

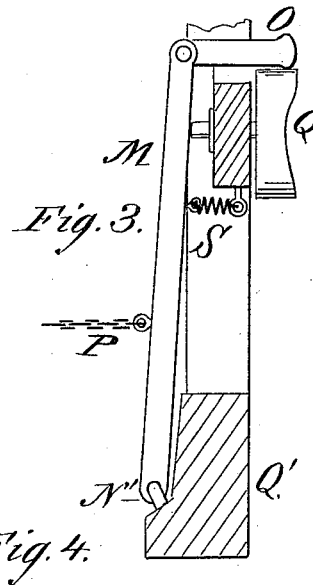
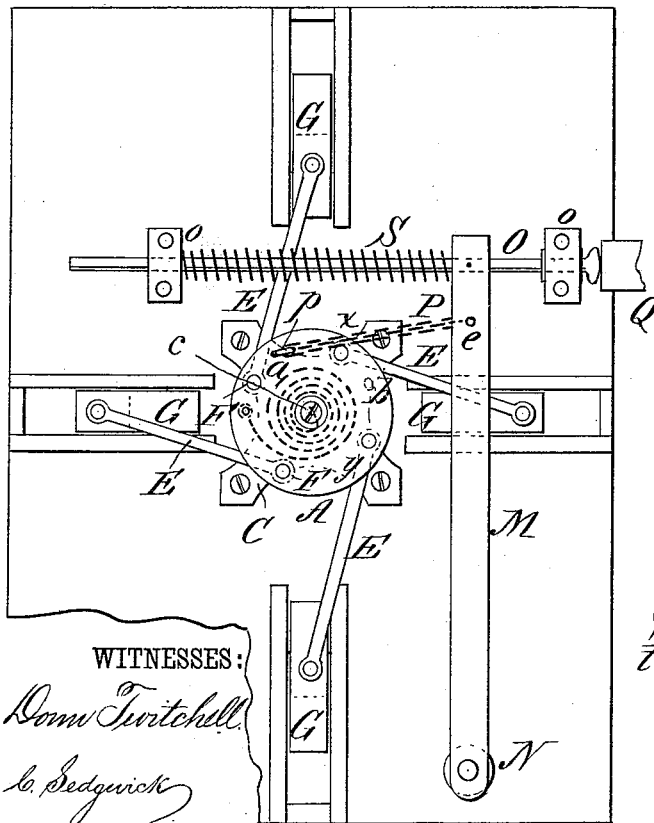
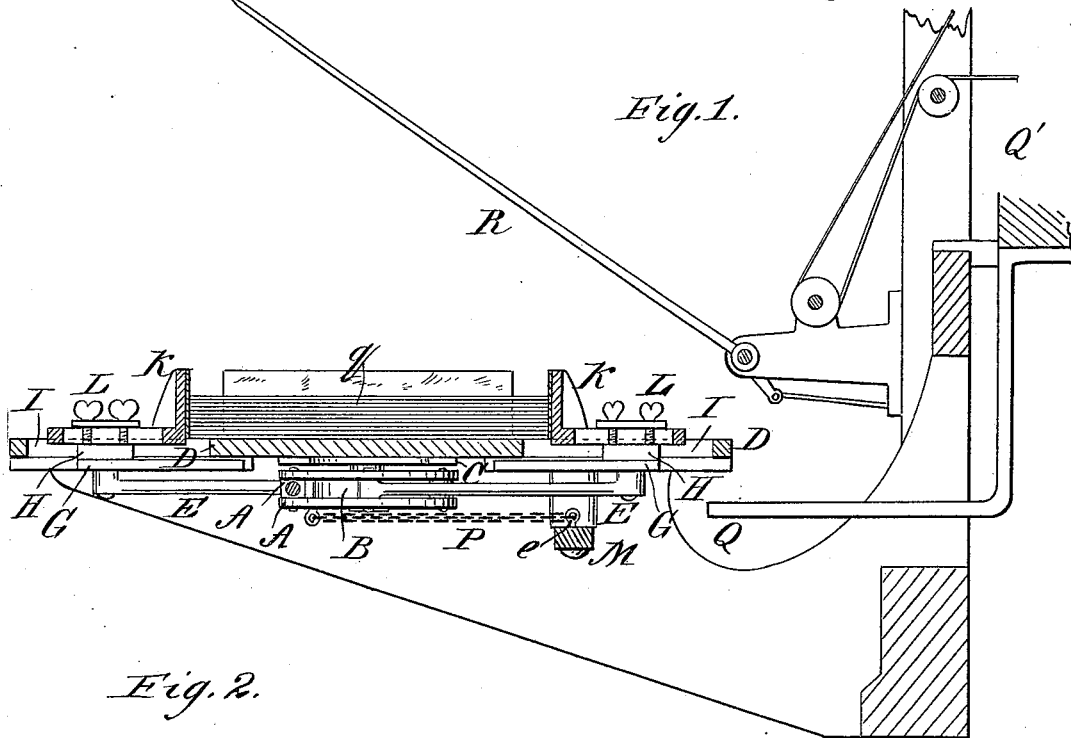
(No Model.)

