(No Model.)

J. J. CLAUSE.

SHEET DELIVERY APPARATUS.

No. 244,981. Patented Aug. 2, 1881.

Fig. 1.

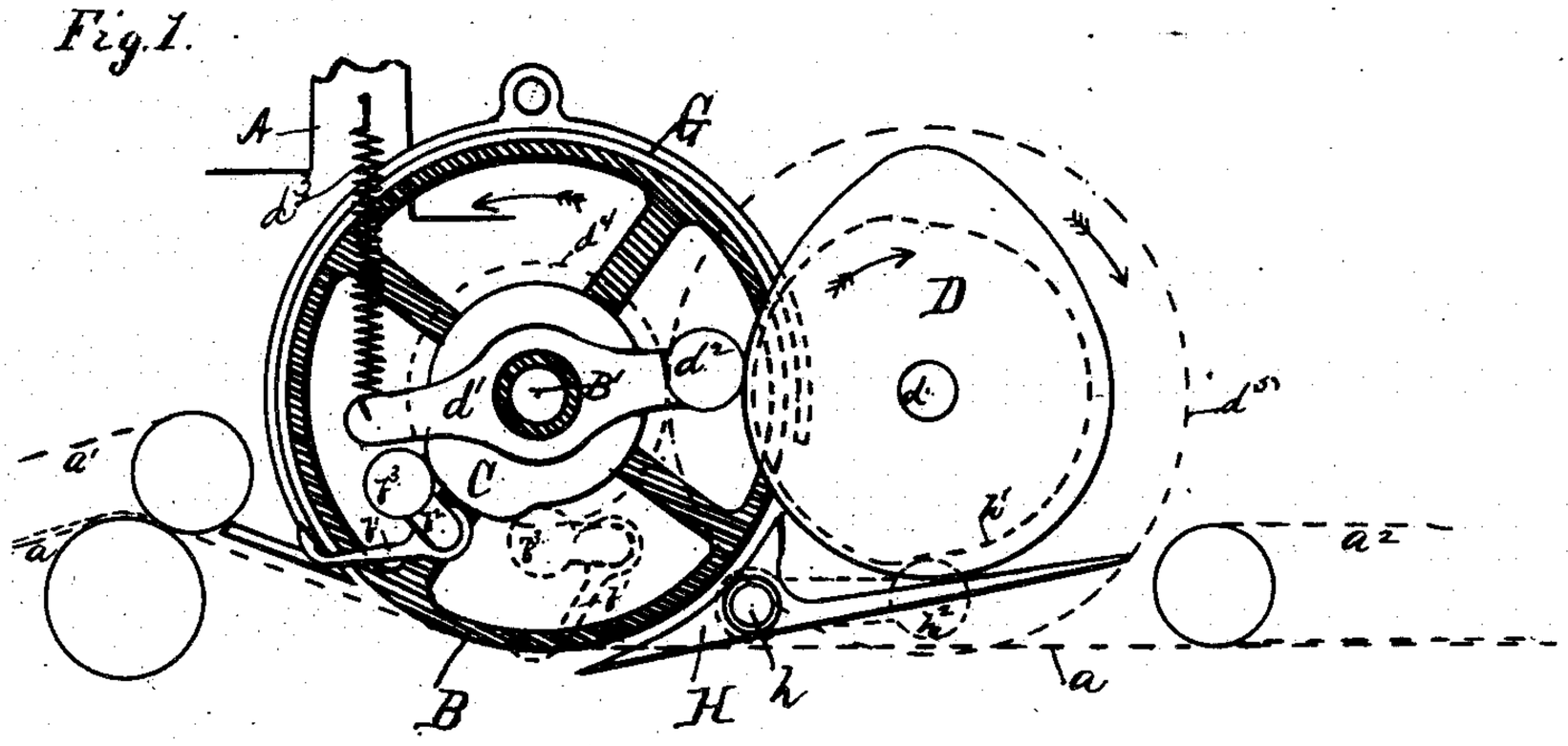


Fig. 2

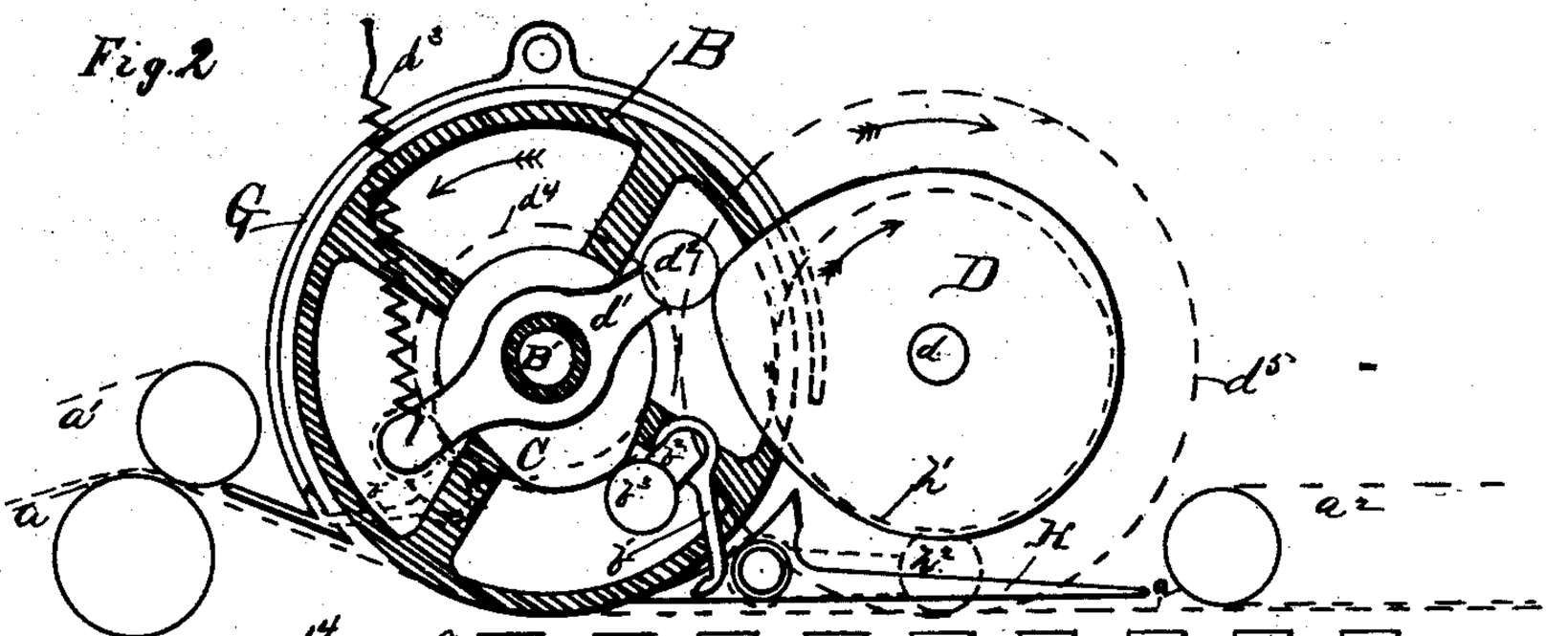
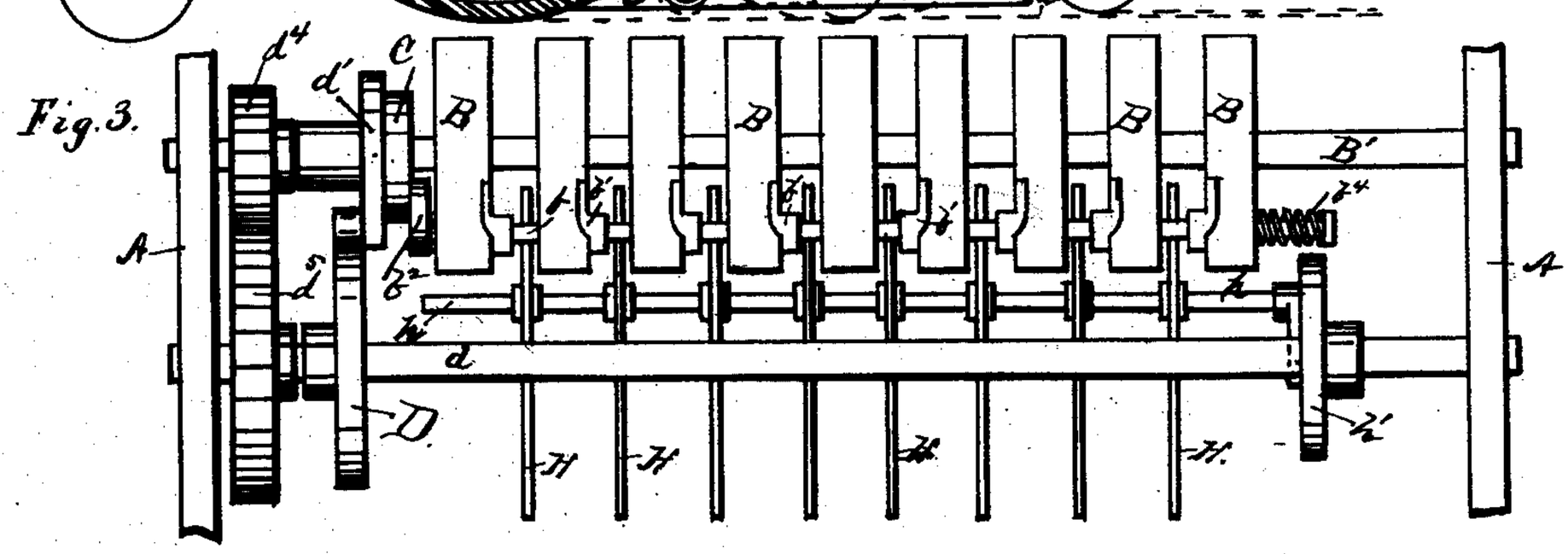


