

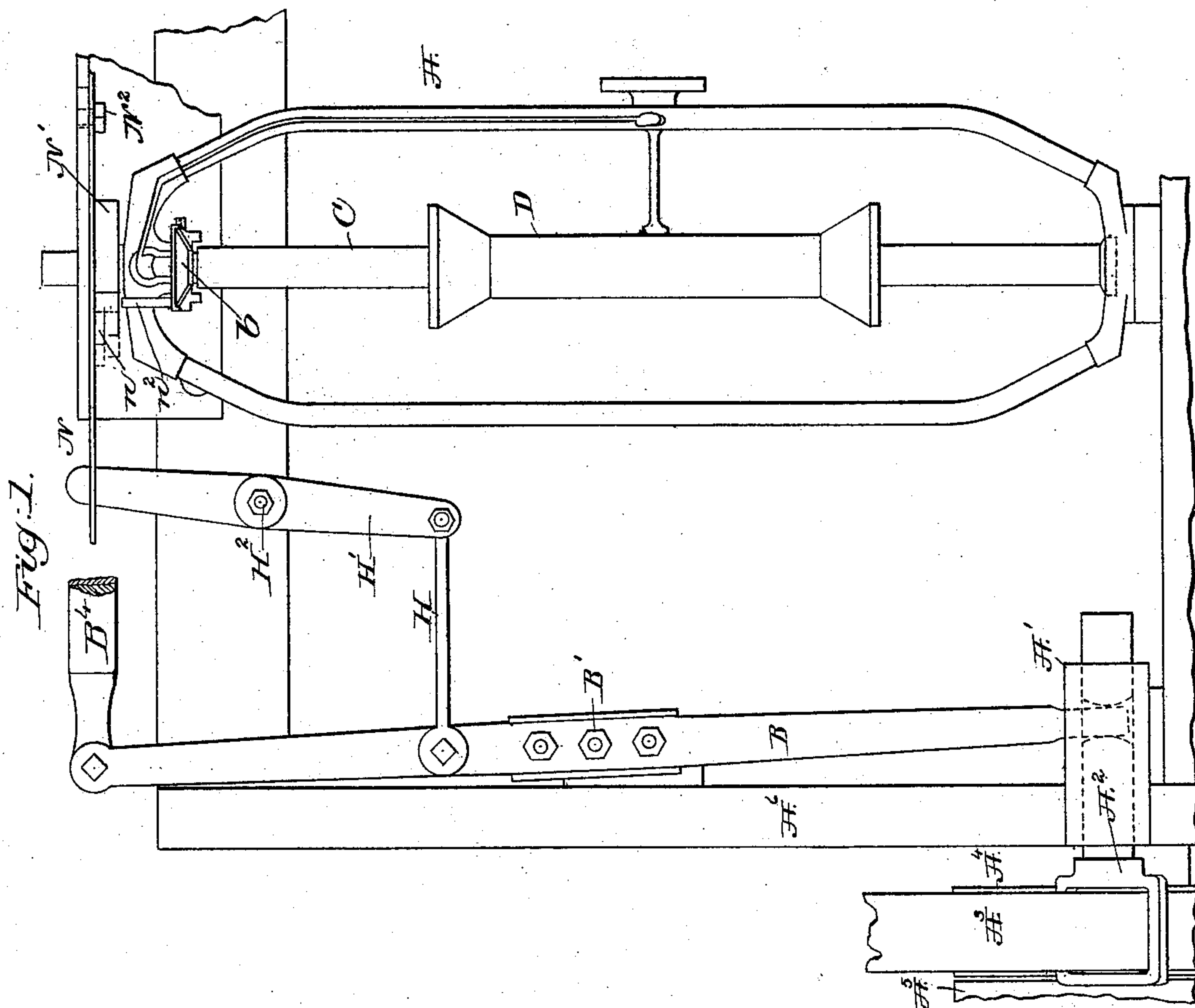
