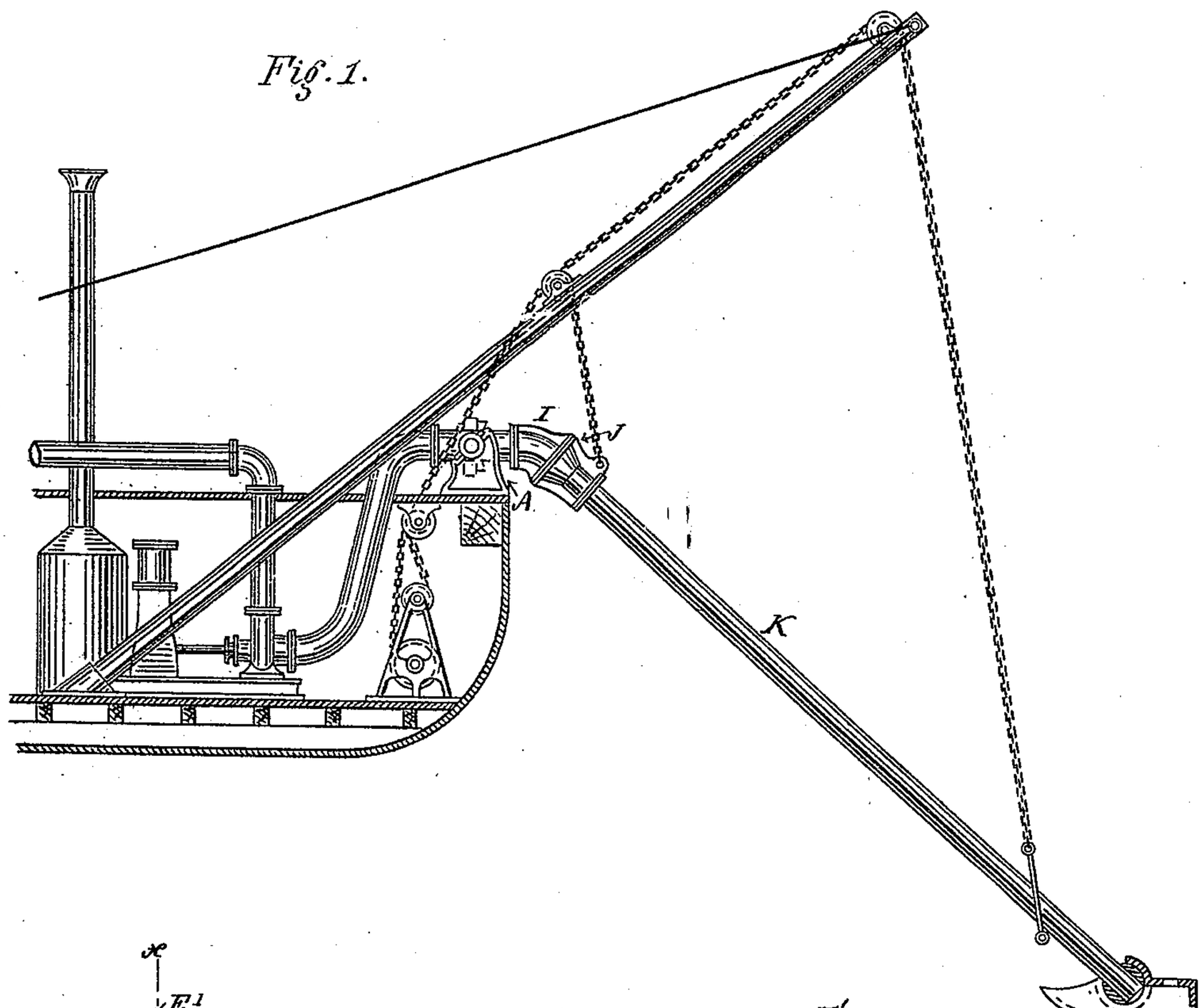
(No Model.)

M. F. BRAINARD.

UNIVERSAL SWIVEL AND PIPE CONNECTION FOR EXCAVATORS.

No. 332,228. Patented Dec. 15, 1885.

Fig. 1.



