

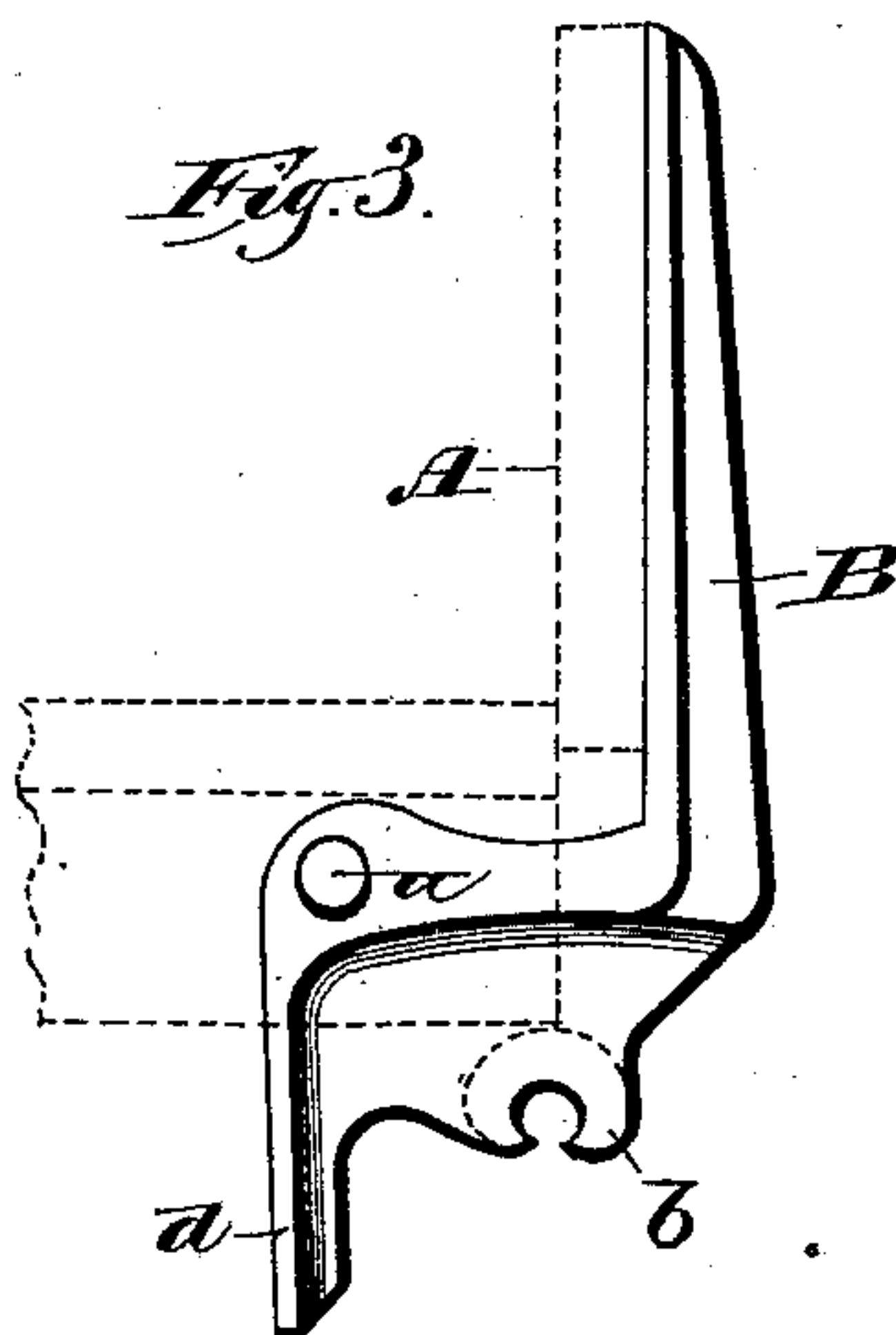
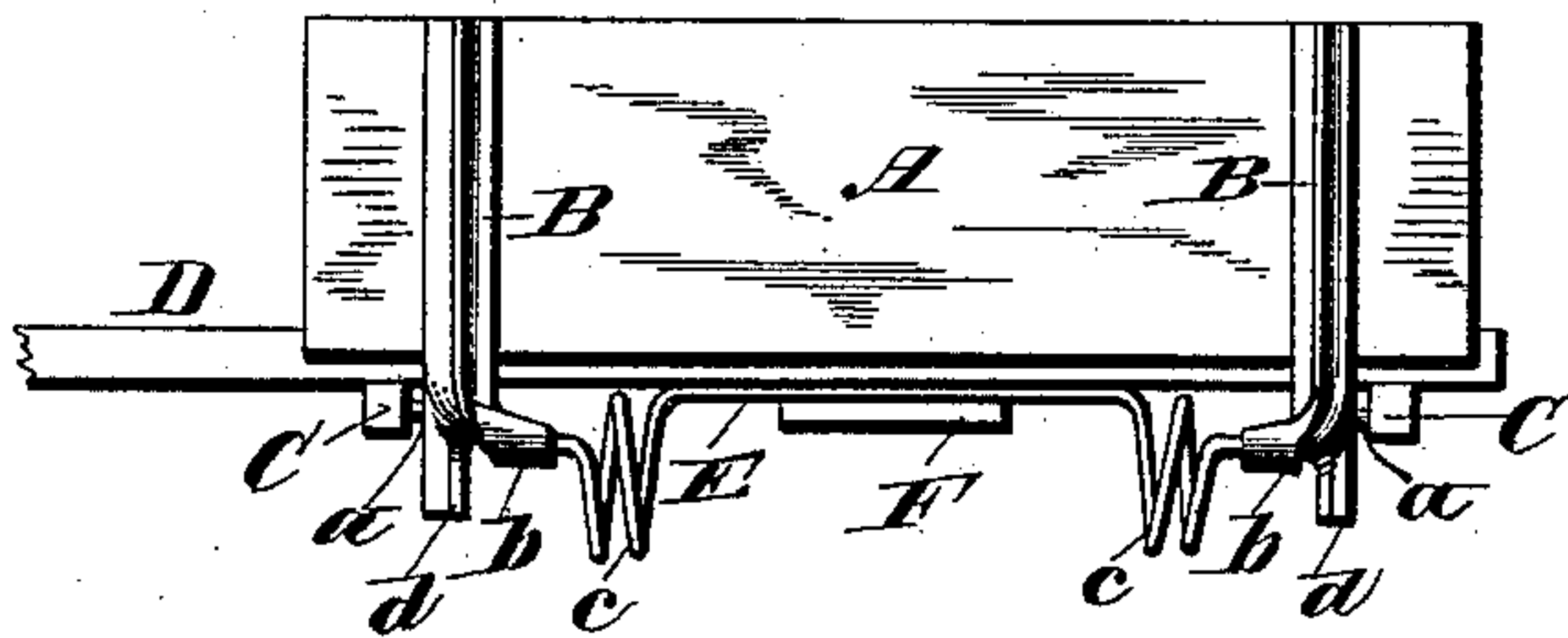