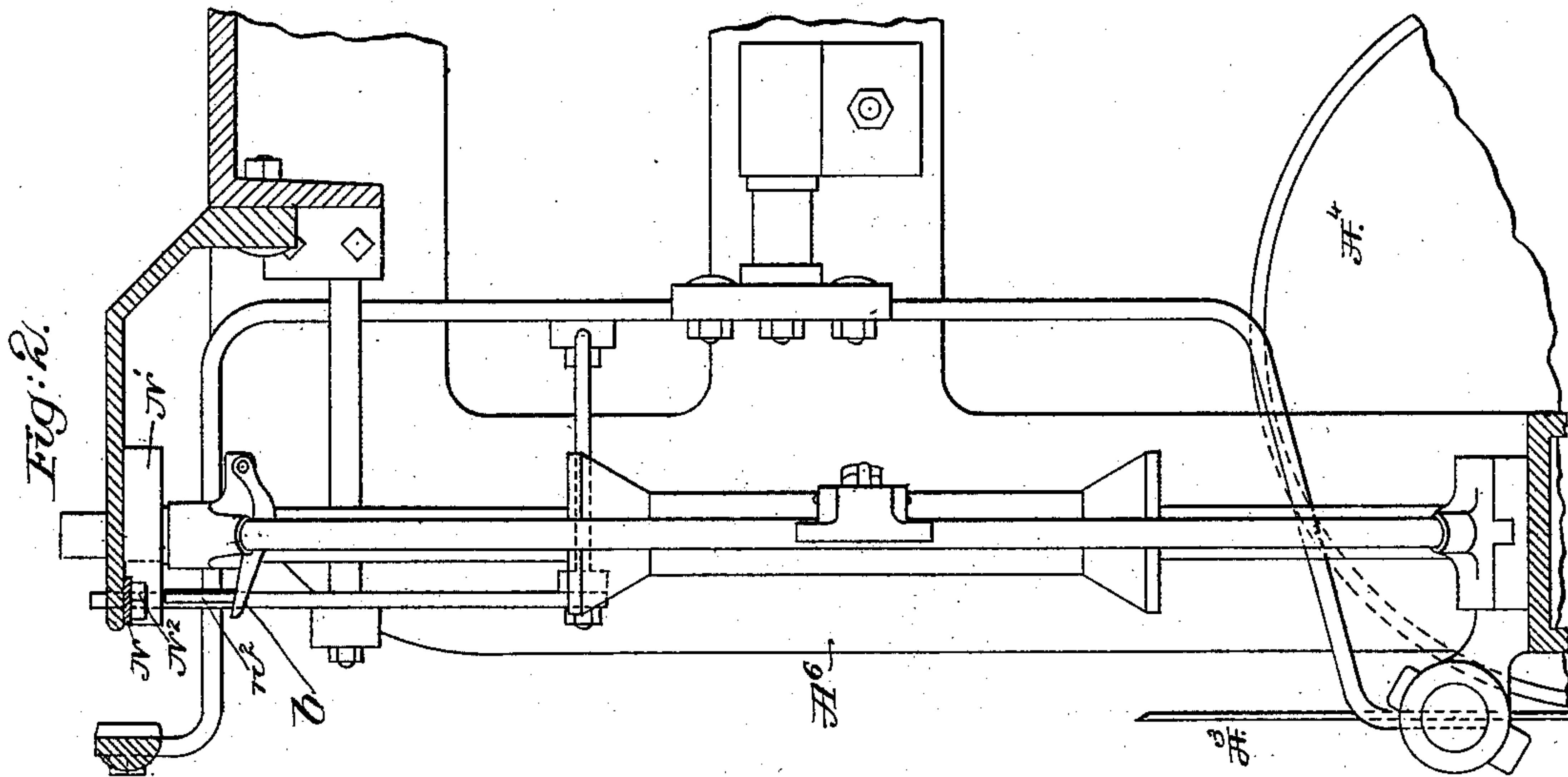
(No Model.)

