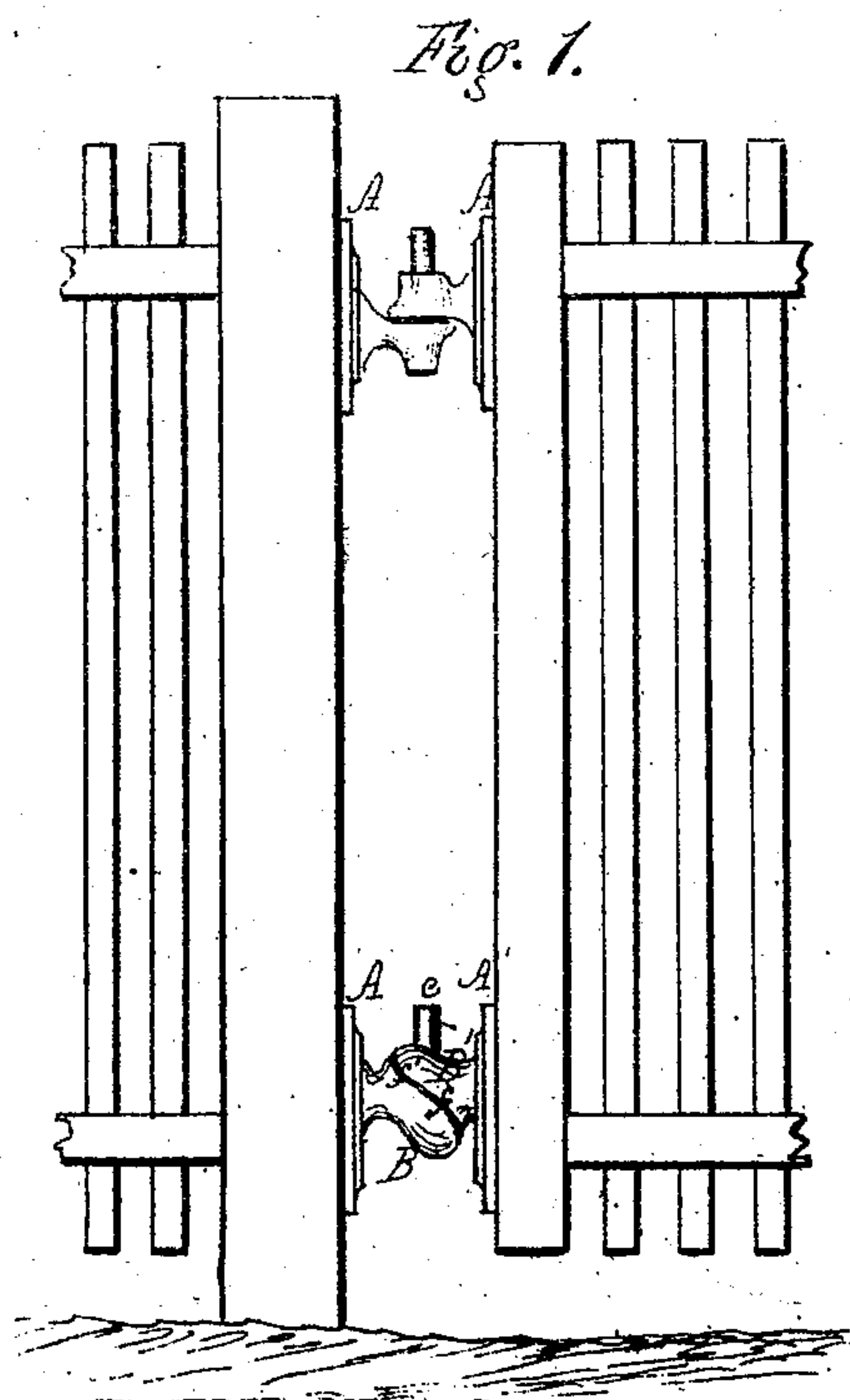
