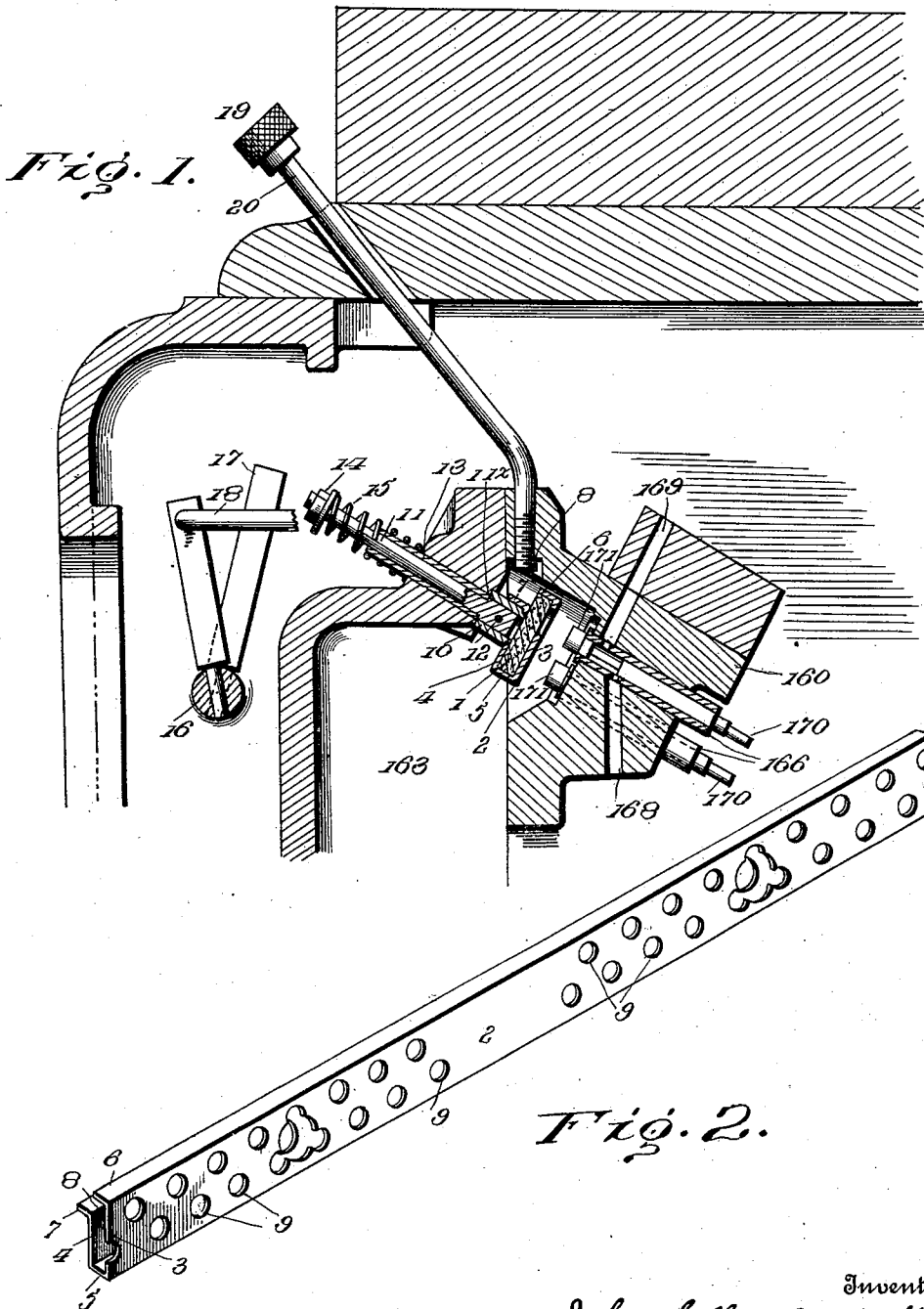


J. S. BANCROFT & M. C. INDAHL.
 RECORD STRIP COMPOSING MACHINE.
 APPLICATION FILED OCT. 21, 1910.

980,904.

Patented Jan. 10, 1911.



Witnesses

Thomas Durant

Inventors

*John Sellers Bancroft &
 Mauritz C. Indahl*

By

*Charles V. Church
 per J. B. Church
 their Attorneys*

UNITED STATES PATENT OFFICE.

JOHN SELLERS BANCROFT AND MAURITZ C. INDAHL, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNORS TO LANSTON MONOTYPE MACHINE COMPANY, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF VIRGINIA.

RECORD-STRIP COMPOSING-MACHINE.

980,904.

Specification of Letters Patent.

Patented Jan. 10, 1911.

