

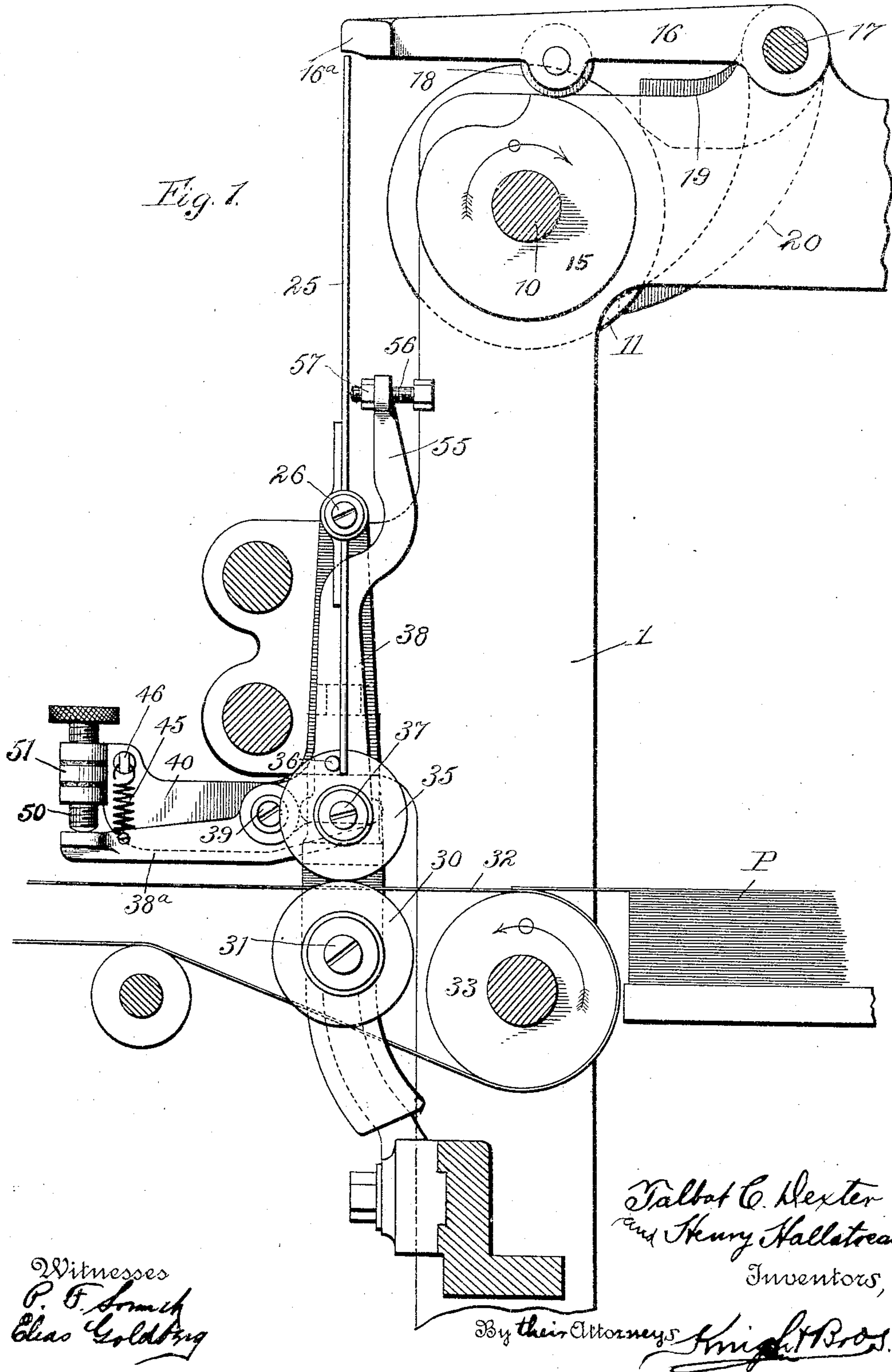
No. 779,914.

PATENTED JAN. 10, 1905.

T. C. DEXTER & H. HALLSTREAM.
SHEET CALIPERING DEVICE FOR PAPER FEEDING MACHINES.

APPLICATION FILED JAN. 4, 1904.

