(No Model.) 3 Sheets—Sheet 1.

A. N. BUCHANAN.

FLY DELIVERY FOR BRONZING OR OTHER MACHINES.

No. 447,101. Patented Feb. 24, 1891.

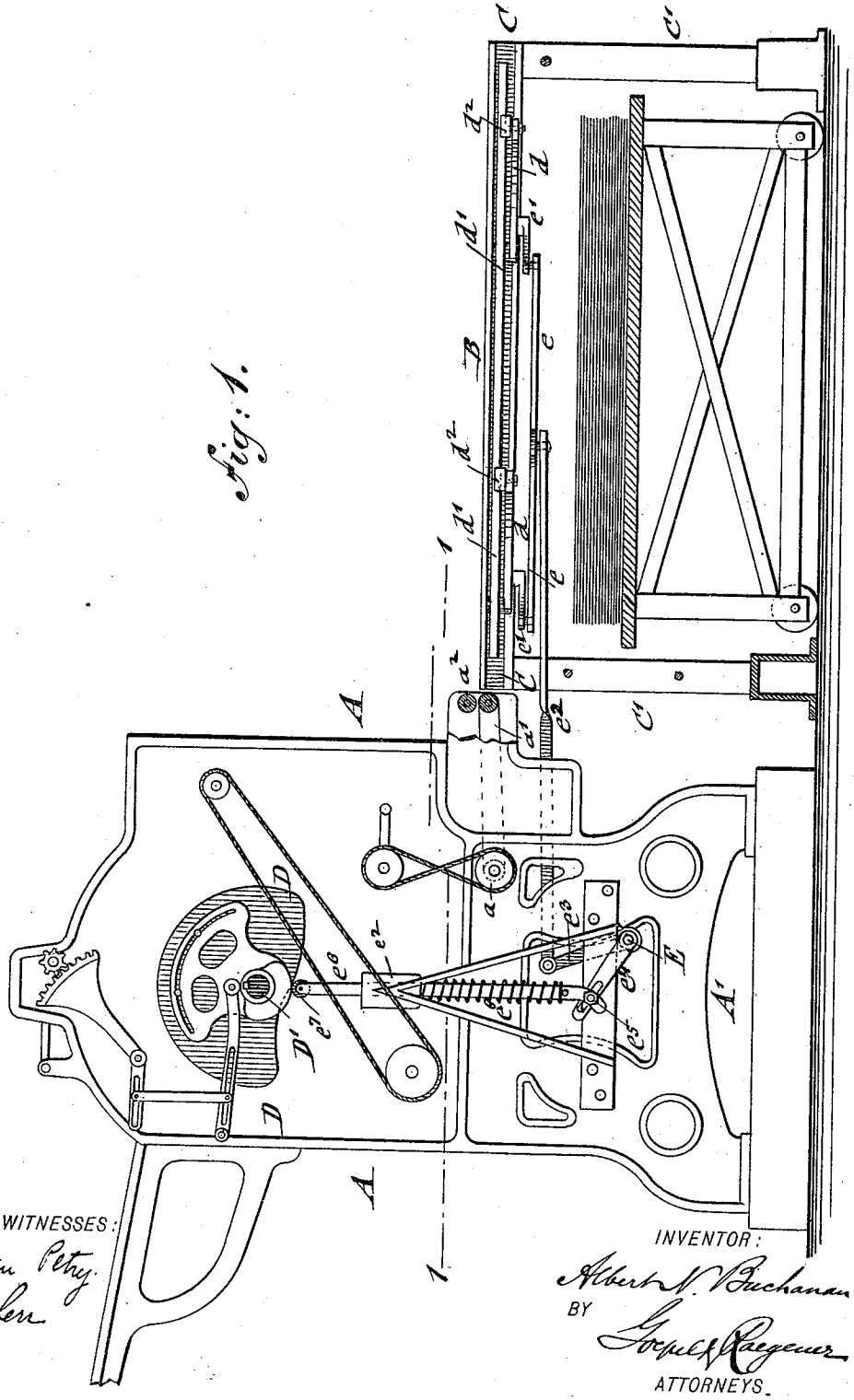


Fig. 1.

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 3 Sheets—Sheet 2.