Application filed October 21, 1910. Serial No. 588,331.

To all whom it may concern:

Be it known that we, JOHN SELLERS BANCROFT and MAURITZ C. INDAHL, citizens of the United States, residing at Philadelphia, Pennsylvania, have invented a certain new and useful Improvement in Record-Strip Composing-Machines; and we do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the figures and letters of reference marked thereon.

This invention relates to improvements in or upon the perforating machine of Patent No. 944,405, dated Dec. 28, 1909, and has for its principal object to provide means in the nature of an attachment, for supplying a lubricant to the series of valves located in the compression chamber and controlling the distribution of air pressure through the various conduits leading to the several perforating devices.

The construction of the machine referred to is such that access to the valves cannot readily be secured without partially dismantling the machine and thus interfering with its use for composing, and the conditions are such as to preclude the employment of ordinary lubricating means owing to their tendency to supply or deposit an excessive quantity of the lubricant which by the action of the air pressure is driven into the conduits and performing devices coupled therewith, where it interferes more or less with the performance of their assigned functions.

The invention consists in a novel form and construction of lubricating device including an absorbent pad movably supported within the compression chamber in position to be advanced into the paths of and be engaged by the ends or heads of the valves, means for supplying the lubricant to said pad from the exterior of the chamber, and means for advancing the pad into the paths of the several valves so that when the operator is advised as by the sticking of any valve that lubrication is required the pad is brought to position and the designated valve or valves advanced into contact therewith whereby a small quantity of oil is deposited upon the head or stem of said valve within the air compression chamber near the in-

take port governed by said valve so that upon a subsequent unseating of the latter the rush of air will drive the film of oil between the valve and its seat and onto the stem of said valve, all as hereinafter more fully described, the novel features being pointed out in the appended claims.

In the accompanying drawings illustrating a preferred form of embodiment of the invention—Figure 1 is a sectional view through the compression chamber and valve bar of the perforating machine with the improved lubricating device applied thereto. Fig. 2 is a front perspective of the pad holder.

Like figures of reference in the several figures indicate the same parts.

The improvements are illustrated as applied to the punching machine of Patent No. 944,405, whereof 163 is the compressed air chamber and 160 the valve bar forming part of the wall of said chamber and containing two series of bushings 166 each occupied by a valve stem 170 carrying a valve 171 seating on the inner end of bushing 166 within chamber 163. Each stem 170 is reduced near its valve, and each bushing is furnished with two ports 168 and 169, the former opening to the atmosphere and the latter communicating through a conduit with a performing member such as a piston. The valves are held to their seats by pressure maintained within chamber 163, and when unseated by pressure applied to their stems the exhaust port is closed and air is admitted around the reduced portion of the stem to the supply port 169. The reference numerals thus far mentioned correspond with those applied to like parts in the patent referred to.

The problem presented for solution is not alone the supplying of a lubricant to the valve and its stem but includes in addition the regulation of the supply and its application when and where demanded. It is obvious that any excess of oil applied to the valve will, upon the unseating of the latter, be blown through the supply port into the conduit and its accumulation therein will seriously interfere with the working of the machine; and, further, that oil applied to the stem of the valve would be prevented from reaching its seat because of the outward leakage of air around the stem between the latter and its bushing. The solu-

tion of the difficulty and remedy for the complaint (sticking of the valves) are supplied by the present invention.

A strip 1 of absorbent material such as felt or the like is inserted in a holder 2, preferably of sheet steel or other appropriate metal bent to produce front and rear plates 3, 4, and connecting bottom 5. The upper edge of the front plate is bent rearwardly as at 6 to form a retaining flange while the upper edge of the back plate is bent outwardly to form a shelf 7 leaving an opening 8 the length of the holder adjacent said shelf.

The front plate 3 of the holder is provided with a series of perforations 9 registering with valves 171, and the back plate 4 is provided with two sockets 10 for the reception of bolts 11, the entering end of the latter being slightly smaller than the bore of its socket and held therein by a cross pin 12. The two pins 12 being in axial alinement permit a limited rocking movement of the holder. Bolts 11 extend through bushings 13 in the wall of chamber 163, and upon the exterior threaded end of each bolt is mounted an adjusting nut 14 and compression spring 15, the latter interposed between a seat on chamber 163 and the adjustable nut 14 while the inner end of each bolt is provided with a flat shoulder 11* seating against the inner end of its bushing 13 and serving both as a stop and as a valve to prevent the escape of air around said bolt.