2 SHEETS—SHEET 1.



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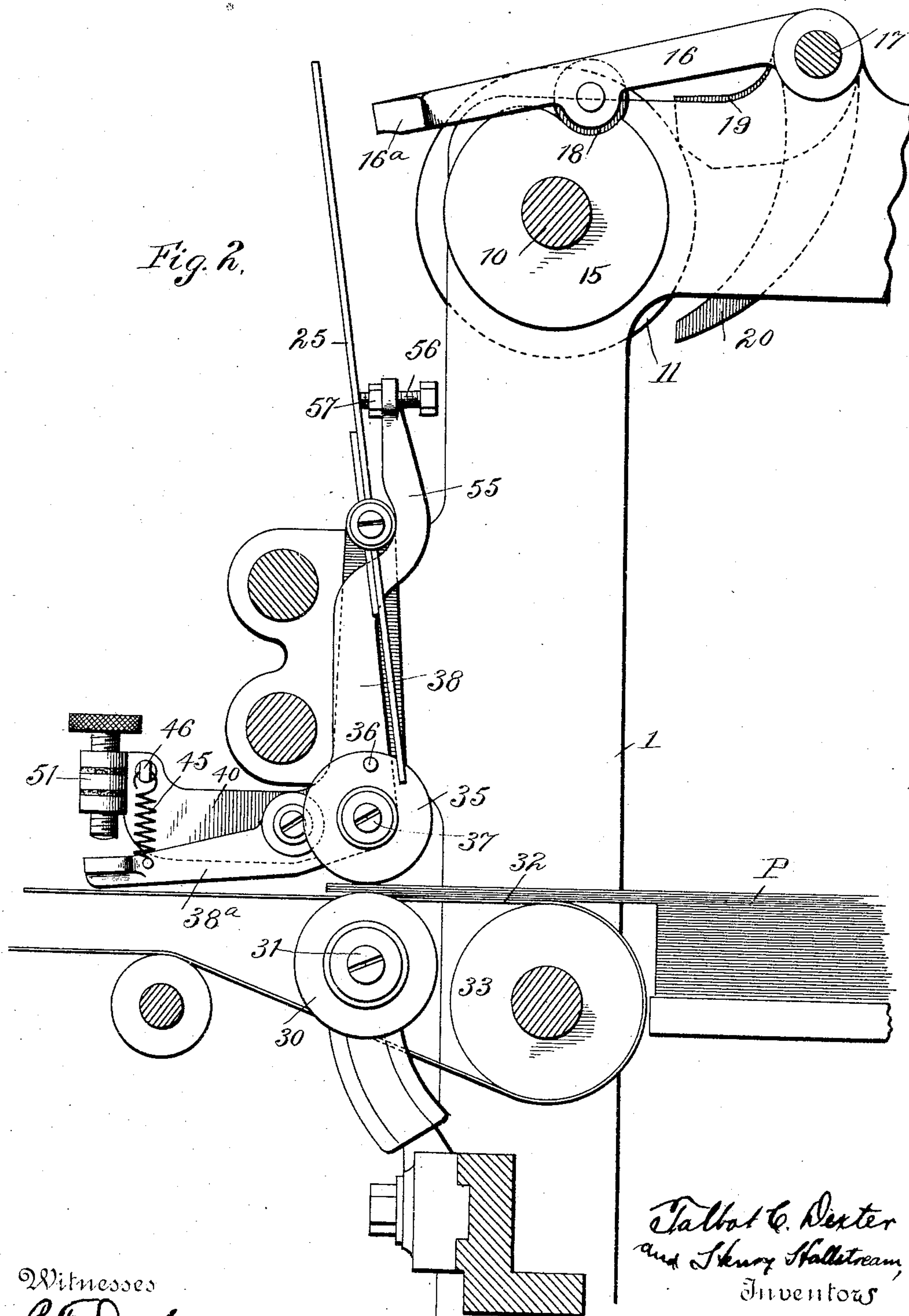
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UNITED STATES PATENT OFFICE.

TALBOT C. DEXTER AND HENRY HALLSTREAM, OF PEARL RIVER, NEW YORK; SAID HALLSTREAM ASSIGNOR TO SAID DEXTER.

SHEET-CALIPERING DEVICE FOR PAPER-FEEDING MACHINES.

SPECIFICATION forming part of Letters Patent No. 779,914, dated January 10, 1905.

Application filed January 4, 1904. Serial No. 187,646.