2 Sheets—Sheet 1.

H. F. STRAW.
FLIER FRAME.

No. 376,118.

Patented Jan. 10, 1888.



Witnesses.
Howard F. Eaton.
John F. C. Prinkert.

Inventor.
Herman F. Straw.
by Leroy Gregory Atty.

(No Model.)

2 Sheets—Sheet 2.

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Fig: 3.

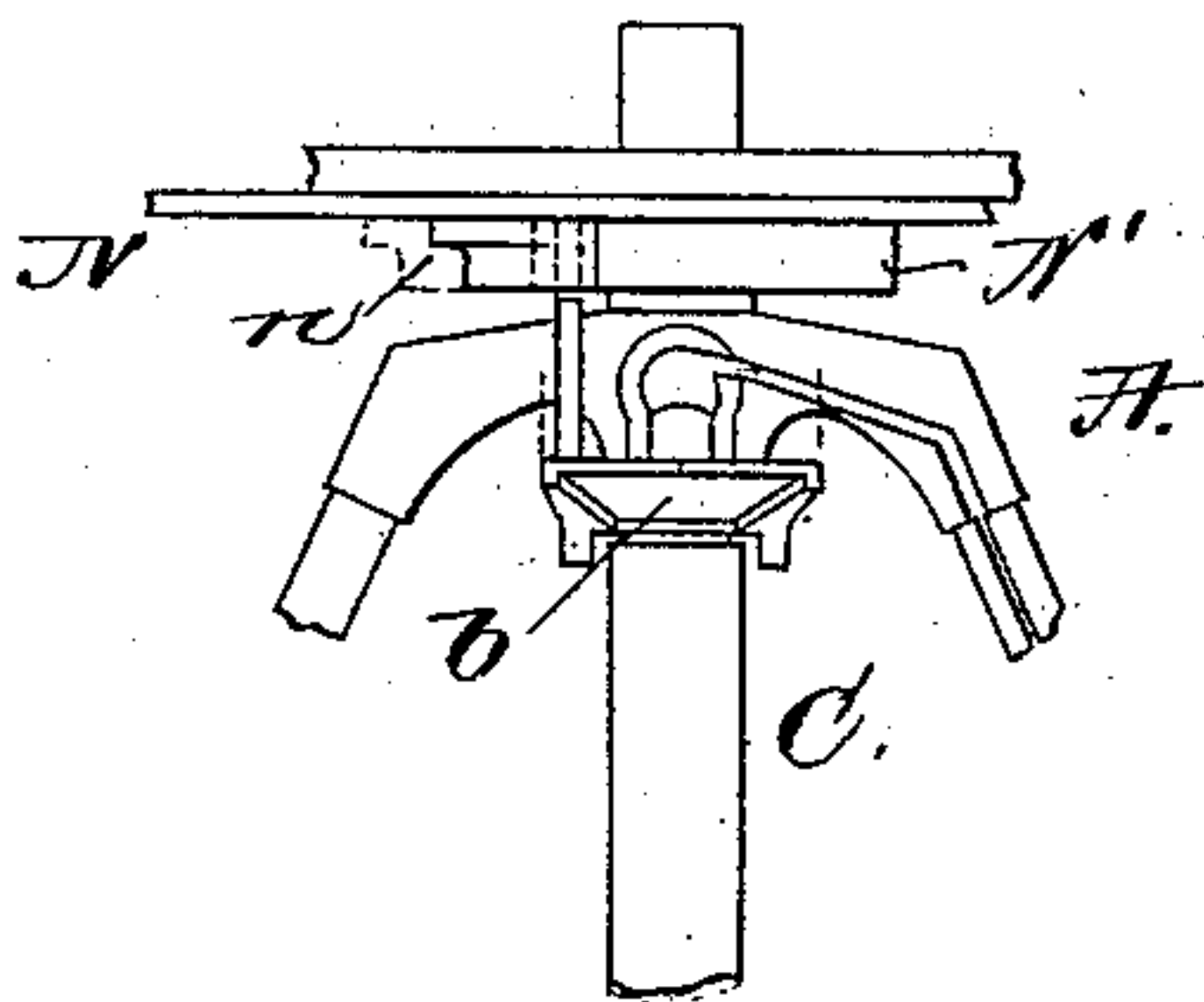


Fig: 4.

