No. 690,703. Patented Jan. 7, 1902.

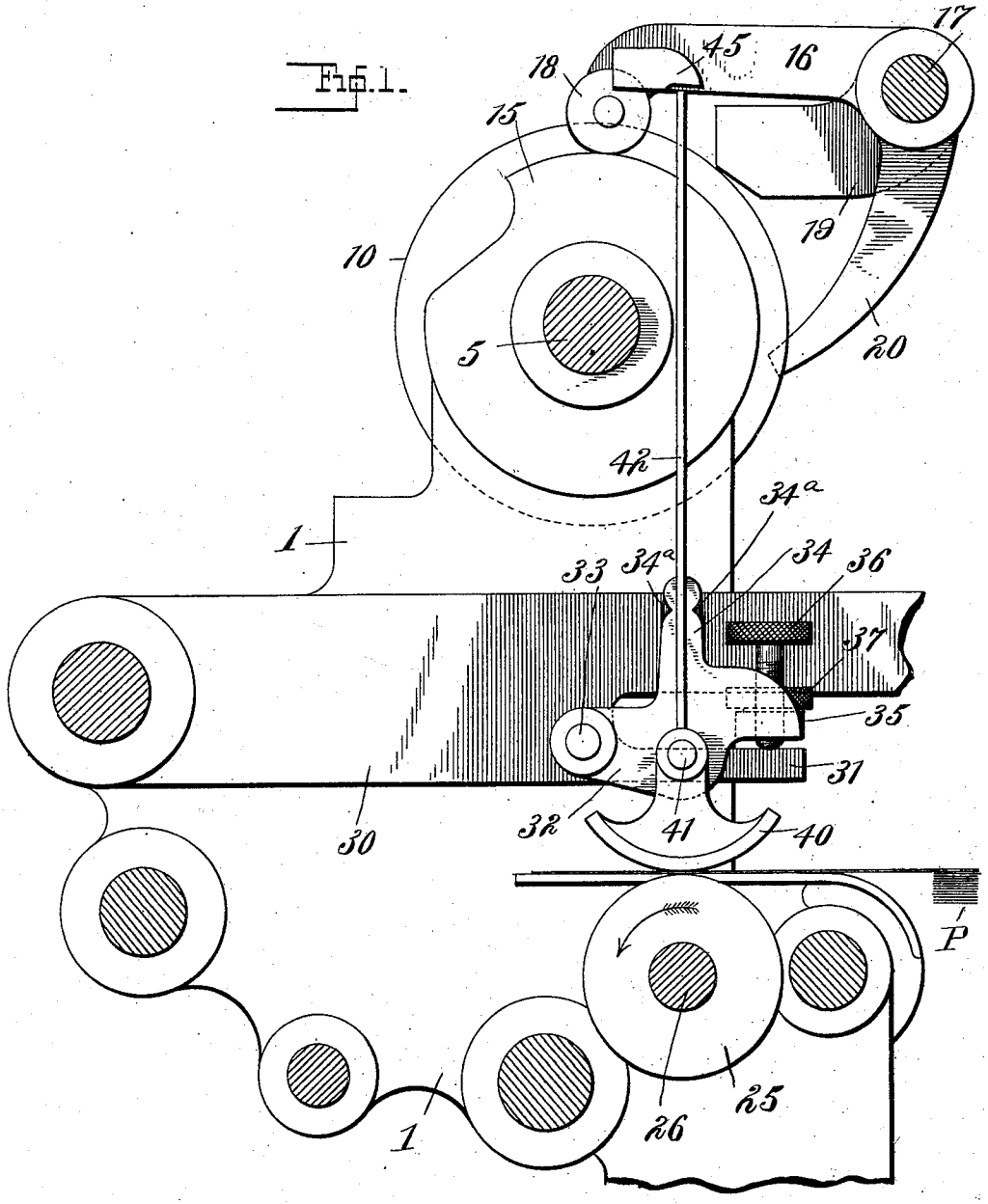
T. C. DEXTER.

SHEET CALIPERING DEVICE.

(Application filed Mar. 20, 1901.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.



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(Application filed Mar. 20, 1901.)

(No Model.) 2 Sheets—Sheet 2.

Fig. 3.

