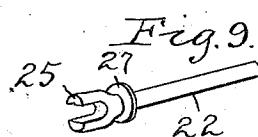
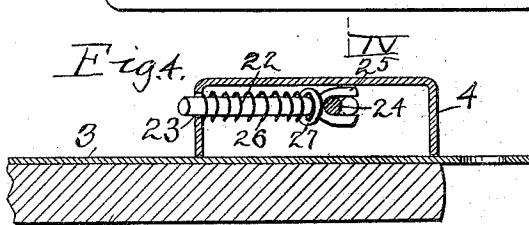
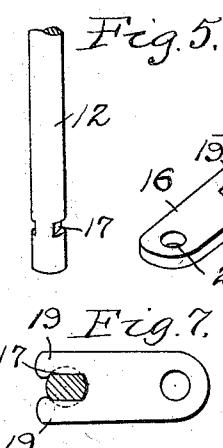
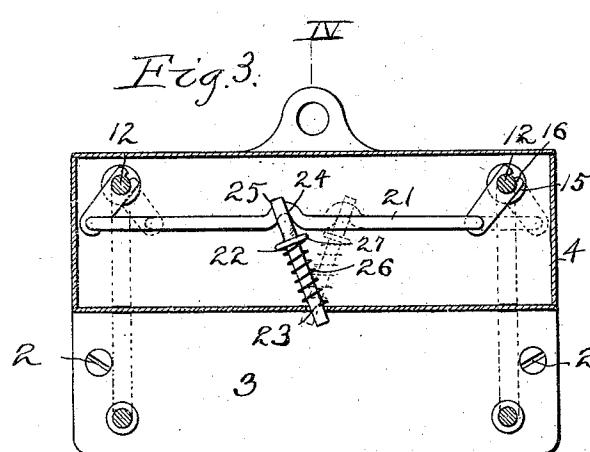
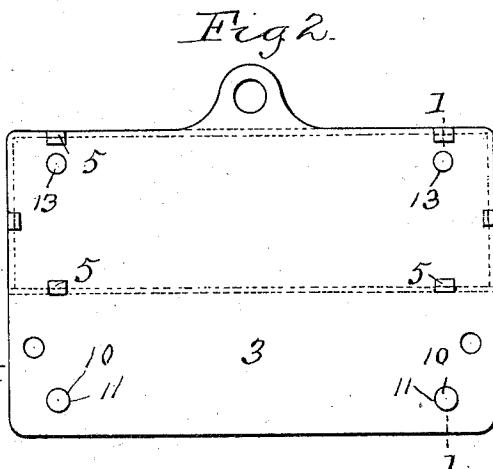
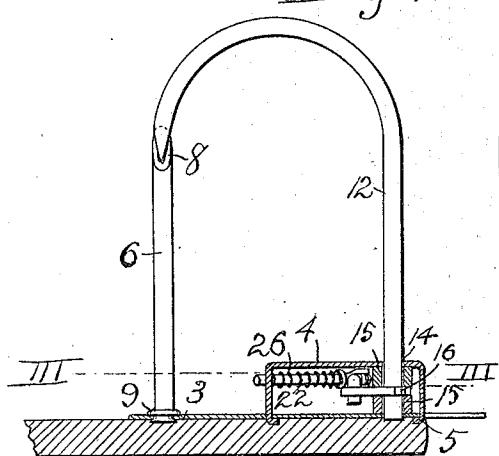


(No Model.)

W. O. GOTTWALS & F. L. ELLIS.
LETTER OR BILL FILE.

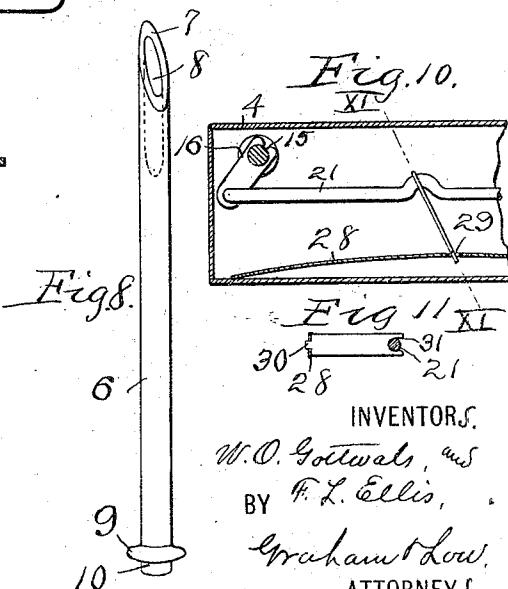
No. 554,261.