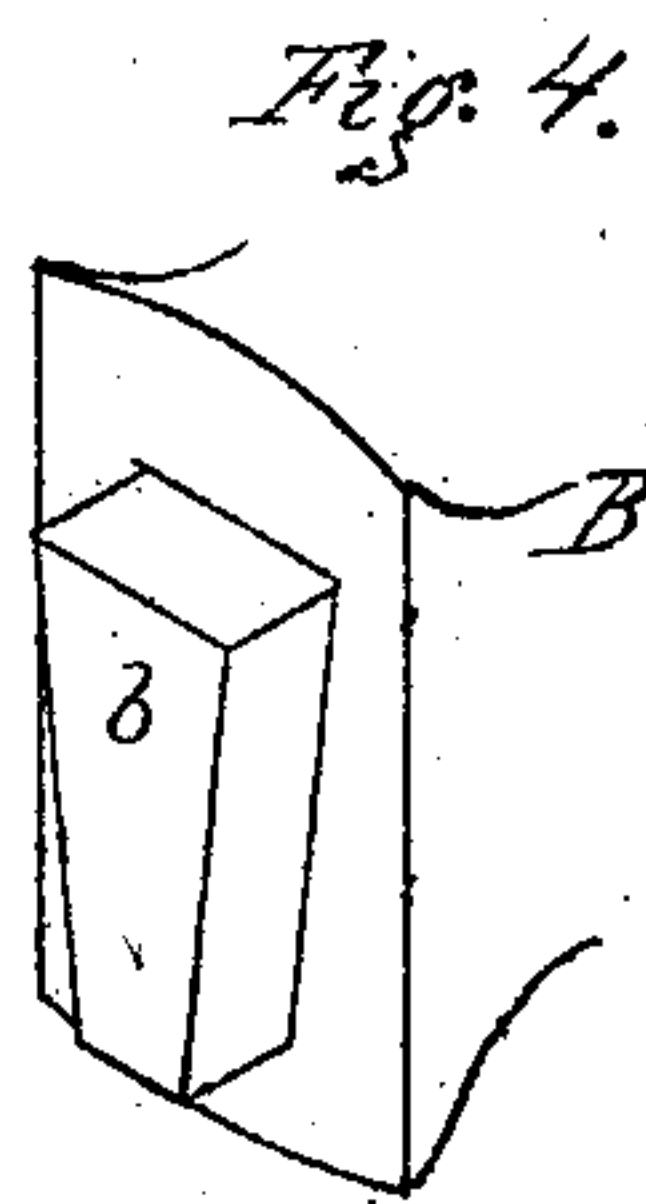
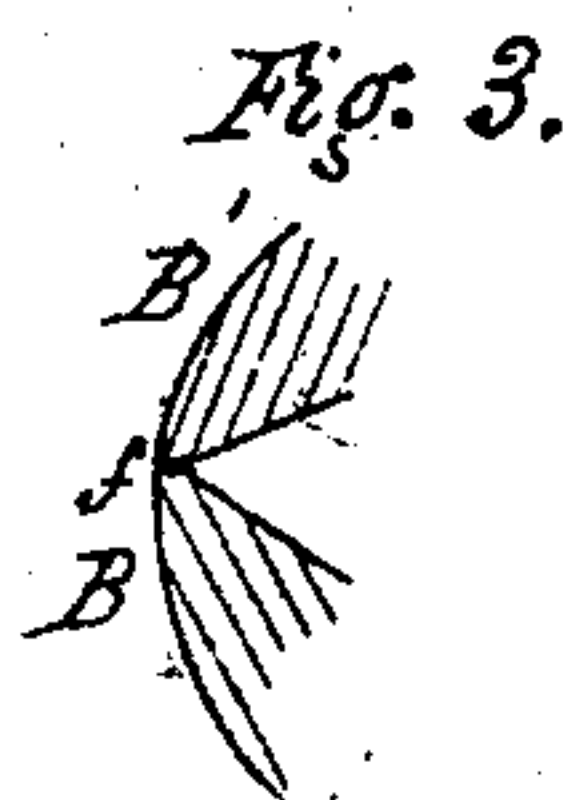