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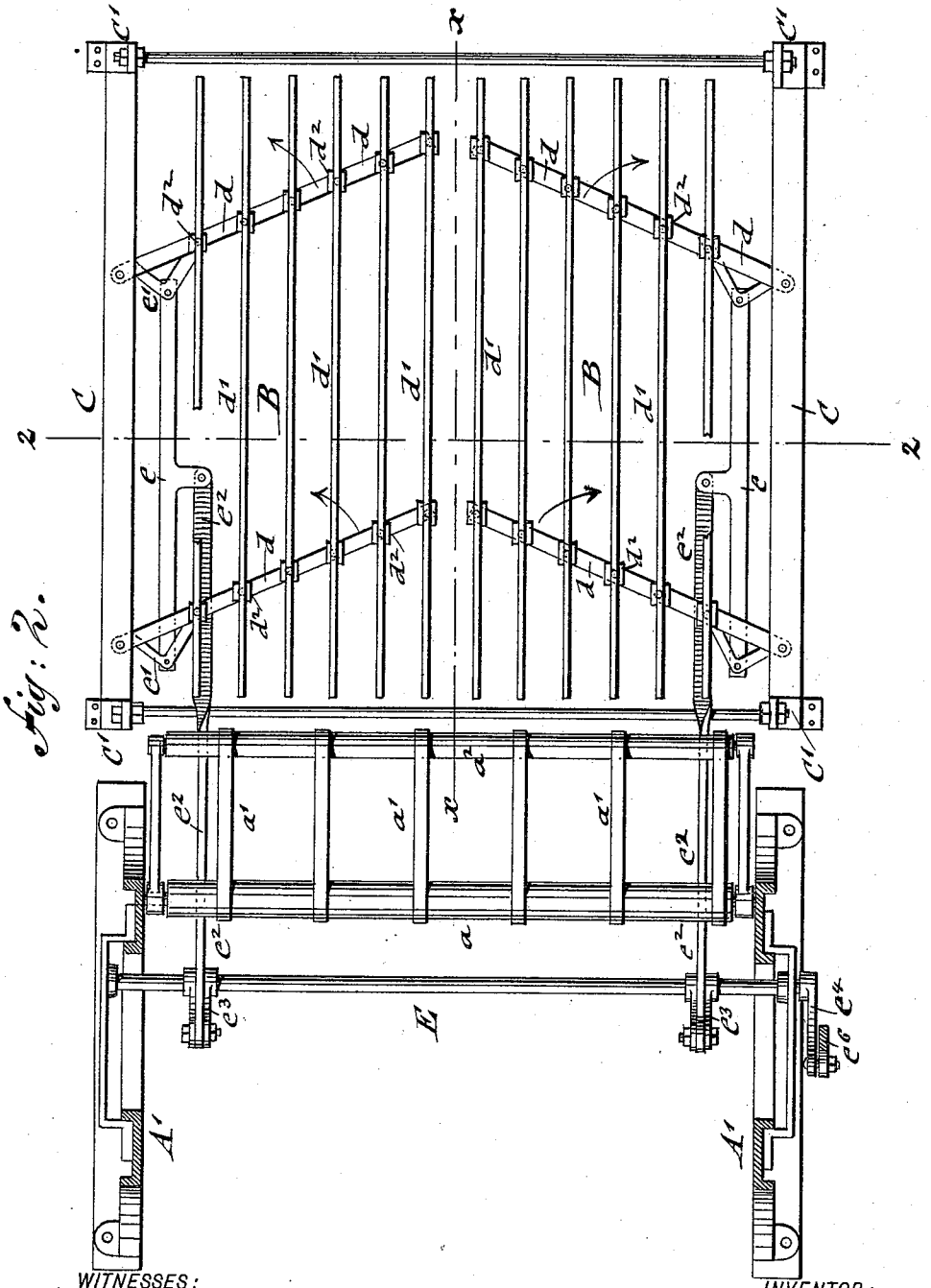


Fig. 2.

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(No Model.) 3 Sheets—Sheet 3.

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Fig. 3.

