# H. J. GILL.

## Machine for Calendering Printed Sheets.

No. 163,180. Patented May 11, 1875.

Fig. 1.

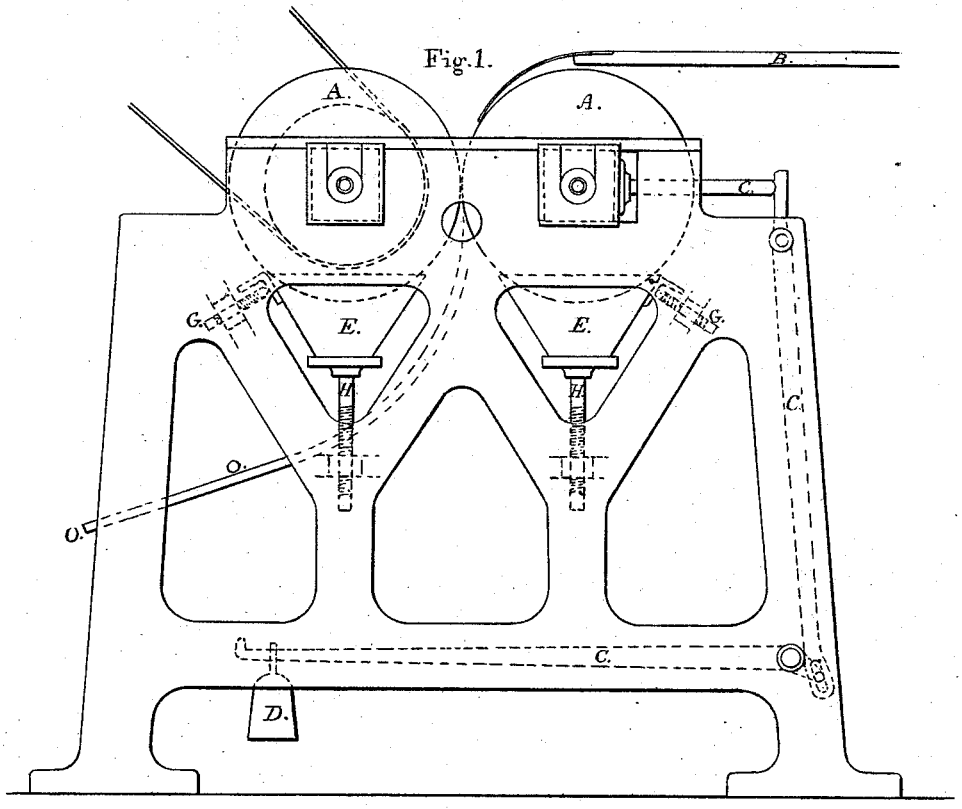
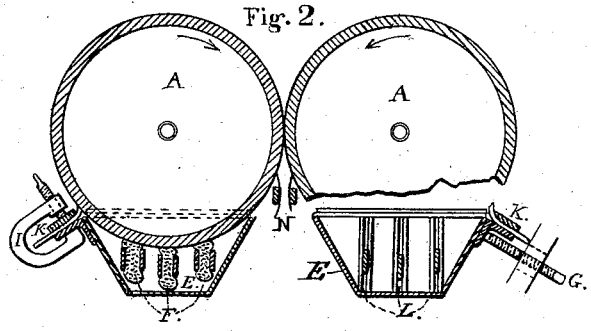



Fig. 2.




Witnesses,
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# UNITED STATES PATENT OFFICE.

HENRY JOSEPH GILL, OF DUBLIN, IRELAND.

## IMPROVEMENT IN MACHINES FOR CALENDERING PRINTED SHEETS.

Specification forming part of Letters Patent No. **163,180**, dated May 11, 1875; application filed November 6, 1874.

*To all whom it may concern:*

Be it known that I, HENRY J. GILL, of Dublin, Ireland, have invented a Machine for Calendering Printed Paper, of which the following is a specification:

The object of my invention is to give a smooth finish to printed sheets of paper, more especially within a short period after printing the same, and without allowing traces of printing-ink "set-off" on the hot pressing-cylinders by one printed sheet to contaminate the succeeding one. This is effected by passing the sheets between two metallic cylinders, A, placed side by side, pressed tightly together by weighted levers C, and revolving in troughs E containing rubbing-pads F, immersed in a liquid capable of dissolving or saponifying printers' ink, such as potash or soda, preferably carbonate of soda, which liquid is continually being rubbed by said pads against the rollers A as they revolve.

The general arrangement of the machine is shown in Figure 1.

The printed sheets are introduced by hand or any suitable feeding mechanism from a table, B, between the revolving polished chilled-metal cylinders A, which are pressed tightly together by the levers C and weight D. Steam can be let into the cylinders through the hollow journals, in the usual manner. A pair of movable troughs, E, are raised on supports by screws H or racks and pinions, or other suitable mechanism, until they inclose the lower portion of the cylinders A. These troughs E, containing a solution of carbonate of soda or other alkaline liquor and the pads F, to be hereafter described, are shown in section on Fig. 2. These troughs E are also adjusted laterally by the screw G, which presses them, or rather the india-rubber scrapers, to be hereafter described, firmly against the revolving cylinders A. On that edge of each trough E opposed to the motion of the surface of the cylinder as it emerges I place a scraper or strip of india-rubber, *n*, or other suitable material, clamped down by screw-clamps I between the angle-iron lip of the trough and another strip of metal, K, and arranged so that when the screws G are screwed up the scraper will press tightly against the cylinders, and thus rub off any liquid or dirt still adhering to them. Strips of india-rubber are also usually arranged at each end of the trough for a similar purpose. In each of the troughs E are arranged pads F. (Shown in section on the left-hand side of Fig. 2.) These are adjusted in any suitable manner to laths of wood or metal, working in slots in the end of the troughs, as shown in the right-hand side of Fig. 2, and adjusted by packing-pieces L or springs, so as to press the pads against the surface of the cylinders. In the drawing the laths are double, except at the ends, and inclose the pads. These pads are bags, made of any suitable porous cloth, and filled loosely with pieces of sponge or other absorbing material. Eye-pieces of glass can be inserted in the ends of the troughs, so as more easily to adjust the troughs with their pads to the cylinders. Beneath the cylinders I place the laths N, with metallic points at intervals secured thereto, and pressing against the cylinders so as to detach any sheet that may stick to them, and cause it to descend on the guide or chute O, Fig. 1, to the front of the machine.

The carbonate of soda dissolves or saponifies the printers' ink adhering to the cylinders, the pads wipe it off, and the india-rubber scrapes the cylinders dry.

It is evident that numerous modifications could be made in the aforesaid arrangement in regard to materials in pressing the cylinders together by springs or other appliances, instead of levers C. One pad could be used in each trough instead of three, and racks and pinions or other appliances could be employed in lieu of screws in adjusting the troughs.

I claim as my invention—

1. The hot-press cylinder-rolls A A, arranged side by side, in combination with troughs E E, for containing a liquid solvent of printers' ink, said rolls and troughs being constructed and arranged to operate substantially as and for the purpose set forth.

2. An apparatus for calendering printed paper consisting of two rolls placed side by side, so that the paper can be passed between and in direct contact with both rolls, a trough

arranged under each roll for supplying a solvent thereto, and a rubber scraper for wiping each roll dry, so as to constantly present a clean surface to the sheet, the said devices being combined to operate substantially as described.

3. In combination with the rolls A, the troughs E and pads F, all arranged to operate substantially as described.

HENRY JOSEPH GILL.

Witnesses:
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