3, forms a rectangle of the lower part of the hanger-frame, thus bracing and greatly strengthening the latter. The sheave 8 is located close to the vertical member 3 of the yoke, so that the bending stress in the sheave-axle is reduced to a minimum.

The rear cheek or guard 12 is preferably formed of wood, as usual, and is applied to the yoke member 3 on the outside thereof—that is, on the side opposite the sheave 8—thus enabling the metallic yoke to be in close proximity to the sheave and reducing the bending moment on the sheave-axle.

At the upper portion of the frame between the parallel members 6 and 3 is interposed a bracing-piece 13, shown as a casting, which is quite wide, and therefore serves not only as a bracing-piece, but also as a rope-guard. It also has the function of guiding the spring-latch and of guiding the gate into place, as will hereinafter more fully appear. This casting is held in place by means of rivets 14, passing through the same and through the parallel members 6 and 3 and also through the cheek 12, thus holding the latter in place. The cheek 12 is further secured to the yoke by means of rivets 15 near its lower end.

The open side of the frame is closed by means of a gate-piece 18, hinged to the yoke in any suitable way, but preferably on the sheave-axle. Externally of this gate-piece is applied the front cheek 19, which is secured to the gate-piece by means of rivets 20. The metallic gate-piece 18 therefore lies close to

the sheave 8 and reduces the bending stress in the sheave-pin. The upper portion of this gate-piece is bent outwardly, as at 21, and is slightly embossed to strengthen it, and the upper end passes outside of the vertical member 6 of the yoke.

Applied to the upper end of the yoke is a reinforce and latch piece 22, this being formed of a plate of metal provided with the wings 23 and 24, which are wrapped around the upper member 2 of the yoke, thus strengthening and reinforcing the latter. This piece is provided with the downwardly-bent portion 25, which lies parallel to the upper member 6 of the yoke and to the upper end of the gate-piece lying outside of the latter and serving as a latch-piece, protecting and guiding the upper end of gate and the latch-bolt. This latch-piece is also provided with the inwardly-bent portion 27, which forms a stop for the gate. This combined reinforce and latch piece is made by cutting a flat plate into the desired shape, bending the latch-piece 25 and stop 27 to the proper position, and securing the same in place by wrapping the wings 23 and 24 around the upper member 2 of the yoke, thus reinforcing the latter at the point where the suspending means is applied. The latter may be of any known or desired form and is shown as an ordinary hook 30, provided with a reduced portion or neck which passes through suitable openings in the upper member of the yoke and the reinforcing-piece, and is upset at its lower end, as at 31, and also provided with the wearing-washer 32, as is common.

The depending member 6 of the yoke, the latch-piece 25, and the upper end of the gate-piece 18 are provided with alining openings, through which is adapted to be projected the lock or latch 35. The latter is in the form of a bolt lying above the brace-casting 13, and thus protected thereby, this bolt being inserted through a suitable opening 36, formed in the rear cheek and vertical member 3 of the yoke. On this latch is secured a sleeve 37, which is provided with one or two outwardly-projecting wings 38, which are guided by the upper face of the brace-casting 13 and serving as a means for retracting said latch. The latch is projected by means of a spring, preferably a spiral spring 39, having one end fitting into a cup in the sleeve 37 and its opposite end resting against the rear member of the yoke. The spring tends normally to keep the latch projected, thus locking the gate-piece 18 to the yoke; but by merely pressing on the wings 38 said latch can be retracted to permit the gate-piece to swing to one side, as indicated in Fig. 3, to permit the rope or bight to be thrown off or onto the sheave 8.

The cheeks 19 and 12 are preferably formed of wood and are strengthened by means of rivets 40. The front cheek 19 is provided with a flattened portion 41, which will rest upon the lower member 4 of the yoke when the gate has reached substantially a horizontal position, thus preventing a further turning movement of the gate.

The sheave 8 is provided with an oil cavity or cistern 43, having an opening 44 into the same located in the side of the sheave. In the front cheek 19 is an opening 45, in such position that it will register with the oil-opening 44 in the sheave.

By reason of the metallic members 3 and 18 being located close to the sheave 8 the bending stress in the sheave-pin is very much reduced, and as a consequence the block is greatly strengthened at this point. The number of wooden pieces also is reduced to a minimum, only two wooden pieces being employed and serving as cheek-pieces. This reduces the amount of work in fitting up the device, and the metal parts also are reduced to a minimum. The yoke itself is made of an ordinary rectangular bar of metal and is substantially of uniform cross-section throughout, being only slightly upset at the lower end of the member 6, as indicated at 47, and also being slightly rounded off at the bottom, as at 48, to prevent wear on the rope or cable. The gate-piece 18 also is an ordinary rectangular bar of metal, being also substantially of uniform cross-section from end to end and being slightly spread apart at the point where the opening is formed therein for the sheave-axle, this being indicated at 49. By reason of the simplicity and the small number of parts the block is cheap to manufacture. The operation also is very simple, the spring-latch securely holding the gate-piece in locked position, but permitting its ready release in cases where needed, it not being necessary to remove any bolts, nuts, cotter-pins, or like locking means.