Patented Feb. 11, 1896.



WITNESSES:

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UNITED STATES PATENT OFFICE.

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LETTER OR BILL FILE.

SPECIFICATION forming part of Letters Patent No. 554,261, dated February 11, 1896.

Application filed March 14, 1895. Serial No. 541,688. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM O. GOTTWALS, a subject of the Queen of Great Britain, and a resident of Ottawa, Carleton county, Province of Ontario, Dominion of Canada, and FREDERICK L. ELLIS, a citizen of the United States, and a resident of Milldale, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Letter or Bill Files, of which the following is a specification.

Our invention relates to that class of bill-files or paper or document holders which comprises a file board or base and arches secured thereon and adapted to hold papers or analogous articles by passing through perforations therein, said arches being composed of stationary arch members and movable arch members, by the separation of which parts the papers are permitted to be impaled or placed upon them.

It is the object of the invention to simplify the construction of such a file and attain great economy in its manufacture, both by reducing the number of parts of which it is composed and by so shaping them that they may be manufactured with few operations and readily assembled.

The invention relates more particularly to the means by which the movable arch members are permitted to oscillate, are kept parallel with each other during such movement, and may be held in either their open or their closed position.

The invention further consists in the parts and combinations thereof hereinafter set forth and claimed.

In order to make our invention more clearly understood we have shown in the accompanying drawings means for carrying it into practical effect, without limiting our improvements in their useful applications to the particular construction which, for the sake of illustration, we have delineated.

In said drawings, Figure 1 is a longitudinal sectional view on line I I, Fig. 2, of a portion of a bill-file embodying our invention. Fig. 2 is a rear view of the same, the file board or base being removed. Fig. 3 is a sectional view on line III III, Fig. 1. Fig. 4 is a sec-

tional view on line IV IV, Fig. 3. Fig. 5 is a perspective view of the lower portion of one of the movable arch members or transfer-wires. Fig. 6 is a perspective view of the operating or controlling crank-arm for the same detached. Fig. 7 is a horizontal sectional view of said wire, showing the crank-arm in plan. Fig. 8 is a perspective view of one of the stationary arch members or receiving-wires. Fig. 9 is a perspective view of the pin forming a portion of the controlling mechanism of the transfer-wires. Fig. 10 is a sectional view taken on a plane similar to Fig. 3, and showing another form of such controlling mechanism. Fig. 11 is a sectional view on line XI XI, Fig. 10.

Referring to the drawings, 1 indicates a file board or base to which is adapted to be secured by screws 2 or otherwise a metallic plate 3, preferably of iron or steel, but which may be of any suitable material, and which serves for the attachment and support of the paper-holding means and their controlling mechanism, the latter being preferably inclosed within a metallic box or case 4 secured to the plate 3 in any preferred manner, as by malleable flanges or lugs 5 engaging perforations or notches in the plate.

The stationary or receiving wires are indicated at 6, each consisting of a metallic rod or wire beveled at the side of its upper end, as indicated at 7, to form a point and having drilled in said upper end a longitudinal socket 8. Formed integrally with the lower end of the wire 6 is a peripheral flange 9, forming a shoulder adapted to rest upon the top surface of the plate 3. Said flange is situated a short distance above the lower end of the wire, leaving a cylindrical neck 10, adapted to be inserted through a perforation 11 in the plate 3 and to be upset or riveted upon the lower surface of the latter, as shown in Fig. 1. We thus form a stationary arch member or receiving-wire in a very simple manner, which is adapted to be very securely held upon the base-plate without liability of becoming bent laterally out of its proper relation to the movable arch member, its stability being greatly enhanced by the flange 9 above described. It is, moreover, adapted

at its upper end to perfectly co-operate by lateral engagement with the downwardly-extended and pointed ends of the movable arch member.