To all whom it may concern:

Be it known that we, TALBOT C. DEXTER and HENRY HALLSTREAM, both citizens of the United States, residing at Pearl River, in the county of Rockland and State of New York, have invented certain new and useful Improvements in Sheet-Calipering Devices for Paper-Feeding Machines, of which the following is a specification.

In Letters Patent No. 663,672, granted December 11, 1900, to Talbot C. Dexter for a paper-feeding machine, is disclosed and claimed a sheet-calipering device comprising suitable throw-out mechanism adapted to arrest the operation of the feeding-machine, a normally stationary rotatable sheet-calipering wheel adapted to be operated by an abnormal thickness of sheets, and a lever arranged to be actuated by said sheet-calipering wheel and by its movement to operate the throw-out mechanism. The present invention may be considered as an improvement upon the sheet-calipering device set forth in said Patent No. 663,672 in that it embodies the rotatable sheet-calipering wheel, the lever actuated thereby, and the throw-out mechanism operated by said lever. In addition to the features in common with said prior patent of Dexter just mentioned the present invention includes means whereby the vertical movement of the calipering-wheel, as well as its rotary movement, will actuate the lever which causes the operation of the throw-out mechanism of the feeding-machine. In our present invention we mount the sheet-calipering wheel upon a pivoted lever supported above the path of the sheets and having an arm extending up from its pivot in position to engage the throw-out-operating lever, so as to actuate the latter when the sheet-calipering wheel is forced upwardly by the attempted passage of an abnormal thickness of sheets. The engagement of this extension of the pivoted lever-support of the calipering-wheel with the throw-out-operating lever is independent of the engagement of the wheel itself with said lever, so that the improved calipering device will normally operate the same as in the above-

named patent of Dexter; but when an unusual thickness of sheets engages the calipering-wheel and forces it upwardly to a sufficient extent the extension of the lever-support will engage said throw-out-operating lever and cause the arrest of the machine independently of the rotation of the calipering-wheel.

In order that our invention may be fully understood, we will first describe the same with reference to the accompanying drawings and afterward point out the novelty thereof with more particularity in the annexed claims.

In the drawings, Figure 1 is a sectional elevation of part of a paper-feeding machine equipped with our improved sheet-calipering mechanism, showing the parts in normal position while the machine is operated. Fig. 2 is a similar view showing the calipering mechanism in tripped position.

The framework of our improved machine may be of any suitable construction to properly support the several mechanisms herein-after referred to.

The pile P of paper to be fed to the folder, printing-press, ruling-machine, or other machine designed to operate upon the paper is mounted upon an automatically-adjusted table or platform, which is intermittently elevated under the control of an automatic device in a manner well understood in the art.

The pile-supporting table, elevating-screws, and the automatic controlling device are not shown in the accompanying drawings, as they do not form any part of the invention covered in the present application.

1 indicates the main frame of a paper-feeding machine. This frame supports the usual sheet-buckling devices for effecting the preliminary separation of the top sheet from the pile and the feeding-off devices for moving the partially-separated top sheet from the pile. These mechanisms are not shown nor specifically described in the present case.

10 is the main operating-shaft of the machine, from which all of the parts of the feeder are driven. Included in the driving mechanism of the shaft 10 is a clutch of any suitable construction, (indicated by the circle 11.)

This clutch may be constructed as shown in the above-named patent of Dexter, No. 663,672.

15 is the throw-out-operating cam keyed to the shaft 10, and 16 is the throw-out-operating arm, keyed to a rock-shaft 17 and having journaled in its forward end an antifriction-roller 18, which operates upon the periphery of the cam 15.

19 and 20 are arms or projections extending from the rock-shaft 17 in the plane of the throw-out clutch 11 in proper position to operate the clutch for stopping and starting the machine, as fully explained in said Patent No. 663,672.

15 The rock-arm 16 has a forwardly-projecting nose 16^a, which normally rests above the upper end of a long lever 25, journaled upon the machine-frame at 26.

20 30 is the lower rotary member of the sheet-calipering device, journaled in the machine-frame at 31 at the delivery end of the machine beneath the plane of feed of the sheets.

25 32 is one of a series of delivery tapes or aprons passing around the delivery-roller 33 to convey the successive sheets from the pile in the feeding-machine to the machine which is to operate upon the sheets.

