(No Model.)

C. ROSS.

GATE FOR SWINGING BRIDGES.

No. 390,621. Patented Oct. 2, 1888.

Fig. 1.

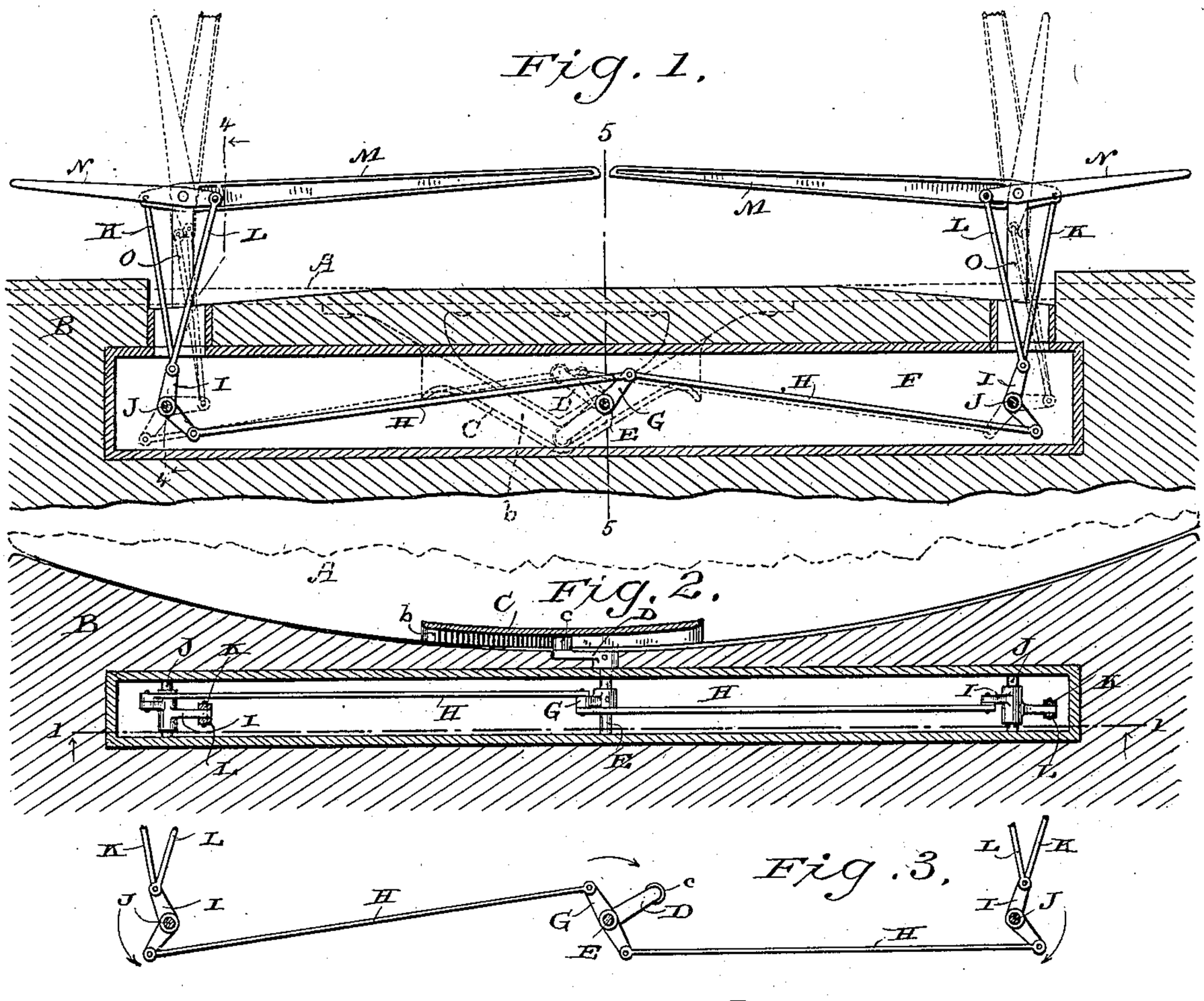

Fig. 2.