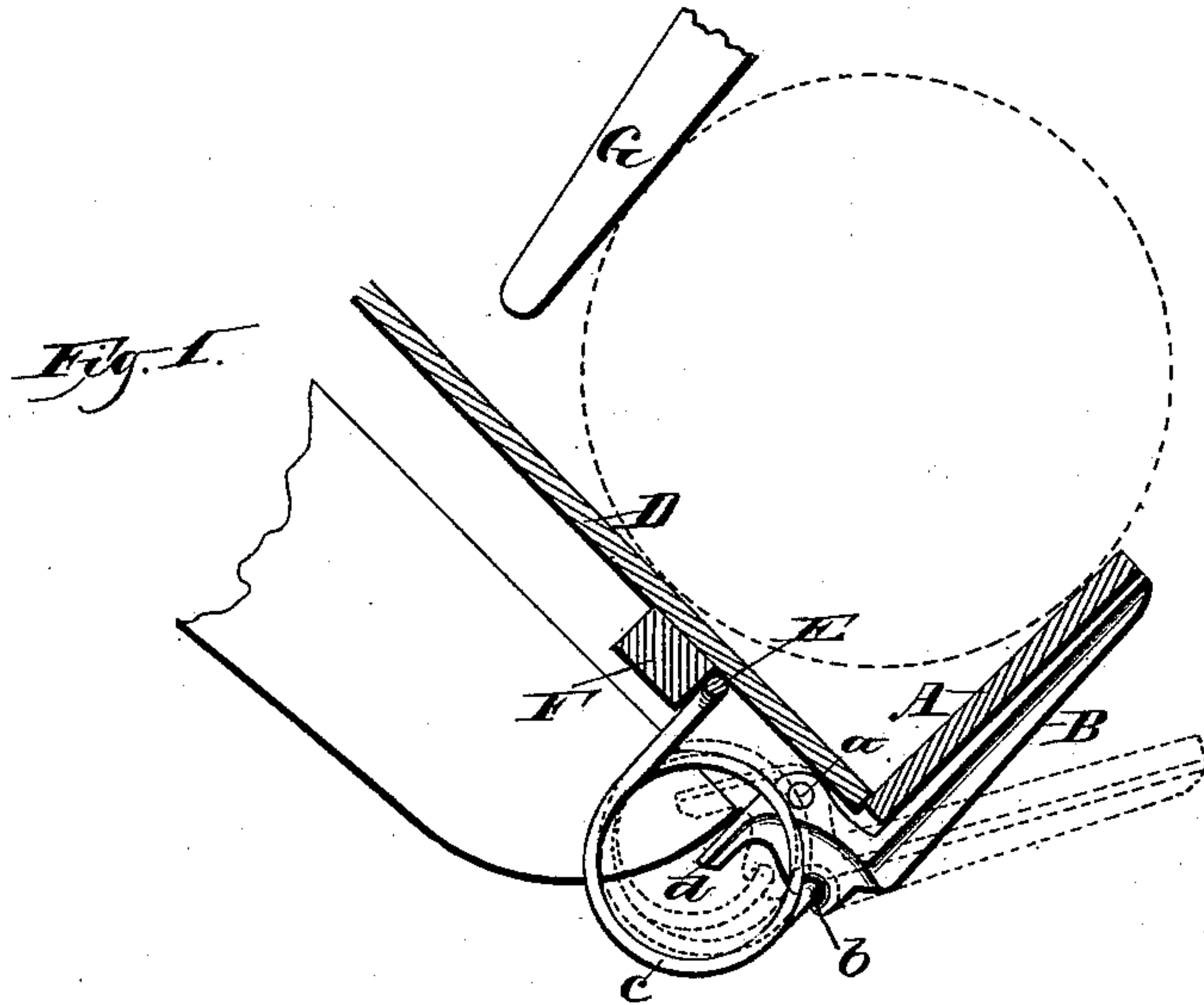
(No Model.)