Fig. 3.



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JOHN J. CLAUSE, OF CHICAGO, ILLINOIS.

SHEET-DELIVERY APPARATUS.

SPECIFICATION forming part of Letters Patent No. 244,981, dated August 2, 1881.

Application filed February 24, 1881. (No model.)

To all whom it may concern:

Be it known that I, JOHN J. CLAUSE, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Newspaper-Folding Machines, of which the following in a specification.

My invention relates to improvements in devices in newspaper-folding machines for imposing each alternate sheet on top of the following sheet, so that the two sheets may be folded simultaneously and by one operation; and my invention consists, in connection with a set of carrying-tapes, of a griping-cylinder arranged above the same and adapted to gripe each alternate sheet and carry it around the cylinder and deposit it upon the next succeeding sheet as the latter is carried directly along on the tapes.

It also consists in the novel devices and combinations of devices herein shown and described. The gripers on the griping-cylinder are operated by means of an oscillating or movable cam, which changes its position at each alternate revolution of the cylinder, so as to allow the gripers to close upon the sheet at one revolution of the cylinder and to keep the same open to permit the next sheet to be carried directly along on the tapes at the next revolution of the cylinder.

In the accompanying drawings, which form a part of this specification, and in which similar letters of reference indicate like parts, Figure 1 is a cross-section of a device embodying my invention, showing the movable cam in position to permit the griping of the sheet as the gripers are carried around on the cylinder. Fig. 2 is a similar view, showing the movable cam in position to keep the gripers open to permit the sheet being switched off the cylinder on top of the next following sheet; and Fig. 3 is a plan view of same, the guides for keeping the sheets on the cylinder being removed.

