

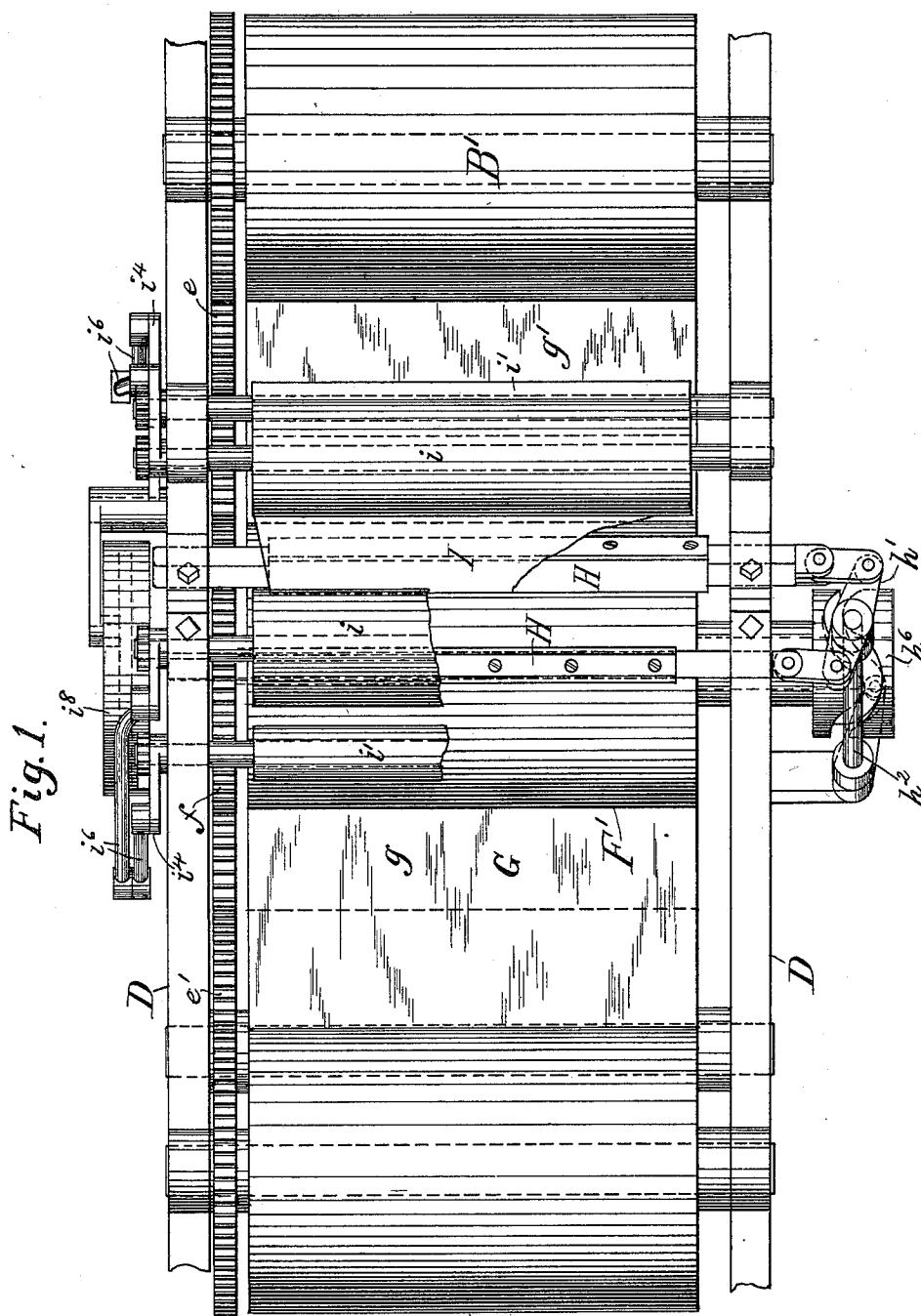
(No Model.)

3 Sheets—Sheet 1.

R. MASON.
OFFSET FOR PRINTING PRESSES.

No. 566,206.

Patented Aug. 18, 1896.