What I claim is—

1. A pulley-block comprising a metallic hanger or yoke having top, back and bottom members integral with each other and being open on one side, a sheave, an axle for the sheave supported at both ends by said yoke, a rear cheek-piece arranged externally of the yoke, a combined gate and front cheek-piece hinged to the yoke, and means for securing the free end of the gate to the yoke.

2. A pulley-block comprising a metallic hanger or yoke having top, back and bottom members integral with each other and being open on one side, a sheave, an axle for the sheave supported at both ends by said yoke, a rear cheek-piece arranged externally of the yoke, a combined gate and front cheek-piece pivoted to the yoke to swing in a plane parallel to the plane of rotation of the sheave, and means for securing the free end of the gate to the yoke.

3. A pulley-block comprising a metallic hanger or yoke open on one side, a sheave, an axle for the sheave supported at both ends by said yoke, a rear cheek-piece arranged externally of the yoke, a combined gate and front

cheek-piece pivoted on the sheave-axle, and means for securing the free end of the gate to the yoke.

4. A pulley-block comprising a metallic hanger or yoke having top, bottom and back members integral with each other and being open on one side, a sheave, an axle for the sheave supported at both ends by said yoke, a rear cheek-piece arranged externally of the yoke, a metallic gate-piece hinged to the yoke, a front cheek-piece arranged externally of the gate-piece, and means for securing the free end of the gate to the yoke.

5. A pulley-block comprising a metallic hanger or yoke open on one side, a sheave, an axle for the sheave supported at both ends by said yoke, a metallic gate-piece pivoted on the sheave-axle, means for securing the free end of said gate-piece to the yoke, a rear cheek secured to the yoke externally thereof, and a front cheek secured to the gate-piece externally thereof.

6. A pulley-block comprising a metallic hanger or yoke open on one side, a sheave, an axle for the sheave supported at both ends by said yoke, a gate pivoted on the sheave-axle to swing in a plane parallel to the plane of rotation of the sheave, and means for securing the free end of the gate to the yoke.

7. A pulley-block comprising a metallic yoke open on one side and wider at the bottom than at the top, a sheave journaled in the wide bottom portion thereof, a gate-piece pivoted on the sheave-journal between the sheave and the open portion of the yoke, and means for securing the free end of the gate-piece to the yoke.

8. A pulley-block comprising a metallic hanger or yoke open on one side and wider at the bottom than at the top, a sheave journaled in the wide portion thereof, a metallic gate-piece pivoted on the sheave-journal between the sheave and the open portion of the yoke, means for securing the free end of the gate-piece to the yoke, a rear cheek secured to the yoke externally thereof, and a front cheek secured to the gate-piece externally thereof.

9. A pulley-block comprising a yoke having top, back and bottom members integral with each other and being open on one side, a gate hinged thereto, and a latch mounted in the top of said yoke and arranged to automatically engage the gate when the latter is closed.

10. A pulley-block comprising a yoke having top, back and bottom members integral with each other and being open on one side, a gate hinged thereto, and a pin or latch mounted in the top of said yoke and movable transversely therein and arranged to automatically engage the gate when the latter is closed.

11. A pulley-block comprising a yoke open on one side, a gate hinged thereto, and a spring-actuated sliding bolt mounted in said yoke and lying, when the pulley-block is in an upright position, in a horizontal plane and arranged to engage the free end of the gate.

12. A pulley-block comprising a yoke or hanger open on one side, a sheave journaled therein, a gate pivoted to the yoke and movable in a plane parallel to the plane of rotation of the sheave, a stop for limiting the movement of the gate, and a lock for securing the free end of the gate to said yoke.

13. A pulley-block comprising a yoke or hanger open on one side, a sheave journaled therein, a gate hinged to said yoke and movable in a plane parallel to the plane of rotation of the sheave, and a spring-actuated latch engaging the gate and yoke members and serving to secure the gate to the yoke.

14. A pulley-block comprising a yoke or hanger open on one side, a sheave, an axle therefor supported at both ends in said yoke, a gate pivoted to the yoke and movable in a plane parallel to the plane of rotation of the sheave, and having its upper end arranged externally of a portion of the upper end of the yoke, and a retractable pin guided at both ends in the yoke and engaging the free end of the gate.