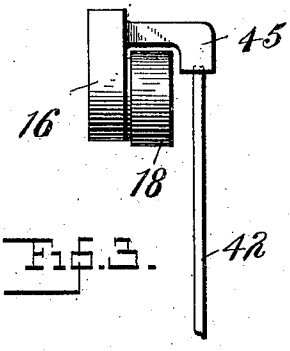


Fig. 2.

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UNITED STATES PATENT OFFICE.

TALBOT C. DEXTER, OF PEARL RIVER, NEW YORK.

SHEET-CALIPERING DEVICE.

SPECIFICATION forming part of Letters Patent No. 690,703, dated January 7, 1902.

Application filed March 20, 1901. Serial No. 52,099. (No model.)

To all whom it may concern:

Be it known that I, TALBOT C. DEXTER, a citizen of the United States, residing at Pearl River, in the county of Rockland, in the 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.

My present invention relates to improvements in the mechanism covered by my Patent No. 663,672, granted December 11, 1900, for paper-feeding machines. In the machine covered by said patent the sheet-calipering mechanism comprises a suitable throw-out mechanism adapted to arrest the operation of the machine to which it is applied, a normally stationary rotatable sheet-calipering device adapted to be operated by an abnormal thickness of sheets passing from the machine, and a lever adapted to be actuated by such calipering device and by its movement operate or control the throw-out mechanism.

The object of my present invention is to simplify the structure of my above-named patent without detracting from its efficiency, and to this end my present invention comprises a suitable throw-out mechanism and a sheet-actuated calipering device controlling or operating the throw-out mechanism and consisting of a pivotally-mounted lever formed, preferably, with a curved frictional foot, which is supported in proper relation to the path of the paper to be frictionally engaged and moved by an abnormal thickness of sheets passing beneath it.

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

In said drawings, Figure 1 is a detail longitudinal sectional elevation of parts of the feeding-machine embodying my invention and showing the sheet-caliper in its normal position during the operation of the machine. Fig. 2 is a similar view showing the sheet-calipering device in its tripped position. Fig. 3 is a detail view of a part of the mechanism.

The framework of my improved machine may be of any suitable construction to properly support the parts of the mechanism hereinafter described.

P represents the pile of paper in a feeding-machine which is to be fed to the folder, printing-press, ruling-machine, or other machine designed to operate upon the paper. The pile P is usually mounted upon an automatically-adjustable table or platform, which is not shown.

1 indicates the main frame of the machine.

5 is the main operating-shaft, upon one end of which is mounted any suitable form of clutch mechanism, (represented in the drawings by a circle 10.)

15 is a throw-out-operating cam keyed to the shaft 5, and 16 is a throw-out-operating arm keyed to the rock-shaft 17 and having journaled in its forward end an antifriction-roller 18, which is operated upon by 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 10 in proper position to operate the clutch for stopping and starting the machine. This clutch mechanism has not been specifically illustrated in the drawings, as it will be understood that any suitable form of clutch and operating devices may be employed to accomplish the result aimed at. For instance, the clutch and operating devices illustrated and described in my above-named patent, No. 663,672, may be employed for this purpose.

25 is the lower rotary member of my improved sheet-calipering device, which member is journaled in machine-frame at 26 just beneath the plane of feed of the sheets at the delivery end of the machine.

30 is a frame-bar formed with a rigid arm or lug 31.

32 is a bracket journaled to the frame-bar 30 at 33 and formed with an upwardly-projecting guiding-arm 34 and a horizontally-extending lug or arm 35. Journaled in the horizontal lug or arm 35 is an adjusting-screw 36, which is adapted to engage the horizontal arm 31 of bar 30 for adjusting the height of the bracket 32 and supporting it in the desired adjusted position.

37 is a lock-nut mounted upon the adjusting-screw 36 for clamping it in the desired adjusted position.

40 is the curved frictional shoe forming the lower extremity of the upper calipering mem-

ber. This shoe 40 is journaled to the pivoted bracket 32 at 41. A rod or bar 42 is rigidly mounted upon the shoe 40 above its journal and projects upwardly therefrom between the two limiting-lugs 34ª upon the guide-arm 34, the upper end of the rod or bar 42 reaching to a point adjacent to the throw-out-operating arm 16.