Witnesses.
John W. Saxe
Mrs. A. Leopeland

Inventor.
Robert Mason
by Edward S. Beach,
Attorney

(No Model.)

3 Sheets—Sheet 2.

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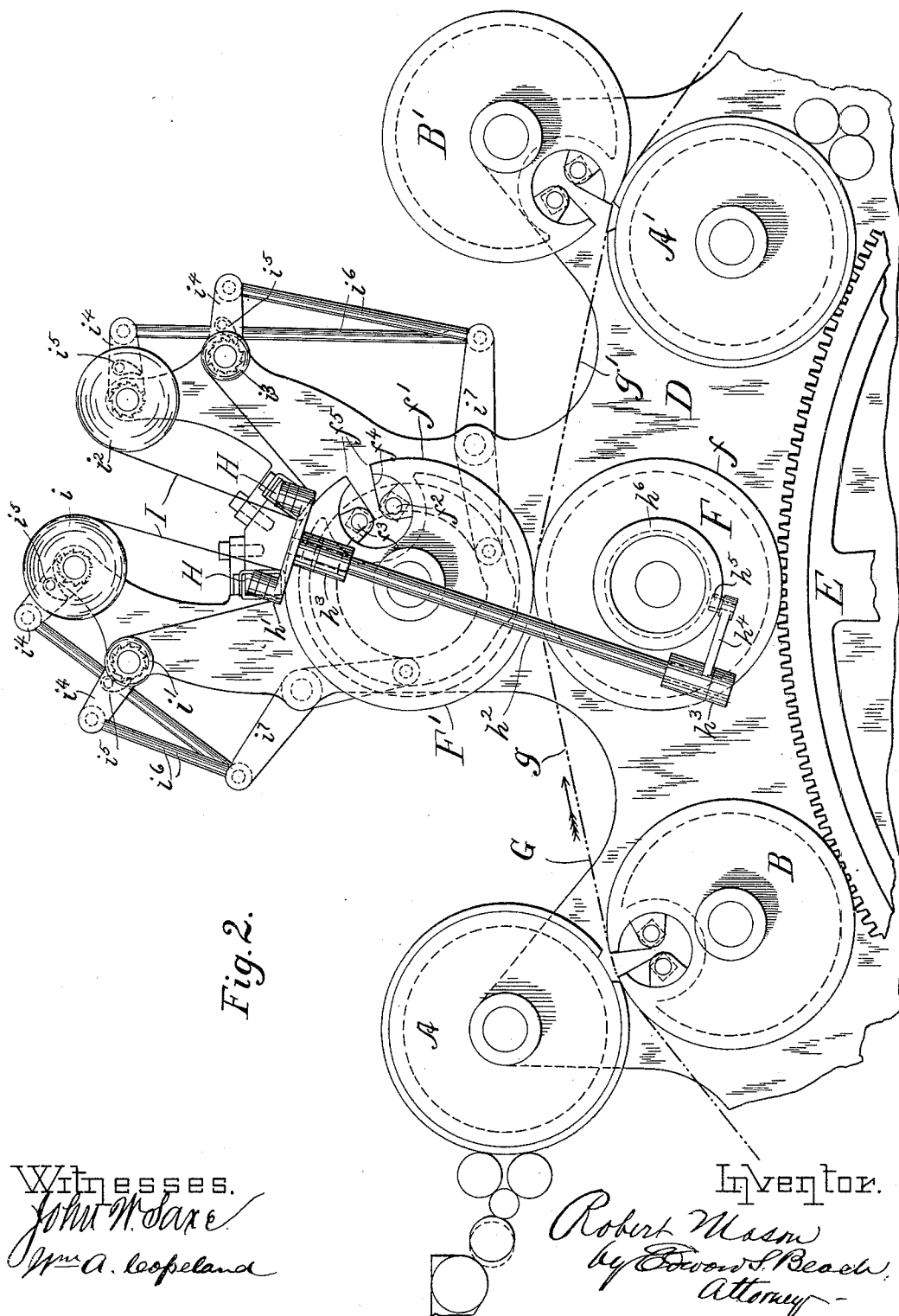


Fig. 2.