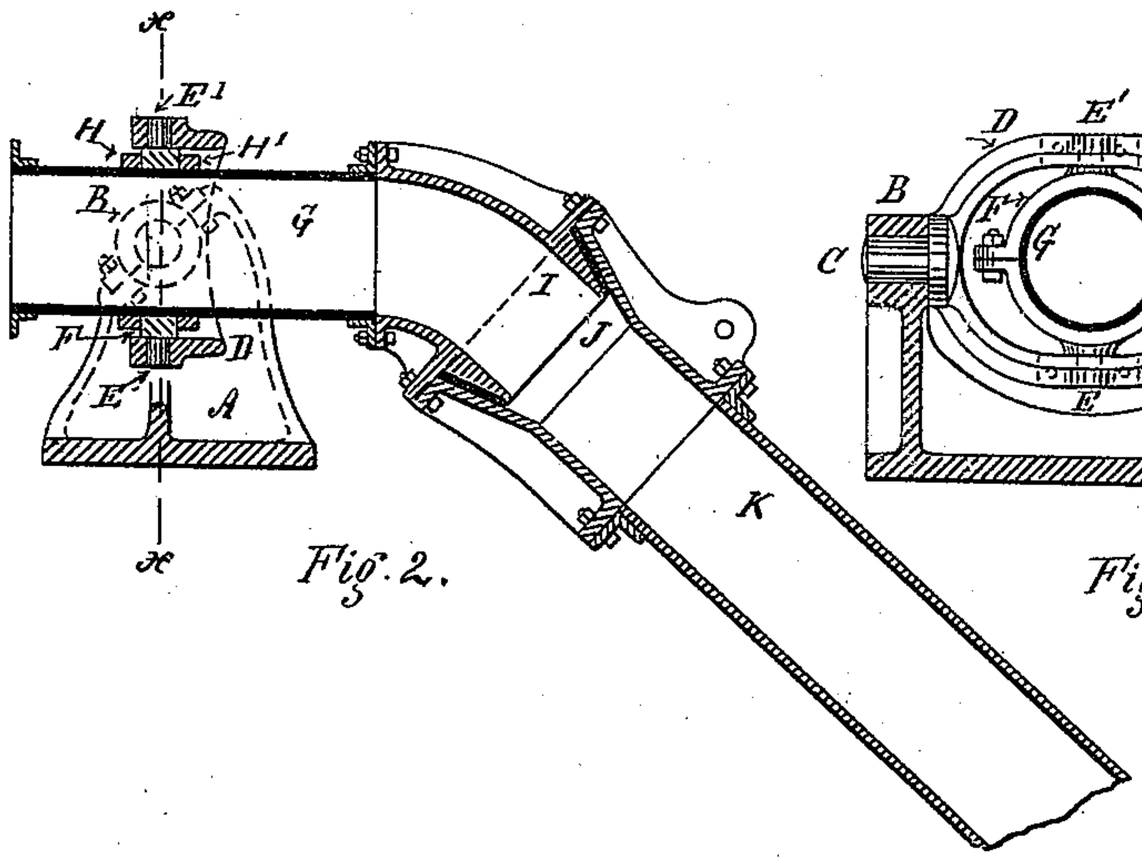


Fig. 2.

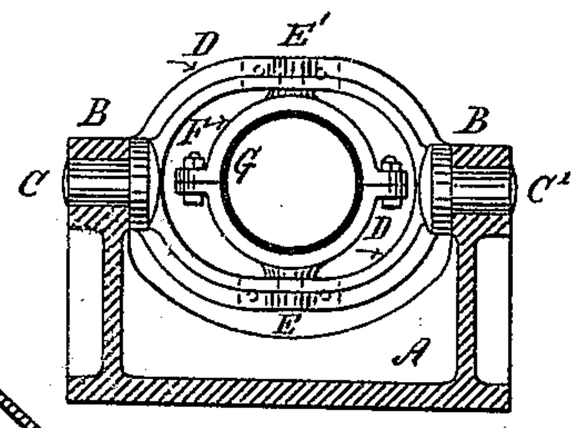


Fig. 3.

WITNESSES:

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UNIVERSAL SWIVEL AND PIPE CONNECTION FOR EXCAVATORS.

SPECIFICATION forming part of Letters Patent No. 332,223, dated December 15, 1885.

Application filed July 11, 1885. Serial No. 171,327. (No model.)

To all whom it may concern:

Be it known that I, MORRIS F. BRAINARD, a citizen of the United States, and a resident of Brooklyn, county of Kings, State of New York, have invented certain new and useful Improvements in Universal Swivel and Pipe Connections for Excavators, of which the following is a specification.

My invention relates to that class of universal swivel used on excavators where one end of the suction-pipe is attached to the deck of scow, while the other rests on the material to be excavated. The object is to overcome the motion of the boat, caused by a rough sea, and thus relieving all parts of undue strain by the rolling or pitching of the boat upon the surface of the water, and to enable the suction-pipe to be readily disconnected when desired, which will be more fully described hereinafter, reference being had to the accompanying drawings, in which—

Figure 1 represents a side elevation of the devices as applied to a scow for operating. Fig. 2 represents an enlarged view of universal swivel and cone connection; Fig. 3, an end section on line *x x*.

A represents a main frame, which is secured to the deck, and is provided with suitable bearings B, for the trunnions C and C′ of the yoke D, and the said yoke D is provided to receive the trunnions E and E′ of the swivel-band F, in which a section of the suction-pipe G can revolve freely as far as desired, and retained in place by the collars H and H′, securely fastened to the said pipe G. On the outer end of the pipe G the cone-connecting joint I is attached, over which the cone-sleeve J is fitted, and, being secured to the main suction-pipe K, enables the said pipe K to be readily connected or disconnected when desired, and insures a perfectly-tight joint when properly secured. Thus it will be seen by the yoke D and swivel-band F oscillating upon their respective trunnions, and the revolving of said pipe G in the band or yoke F, I am enabled to keep the suction-pipe K with the shoe L resting on the work, regardless of the position of the boat or the depth of the work below the boat, and thereby removing all excessive strain from the various parts of the structure.

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

1. In an excavator, the frame A, yoke D, provided with trunnions C C′, and the swivel-band F, with trunnions E and E′, in combination with the pipe G and bands H and H′, substantially as and for the purpose specified.

2. In an excavator, the pipe G, provided with a cone-connection, I, and cone-sleeve J, in combination with suction-pipe K, substantially as and for the purpose specified.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 8th day of July, 1885.

MORRIS F. BRAINARD.

Witnesses:
CHRISTIAN WEBB,
C. PH. WAGNER.