

(No Model.)

3 Sheets—Sheet 2.

J. H. GOODBAR.
FEEDING AND PRINTING MACHINE.

No. 552,122.

Patented Dec. 31, 1895.

Fig. 5.

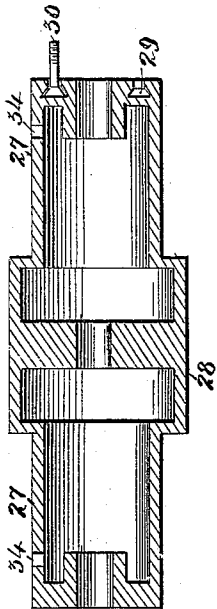


Fig. 6.

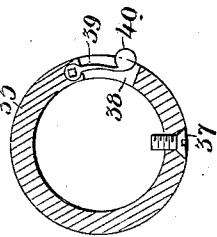
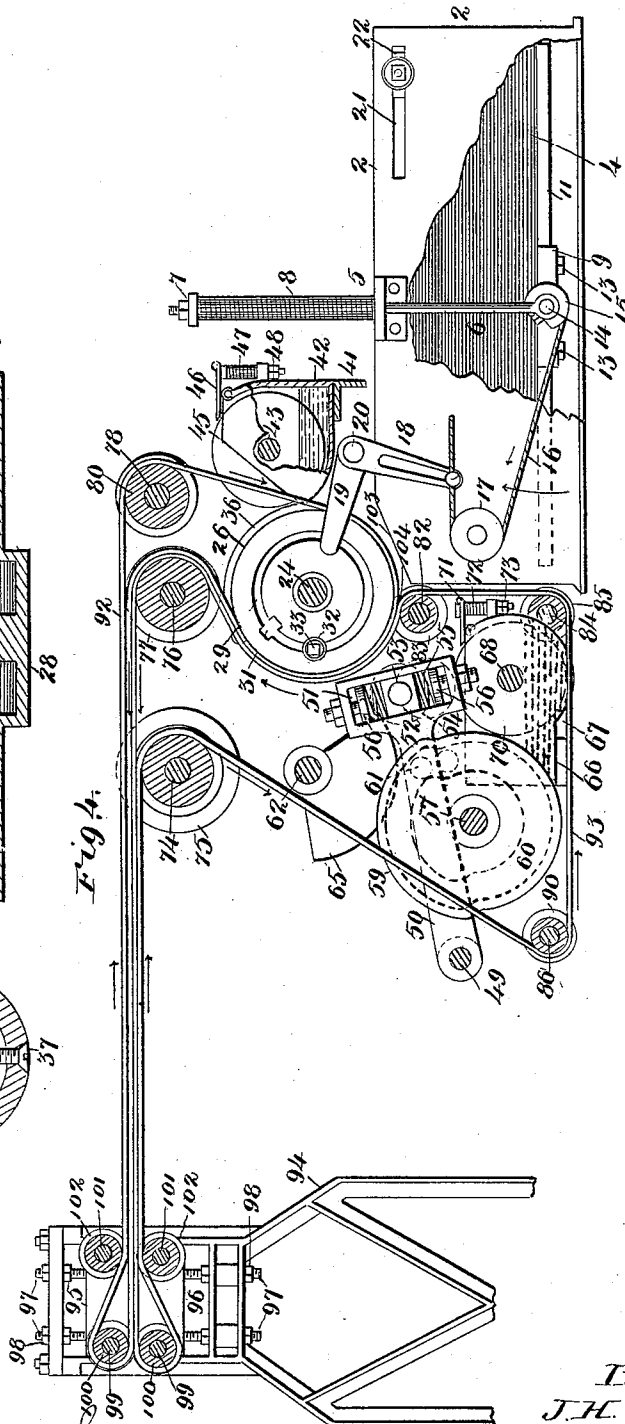


Fig. 4.