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3 Sheets—Sheet 3.

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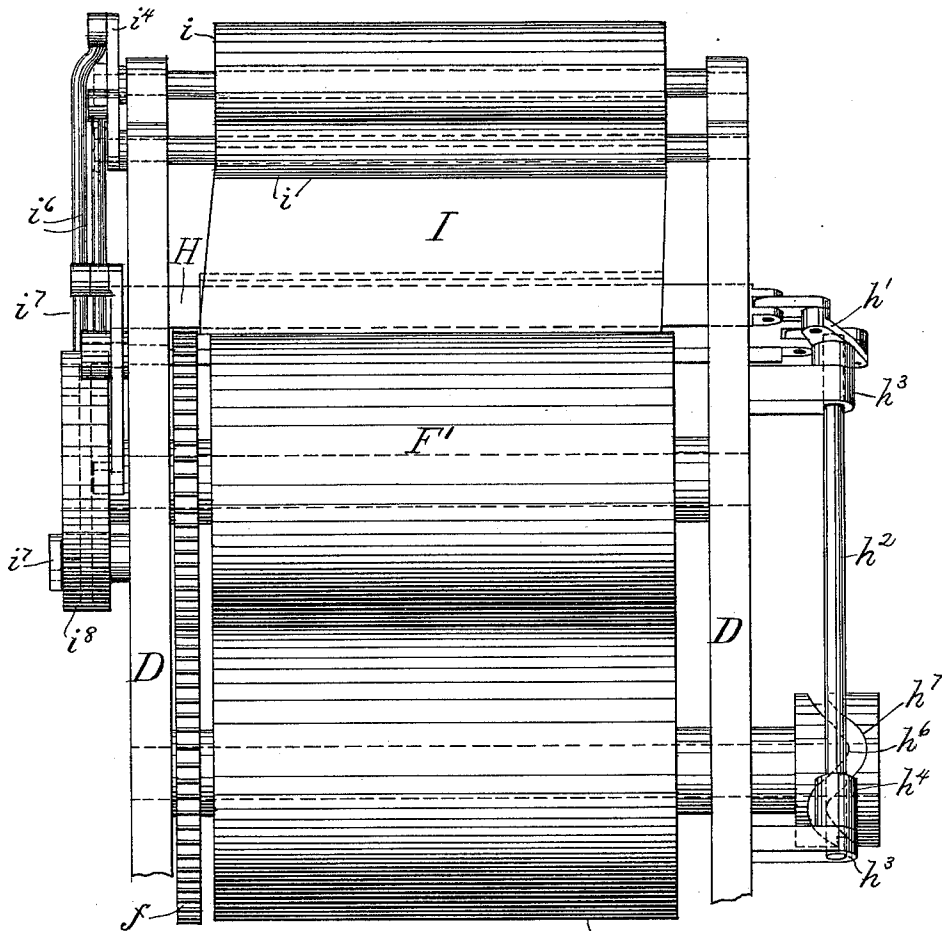


Fig. 3. F'

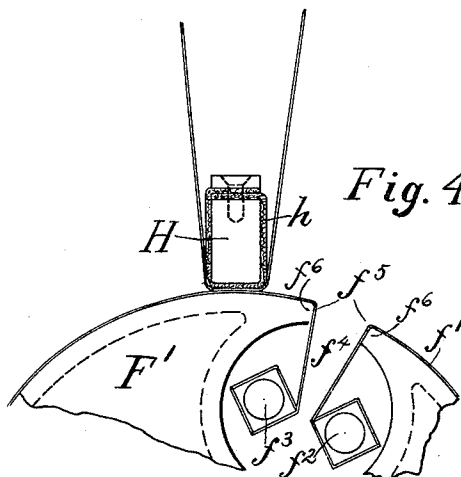


Fig. 4.

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UNITED STATES PATENT OFFICE.

ROBERT MASON, OF BOSTON, MASSACHUSETTS.

OFFSET FOR PRINTING-PRESSES.

SPECIFICATION forming part of Letters Patent No. 566,206, dated August 18, 1896.

