

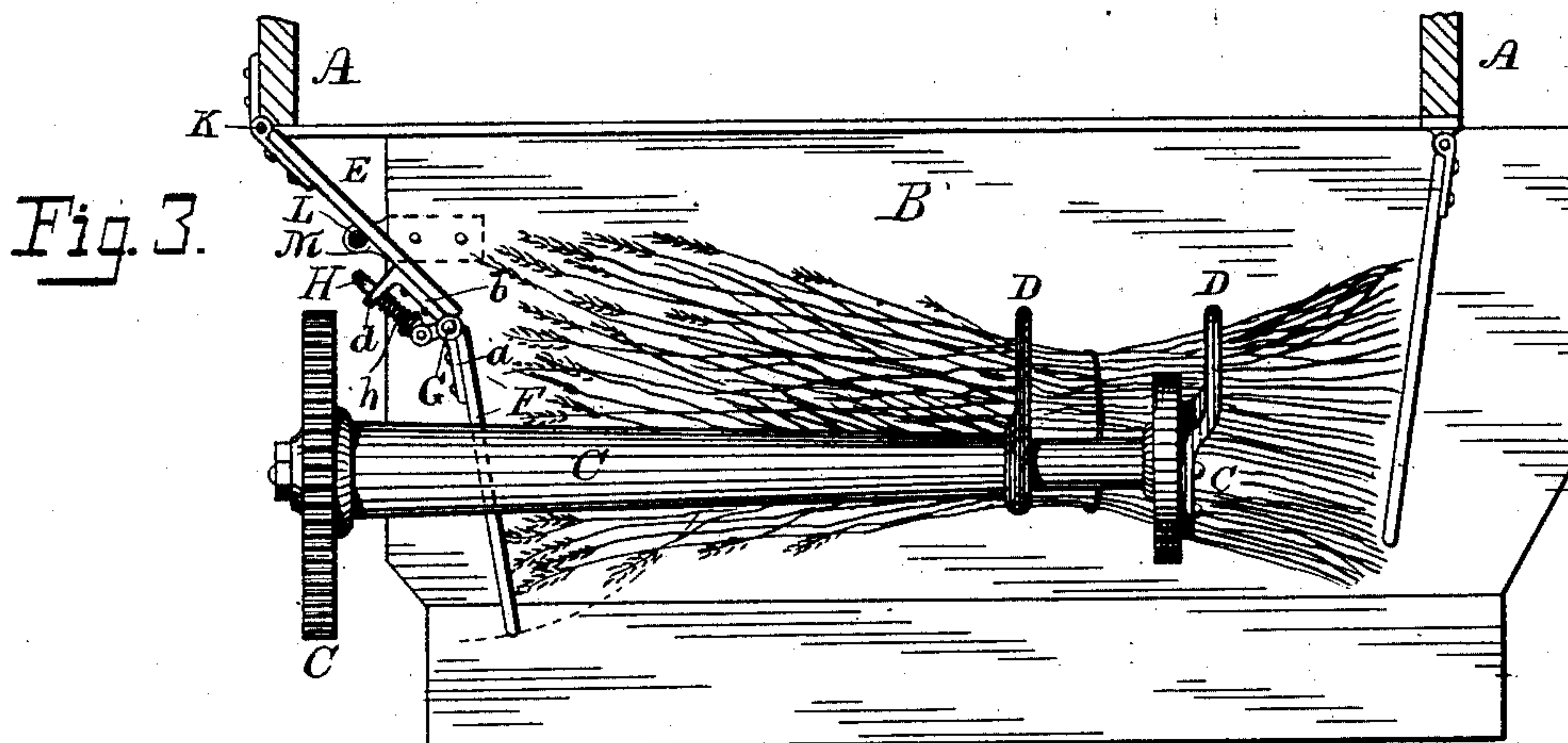
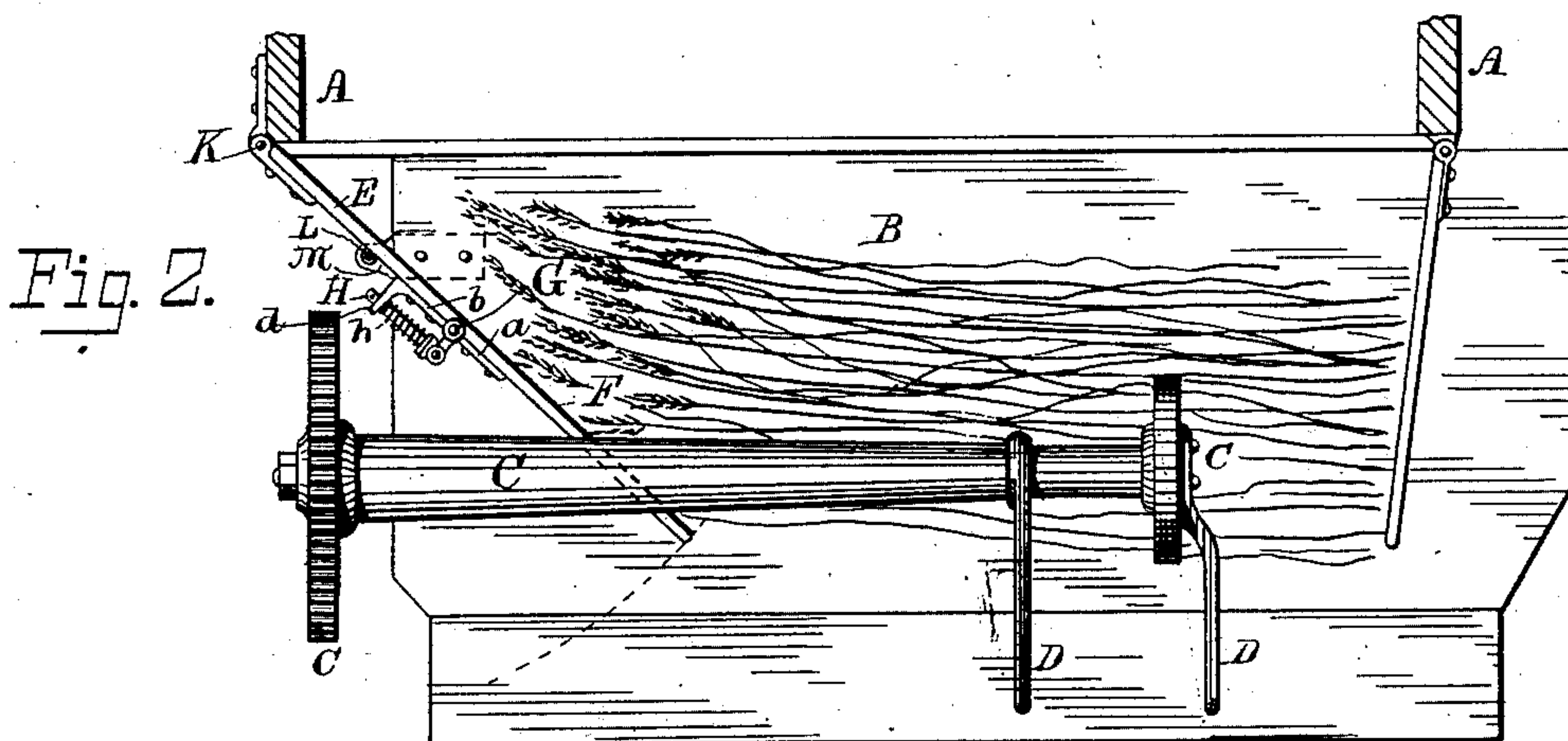