Formed upon the throw-out-operating arm 16 is a lug or bracket 45, which extends over the antifriction-roller 18 to a point above the normal position of the upper end of the rod or bar 42, so that when the low part of the throw-out cam 15 reaches the antifriction-roller 18 said bracket or lug 45 will engage the upper end of the rod or bar 42 and the throw-out arm 16 will be supported until the low part of the cam passes beyond the antifriction-roller.

The frictional shoe 40 of the upper calipering member is adjusted by the screw 36 toward or away from the lower rotary calipering member 25, so as to allow a single sheet of paper to pass freely between the shoe and the lower calipering member without affecting the upper calipering member. If, however, a double thickness of sheets should accidentally be fed forward in the feeding-machine, as represented in Fig. 2 of the drawings, the abnormal thickness will cause a sufficient frictional engagement with the shoe 40 to cause the shoe and its connected rod or bar 42 to rock upon the journal 41, with the result that the upper end of the rod or bar 42 will be moved from beneath the lug or bracket 45, and when the low part of the cam reaches the antifriction-roller 18 the rock-arm 16 will drop, as shown, and the consequent rocking of the shaft 17 will actuate the clutch to throw out and arrest the operation of the machine.

My present improvement is important in that it accomplishes the results of the structure set forth in my above-named patent, No. 663,672, in a simpler manner.

As far as I am aware I am the first to produce a mechanical sheet-calipering mechanism consisting of a throw-out mechanism and a single movable device adapted to be actuated by the engagement of an abnormal thickness of sheets and controlling the operation of the throw-out mechanism, and I desire to claim this combination of elements broadly.

Having thus fully described my invention, the following is what I 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 sheet-calipering arm or lever pivotally mounted adjacent to the path of the sheets, and normally resting in position to prevent the operation of the throw-out mechanism, said arm or lever being arranged and adapted to be directly engaged by an abnormal thickness of sheets and be moved by the sheets in the direction of travel of the sheets to cause or allow the operation of the throw-out mechanism, substantially as set forth.

2. 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 sheet-calipering arm or lever pivotally mounted above the path of the sheets, the upper end of said arm or lever being normally in position to engage and prevent the operation of the throw-out mechanism, and the lower end of said arm or lever being supported in position to be directly engaged by an abnormal thickness of sheets and be moved by the sheets in the direction of travel of the sheets to cause the upper end of said arm or lever to be disengaged from the throw-out mechanism and cause or allow the latter to operate, substantially as set forth.

3. In combination with a machine through which sheets of paper are passed, suitable throw-out mechanism adapted to arrest the operation of said machine and an arm connected with and operating said throw-out mechanism, of a normally stationary sheet-calipering arm or lever pivotally mounted above the path of the sheets, the upper end of said arm or lever being normally in position to engage and support said throw-out-operating arm to prevent the operation of the throw-out mechanism, and the lower end of said calipering arm or lever being supported in position to be directly engaged by an abnormal thickness of sheets and be moved by the sheets in the direction of travel of the sheets to cause the upper end of said arm or lever to be disengaged from the operating-arm of the throw-out mechanism and cause or allow the latter to operate, substantially as set forth.

4. 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 sheet-calipering arm or lever pivotally mounted above the path of the sheets, the upper end of said arm or lever being normally in position to engage and prevent the operation of the throw-out mechanism, and the lower end of said arm or lever being supported in position to be directly engaged by an abnormal thickness of sheets and be moved by the sheets in the direction of travel of the sheets to cause the upper end of said arm or lever to be disengaged from the throw-out mechanism and cause or allow the latter to operate, and a lower rotatable sheet-calipering member arranged directly beneath the path of the sheets and the lower end of said sheet-calipering lever so as to allow the sheets of paper to pass between the calipering-lever and lower rotatable calipering member, substantially as set forth.

5. 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 sta-

tionary sheet-calipering arm or lever pivotally mounted adjacent to the path of the sheets, and normally resting in position to prevent the operation of the throw-out mechanism, and a curved friction-shoe rigidly mounted on the lower end of the calipering arm or lever and arranged adjacent to the plane of feeds of the sheets and adapted to be directly engaged by an abnormal thickness of sheets and be moved by the sheets in the direction of travel of the sheets to cause or allow the operation of the throw-out mechanism, substantially as set forth.

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Witnesses:
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