Application filed March 29, 1895. Serial No. 543,765. (No model.)

To all whom it may concern:

Be it known that I, ROBERT MASON, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful
5 Offset for Printing-Presses, of which the following is a specification.

Referring to the accompanying drawings, Figure 1 is a plan, and Fig. 2 a side elevation, of one form of my invention. Fig. 3 is a view
10 showing more plainly the preferred arrangement of devices for actuating the wipers. Fig. 4 is a detail view showing a portion of the offset-cylinder and wiper-bar.

In the drawings, A A' are the printing-cylinders, and B B' impression-cylinders. These
15 cylinders are mounted in any suitable manner in an appropriate frame, such as D, for instance, and are rotated simultaneously at the same speed by any suitable means, such,
20 for example, as the gear-wheel E, that meshes with gears *e e'* on cylinders B and A', respectively, as well as with a gear *f* on cylinder F', which is one member of the offset mechanism and is also journaled in frame D. The mounting and driving of all these parts will be
25 readily understood by all skilled in the art without particular description except that in my invention the offset mechanism, and consequently the cylinder F, which forms part thereof, is intermediate the cylinders A B and
30 B' A', the functions of which are expressed hereinafter.

The paper G is shown as passing between cylinders A B, whereby the paper is printed
35 on its surface *g*, thence between the cylinders F F' of the offset mechanism, and thence between the cylinders B' A', whereby it is printed on its surface *g'*. As the construction, functions, and arrangements of cylinders A B and
40 B' A' are old and well known and the printing of surfaces *g g'* of the paper fed between them is also old and well understood, no particular description is necessary to a full understanding of the same by all skilled in the
45 art.

Heretofore various mechanisms and methods have been employed for preventing, or at least minimizing, the offset of the ink from one printed side of the paper upon a subse-
50 quently-utilized impression-cylinder, but most of these offset mechanisms have fallen short of success and been attended with va-

rious objections from an economical standpoint.

In carrying out my plan of preventing the
55 objectionable offset a pair of cylinders F F' are interposed between the sets of printing and impression cylinders A B A' B' and the paper is fed from one of these sets to another, all the cylinders A B, A' B', and F F' having
60 the same surface speed, whereby the proper feed of the paper is not in any wise impeded. Cylinder F has a hard surface, (preferably,) and the surface *f'* of cylinder F' is a jacket or cover of a suitably absorbent or semi-ab-
65 sorbent material, so as to take up the surplus ink on printed surface *g* of the paper G.

Cylinder F', as shown, is driven by gears *f* and *f'*, and the paper G is so tightly nipped
70 between the cylinders F F' that not only is the superfluity of ink largely removed from printed surface *g*, sufficiently so to prevent or at least minimize the offset on the next impression-cylinder B', but the paper passing
75 between cylinders F F' on its way to the next set A' B' is approximately "calendered," the impression on the surface *g'* of the paper G being largely obliterated and the ink type-forms or printing being nicely "laid" on the
80 printed surface *g*, as will be plain upon consideration of the fact that paper G is printed on surface *g* while passing between rolls A and B, is then passed between the cylinders F F', and is then passed between the cylinders B' A',
85 to be printed on its reverse surface *g'*. The work surface *f'* of semiabsorbent or absorbent material is held in place by reel-rods *f² f³*, mounted in a recess *f⁴* in cylinder F' and extending lengthwise of the cylinder, one end
90 of surface *f'* being fast upon rod *f²* and passing thence outwardly from recess *f⁴* and about the cylinder F' to the other rod *f³*. The space *f⁵* between the corners *f⁶* of the recess and covering surface *f'* generally corresponds to
95 marginal portions of the paper G, so that offset-surface *f'* is effectual for the whole of the printed surface *g* coming from cylinders A B. The absorbing-surface *f'* takes up more or less of the superfluous ink on the printed portion of surface *g* and prevents the "smutch-
100 ing" of that portion when the opposite portion of the paper receives impression from cylinder A'. Wipers are employed to clean the surface *f'*, consisting, preferably, of re-