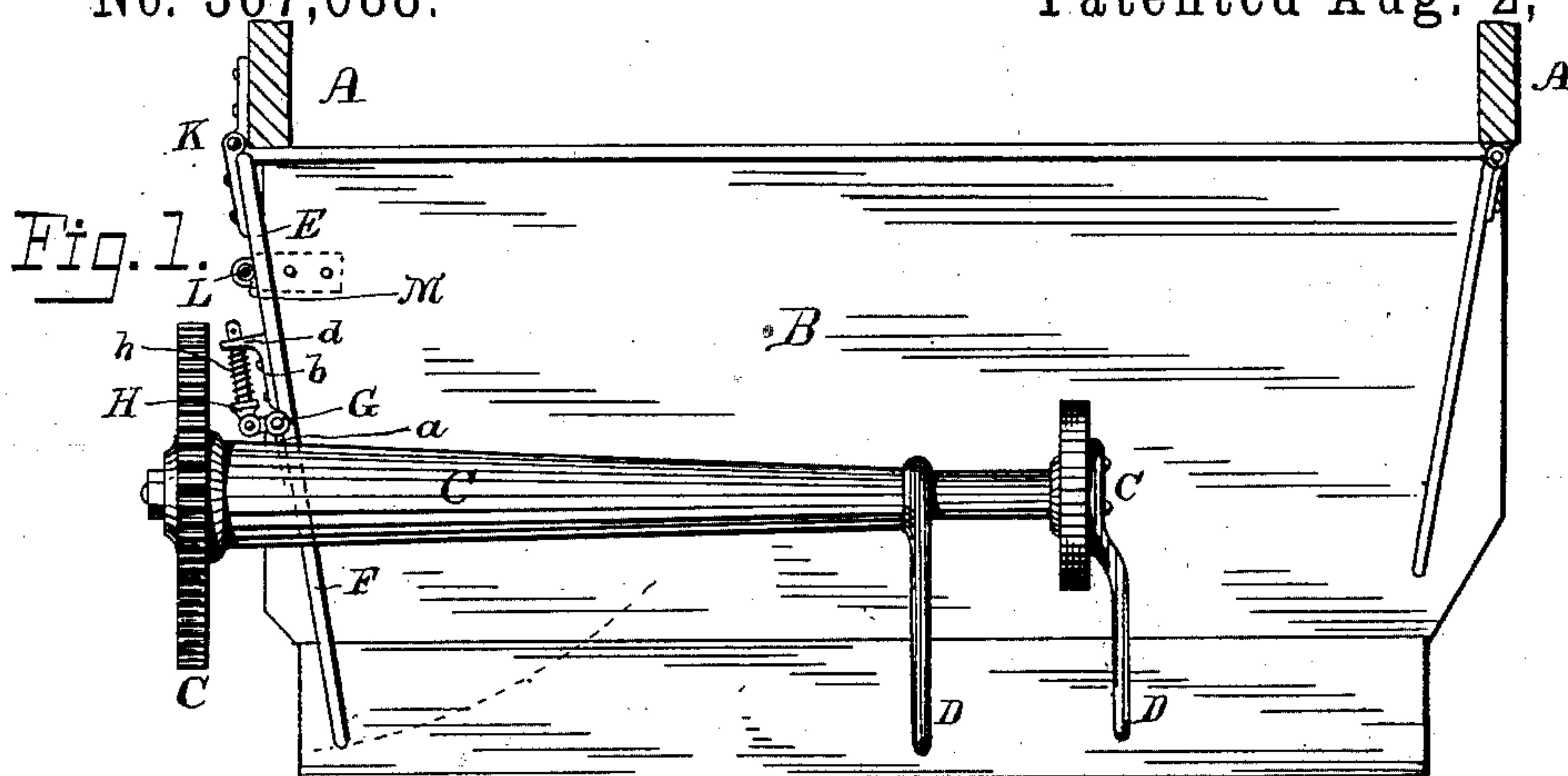
(No Model.)