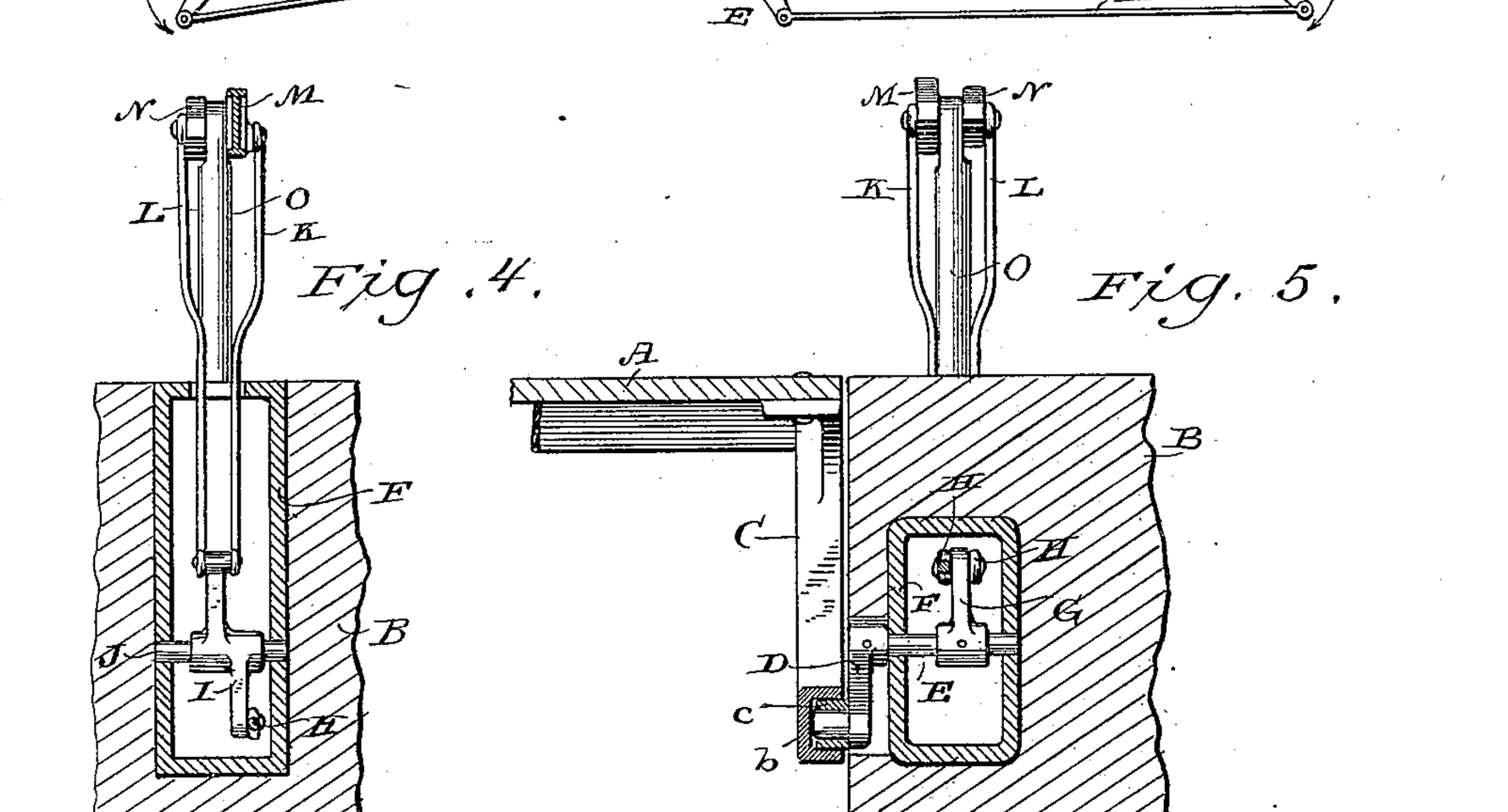

Fig. 3.