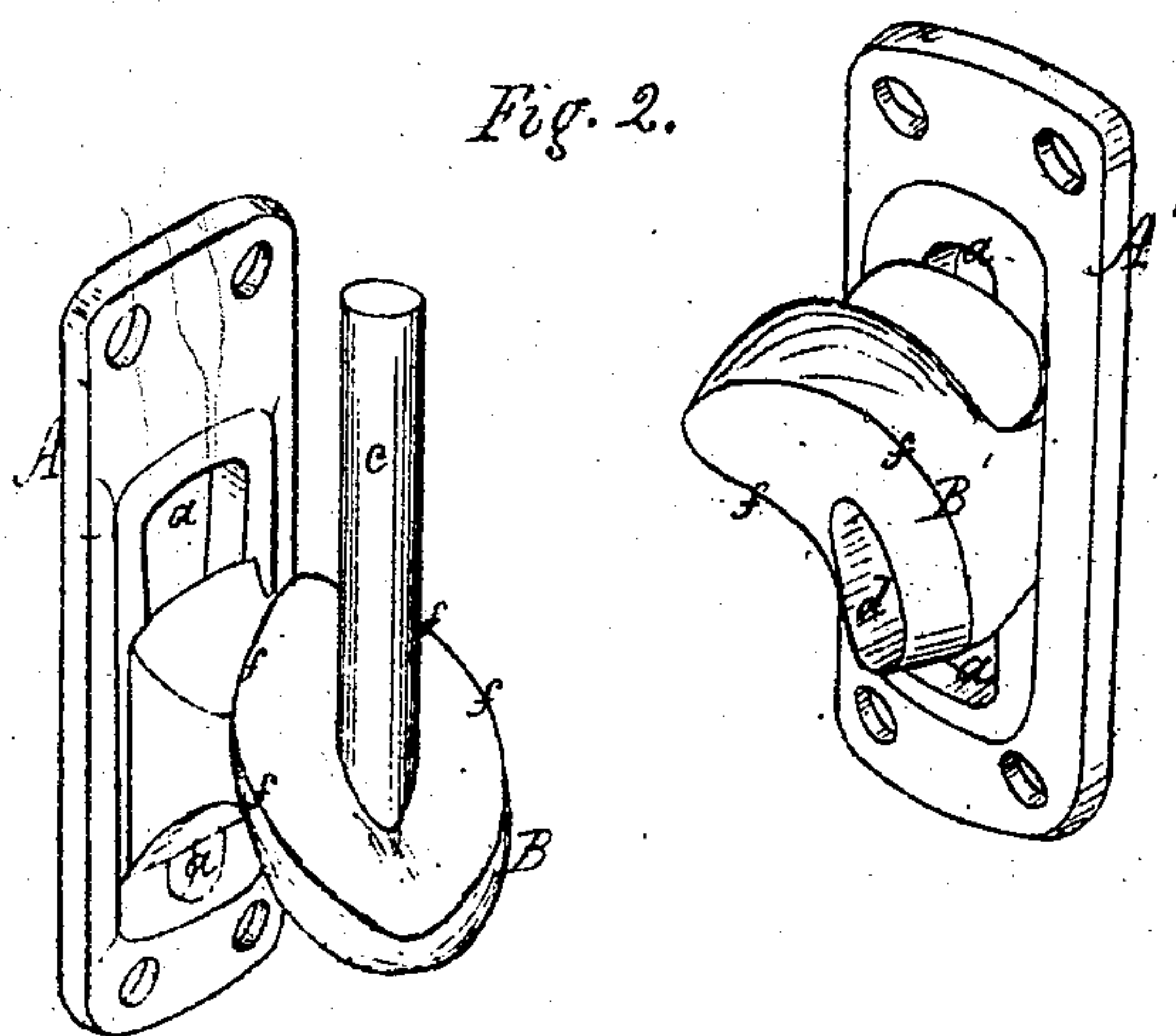