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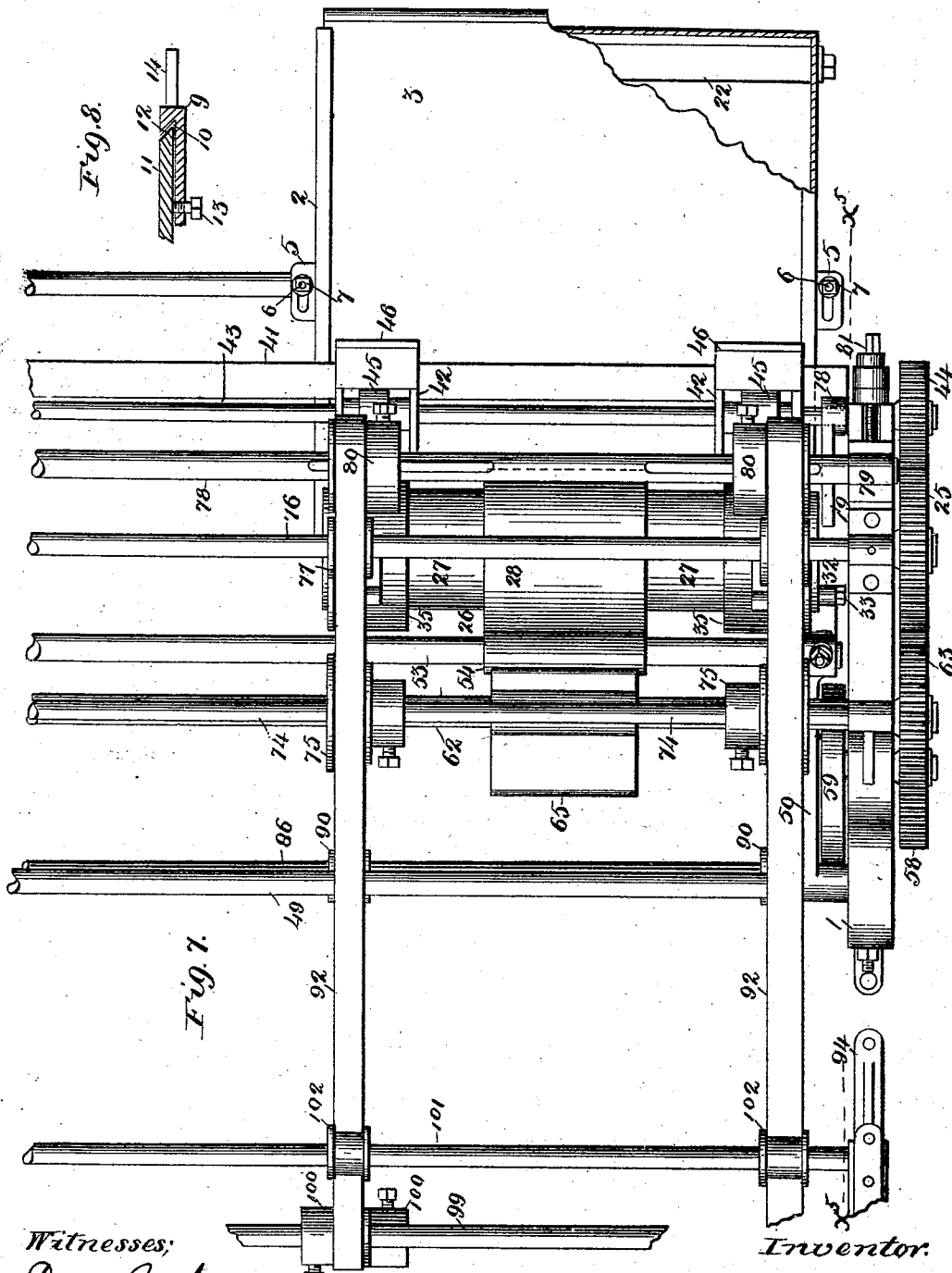
(No Model.)

3 Sheets—Sheet 3.

J. H. GOODBAR.
FEEDING AND PRINTING MACHINE.

No. 552,122.