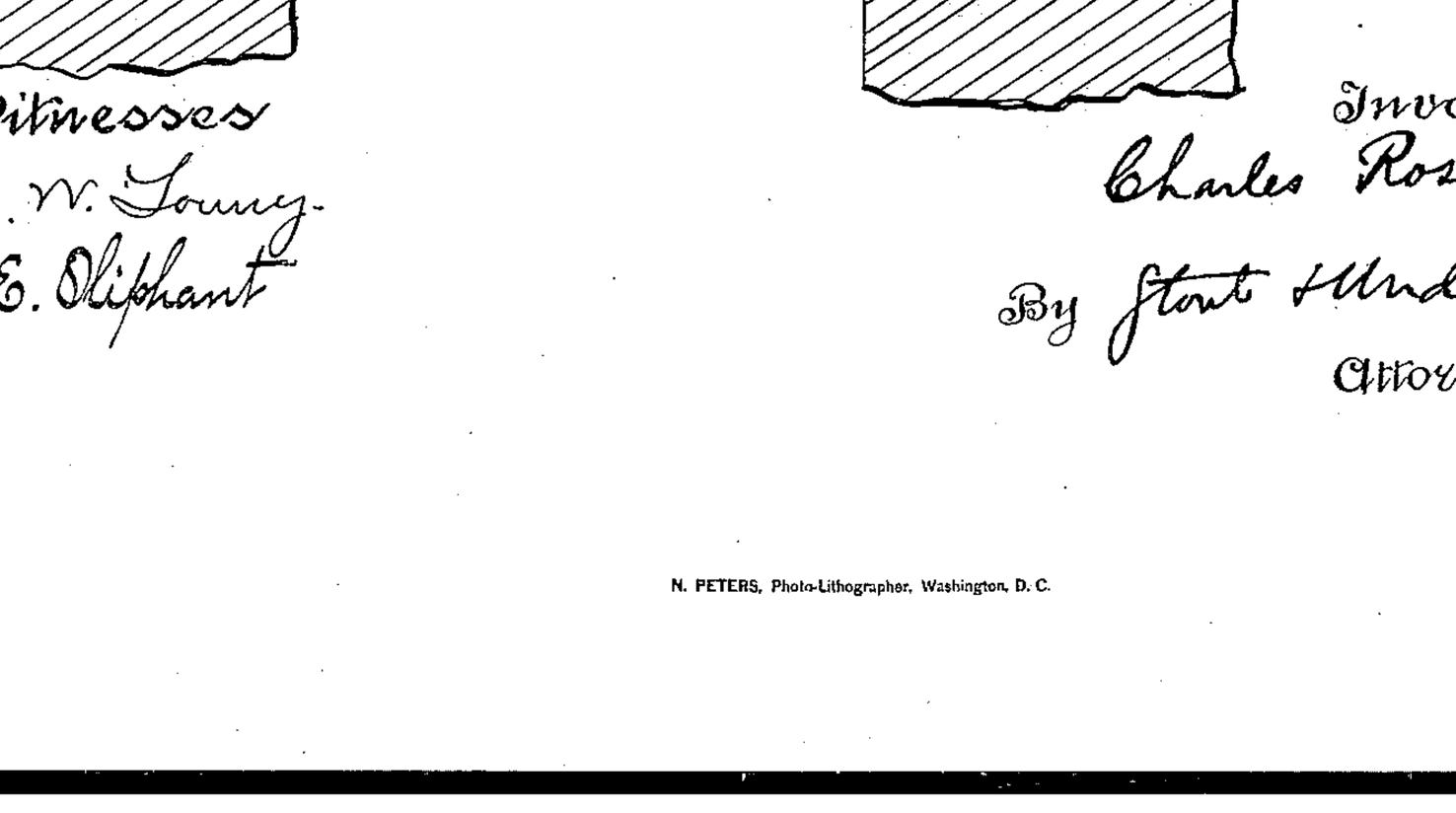

Fig. 4.

Fig. 5.

Witnesses
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UNITED STATES PATENT OFFICE.