W. N. WHITELEY.

HEAD AND BUTT BOARD FOR GRAIN BINDERS.

No. 367,688.

Patented Aug. 2, 1887.



Witnesses:

Oscar C. Perrigo
Fred State

Inventor:

William N. Whiteley

UNITED STATES PATENT OFFICE.

WILLIAM N. WHITELEY, OF SPRINGFIELD, OHIO.

HEAD AND BUTT BOARD FOR GRAIN-BINDERS.

SPECIFICATION forming part of Letters Patent No. 367,688, dated August 2, 1887.

Application filed June 9, 1886. Serial No. 204,609. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM N. WHITELEY, a citizen of the United States, residing at Springfield, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Grain-Adjusters for Grain-Binders; and I hereby declare the following to be such a full, clear, and exact description of the invention as will enable any person skilled in the art to which it applies to construct and use the same, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to self-binding harvesters, and is in the nature of improvements in the devices for guiding the grain from the elevating apparatus to the binding mechanism, particularly when the latter is made adjustable in respect to the former, for the purpose of always placing the band around the center of the bundle of grain, whether the same be long or short.

The object of my invention is to provide a flexible head or butt board for automatic grain-binding harvesters which shall properly guide the grain from the elevators of the harvesters down the inclined binding-deck to the binding apparatus, and automatically adjust itself to the varying positions of the binding mechanism in reference to the cutting and elevating apparatus when the same is adjusted to suit the varying lengths of grain. I accomplish this object by means of a head or butt board hinged or pivoted to the proper point on the harvester, and held in position and automatically adjusted by a stop-pin or similar device on the binding mechanism, the said board being composed of two parts flexibly connected to each other and controlled by a suitable spring, the whole being constructed, arranged, and operating as hereinafter described.

In the accompanying drawings, Figure 1 is a plan view of such a portion of a binder as will show my invention, the binder being adjusted for binding long grain. Fig. 2 is a similar view showing the position of the head-board when the binder is adjusted to bind short grain; and Fig. 3 is a similar view showing the operation of the head-board when the bound bundle is being ejected.