Patented Dec. 31, 1895.



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UNITED STATES PATENT OFFICE.

JAMES H. GOODBAR, OF ST. LOUIS, MISSOURI.

FEEDING AND PRINTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 552,122, dated December 31, 1895.

Application filed November 13, 1893. Serial No. 490,821. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. GOODBAR, of the city of St. Louis, State of Missouri, have invented certain new and useful Improvements in Machines for Printing and Feeding Paper, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention has relation to improvements in machines for printing and feeding paper; and it consists in the novel arrangement and combination of parts more fully set forth in the specification and pointed out in the claims.

In the drawings, Figure 1 is a side elevation of my complete invention for printing and feeding cut or sheet paper. Fig. 2 is a plan view of the roller upon which the adjustable take-up fingers are secured. Fig. 3 is an end view of the same. Fig. 4 is a vertical longitudinal section taken on lines x^x of Fig. 7, the belt-rollers being shown in section for the better illustration of the path of the belts, the end walls of the ink and paste boxes being shown as broken away. Fig. 5 is a longitudinal section of the construction of the roller shown in Fig. 2. Fig. 6 is a cross-section of one of the rings carried by the said roller which carries the take-up fingers. Fig. 7 is a plan view of the machine, and Fig. 8 is a detail view in section of the movable bottom and support upon which the sheet paper is placed.

The object of the present invention is to construct a device for printing and delivering sheets of paper of determinate dimensions for any purpose to which such printed sheets may be applied, but particularly is the present device intended for delivering printed sheets to a machine for wrapping oranges, the latter forming the subject-matter of a separate application, filed November 6, 1893, Serial No. 490,097.

The purpose of the present device is to print a series of cut sheets introduced into the machine and convey them to the point of delivery.

Generally stated, it consists of a suitable receptacle or box within which the cut sheets are placed on a tilting board or false bottom, the said board tilting so as to bring one end of the top sheet of the series in contact with one or more take-up devices or fingers, the latter

interposing the sheets between carrier-belts, the paper so held between the belts having the necessary imprint placed thereon at a certain point in the path or travel of the belts. As the layer of sheets on the tilting bottom decreases in thickness, the said bottom correspondingly moves toward that end of the box at which the take-up devices or fingers are located, so that the top sheet shall always be within easy reach of said devices.

The machine is adapted to print and deliver sheets of various sizes, the sizes supplied at any one time depending upon the size of the oranges to be wrapped, the distance separating the take-up devices being varied according to the width and length of the sheet, so that the latter can always be picked up at or near the opposite edges of the same, and fed so as to bring the imprint of the printing device as near the center of the sheet as possible.

The details of the apparatus can be described as follows:

Referring to the drawings, 1 represents a frame to which the several parts of my invention are secured, said frame being suitably ornamented and constructed to accommodate the several parts, the machine in the present case being a duplicate one, two sheets of paper being fed and printed simultaneously by duplicate parts of the machine, as is obvious from Fig. 7, where the operative parts of only one side of the duplicate machine are illustrated. Attached to the frame 1 and projecting therefrom is a box or receptacle 2 having a cover 3, within which a suitable amount of sheet or cut paper 4 is placed and fed from said receptacle in a manner hereinafter to be described. To the opposite sides of the receptacle 2 and adjacent to the upper edges thereof are secured plates 5, within which move two vertically-operating rods 6, the same extending above and below said plates. Encircling the rods 6 above said plates and interposed between the latter and suitable nuts 7 adjustably secured to the upper ends of said rods are coiled adjusting-springs 8 which elevate the bottom upon which the paper rests as the same is fed from the receptacle.

9 represents a support, the construction of which is best shown in Figs. 4 and 8, and is provided with a V-shaped or dovetailed groove 10, which receives loosely the false

The bearings 52 are made yielding by springs 55, said springs being interposed between said bearings and adjustable disks 56.