H. F. CRANDALL.

GRAIN BINDER.

No. 362,427.

Patented May 3, 1887.



Witnesses:

E. G. Ames
N. E. Oliphant

Inventor:

Henry F. Brandell

By Flint & Underwood
Attorneys.

UNITED STATES PATENT OFFICE.

HENRY F. CRANDALL, OF MILWAUKEE, WISCONSIN, ASSIGNOR OF ONE-HALF
TO THE MILWAUKEE HARVESTER COMPANY, OF SAME PLACE.

GRAIN-BINDER.

SPECIFICATION forming part of Letters Patent No. 362,427, dated May 3, 1887.

Application filed March 22, 1886. Serial No. 196,086. (No model.)

To all whom it may concern:

Be it known that I, HENRY F. CRANDALL, of Milwaukee, in the county of Milwaukee, and in the State of Wisconsin, have invented
5 certain new and useful Improvements in Grain-Binders; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to drop-leaves for
10 grain-binders; 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.

15 In the drawings, Figure 1 represents a sectional view of a portion of a grain-binder having my drop-leaf applied thereto; Fig. 2, a detail elevation of the drop-leaf, and Fig. 3 a detail view of a hinge-arm such as is employed
20 to unite the drop-leaf and main deck.

Referring by letter to the drawings, A represents a drop-leaf that has secured thereto angular arms B, each of the latter being provided with a lug, *a*, that fits a corresponding
25 socket in an adjacent cleat, C, on the under side of the main deck D. On the sides of the angular arms B, opposite the lugs *a*, I form hollow projections *b*, that serve to receive the spirally-twisted ends *c* of a spring-rod, E, the
30 latter having its bearing against a suitable cleat, F, and acting to hold the drop-leaf A in its normal position at right angles to the main deck D.

When the ejector-arms G of the binder strike
35 a bound bundle that has fallen down against the drop-leaf A, as shown by dotted lines, Fig. 1, the spirally-twisted ends *c* of the spring-rod E will yield and allow said drop-leaf to lower, and thus permit the bundle to
40 be thrown clear of the machine. The downward extensions *d* of the angular hinge-arms B serve to limit the movement of the drop-leaf by coming against the under side of the main deck. Immediately after the discharge
45 of the bundle has been accomplished the contracting force of the spirally-twisted ends *c* of

the spring-rod E acts to return the drop-leaf to its normal position.

I am aware that it is not broadly new to hinge a drop-leaf to the frame-work or main deck of a grain-binder and hold the same in its normal position by a spring. I am also aware of a door-spring in which a wire is coiled in two directions around a core and has its ends extended to form arms terminating in right-angular bends, and I therefore lay no broad claim
55 to either construction.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—
60

1. In a grain-binder, the combination of a main deck having cleats upon its under side provided with suitable sockets, a drop-leaf provided with angular arms, each of which has a lug on one side thereof to engage a socket in
65 an adjacent one of said cleats and the other side provided with a hollow projection, and a horizontal spring-rod arranged beneath said main deck and having its terminals in the form of spiral twists, the ends of which latter engage said hollow projections on the angular
70 arms, as set forth.

2. In a grain-binder, the combination of a main deck having cleats upon its under side provided with suitable sockets, a drop-leaf
75 provided with angular arms, each of which has a downward extension, a lug on one side to engage a socket in an adjacent one of said cleats and the other side provided with a hollow projection, and a horizontal spring-rod
80 arranged beneath said main deck and having its terminals in the form of spiral twists, the ends of which latter engage said hollow projections on the angular arms, as set forth.

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

HENRY F. CRANDALL.

Witnesses:

H. G. UNDERWOOD,
MAURICE F. FREAR.