116851



A. D. McMaster.  
Gate Hinge.

PATENTED JUL 11 1871



Witnesses.  
R. F. Ogden.  
C. H. Woodward

Inventor.  
A. D. McMaster,  
By J. Fraser & Co.,  
attys.



# UNITED STATES PATENT OFFICE.

ALONZO D. McMASTER, OF ROCHESTER, NEW YORK, ASSIGNOR TO HIMSELF  
AND ORRIN MORSE, OF SAME PLACE.

## IMPROVEMENT IN HINGES FOR GATES, &c.

Specification forming part of Letters Patent No. 116,851, dated July 11, 1871.

*To all whom it may concern:*

Be it known that I, ALONZO D. McMASTER, of the city of Rochester, in the county of Monroe, and State of New York, have invented a certain new and useful Improvement in Hinges for Gates, &c., of which the following is a specification:

This invention consists in constructing the leaves and the knuckle or bearing portions of the hinge in separate parts and connecting them by dovetailed wedges and slots. It also consists in the construction and combination of certain parts, as will hereinafter more fully be set forth.

In the drawing, Figure 1 is an elevation of a section of gate and fence showing my improved hinge. Fig. 2 is a perspective view of the parts of the hinge separated; Fig. 3, a diagram showing the bearing or contact of the outer edges of the parts constituting the knuckle; Fig. 4, a view of the dovetailed wedge of the knuckle portion.

A A' are the leaves or attaching-plates, and B B' the knuckles or bearing portions. The leaves are the same as those ordinarily used, except they are cast separate from the knuckles and have central longitudinal slots *a a'*. These slots are made wedging in a longitudinal direction and dovetailed in a cross or transverse direction, the widest portion being at the back. Correspondingly-shaped wedges or lugs *b*, Fig. 4, cast upon the ends of the knuckles, enter these slots, and when pressed or driven in tighten in place and thus secure the parts together as firmly as if the whole were cast entire. The slots in the leaves A which attach to the post narrow downward, while those in the leaves A' which attach to the gate narrow upward, as clearly shown. This is for the purpose of causing the gravity of the gate to press the wedges or lugs more closely in place in the slots, which, it will be seen, is the effect.

I claim this construction of the parts A B in separate parts and their connection together by the wedges and slots, or their equivalent, as an essential feature of my invention. By this means, if any one portion becomes broken, it may be replaced without discarding the whole hinge. It enables a ready adjustment to be made. It is also of special importance in my construction of the knuckles, as, owing to their peculiar form, they cannot be drawn from the sand, in casting entire with the leaves, without drawing edge-

wise of the latter, in which case the screw-holes cannot be cast, but must be drilled. By casting in separate parts the leaves can be drawn the other way and the screw-holes cast therein.

I do not intend to confine this loose connection of the parts specially to gate-hinges alone, nor to the precise form of the wedges and lugs. If desired, blocks or pieces may be placed in the slots over the lugs to retain them in place against accident. If desired, also, the edges of the slots may be serrated and thin strips of iron driven in to hold the lugs.

The supporting-knuckle B has a wrought-iron pintle, *c*, cast in it, and the knuckle B' has a corresponding socket, *d*. This is common in other hinges. The knuckles, when fitted together, are of oval or egg-form, as shown, and fit closely together when closed. The drawing shows a hinge for a "through-and-through" or double-swinging gate. In this case there are two spiral twists or inclines, *f f'*, which form the periphery of the bearing or joint of the knuckles. These gradually incline in a spiral from the center next the gate to the opposite side, the rear part *f'* being the steepest, so as to give the greatest impetus to the gate at the starting point to swing back. The construction of the fitting surfaces of the joint is such as to rest close together when closed, but in opening to separate and slide free, except at the outer edges, which there form the bearing portions, as clearly shown in Fig. 3. The junction at that point is made with a bearing-surface of slight width, just enough to give firmness to the movement. When chilled or otherwise hardened but very little wear comes at that point, and the friction is light.

A single as well as a double-acting hinge may be made to act in this way.

I am aware that hinges are well known in which one-half rides upon the other in opening the gate. This I do not claim. The novelty in my case consists in the oval form of the hinge and the construction of the spiral twist so that the outer periphery only bears in riding up or down. I thereby greatly lessen the friction, and the sharp edges will easily cut their way free through ice and snow.

What I claim, and desire to secure by Letters Patent, is—

1. The construction of the leaf and knuckle of the hinge in two separate parts, connected together by a wedging and dovetailed slot and lug, or equivalent, as herein described.

2. The combination of the dovetailed plate A with the slot *a*, pintle C, spiral oval incline *ff'*, of the knuckle B and its dovetail or lug *b*, substantially as set forth.

In witness whereof I have hereunto set my hand this 13th day of February, 1871.

A. D. McMASTER.

Witnesses:

R. F. OSGOOD,

O. MORSE.