reciprocating bars H, provided with felt or the like at h and extending and reciprocating endwise of cylinder F' in contact with the work surface f' , (consisting of Manila paper, for example,) which is, however, removable, as will be readily understood, from its detachable connection with cylinder F' at $f^2 f^3$. The wiping-bars H, in the construction illustrated, are connected with arm h' of a rocker-shaft h^2 , which has a bearing, as at h^3 , on frame D, and a cam-roll-supporting arm h^4 , provided with a cam-roll h^5 , that engages and works with a cam-surface h^6 on the end of cylinder F. By this arrangement the wiping-bars H are alternately reciprocated against and lengthwise of the offset-cylinder F', as the arm h^4 is moved outwardly by the cam-surface h^6 and inwardly by the cam-surface h^7 , that tends to keep the cam-roll h^5 in continual contact with the cam-surface h^6 . An offset-cloth or wiper-web I passes from a reel i over each wiping-bar H, having a padded face H', to a reel i' , reels $i i'$ being arranged in pairs, corresponding to each wiping-bar employed, and mounted in any suitable manner, conveniently on frame D, for instance. One or more sets of reels $i i'$ and $i^2 i^3$ extend lengthwise the wiper-bars and offset-cylinder, and are provided with ratchets i^3 and pawl-carrying arms i^4 , each provided with a pawl i^5 . The pawl-carrying arms of each set of reels $i i'$ are each attached to a rod i^6 from a rocker-arm i^7 , pivoted to frame D and actuated by a cam i^8 , each connecting-rod i^6 being pivoted to one and the same end of a rocker-arm i^7 , and but one pawl and ratchet of a set being in engagement at the same time. Consequently each offset-cloth or wiper-web I is moved intermittently over its reciprocating wiper-bar, being wound from one reel to its mate, and by throwing the first operating-pawl out of engagement and the other pawl into working position the wiper-cloth so intermittently fed from one reel i of a set to its mate i' is rewound from reel i' to its mate i , but intermittently, so that the wiper-cloth is not only reciprocated over the work surface of the offset-cylinder F from end to end thereof, but is also intermittently moved over the wiper-bar to present clean or approximately clean surfaces for wiping ink from the work surface f' . One wiper-cloth I is best a clean cloth and the other an oiled cloth, that wiper-cloth I nearer the first acting cylinders A and B usually being the oiled cloth, the oil from the cloth acting upon the offset ink to soften it, so that

the next wiper-cloth I the more readily and thoroughly cleanses the offset surface or sheet f' , which is removable, so as to be replaced by a fresh sheet from time to time.

The work surface f' of the offset-cylinder may be compared to a "blotter" and this cylinder termed a "blotter-cylinder;" and the function of the wiping mechanism is to clean the work surface of the cylinder, which, but for the wiping mechanism of some construction, would speedily become smeared with ink from the freshly-printed surfaces g .

It will be plain that my invention may and must be embodied in many different forms to accommodate it to printing-presses differing in construction.

Having now described one and on the whole the best of several contemplated embodiments of my invention, what I claim is—

1. In a printing-press, the combination of a pair of printing and impression cylinders with a pair of intermediate offset-cylinders; one of said cylinders having a movable ink-absorbing sheet; a shifting wiper-web contacting with said sheet; means for rotating all said cylinders in the same direction at the same surface speed to feed and print; and means for shifting the wiper-web; the offset-cylinder which coöperates with the wiper-web being recessed and therein provided with means for securing the removable ink-absorbing sheet in working position, all substantially as and for the purpose set forth.

2. In a printing-press, the combination of a plurality of pairs of printing and impression cylinders with an offset mechanism, comprising a pair of cylinders, one of which has an ink-absorbing surface, all the cylinders having the same surface speed; and a movable wiper-bar and shifting wiper-web, substantially as described.

3. In a printing-press, the combination of an offset-cylinder with a pair of endwise-moving wiper-bars and a shifting web for each bar, one of the webs being an oiled cloth, and the other a plain cloth, substantially as and for the purpose set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 2d day of March, A. D. 1895.

ROBERT MASON.

Witnesses:

EDWARD S. BEACH,
 A. I. CRAWFORD.