Mounted in bearings in the frame in rear of the compressed air chamber 163 is a rock shaft 16 bearing arms 17, each opposite one of the bolts 11, and an actuating member 18, the latter located or connected up so as to be within convenient control of the operator at the keyboard. Extending through the frame of the machine with its outer end engaged by a removable cap 19 is a supply conduit 20, the inner end of which terminates above and in close proximity to shelf 7, which latter, owing to the angular position of the pad holder, forms in conjunction with opening 8 a distributing trough for the pad.

In order that the lubricating pad may not be caused to interfere with the free movement of the valves under normal conditions, and to prevent the transfer or deposit of the lubricant when not required, the pad is preferably so mounted, proportioned and held by springs 15 as to lie normally just outside the range of movement of the valves, hence no transfer of oil takes place. When the operator notices a tendency on the part of one or more of the valves to stick or respond sluggishly, he pulls upon actuating member 18 thereby advancing the pad into contact with the valves. While the quantity of oil deposited upon the valve through con-

tact with the pad will vary somewhat with the degree of saturation of the pad, it will in any case be small in quantity at a single contact and may be increased by repeated contacts. When the valve is unseated the rush of air incident thereto will cause a portion of the film of oil thus deposited to creep and be distributed over the seating surface and stem of the valve, but the limited supply furnished coupled with the leakage around the stem will preclude the entrance of any appreciable amount into the distributing conduit.

As will be apparent lubrication of the valve can be effected in either of two ways and without dismantling the machine or otherwise interfering with its use; thus the pad can be advanced into contact with all the valves while the latter occupy their retracted or closed position, thereby applying a film of oil to each valve; or, if desired, to individualize the operation the pad may be advanced part way and the valve to be oiled actuated one or more times to bring it into contact with the former. The movable pad may also be utilized as a retractor to return any valve to its seat. It sometimes occurs in practice that a valve will become stuck when in its advanced or open position so that pressure will be maintained upon the performing member after the period when under normal conditions it should have been cut off by the seating of the valve, thereby for the time being putting the machine out of commission and requiring more or less dismantling to be done before access is gained to the refractory member. In such an event it is only necessary to advance the pad and employ it as a pusher for seating the reluctant member.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent, is:—

1. A composing machine such as described provided with a compressed air chamber and a plurality of valves located therein, and in combination therewith a lubricating pad located within said chamber and means for advancing the pad into contact with the valves.

2. In a composing machine the combination with the compressed air chamber and inwardly opening valves, a movable lubricating pad located within said chamber, means for normally holding said pad away from the paths of the valves, and means exterior to the chamber for shifting the pad into the paths of said valves to contact therewith.

3. In a composing machine such as described and in combination with its compressed air chamber and controlling valves, the latter located and opening within said chamber and each controlling an eduction port thereof, a movable member located

within and actuated from without said chamber for engaging and seating any valve which becomes stuck in open position.

4. In a composing machine provided with
5 a series of control valves located within a
compressed air chamber, and opening there-
in against the pressure of the contained air,
and in combination therewith a pad of ab-
sorbent material arranged opposite the valve
10 and supported upon rods extending through
openings in the wall of said chamber, means
for retracting said pad and retaining it
outside of the path traversed by the valves
within the chamber, and actuating devices
15 exterior to said chamber for engaging the
supporting rods to advance the pad against
the surfaces of the valves and deposit a film
of oil thereon, which film is distributed over
the valve by the flow of air incident to the
20 opening of the valve.

5. In a composing machine provided with
a compressed air chamber and a series of
control valves located and opening therein
and in combination therewith a lubricating
25 pad located and movable within said cham-
ber to engage said valves the same compris-
ing a strip of absorbent material, an in-
closing casing or holder therefor, pro-
vided with front, rear and bottom sections
30 whereof the front section or that facing
the valves is furnished with a series of per-

forations or openings registering with the
valves and the rear section is provided with
an outwardly projecting oil receiving and
distributing flange at its upper edge, sup- 35
porting bolts extending through the walls
of said chamber and attached at their inner
ends to said pad holder, means engaging
said rods to retract said holder, and means
engaging said rods outside the chamber for 40
advancing the holder and contained pad into
contact with the valves.

6. A valve lubricating attachment for in-
sertion within the compressed air chamber
of a composing machine such as described, 45
the same including a holder formed from a
sheet of metal bent upon itself to form front
and rear plates, and a connecting bottom
plate, with the upper edge of the rear plate
flanged outwardly and the front plate per- 50
forated for the passage of the valves, sup-
porting bolts secured to the rear plate, and
a strip of absorbent material located within
the holder and exposed to contact with the
valves through said opening in the front 55
plate.

JOHN SELLERS BANCROFT.
MAURITZ C. INDAHL.

Witnesses:

MORTIMER A. JONES,
JOSEPH B. CHURCH.