5 The movable arch members or transfer-wires are shown at 12, their upper ends being curved and pointed and their lower ends held in suitable bearings, in which they may oscillate relative to the receiving-wires 6. We 10 conveniently form such bearings by perforations 13 in the plate 3 and similar perforations 14 in the top plate of the casing 4. The transfer-wire is held in place in these bearings and prevented from vertical movement 15 by collars or washers 15, situated above and below a crank-arm 16, fixed on the wire and confined between said arm, the casing 4 and the bottom plate 3. For the rigid attachment 20 of the crank-arm to the transfer-wire the latter is formed with one or more lateral recesses or notches 17, forming flat faces, and the crank-arm is provided with a longitudinal slot 18 of such width as to neatly receive the notched or recessed portion of the wire 12. 25 When these two parts are thus assembled, the ends 19 of the crank-arm situated at the opposite sides of the slot 18 are bent together or toward each other, as shown in Fig. 7, thus producing with little labor a union between 30 the wire and crank-arm which is perfectly rigid and of such nature as to prevent any turning of the arm upon the wire.

The crank-arms 16, which constitute a part of the mechanism for operating the transfer-wires, are provided with apertures or bearings 35 engaged by a connecting-rod 21, the relative arrangement of the parts being such that the arches of the transfer-wire are parallel and are so maintained by the rod 21 during 40 their oscillation from or toward the receiving-wire 6 as the file is opened or closed. We are thus enabled to oscillate the transfer-wires while containing papers upon their arched portions, and may apply papers to 45 the transfer-wires instead of to the ordinary receiving-wires, while the file is open, which could not be done if the arches were arranged to oscillate in opposite directions.

Various forms of controlling means may be 50 applied to the arms 16 and rod 21, or to one of them, all of said parts constituting a single connected mechanism; but we prefer that herein illustrated, consisting of a thrust device, such as a thrust-pin, operating upon the 55 connecting-rod 21 and spring-actuated. Such a pin is indicated at 22, having its outer end mounted in a socket, recess, or aperture 23 in the casing 4 or other fixed part and having its inner end engaging the connecting-rod. For 60 simplicity and security such engagement is effected by a bend or recess 24 formed in the rod 21, in which rests the notched or bifurcated end 25 of the thrust-pin. The controlling means is thus adapted to be moved by the 65 connecting-rod from one position to another, (see the dotted lines in Fig. 3,) so that it may

exert its thrust or force in either of two directions, enabling the same controlling means to be utilized for holding the movable arch members in either their closed or open position. That position of the controlling device in which it is forced back to the greatest distance by the movable arch members is in a line which may be termed its line of greatest resistance and is intermediate between the two other positions which it assumes at the extreme open or closed positions of said arch members.

A convenient mode of applying the spring to the thrust-pin is indicated in Fig. 3, in which a helical spring 26 surrounds the body of the pin and is confined between the front plate of the casing 4 and a flange 27 on the pin. The thrust-pin with its bifurcated end and flange is preferably formed in a single piece of wire, as indicated in Fig. 9.

Another simple means of applying a spring to the thrust device is indicated in Fig. 10, in which a leaf-spring 28 of arched form bears at its ends upon the front plate of the casing 90 and engages the thrust device at the outer end of the latter. This engagement is effected by forming the spring with an aperture 29 in which is received the outer end of the thrust device. In this construction said device may be made of sheet metal, formed at its outer end with a projection 30 for entering the aperture 29 and at its inner end with a notch 31 for receiving the connecting-rod.

We claim—

1. In a letter or bill file provided with paper-holding arches the combination with the movable arch members rotary upon vertical axes of connections whereby they are maintained in parallelism during their oscillation, and a spring-actuated controlling device which is connected with said movable arch members and is by their movement shifted from one side to the other of its line of greatest resistance, for holding said members in either their open or closed position, substantially as set forth.

2. The combination in a file of movable arch members rotary on vertical axes, crank-arms on the same, extending in the same direction with each other, a connecting rod or link between said arms and a spring-actuated controlling device which is connected with said arches and is by their movement shifted from one side to the other of its line of greatest resistance, for holding said members in either their open or closed position, substantially as set forth.

3. The combination of the movable arch members, crank-arms and a rod connecting said members, and a spring-actuated thrust-pin connected with said rod, substantially as set forth.

4. The combination of the movable arch members, cranks and a rod connecting the same, said rod being formed with a bend or recess, and a spring-actuated thrust device en-

gaging said recess and adapted to be changed in direction by the movement of the rod, substantially as set forth.

5. The combination with the movable arch members, their connecting-rod, and the spring, of the thrust-pin formed with a collar and bifurcated end, substantially as set forth.

In witness whereof we have hereunto set our hands in the presence of two witnesses.

WILLIAM O. GOTTWALS.

FREDERICK L. ELLIS.

Witnesses:

F. M. ELLIS,

E. S. TODD.