2 Sheets--Sheet 1.

J. H. TRAINOR.
Fulling Mills.

No. 150,663. Patented May 5, 1874.

Fig. 1

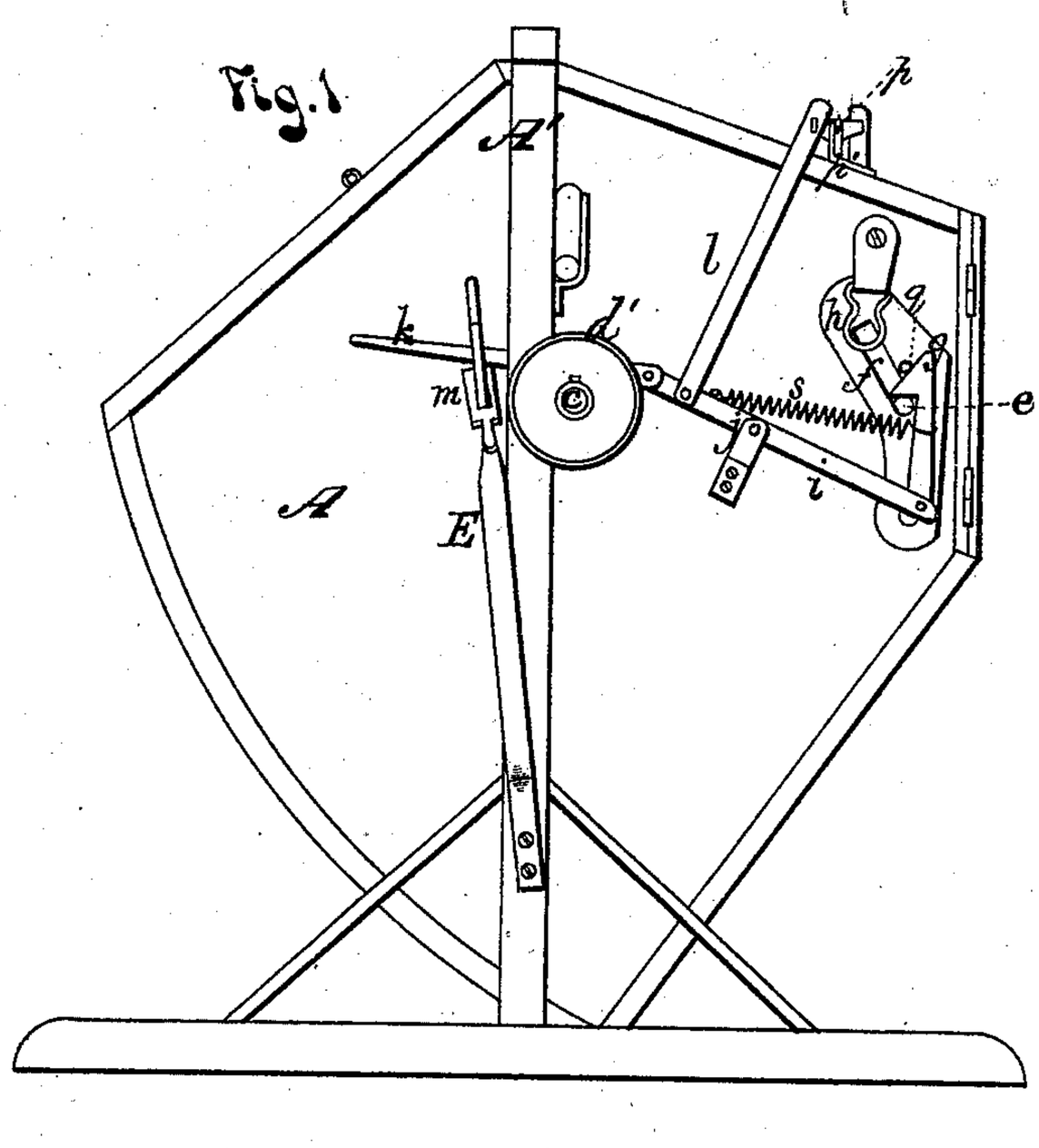
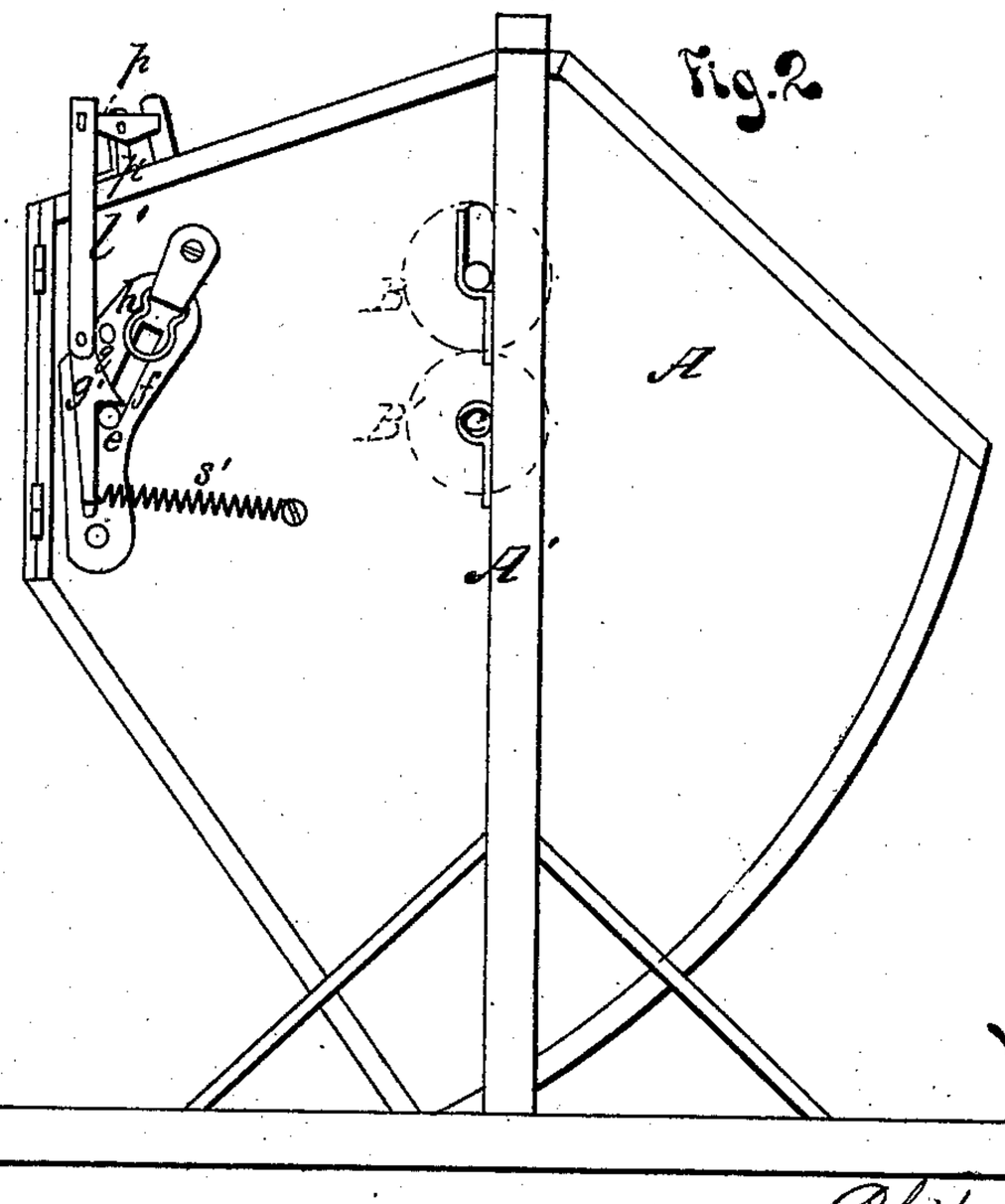


Fig. 2.