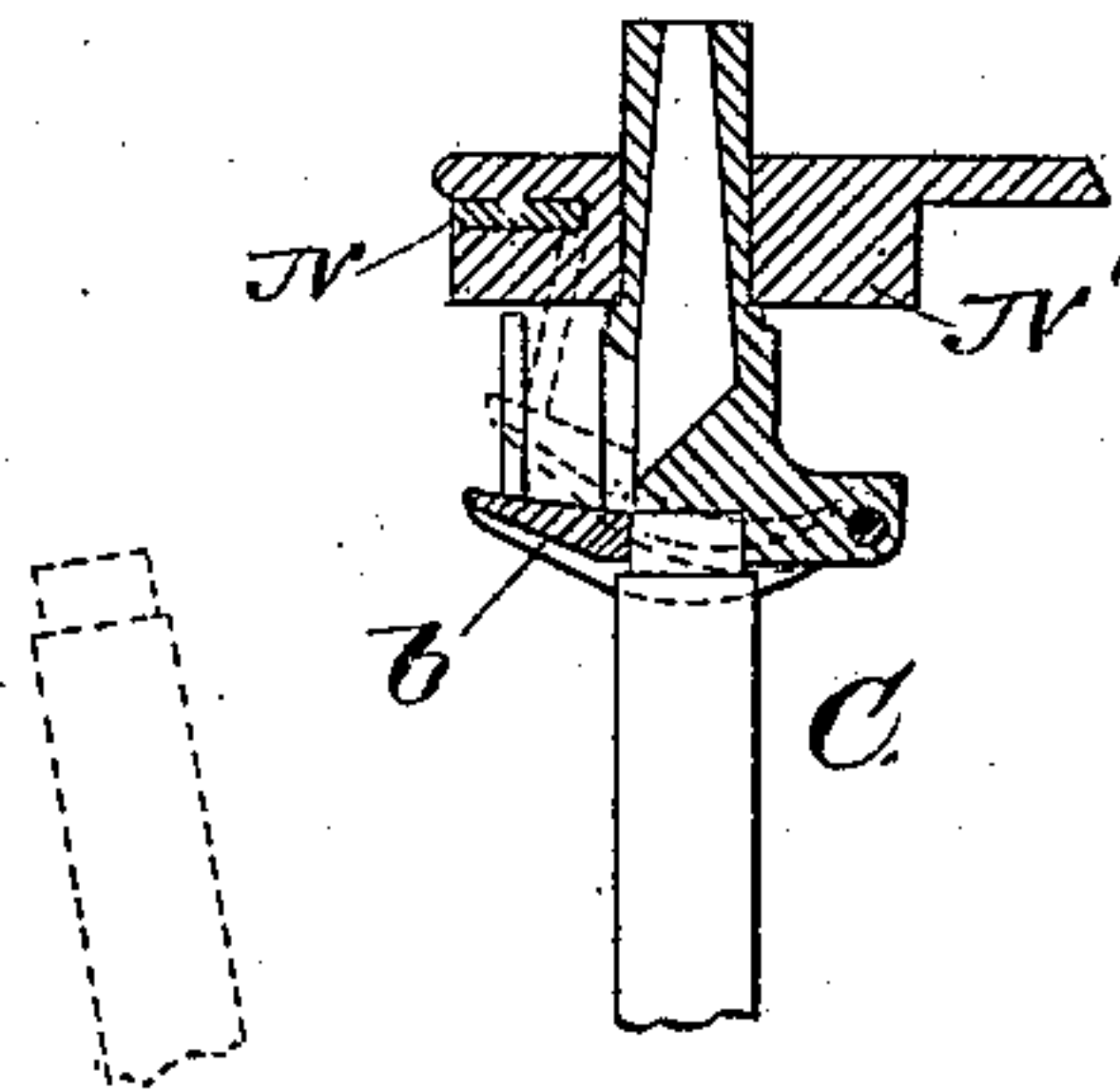