Journalled in the side of the frame 1 is a short shaft 57 which projects on either side of the same and to the outer end of which is fixed a gear-wheel 58, and to the inner end of the same is fixed an interiorly-cammed disk 59, the groove 60 forming the cam receiving the pin 61 secured to said arm 50, whereby the composition roller 54 is given a motion to and from the inking-roller and the form for printing.

62 represents a shaft which is also journalled in the frame 1 and approximately on a line with the shaft 24, one end of which shaft projects a suitable distance on one side of the frame and to which is keyed a gear-wheel 63 meshing with both the gear-wheels 25 and 58. Fixed to the shaft 62 is a form 65 for receiving ordinary type, and which when the said shaft is rotated or turned comes in contact with the enlarged portion 28 of the cylinder 26, and thus when the paper is fed between said form and cylinder an imprint is placed thereon.

Located immediately below the composition roller 54 and secured to the frame 1 in any mechanical manner is a box 66 within which printers' ink or other coloring material 67 is placed, as best shown in Fig. 4, and passing loosely through the sides of said box and journalled in the frame 1 is a shaft 68, to one end of which is fixed the gear-wheel 69 which meshes with the gear-wheel 58 for imparting motion to said shaft. Secured to the shaft 68 within the box 66 is a roller 70, which is rotated by the shaft and is immersed in the ink located within the box and is designed to convey ink to the composition roller 54 when the latter is brought in contact with the same.

71 represents a scraping-plate which is hinged to the upper edge of the box 66, one end of which is made to bear upon the roller 70 to scrape off any surplus of ink from said roller. The pressure of the plate 71 upon the roller 70 is adjusted by a spring 72 and nuts 73, as best shown in Fig. 4.

74 represents a shaft which is journalled in the upper portion of the frame 1 and to which are adjustably secured two rollers 75, and immediately to the right of said shaft and journalled in a like manner is a second shaft 76, to which are also adjustably secured rollers 77.

78 represents a shaft which is journalled in adjustable bearings 79, and to said shaft are fixed rollers 80, the said bearings being adjustable longitudinally to the length of the frame by screw-shafts 81 projecting beyond the frame, the screw portions of which pass through said bearings, the same being of well-known construction and being best illustrated in Fig. 7.

Journalled in the frame 1 and immediately below the shaft 24 is a shaft 82, to which are

fixed rollers 83, and located immediately below said shaft and also journalled in a like manner is a shaft 84, to which are fixed rollers 85.

86 represents another shaft which is located within independent bearings 87, which bearings slide within slots 88 formed in the frame 1 and are made adjustable by the screws 89 turning within the frame, the ends of which screws are attached to said bearings, and secured to said shaft 86 are rollers 90.

Over the rollers 75 77 80 83 85 90 and rings 35 the endless belts 92 and 93 pass for feeding the paper to a proper position between the same in a manner hereinafter to be described.

Located at a suitable distance to the left of the frame 1 is a standard 94 within the upper end of which are adjustably secured two bearings 95 and 96, the same being adjusted to and from each other by screws 97 and nuts 98. Journalled within said bearings are shafts 99, which are in a vertical line with one another, and fixed to the same are rollers 100, around which the belts 92 and 93 also pass. Also journalled within said bearings 95 and 96 are shafts 101, to which are fixed rollers 102, against which the endless belts 92 and 93 bear, the latter being held together or in contact with one another by said rollers 102.

In carrying out the invention there are four endless belts or bands, such as 92 and 93, employed to deliver the paper to a suitable position and to also feed the paper through the machine for printing the same before it is carried to said delivery position or point. It will be seen by referring to Fig. 4 that the endless belts 92 and 93 come together and pass over one another as they move around the rings 35, their point of contact being the one at which the paper from the box 2 is introduced.