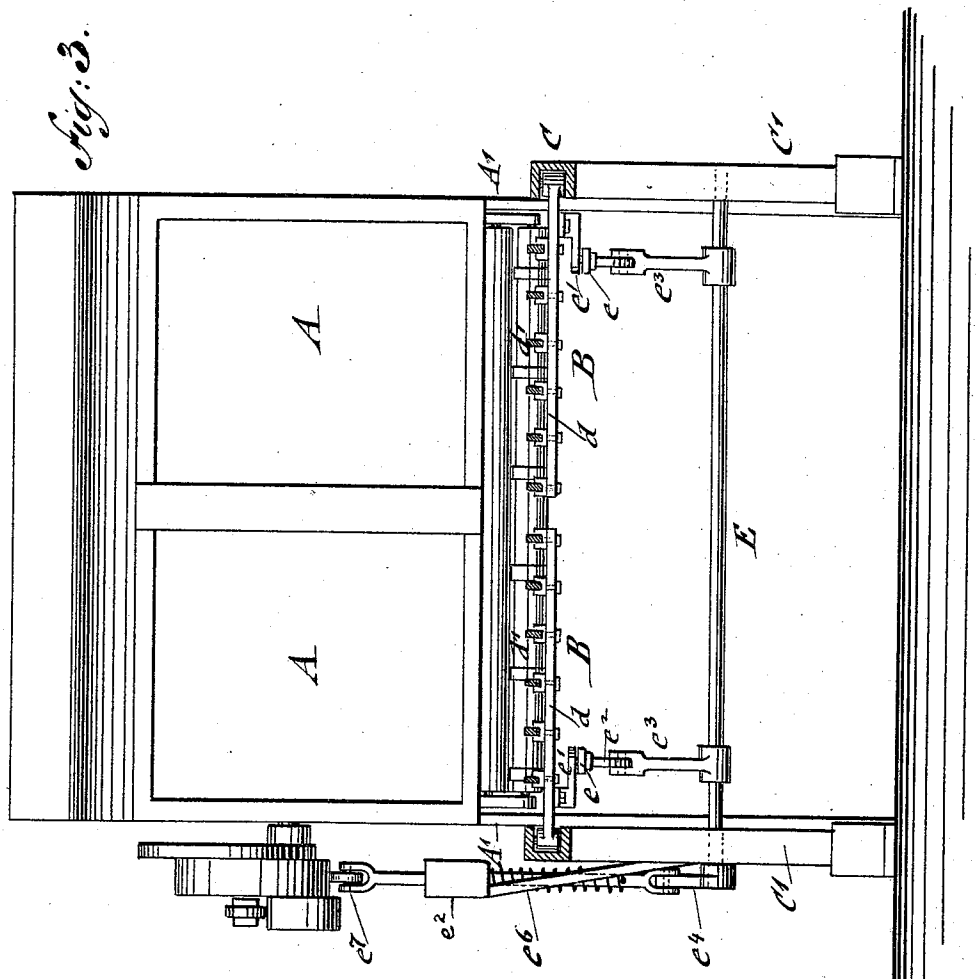
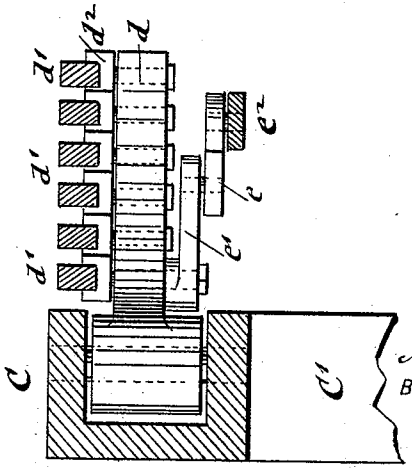


Fig. 4.



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UNITED STATES PATENT OFFICE.

ALBERT N. BUCHANAN, OF BROOKLYN, NEW YORK.

FLY-DELIVERY FOR BRONZING OR OTHER MACHINES.

SPECIFICATION forming part of Letters Patent No. 447,101, dated February 24, 1891.

Application filed July 5, 1890. Serial No. 357,755. (No model.)

To all whom it may concern:

Be it known that I, ALBERT N. BUCHANAN, of Brooklyn, in the county of Kings and State of New York, a citizen of the United States, have invented certain new and useful Improvements in Fly-Deliveries for Bronzing or other Machines, of which the following is a specification.

For applying bronze-powders to lithographs, the sheets are sized and then passed through a bronzing-machine and covered on the sized portion with a layer of bronze-powder. From the bronzing-machine the sheets are delivered to a truck, which is located at the delivery end of the bronzing-machine. As the sheets are piled upon the truck the uppermost sheet of the pile is frequently injured at the parts just bronzed by the sheet next delivered from the bronzing-machine, which exerts by its edges a scraping action on the bronzed surface of the top sheet. This is objectionable, as thereby the uniform appearance and quality of the work are considerably impaired.

The object of this invention is to furnish an improved fly-delivery for bronzing-machines by which the sheets are piled one on top of the other without impairing in the least the bronzed surface; and the invention consists of a fly-delivery for bronzing-machines which is composed of two laterally-folding sections, each section being formed of horizontally-swinging arms and of longitudinal strips, which are pivoted to said arms so as to fold up in opposite directions along the side rails of the supporting-frame and deposit thereby the sheet delivered by the bronzing-machine on the pile. The fly-sections are operated by means of a cam-piece on the shaft of the bronzing-machine, and by intermediate lever mechanism interposed between the cam and the fly-sections, which will be fully described hereinafter, and finally pointed out in the claims.