30 35 is the upper normally stationary rotatable calipering-wheel, which is provided with the laterally-projecting pin or lug 36. This upper calipering member 35 is freely journaled at 37 upon a rectangular lever-support 38, which is pivoted at 39 to a bracket 40 of the machine-frame. It will be observed that 35 the calipering-wheel 35 is journaled upon an elbow of the lever 38 and that said lever is pivotally supported at a point on one of its arms adjacent to the elbow, so that in the rocking of the lever-support the calipering-wheel 35 will move toward and away from the lower calipering-wheel 30. A spring 45 connects the horizontal arm 38^a of lever 38 with a stationary point 46 of bracket 40 to hold the lever 38 and calipering-wheel 35 in operative position. The extreme end of the arm 38^a of lever 38 is engaged by the end of an adjusting-screw 50, which is threaded through a suitable socket 51, formed in the bracket 40. By adjusting the screw 50 the lever 38 can be 50 shifted upon its pivot 39 to bring the periphery of the calipering-wheel 38 closer to or farther away from the periphery of the lower calipering member 30. This adjustment enables the operator to set the machine for any 55 desired thickness of sheets.

The caliper-supporting lever 38 is formed with an upper extension 55, which projects above the pivot 26 of the throw-out-operating lever 25. Mounted in the upper free end 60 of this extension 55 is an adjustable screw 56, provided with a locking-nut 57, by which it may be secured in any desired adjusted position in the extension 55. The end of the adjustable screw 56 is presented just behind the 65 throw-out-operating lever 25 above its pivot

26, so as to engage said lever under certain circumstances.

During the normal operation of the machine single sheets are allowed to pass freely between the calipering-wheels 30 and 35 without effect. In case two sheets should pass forward from the pile the extreme thickness will be sufficient to frictionally engage the calipering-wheel 35 and rotate it, because the pin 36 will actuate the lever 25 to remove the upper end of lever 25 from beneath the nose 16^a of the throw-out-operating rock-arm 16, so that when the low portion of controlling-cam 15 reaches the antifriction-roller 18 said rock-arm 16 will drop to its lowest position and by the movement of rock-shaft 17 cause the throw out of the clutch indicated at 11, which will arrest the operation of the feeding-machine. The operation so far as described is precisely the same as in the structure disclosed in the above-named patent of Dexter, No. 663,672.

In addition to the above-described operation our improved calipering device embodies means for throwing out the clutch by the upward movement of the calipering-wheel 35 when an unusually large number of sheets attempts to pass between it and the lower member 30. In case an unusually thick bunch of sheets forces itself between the calipering-wheels 30 and 35 the caliper-supporting lever 38 will be moved on its pivot 39, with the effect that the upwardly-extending arm 55 will be thrown toward the upper portion of lever 25, the screw 56 engaging lever 25 above its pivot and moving the upper end of said lever 25 from beneath the rock-arm 16, with the result that the clutch will be thrown out, as above explained.

Having thus described our invention, the following is what we claim as new therein and desire to secure by Letters Patent:

1. In combination with a machine through which sheets of paper are passed, and suitable throw-out mechanism adapted to arrest the operation of said machine, of a normally stationary rotatable and vertically-movable sheet-calipering device adapted to be operated by an abnormal thickness of sheets, and a lever controlling the throw-out mechanism and adapted to be actuated by either the rotary or vertical movement of said calipering device to cause the operation of the throw-out mechanism, substantially as and for the purpose set forth.

2. In combination with a machine through which sheets of paper are passed, and suitable throw-out mechanism for said machine, a pivotally-mounted caliper-support, a rotatable calipering member journaled upon said support and adapted to be moved with its support or be rotated upon its support by the passage of an abnormal thickness of sheets, and a lever arranged to cause the operation of the throw-out mechanism, said caliper-sup-

port and the calipering member being adapted to independently engage and actuate said lever, whereby the throw-out mechanism will be operated when said caliper-support is moved or the calipering member is rotated, substantially as set forth.

3. In combination with a machine through which sheets of paper are passed, and suitable throw-out mechanism adapted to arrest the operation of said machine, a lever arranged to normally prevent the operation of said throw-out mechanism, a pivotally-mounted caliper-support having an arm or extension which projects into operative relation with said lever for operating it, and a rotatable

ble calipering member journaled upon said support and provided with a projecting pin or lug which is adapted to engage and operate said lever, said calipering member being adapted to be moved with its support or be rotated upon its support by the passage of an abnormal thickness of sheets to cause the operation of the throw-out mechanism, substantially as set forth.

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