By preference, motion is imparted to the shaft 24 from any suitable source of power, thus turning the drum 26 in the direction as shown by the arrow in Fig. 4, which in turn gives motion to the belts 92 and 93 in the same direction, and further causes the roller 32 secured to one end of said drum to be brought in contact with the free end of the crank-arm 18, tripping the same, and by the employment of the rope attached to the lower end thereof causes the false bottom 11 to be tilted in the direction as shown by the arrow in Fig. 4, and the upper sheet of paper of the pile located upon the false bottom will be elevated across the entire width of the box at the left-hand end 103 of the same in a position to be withdrawn by the elastic fingers 39 carried by the rings 35, which rings as will be remembered are secured to the drum and rotated thereby. The object of having the holes 34 arranged at an angle to the general axis of the drum 26 is that, while this arrangement enables the rings 35 to be brought toward each other for operating on narrow widths of sheets contained in the box 2, at the same time the pick-up fingers 39 are adjusted toward that edge of the sheets along which the latter are picked

up, which sheets as a rule are shorter, (the length decreasing in proportion to the width,) thus insuring that the fingers will positively come in contact with the paper at the proper moment, pick up the same, and dispose it symmetrically about the center of the form which carries the type. The simultaneous longitudinal and peripheral adjustment of the rings along the axis of the cylinder is therefore rendered necessary to feed the sheets to the printing mechanism at the proper time, when shorter sheets are used. As before stated, the gear-wheel 25 is keyed to the shaft 24 and when rotated imparts motion to the gear-wheel 44, which in turn rotates the shaft 43 and rollers 45 with which the elastic fingers 39 come in contact and are supplied with the necessary paste or mucilage during the revolution of both, and immediately after said fingers pass said rollers 45 they are brought in contact with the upper sheet of paper located within the box 2, which has been previously elevated at that end by the mechanism just described. The elastic fingers 39 when brought in contact with said top sheet take hold of the same by reason of the adhesive material clinging to them and convey it to a point 104 where the belts 92 and 93 meet in passing around the rings 35, said belts afterward serving to convey said sheet to a suitable position for its removal, the sheet being held between the belts by frictional contact. It will also be remembered that the form 65 carrying printing-type is rotated by the gear 63 which meshes with the gear 25 from which it derives its power, in order that when the paper fed between the belts passes the enlarged portion 28 of the cylinder 26 the form 65 may be brought in contact with the paper and make a suitable imprint thereon. Before the form 65 however is brought in contact with the paper the inscription thereon is brought in contact with the composition roller 54 which has been previously elevated by the arms 50 and their co-operation with the cam-disks 59, which disks are located adjacent to the arms 50 and are operated by the gear-wheel 58 which meshes with the gear-wheel 63. After the form 65 has moved out of contact with the paper the composition roller 54 is brought in contact with the inking-roller 70 for supplying ink to said composition roller by the cam-disk 59 until the form 65 is again brought in a position to be moved in contact with the composition roller, when the latter will again be elevated in a manner previously described. After the sheet has been fed from the box and an imprint formed thereon, the same is carried between the endless belts over the pulleys 77 and 75 to a suitable position between the frame 1 and standard 94, where the sheet is removed from the belts by the dropping of an orange to be wrapped or in any other manner according to the purpose which the machine subserves. Should either the belts 92 or 93 slacken during the operation of the machine,

the same may be tightened by the rollers 80 and 90, each of which is secured upon shafts journaled within adjustable bearings.

When it is desired to feed paper of various sizes through the machine, the rings 35 are adjusted upon the cylinder 26 by the openings 34 formed therein, and likewise the rollers over which the endless belts 92 and 93 pass may be adjusted longitudinally on the shafts to which they are secured, according to the width of the paper carried between them.

Having described my invention, what I claim is—

1. In a paper feeding and printing machine, a box or receptacle for sheet paper, a drum adapted to be rotated, rings adjustably secured to said drum, spring take-up devices for taking up a suitable amount of adhesive and adapted to be brought in contact with the top sheet of paper, endless belts passing over said rings and suitable rollers for feeding the paper to a point of delivery and a suitable printing device in the path of said belts, substantially as set forth.