15. A pulley-block comprising a yoke open on one side, a sheave journaled in said yoke, a gate hinged to said yoke, a spring-actuated pin mounted in said yoke and lying, when the block is in an upright position, in a horizontal plane and arranged to engage the gate and yoke members, and a wing on said pin for retracting the same.

16. A pulley-block comprising a yoke or hanger open on one side, a sheave journaled therein, a brace-piece interposed between upper parallel members of said yoke, a gate hinged to said yoke, a spring-actuated pin engaging said gate and yoke members, and a projection on said pin guided by said brace-piece.

17. A pulley-block comprising a yoke or hanger open on one side, a spacing member between the parallel lower members thereof, a sheave journaled on said spacing member, a gate hinged to said yoke, and means for securing the free end of said gate to said yoke.

18. A pulley-block comprising a yoke or hanger open on one side, a spacing member secured between parallel lower members of said yoke, a sheave journaled on said member, a gate pivoted on the sheave-axle, and means for securing the free end of said member to the yoke.

19. A pulley-block comprising a metallic yoke open on one side, a spacing member between the parallel lower members thereof, a sheave journaled on said spacing member, a brace-piece between the parallel upper members of said yoke, a gate hinged to said yoke, and means for securing the free end of the gate to said yoke.

20. A pulley-block comprising a yoke hav-

ing top, back and bottom members integral with each other and being open on one side, a gate hinged to said yoke, and a spring-actuated locking-pin housed in said yoke and engaging said gate.

21. A pulley-block comprising a yoke or hanger open on one side and having a downwardly-projecting portion at its upper end, a brace-piece between said downwardly-projecting portion and the vertical member of the yoke, a gate hinged to said yoke, and a spring-latch located above said brace-piece and engaging the gate-piece.

22. A pulley-block comprising a yoke open on one side, a brace-piece between parallel upper members of said yoke, a gate hinged to the lower portion of said yoke and having its free end bearing against an upper member of the yoke opposite said brace, and means for securing the free end of said gate to the yoke.

23. A pulley-block comprising a yoke open on one side, a wooden cheek secured to the vertical member thereof, a brace between parallel upper members of said yoke, said brace having a broad face bearing against the cheek and having a concave lower face, a sheave journaled in said yoke, a gate hinged to said yoke, and means for securing the free end of the gate to the yoke.

24. A pulley-block comprising a metallic yoke opening on one side, a reinforcing member wrapped about the upper member thereof and arranged to receive a suspending means, a gate hinged to said yoke, and means for securing the free end of said gate to the yoke.

25. A pulley-block comprising a yoke open on one side and having a downwardly-projecting portion at its upper end, a latch-iron secured to the top of the yoke and projecting parallel to the depending portion thereof, a gate pivoted to swing in a plane parallel to the plane of rotation of the sheave, and a locking-pin passing through the parallel portions of the gate and of the yoke.

26. A pulley-block comprising a yoke open on one side and having a downwardly-projecting portion at its upper end, a latch-iron secured to the upper end of the yoke and projecting parallel to the depending portion thereof, a stop on said latch-iron, a sheave journaled in said yoke, a gate pivoted to the yoke to swing in a plane parallel to the plane of rotation of the sheave, and a locking-pin passing through parallel portions of the gate and of the yoke.

27. A pulley-block comprising a metallic yoke open on one side, a sheave journaled therein, a reinforcing-piece wrapped around the upper member of said yoke and provided with a depending latch portion, a suspending means secured to the reinforcing-piece and upper yoke member, a gate hinged to said yoke, and means for securing the free end of said yoke to said latch.

28. A pulley-block having journaled therein a sheave which is provided with an oil-cistern and a filling-opening in its side, and having a cheek-piece provided with an opening to register with the filling-opening in the sheave.

In testimony whereof I, the said MEIER G. HILPERT, have hereunto set my hand.

MEIER G. HILPERT.

Witnesses:
ROBERT C. TOTTEN,
G. C. RAYMOND.

Correction in Letters Patent No. 773,741.

It is hereby certified that in Letters Patent No. 773,741, granted November 1, 1904, upon the application of Meier G. Hilpert, of Pittsburg, Pennsylvania, the title of the invention was erroneously written and printed "Pulley-Block and Spring-Latch Gate," whereas the said title should have been written and printed *Pulley-Block with Spring-Latch Gate;* and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 22d day of November, A. D., 1904.

[SEAL.]

F. I. ALLEN,

Commissioner of Patents.