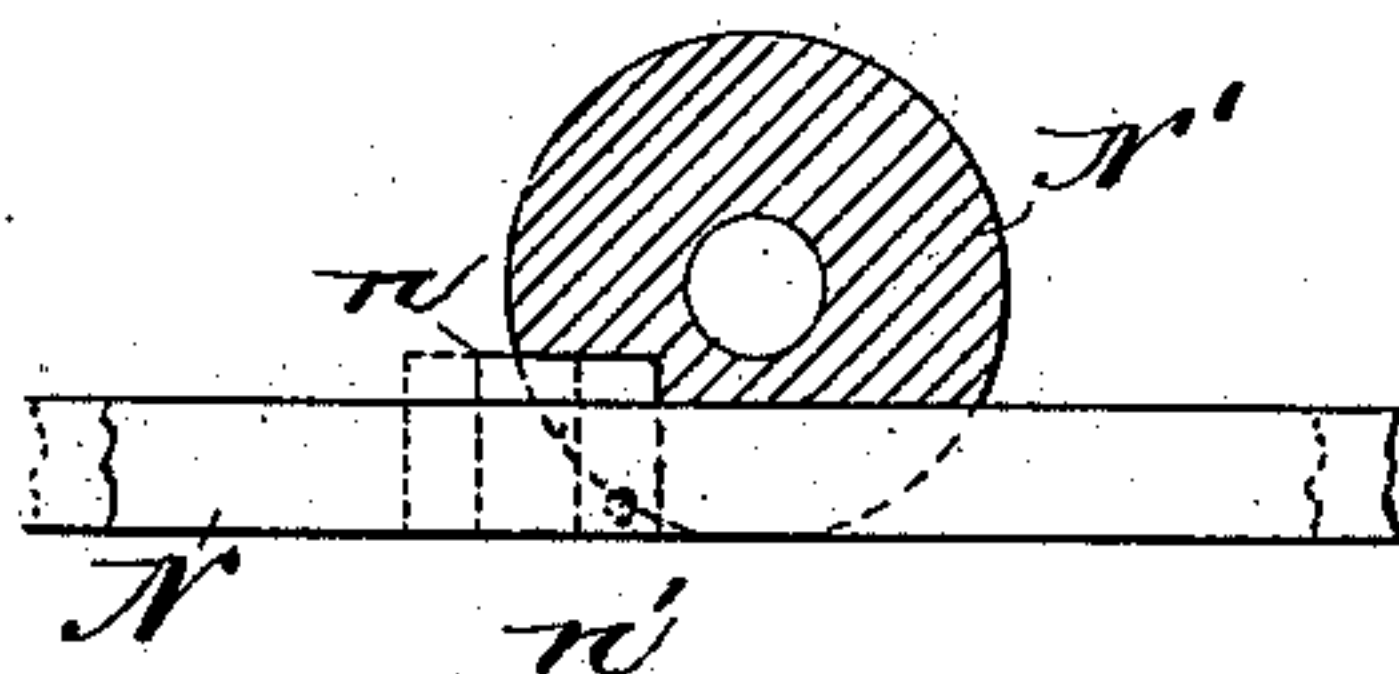