2. In a paper feeding and printing machine, the combination of a suitable frame, a box or receptacle secured to the same, a false bottom for said box upon which the sheet paper is placed, spring adjusting devices for said bottom, a crank arm movably secured to the frame, means co-operating with one end thereof and with the false bottom for tilting the same, a cylinder also journaled in the frame, means adjustably secured to one end thereof and adapted to be brought in contact with the free end of said crank arm, rings adjustably secured to said drum and provided with suitable take-up devices, rollers also journaled in the frame, endless belts passing over said rollers and rings, a standard provided with rollers over which the belts also pass, suitable adhesive supply devices with which the take-up devices are brought in contact, and suitable printing mechanism for imprinting the paper fed between the belts, substantially as set forth.

3. In a printing and feeding machine, a suitable box or receptacle, a false bottom for the same, adjusting devices forming a support for said false bottom, additional means for adjusting the bottom longitudinally within the box, a bar adjustably secured to the box for holding the paper in position upon the bottom, a crank arm, means co-operating with one end thereof and with the bottom for tilting the latter, a cylinder journaled within said frame, a roller adjustably secured to one end thereof and co-operating with the free end of the crank arm, rings adjustably secured to said cylinder, take-up devices on said rings, rollers also journaled within the frame, endless belts passing over said rings and rollers and meeting between one of said rollers and rings, a standard, rollers adjustably secured within the same over which the belts also pass, and a suitable printing form and ink supply device, substantially as set forth.

4. A printing and feeding machine having a box or receptacle, a supporting plate 9 having a V-shaped groove formed thereon, a false bottom 11 adjustable within said groove, means carried by said plate for holding the bottom in an adjusted position, trunnions 14 formed on said plate and passing through curved slots 23 formed in the sides of said receptacle, plates 5 secured to the receptacle, rods 6 passing through said plates and embracing said trunnions, nuts secured to the upper ends of said rods, coiled springs encircling said rods and interposed between said plates and nuts, and means attached to the trunnions for tilting the bottom, substantially as set forth.

5. A printing and feeding machine having a box or receptacle 2, slots 21 formed in the opposite sides of the same, a bar 22 adjustably secured within the slots, a false bottom for said box, a spring adjusting device co-operating with said bottom, trunnions 14, a segment 15 secured to the same, a rope attached to said segment, a roller 17 over which the rope passes, a crank arm 18 one end of which is attached to said rope, and means for actuating said arm, substantially as set forth.

6. In a printing and feeding machine, a drum 26 having an enlarged portion 28 and reduced portions 27, openings 34 formed in the reduced portions arranged in a line and at an angle to the axis of the drum, rings 35 adjustable upon said reduced portions, screws 37 carried by said rings and adapted to be

received by said openings, a form adapted to be brought in contact with the enlarged portion of the drum, and spring take-up devices 39 secured to said rings, substantially as set forth.

7. In a printing and feeding machine, the combination of a suitable box or receptacle to receive sheet paper, a bottom upon which the paper is adapted to rest, take-up devices for removing successively the top sheet of paper on said bottom, a rotating cylinder supporting said take-up devices, and means for adjusting the take-up devices simultaneously in a longitudinal and peripheral direction to the axis of the cylinder, substantially as set forth.

8. In a printing and feeding machine, a suitable box or receptacle to receive sheet paper, a bottom upon which the paper is adapted to rest, suitable means for bodily elevating the bottom parallel to itself during the feeding operation, rotatable take-up devices for removing successively the top sheet of paper on said bottom, a rotating cylinder supporting said take-up devices, and means for adjusting the take-up devices simultaneously in a longitudinal and peripheral direction to the axis of the cylinder, substantially as set forth.

In testimony whereof I affix my signature in the presence of two witnesses.

JAMES H. GOODBAR.