CHARLES ROSS, OF MILWAUKEE, WISCONSIN.

GATE FOR SWINGING BRIDGES.

SPECIFICATION forming part of Letters Patent No. 390,621, dated October 2, 1888.

Application filed January 13, 1888. Serial No. 260,623. (No model.)

To all whom it may concern:

Be it known that I, CHARLES ROSS, of Milwaukee, in the county of Milwaukee, and in the State of Wisconsin, have invented certain new and useful Improvements in Gates for Swinging Bridges; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to gates for swinging bridges; and it consists in certain peculiarities of construction and combination of parts, to be hereinafter described with reference to the accompanying drawings, and subsequently claimed.

In the drawings, Figure 1 represents a vertical transverse section of a bridge-abutment taken on line 1 1, Fig. 2, and showing the application of my invention; Fig. 2, a horizontal section of the abutment; Fig. 3, a detail view of a lever system; Fig. 4, a section on line 4 4, Fig. 1; Fig. 5, a similar view on line 5 5 of Fig. 1.

Referring by letter to the drawings, A represents a swinging bridge, and B one of the abutments therefor; and while I have only shown one end of the bridge and the adjacent abutment, the construction to be hereinafter set forth is duplicated at the other end of said bridge. Designed to depend from each end of the bridge is a bracket, C, and this bracket is provided with a slot or groove, *b*, that extends at an obtuse angle in opposite directions from a given center, as best illustrated by dotted lines, Fig. 1, said slot or groove being normally in engagement with an anti-friction roller, *c*, on a crank, D, that is fast on a shaft, E, journaled in the side walls of a housing, F, inclosed by the adjacent abutment B. Fast on the shaft E is a lever, G, that is connected by rods H with two bell-crank levers, I, respectively arranged on shafts J, that also have their bearings in the side walls of the housing F.

In Fig. 1 I have shown a single lever G and the rods H connected to the free end thereof; but it is obvious that I may employ a double lever and individually connect said rods to its respective ends, as shown in Fig. 3.

The bell-crank levers I are respectively connected by rods K L to bars M N, that are pivoted to standards O on the abutment B at each side of the approach to the bridge, the bars M being for the purpose of guarding the roadway and the bars N the sidewalks leading to said bridge.

In the operation of my invention the parts above described are normally in the position shown by dotted lines, Fig. 1, the bars M N being held up out of the way by the anti-friction rollers *c* on the cranks D being retained in the lowest portions of the slots or grooves *b* in the depending brackets C. The moment the bridge is moved either to the right or left the cranks D will be actuated by the movement of the brackets C to operate the shaft E, and the latter, through the rods H, bell-crank levers I, and rods K L, will in turn cause the bars M N to fall to the position shown by full lines, Fig. 1, and said bars by their own gravity aid this movement. The bars M N are in the last-named position by the time the brackets C have cleared the anti-friction rollers on the cranks D, and thus remain while the bridge is open. When the bridge is being closed, the slotted or grooved brackets C again engage the cranks D, and through the lever mechanism above described cause the bars M N to return to their normal position, this being accomplished by the time said bridge is brought home.

By the above description it will be seen that the parts connecting the cranks D with the bars M N are all housed, and that I employ a direct lever action that is very simple and not likely to break or get out of order.

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

The combination, with a swinging bridge and an abutment thereof, of a housing, F, arranged in the abutment, a shaft, E, having its bearings in the housing and provided with a crank, D, carrying an anti-friction roller, *c*, the grooved bracket C, depending from the adjacent end of the bridge to engage the anti-friction roller, the lever G, fast on said shaft, the shafts J, journaled in said housing, the bell-crank levers I, arranged on the latter

shafts, the rods H, connecting the levers G I, the standards O on said abutment, the bars M N, pivoted to the standards, and the rods K L, connecting said bell-crank levers with said bars, all arranged to operate substantially as and for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand, at Milwaukee, in the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

CHARLES ROSS.

Witnesses:
N. E. OLIPHANT,
H. G. UNDERWOOD.