In the accompanying drawings, Figure 1 represents a side elevation of a bronzing-machine with my improved fly-delivery partly in section in line $x\,x$, Fig. 2. Fig. 2 is a horizontal section of the bronzing-machine on the line 1 1, Fig. 1, showing a plan view of the fly-delivery. Fig. 3 is a vertical transverse section of the delivery on the line 2 2, Fig. 2, showing the fly-sections in position for receiving a sheet from the bronzing-machine; and Fig. 4 is a detail vertical transverse section of one of the fly-sections drawn on a larger scale and folded up at one side of the supporting-frame so as to permit the dropping of the sheet onto the pile.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents a bronzing-machine of any approved construction, such as are used by lithographers for transferring the bronze-powder onto the sized portions of the sheet. The bronzing-machine is provided at the delivery end with tapes a' and rollers $a\,a^2$, between which the sheet just bronzed is fed forward and delivered onto a fly, which is arranged on a level with the lower delivery-roller and formed of two fly-sections B B, which are arranged in horizontal position above a truck or other movable support on which the sheets are piled as they are successively delivered by the bronzing-machine. Each horizontal fly-section is formed of two laterally-swinging arms $d\,d$, which are pivoted to grooved longitudinal side rails C, which are supported by upright standards C'. To the pivoted arms d are applied a number of parallel longitudinal rods or strips $d'\,d'$, by means of keepers d^2, which latter are pivoted to the arms d, whereby said longitudinal rods can be readily folded up parallel with each other and alongside of the side rails C when the arms are swung over toward the latter into the position shown in Fig. 4. The swinging arms $d\,d$ of each fly-section B are connected by a longitudinal rod e, which is pivoted to angle-irons e', attached to the arms $d\,d$. The connecting-rod e is again pivoted at its center to a second connecting-rod e^2, that is applied at its opposite end to a crank-arm e^3, which is keyed to a rock-shaft E, that turns in bearings at the lower part of the supporting side standards A' of the bronzing-machine. The rock-shaft E is extended at one end through the side standard A' of the bronzing-machine A and supplied with a slotted arm e^4, which is connected by an adjustable pin e^5 with the lower end of a spring-actuated rod e^6, that is guided in a keeper e^2, attached to the side standard of the bronzing-machine. To the upper end of the vertically-guided rod e^6 is applied an anti-friction roller

e^7, which is kept by the spiral cushioning-spring of the rod e^6 in contact with the circumference of a cam D, that is keyed to the cylinder-shaft D′ of the bronzing-machine, as shown in Fig. 1. The cam D is so shaped that at each full rotation of the same the fly-sections are operated. This is accomplished at the moment when the sheet is delivered from the bronzing-machine onto the fly-sections, which are then folded up alongside the rails C by the action of the cam and intermediate connecting mechanism described.

When the fly-sections B are moved sidewise, the longitudinal rods of the same are moved parallel with each other and the supporting-rails C into the position shown in Fig. 4, in which position the sheet is dropped between the fly-sections onto a truck supported below the same, the sheets being deposited in a pile, one on top of the other, without injury to the bronzed surface of the sheets. As soon as the sheet is dropped on the pile the fly-sections B are returned by the action of the cam D into their normal position, so as to close up the space above the pile, as shown in Fig. 2, in which position they are ready to receive the next sheet delivered by the delivery-rollers of the bronzing-machine. The cam D is so shaped that the required movements of the fly-sections are produced at the proper time. When a pile of sheets is deposited on the truck, the same is removed and another truck placed in position below the fly, so as to receive the next pile of sheets. The fly-delivery described can also be used in connection with a printing-press in all those cases in which it is desired to obviate any injury or offset caused by the next following sheet to the top sheet on the pile.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A fly-delivery formed of two horizontally-swinging and laterally-folding fly-sections, substantially as set forth.

2. The combination of a fly-delivery formed of two horizontally-swinging and folding fly-sections, a cam on the cylinder-shaft of the bronzing or other machine, and intermediate mechanism, substantially as described, between said cam and the fly-sections for imparting horizontally-reciprocating motion to the fly-sections, so that they drop the sheets between the folded-up fly-sections, substantially as set forth.

3. The combination of a fly-delivery formed of two horizontal fly-sections pivoted to the fixed longitudinal side rails, said fly-sections being formed of swinging arms and longitudinal rods applied by pivoted keepers to the arms, an actuating-cam on the shaft of the main cylinder of a bronzing or other machine, and intermediate lever mechanism for transmitting the motion of the cam to the fly-section, substantially as set forth.

4. The combination, with horizontal fly-sections, each formed of swinging arms and parallel longitudinal rods applied by pivoted keepers to said arms, of pivot-rods connecting the swinging arms of the fly-sections, a rock-shaft, rods connecting said pivot-rods with cranks on said rock-shaft, a slotted arm on said rock-shaft, a spring-actuated and vertically-guided rod connected to said arm, and a cam on the shaft of the main cylinder of a bronzing or other machine, said cam engaging the vertically-guided rod and operating thereby the fly-sections, substantially as set forth.

5. A fly-delivery composed of two folding fly-sections pivoted to fixed side rails and formed of pivoted arms and longitudinal parallel rods applied by pivoted keepers to said arms, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

ALBERT N. BUCHANAN.

Witnesses:
PAUL GOEPEL,
W. REIMHERR.