Fig: 5.



Witnesses.

*John F. C. Printz
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*Herman F. Straw.
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UNITED STATES PATENT OFFICE.

HERMAN F. STRAW, OF MANCHESTER, NEW HAMPSHIRE.

FLIER-FRAME.

SPECIFICATION forming part of Letters Patent No. 376,118, dated January 10, 1888.

Application filed August 26, 1887. Serial No. 247,927. (No model.)

To all whom it may concern:

Be it known that I, HERMAN F. STRAW, of Manchester, county of Hillsborough, and State of New Hampshire, have invented an Improvement in Flier-Frames, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention is an improvement on that class of frame employing a flier such as shown in United States Patent No. 317,323, wherein a latch holds the upper end of the quill on which the bobbin is reciprocated.

In the practical use of the flier shown and described in the said patent the latch is liable to become disengaged from the upper end of the quill; and to prevent this, which is the chief object of my invention, I have combined with the latch a locking bar or device under the control of, preferably, the shipping mechanism, whereby the latch is held firmly and positively in place, while the driving-belt runs on the fast pulley; but I may, if desired, disconnect the locking-bar from the shipper-lever and work the said bar by hand without moving the shipper-lever.

Figure 1, in front elevation, shows a sufficient part of a flier-frame to enable my invention to be understood; Fig. 2, a right-hand elevation of the machine shown in Fig. 1, and Figs. 3 to 5 show details to be described.

The flier A, quill C, spool or bobbin D, and latch *b* are all substantially as in United States Patent No. 317,323, wherein like letters are used to designate like parts.

The frame-work A⁶ of the machine has a suitable guide, A', for the belt-shipper A², it having a loop, as shown in Fig. 1, for the reception of the belt A³, which may thus be placed on either the loose pulley A⁴ or the fast pulley A⁵, but partially shown on the usual driving-shaft of the frame.

The belt-shipper (see Fig. 1) has a notch, (shown by dotted lines,) in which enters the lower end of a shipper-lever, B, having its fulcrum at B', the upper end of the said lever being jointed to a shipper-rod, B⁴, (shown broken off in Fig. 1,) but which in practice is made to extend entirely across the frame from end to end, so as to be within easy grasp of the operator, in order that the machine may be stopped from any part of the machine as soon as the operator discovers the necessity of stopping the machine.

The shipper-lever B has jointed to it a link, H, which in turn is attached to an auxiliary lever, H', having its fulcrum at H², the upper end of the said lever H' being loosely engaged with a long locking-bar, N, which in practice is extended past all the fliers, the said bar being, as shown, made to enter a groove in the usual bearing, N', for the nose of the flier, the said bar being also preferably guided by means of bolts N² extended through slots therein.

The locking-bar, as herein shown, has a stop, *n*, provided with a registering-hole, *n'*, which is placed in line with a pin or projection, *n*², on the latch *b*, so that the said pin may enter the said hole whenever the belt is on the loose pulley, as in the drawings; but when the belt is on the fast pulley and the machine is running the stop *n*, by the movement of the bar N to the left, is placed in position to stop or arrest the upward movement of the pin or projection *n*², thus preventing the lifting of the latch and the release of the quill.

I may disconnect the link H from the lever B and remove the auxiliary lever, and then the bar N can be moved only by the operator and by direct application of the hand thereto.

The dotted lines at left of Fig. 4 show the quill turned out in position to permit the bobbin to be doffed.

I claim—

1. The quill, the flier, and the latch provided with a pin or projection, combined with a locking bar or stop to co-operate with the said pin or projection and prevent or permit, as desired, the lifting of the latch, substantially as described.

2. The quill, the flier, and the latch provided with the pin or projection, and the locking bar or stop, combined with the belt-shifting rod and intermediate connections, whereby the bar or stop prevents the lifting of the latch, except when the belt is on the loose pulley, to effect the stopping of the machine, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HERMAN F. STRAW.

Witnesses:

BERNICE J. NOYES,
HOWARD F. EATON.