Witnesses.
F. E. Upham
Robert Everett

Inventor.
J. H. Trainor,
Shipman & Gosman & Co.
Attys.

2 Sheets--Sheet 2.

J. H. TRAINOR.
Fulling Mills.

No. 150,663. Patented May 5, 1874.

Fig. 3

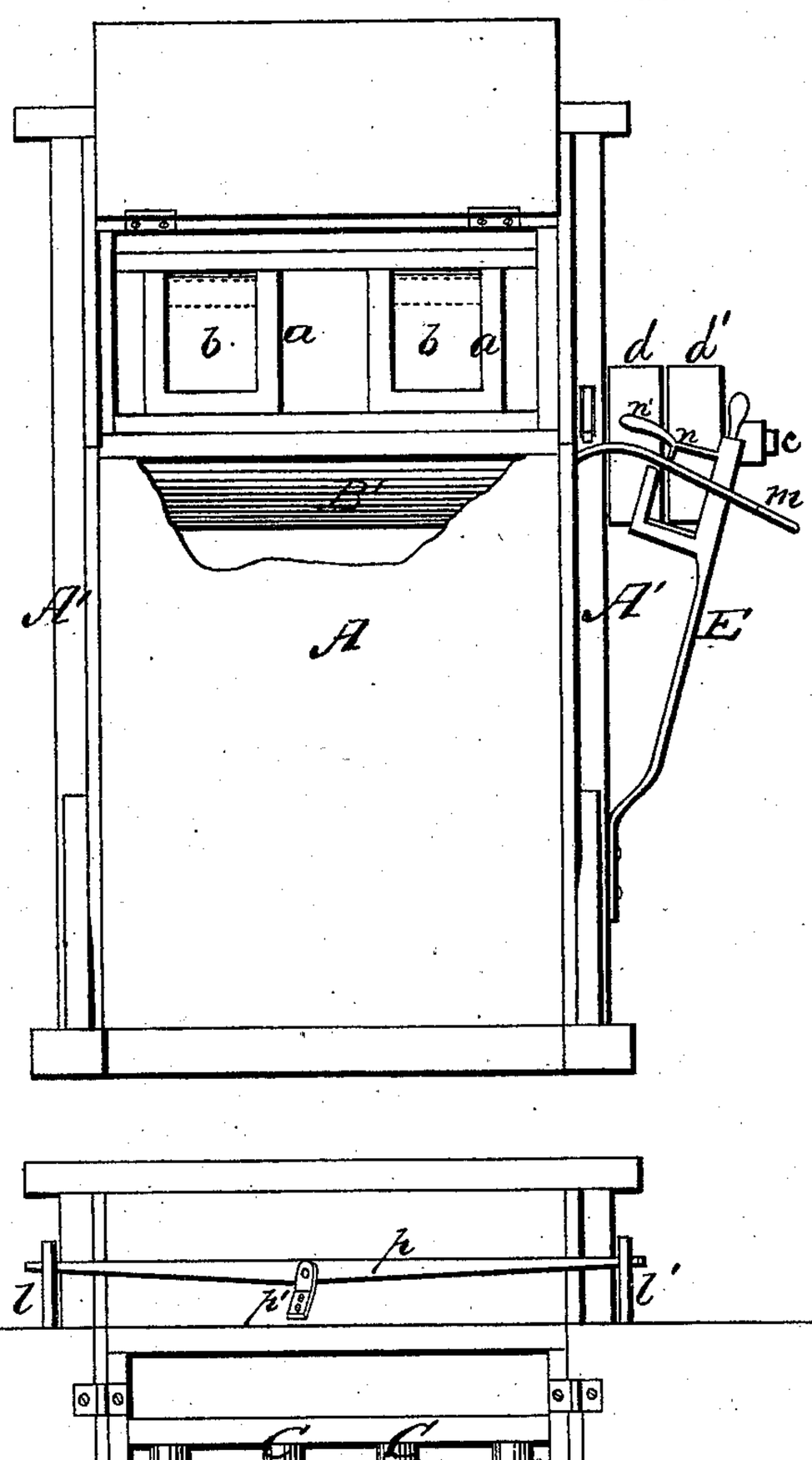
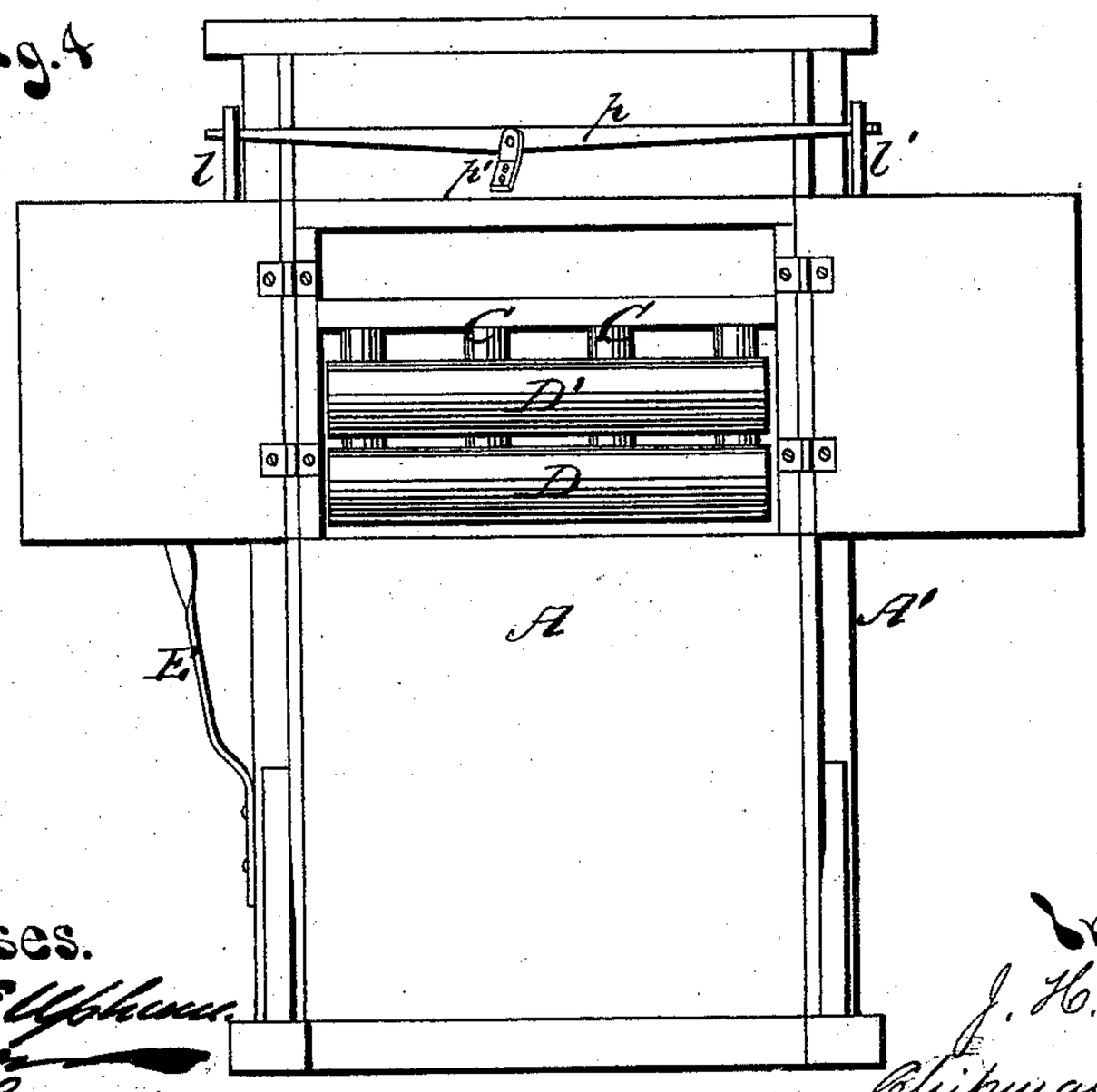


Fig. 4



Witnesses.
George C. Upham
Robert Everett

Inventor.
J. H. Trainor.
Philipp and Fosmer & Co.
Attys.