Similar letters refer to like parts in the several views.

Referring to the drawings, A A are the side boards of the usual elevating apparatus; B is the binder-deck; C C C is the binder, and D D the ejectors, all constructed and arranged in any convenient manner.

The head-board is composed of two parts or boards, E and F, which are hinged or pivoted to each other by the hinge G. Pivoted to the portion *a* of the hinge G is the rod H, which passes through a perforated projection, *d*, formed upon the portion *b* of the hinge G.

The rod H is provided with the spiral spring *h*, which, pressing against the shoulder on the rod H and the projection *d*, tends to keep the hinge G extended, and consequently the boards E F in a straight line—i. e., the board F in prolongation with the line of the board E—as shown in Figs. 1 and 2.

The upper end of the board E is hinged or pivoted to the elevator-side A by a simple hinge, K.

The board E is held in contact with the grain as it flows down the binding-deck B by a pin or friction-roller, L, carried by the bracket M, which is fixed to the binding-deck B, while the board F is held in contact with the grain by the spring *h*, operating in connection with the hinge G.

When the binder is adjusted to bind short grain, as shown in Fig. 2, the pin or roller L, pressing against the board E, swings it around into its place, as shown, and the grain is thereby guided into its proper place for placing the binding-cord around the center of the bundle, the board F yielding to any unusual pressure and swinging in the arc of a circle, as shown by dotted lines. In the case of long grain coming down to the binding-receptacle, the heads are bent upward as it accumulates, as shown in Fig. 2. When the bundle is discharged by the ejectors D D, the pressure of the heads of the grain against the board F forces it back to the position shown in Fig. 3, and the bundle is allowed to pass out, after which the force of the spring *h* swings the board forward to its position, as shown in Fig. 2. It is obvious that the pressure of grain will in all cases keep the board E in contact with the pin or roller L.

In the drawings my invention is shown as arranged to act as a head-board; but it may be used with as practical an effect as a butt-

board; or the same binder may be provided with both head-boards and butt-boards constructed on the same principles.

I am aware that a flexible metallic shield 5 has been arranged between the elevating apparatus and the binder-frame, and that against such shield a portion of the sliding binder-frame has been made to bear, so that whatever the position of the latter there would constantly be a practical continuation of the side 10 board of the elevator to the binder-deck; but such shields have not, nor well could they, as in my case, extended so far as to give direction to the grain until it reached the binding mechanism—that is, practically into line with the knot- 15 ting mechanism. Further, an examination of Figs. 1 and 2 will show that the extent of lateral movement of the binding mechanism is such that a hinge or pivot joint between the 20 grain-guiding board and the stationary elevator-frame is practically necessary, for were the elasticity of the material of which the board is composed depended upon the long-continued tension to which it would be subjected 25 and the great variations in position into which it would be moved would seriously impair its elasticity, if not shortly cause fracture thereof.

Having thus described my invention, its construction, arrangement, and operation, and 30 without wishing to be understood as restricting my claims of invention to any precise form or proportion of parts, or to any particular devices not essential to the principles of construction and mode of operation herein described, what I claim as new, and desire to secure 35 by Letters Patent, is—

1. In combination with the elevating apparatus and the sliding binder mechanism of an automatic grain-binder, a grain-guiding board 40 composed of two parts, E and F, flexibly con-

nected with each other and extending practically into line with the binding mechanism, said part E being hinged to a suitable part of the elevating apparatus, and also being engaged by a fixed part of the binder-frame, by 45 which the position of the board is controlled as the binder is shifted, substantially as set forth.

2. In combination with the elevating apparatus and the binding mechanism of an automatic grain-binder, a grain-guiding board 50 made in two or more parts jointed together, and springs applied to said joints tending to keep said parts in line, the part at the upper end being hinged to a suitable part of the elevating apparatus and extending practically 55 into line with the binding devices, and a stop on the binder-frame fixed in position to make contact with said upper end part of the board to control the position of the same with reference 60 to the position of the binder, substantially as set forth.

3. In combination with the elevating apparatus and the binding mechanism of an automatic grain-binder, a grain-guiding board consisting of the part E, hinged to a suitable part 65 of the elevating apparatus, and the part F, hinged to part E, a fixed part of the binder-frame bearing against part E of the board, and a spring, h, on the bolt H, which is attached to one of said parts E F and slides 70 through a lug attached to the other of said parts, and is therefore interposed between said parts, tending to keep them in line, substantially as set forth.

WILLIAM N. WHITELEY.

Witnesses:

OSCAR E. PERRIGO,
FRED STATE.