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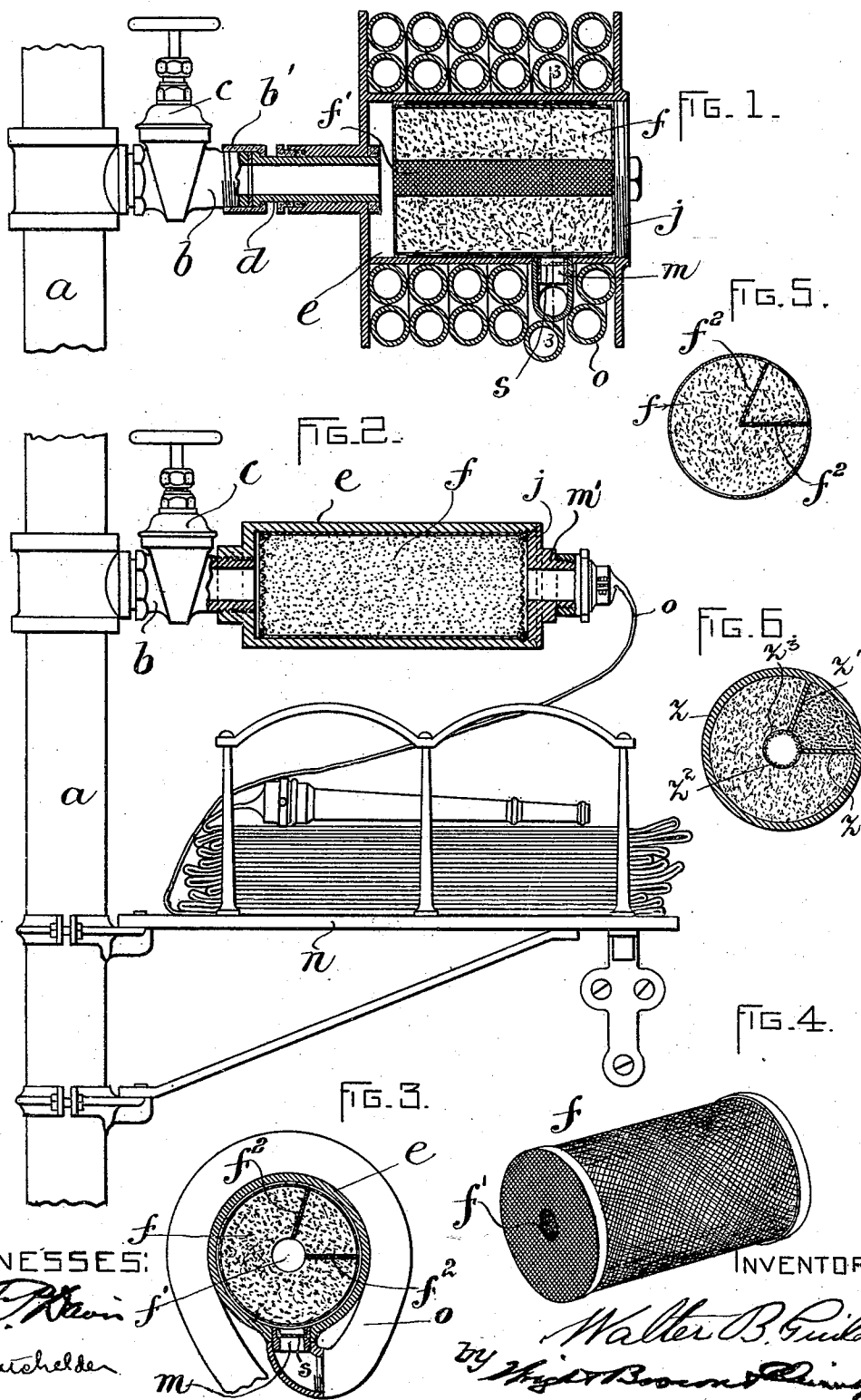
(No Model.)

W. B. GUILD.

FIRE EXTINGUISHING APPARATUS AND CARTRIDGE THEREFOR.

No. 552,123.

Patented Dec. 31, 1895.



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