C. E. HOLBROOK.

SHEET PILING ATTACHMENT FOR PRINTING MACHINES.

No. 348,123.

Patented Aug. 24, 1886.



WITNESSES:

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UNITED STATES PATENT OFFICE.

CHARLES E. HOLBROOK, OF WATERTOWN, N. Y., ASSIGNOR OF ONE-HALF
TO HENRY M. STEVENS AND ADDICE E. DEWEY, BOTH OF SAME PLACE.

SHEET-PILING ATTACHMENT FOR PRINTING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 348,123, dated August 24, 1886.

Application filed December 13, 1883. Serial No. 114,437. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. HOLBROOK, of Watertown, in the county of Jefferson and State of New York, have invented certain new and useful Improvements in Sheet-Piling Attachments for Printing-Machines, of which the following is a full, clear, and exact description.

My invention relates to an improvement in gages used for adjusting sheets of paper thrown on a table from a printing-press into an even and systematic pile.

I have found from experience that in the class of devices to which my invention pertains, serious defects in operation ensue when any one or more of the gages are of a permanent or stationary character, as the sheets when thrown by the fly are liable sometimes to be deposited in such manner that one edge may rest upon or hang over the said stationary gage or gages, in which event the action of the moving gages tends to augment such irregular displacement of such sheets.

The object of my invention is to avoid any such possibilities, and to secure the proper piling of the sheets by causing the gage-plates to come in contact absolutely and certainly with all four edges of the sheets.

With this end in view my invention consists of four movable gage-plates mounted on the piling-table in planes parallel with the four edges of the sheets when finally jogged into position, and outside of the boundary within which the action of the fly commonly deposits a sheet; and, further, the invention consists in connecting said four gages by suitable intermediate mechanism with the bed or any other regularly-moving part of the machine, whereby the gages may be automatically given a reciprocating motion.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional elevation showing my improvement as applied to a printing-press. Fig. 2 is an inverted plan exhibiting the features of the device under the table on which the paper is laid. Figs. 3 and 4 are details of certain modifications.

In my construction, A represents two metal

disks riveted together, containing between them a coiled spring, B, which is fastened to the disks near their periphery by a pin, and the inner end is secured to a stud or pivot, *c*, in the center of the disks, forming a spring-barrel. This stud *c* is stationary and firmly fastened to an iron plate, C, to be screwed to the under side of a table, D. The disks in operation perform a partial revolution and return on the central pivot.

E represents four steel pitmen, which are attached by pins F between the disks, and connect by the outer end with cleats G. The cleats run in grooves or ways secured to the table, and can only move straight forward and back. The ends of the cleats on the upper side have pieces H screwed to them, adapted to run in slots I in the table, and come up nearly to the upper surface of the table, and upon these pieces H are fastened gages K, held by thumb-screws L.

M is a lever hung loosely on a pin, N, and far enough away from the table to allow the pitman above it to play between it and the table.

O is a rod made to slide in the bearings *o o*, and also to receive the end of the lever M, secured to it. The rod O carries the spiral spring S, between the inner bearing, *o*, and the end of the lever. This spiral spring is more powerful than the spring B.

P is a chain which is attached to the outside of one disk A by a pin, *p*, and connects with the lever M.