I have thought it necessary to show only those parts of the folding-machine to which my invention relates, as my improvement can be applied to any ordinary folding-machine.

In said drawings, A represents a portion of the frame of the folding-machine. *a* is the under set of carrying-tapes leading from the press to the first pair of folding-rollers. *a'* is the upper set of tapes leading from the press; and a^2 is the upper set of tapes leading to the first pair of folding-rollers.

B is the griping-cylinder composed of short sections or separate pulleys secured to the shaft B', which is mounted in suitable bearings in the frame.

The shaft *b*, to which the gripers *b'* are secured, is mounted in bearings in the interior of the griping-cylinder, and is provided with a crank or arm, b^2, carrying a friction-roller, b^3, on its end.

The gripers are held closed upon the cylinder by the torsion-spring b^4 surrounding the griper-shaft, and the same are opened in order to grasp and to release the sheet by the movable or oscillating cam C, mounted loosely on the cylinder-shaft B', so as not to revolve with the cylinder acting upon the friction-roller on the arm of the griper-shaft. This cam C at each alternate revolution of the cylinder is made to occupy the positions shown in Figs. 1 and 2, respectively, by means of the cam D, secured to the shaft *d*, acting upon the yoke or arm *d'* attached rigidly to the cam C. The yoke *d'* carries a friction-roller, d^2, upon its end, which is caused to press steadily against the face of the cam D by means of the spiral spring d^3, one end of which is secured to the other end of the yoke *d'* and its upper end to the frame.

The shaft *d* is geared to the cylinder-shaft by means of the gears d^4 and d^5 of such relative size that the shaft *d* makes one revolution while the cylinder-shaft makes two.

The form of the cam C is such that when occupying the position shown in Fig. 1 it will cause the gripers to open and to close upon the sheet when the gripers are carried around with the cylinder to the position shown in dotted lines in the same figure. The form of the cam D is such and so timed that at the second revolution of the cylinder it will cause the cam C to oscillate from the position shown in Fig. 1 to that shown in Fig. 2, and thus cause the gripers to remain open from about the position shown in dotted lines in Fig. 2 to that shown in solid lines, and thus at the same time

permit the next succeeding sheet to pass directly along on the tapes and to release and deposit the first sheet which has been carried around the cylinder upon such succeeding sheet. The cam D then permits the cam C to oscillate back to the position shown in Fig. 1, so as to be ready to gripe the next alternate sheet and carry it around the cylinder.

G is a curved guide to keep the sheets on the cylinder.

H is a switch for switching the sheets off the cylinder, secured to the shaft *h*, which is operated at each alternate revolution of the cylinder by means of the cam *h'* secured to the shaft *d* acting on the friction-roller h^2 on the arm of the switch-shaft *h*.

The cam *h'* and the gears d^4 and d^5 are shown in dotted lines in Figs. 1 and 2.

What I claim is—

1. The combination, with the delivering-tapes, of the cylinder B, provided with gripers and mechanism, substantially such as described, for actuating the gripers at the receiving-point at each alternate revolution of the cylinder and at the discharging-point at each succeeding revolution thereof, whereby each alternate sheet is carried around the cylinder and deposited upon the following sheet as it passes directly along on the delivering-tapes, substantially as specified.

2. The combination of a set of carrying-tapes with a cylinder provided with gripers, movable griper-cam, and cam for oscillating or moving the griper-cam to cause the gripers to gripe only each alternate sheet, substantially as specified.

3. The combination of the griping-cylinder provided with gripers with a movable griper-cam and a cam for moving the griper-cam into position to open the gripers and gripe the sheet at each alternate revolution of the cylinder, and into position for opening the gripers and discharging the sheet at the next succeeding revolution of the cylinder, substantially as specified.

JOHN J. CLAUSE.

Witnesses:

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