UNITED STATES PATENT OFFICE.

JOSEPH H. TRAINOR, OF SPRINGFIELD, VERMONT.

IMPROVEMENT IN FULLING-MILLS.

Specification forming part of Letters Patent No. **150,663**, dated May 5, 1874; application filed March 28, 1874.

To all whom it may concern:

Be it known that I, JOSEPH H. TRAINOR, of Springfield, in the county of Windsor and State of Vermont, have invented a new and valuable Improvement in Fulling-Mills; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figures 1 and 2 of the drawings are representations of side views of my device, and Figs. 3 and 4 are end views.

This invention has relation to fulling-mills; and it consists in making one of two rollers, between which the cloth is passed while being treated, vertically adjustable, in combination with a contrivance which will automatically unship the driving-belt and stop the operation of the machine, should a knot or kink in the cloth pass between said rollers.

In the annexed drawings, A designates the box or chest of the mill, which is mounted in a frame, A′. Inside of this chest are two large horizontal rollers, B B′, several vertical rollers, C C, and two small horizontal rollers, D D′; and on the opposite side of the rollers B B′ to the rollers C and D D′ are guides *a a*, having hinged gates *b b* applied to them. The shaft *c* of the roller B′ carries on one end, outside of the chest A, a fast belt-pulley, *d*, and a loose belt-pulley, *d′*, for the driving-belt. The shaft *e* of the upper roller D′ extends through the sides of the chest A, and its ends are received through inclined slotted guides *f*, which allow this roller D′ to rise and fall. When the roller D′ is down, the ends of its shaft *e* are caught and held by two hooks, *g g′*; and when the roller is raised, it may be so held by means of loops *h*. The lower end of the catch or hook *g* is pivoted to a lever, *i*, having its fulcrum at *j*. This lever *i* has also pivoted to it a tripping-rod, *k*, and a vertically-movable arm, *l*. The rod *k* extends through one of the posts of frame A, and has a fulcrum on a bearing of the roller-shaft *c*. This rod extends over a bracket, *m*, through which a spring belt-shipper, E, passes, which shipper is constructed with a latch, *n*, having a horn, *n′*, formed on it The latch is designed to catch in a hole made through the bracket *m*, and hold the shipper E with its belt around the fast pulley *d*. When the latch is raised by the rod *k* striking the horn *n′*, the shipper will move the driving-belt upon the loose pulley *d′*, and stop the operation of the machine. The arm *l* is loosely connected to a lever, *p*, which crosses the top of the chest A, and is pivoted at the middle of its length to a bracket, *p′*, so as to vibrate vertically. This lever *p* is connected by an arm, *l′*, to the upper end of the hook *g′*, the lower end of which hook is acted on by a spring, *s′*. The spring *s′* holds hook *g′* on its end of the roller-shaft *e*, and a similar spring, *s*, holds its hook *g* on this shaft. Above the beveled edges of the two hooks *g g′* are fixed studs *q q*, which will throw back these hooks when they are raised, and release them from the shaft *e*.

When the several parts are adjusted for operation, the cloth passed between the two rollers D D′ will not touch the upper roller; but should a knot or a kink in the cloth pass beneath the roller D′, it will raise the latter, and cause the shipper E to move the driving-belt from the fast pulley upon the loose pulley, and thereby stop the movements of the machine. When the knot or other imperfection is removed from the cloth, the unshipping device is again adjusted for operation.

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

1. In a fulling-mill, a vertically-movable roller, D′, in combination with hook *g*, lever *i*, tripping-rod *k*, and a belt-shipper, E, provided with a catch, *n*, substantially as and for the purposes described.

2. The combination of a vertically-movable roller, D′, with the arms *l l′*, vibrating lever *p*, lever *i*, rod *k*, and shipper E, substantially as and for the purposes described.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

JOSEPH HENRY TRAINOR.

Witnesses:

SAML. W. PORTER,

JOHN RAFFERTY.