Q is a bar attached to the bed of a press, and is arranged to press upon the end of the rod O and push it forward to the point it occupies, as shown in Fig. 2, each time the press is drawn back.

In operation, as shown in Figs. 1 and 2, the bed of the press is back to the farthest point, and the rod O is pushed in. As the press goes ahead, releasing the pressure on the rod O, the spring S moves the end of the lever down to that bearing *o* near the outer end of the rod. This moves the end of the chain at *a* down about to the point *b*, and the end of the pitman at *x* will be brought around about to the point *y*, and all the other pitmen will be moved accordingly, making about a third movement of the disks. This moves the cleats

G to the outside of the slots I, carrying the gages K with them an inch or more from the pile of papers *g*, and the gages all remain at this point until the return of the bed of the press. The fly R of the press lays the sheet of paper down on the table while the gages are moved away from the center of the table and the bed of the press is farthest away from the table. When the bed of the press returns, it again strikes the plunger-rod O, which loosens the chain, and the spring B moves the disks back about one-third, around which moves all the pitmen, and in connection with them the gages up against the sheet just laid on, and moves it to the center of the pile.

The advantage of using the spiral spring S, clock-spring B, and chain P is to avoid a positive action of the gages, as a rigid positive action will not adapt itself to the slight variations in the size of the papers.

With my devices the machine will not be broken if it becomes clogged or any obstruction prevents its operation. Carelessness in setting the gages around the paper might break the machine if the motion was positive.

In the place of the chain P, I may use a slotted rod, P'. This is fastened to the disk at *a* by a pin in the round hole *t*, and the slot *r* is fitted over and moves on the pin *e* on the lever. The connection is substantially the same; also, in place of having the spiral spring S on the rod O under the table, I may attach one end of it to the lever M and the other to the press, a portion, Q', of which is shown in Fig. 3, and that feature is preferable when the apparatus is attached to an old press, as it will not be necessary to secure the table so firmly to the press as when operated by the plunger-rod and spring under the table, and the old table may be used.

On new presses it is intended that the table be attached firmly to the press, and it is better to have it made of iron or some firmer material than is generally used.

I may cover my gages with cloth or other rough substance, glued or otherwise fastened to the working-surface. This being slightly rough prevents the edge of the paper from sliding up on the gages, and assists in moving the paper toward the center.

By having the pitmen so arranged that in operation they will be pulled slightly past the center in reaching the point *g*, a slight quick motion of the gages is produced, which materially assists in moving the sheets of paper toward the center.

Although I have particularly described the

construction of the mechanism by which the intermittent movement is imparted to the gages, I do not consider my invention limited thereto, as any suitable means may be employed.

What I consider as of my invention, and desire to secure by Letters Patent, is—

1. As an improved sheet-piling attachment, a series of four reciprocating gages at right angles to each other, arranged upon the piling-table, between which gages the sheets are piled as they come from the press.

2. As an improved sheet-piling device, a series of four movable gage-plates arranged upon the piling-table, said four movable gage-plates being connected with any movable part of a printing press by suitable intermediate mechanism, as described, whereby the gage-plates are automatically caused to kick, push, or jog the sheets from four sides into proper position, as hereinbefore set forth.

3. The combination, with a table, of gages mounted to slide thereon at four sides of the center, and mechanism, substantially as described, connected therewith for simultaneously moving said gages toward and from the center, substantially as set forth.

4. In a sheet-piling attachment for printing-presses, the combination of the disks A, spring B, and connection P with the lever M, rod O, and spring S, the said spring S being more powerful than the spring B, substantially as and for the purposes set forth.

5. The combination of gages K, cleats G, pitmen E, and disks A, said disks being provided with spring B, and having the connection P, with the lever M, the rod O, and spring S for operation by a press, substantially as and for the purpose set forth.

6. The combination, with the table of a printing-press, of gages mounted in slots I, a spring-barrel connected with the gages and secured to the under side of the table centrally between the said slots to draw the gages inward, and a spring-operated lever connected with said spring-barrel to move the gages outward against the force of said spring-barrel, said spring-operated lever being operated from the bed of the press in its backward movement, whereby its spring is compressed and the spring-barrel allowed to draw the gages inward, substantially as set forth.

CHARLES E. HOLBROOK.

Witnesses:

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