2. Sheets. Sheet. 1.

W. J. Willson,

Hay Press.

No. 106,440. Patented Aug. 16. 1870.

Fig. 1.

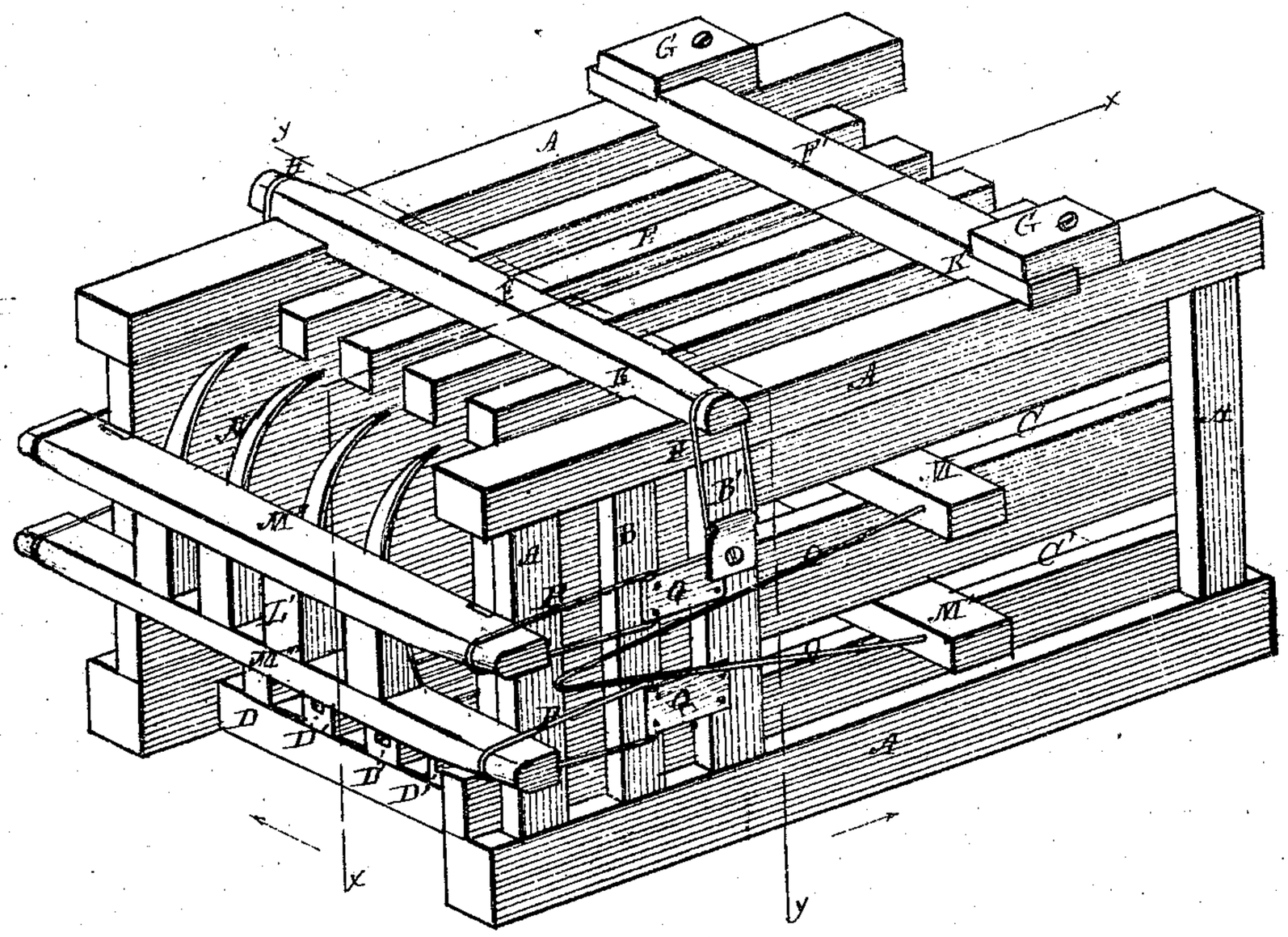
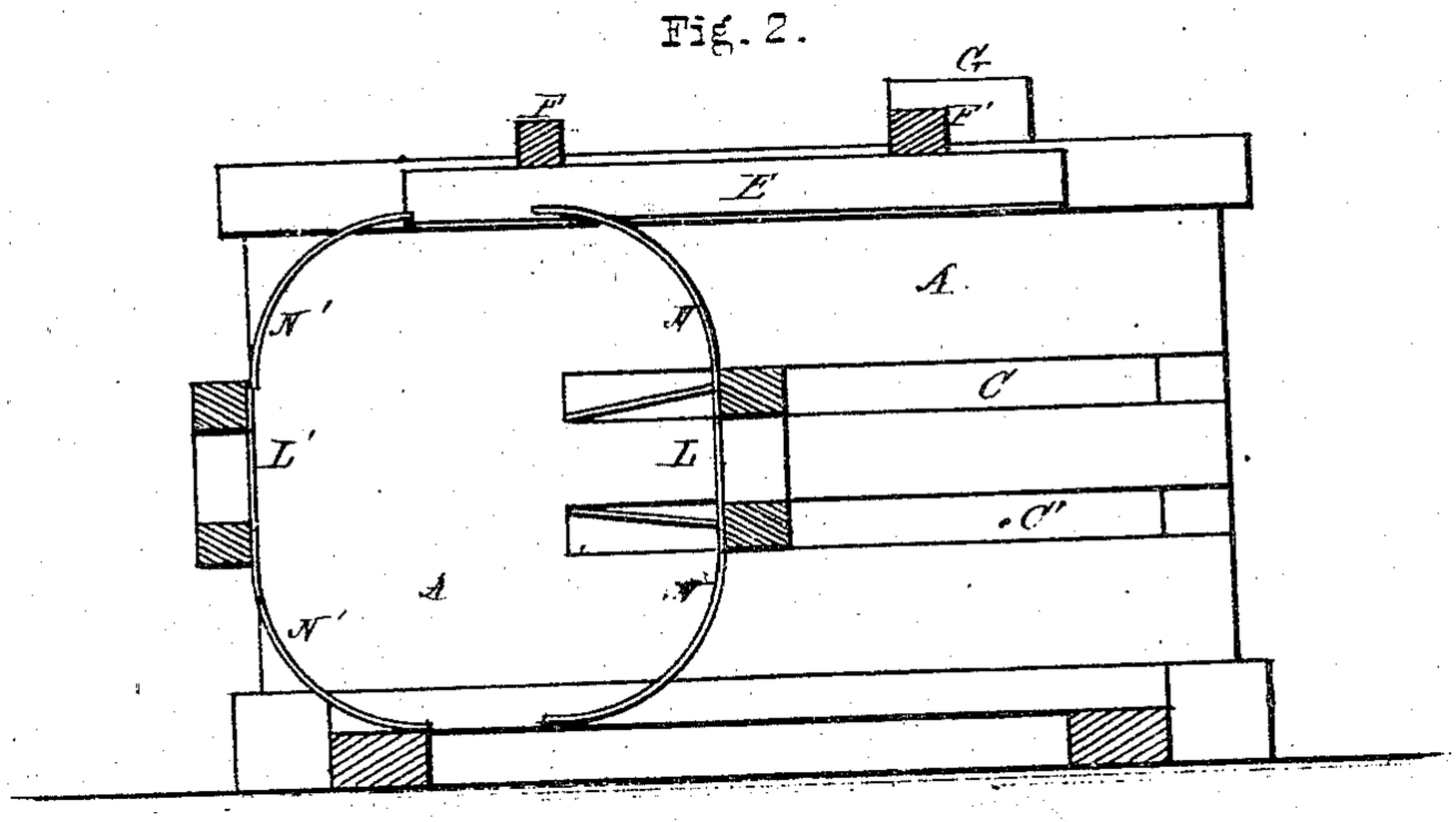


Fig. 2.



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Saml. J. Moore

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William J. Willson
by Prindle & Dyer. Attys.

W. J. Willson, 2. Sheets. Sheet. 2.

Hay Press.

No. 106,440. Patented Aug. 16. 1870.

Fig. 3.

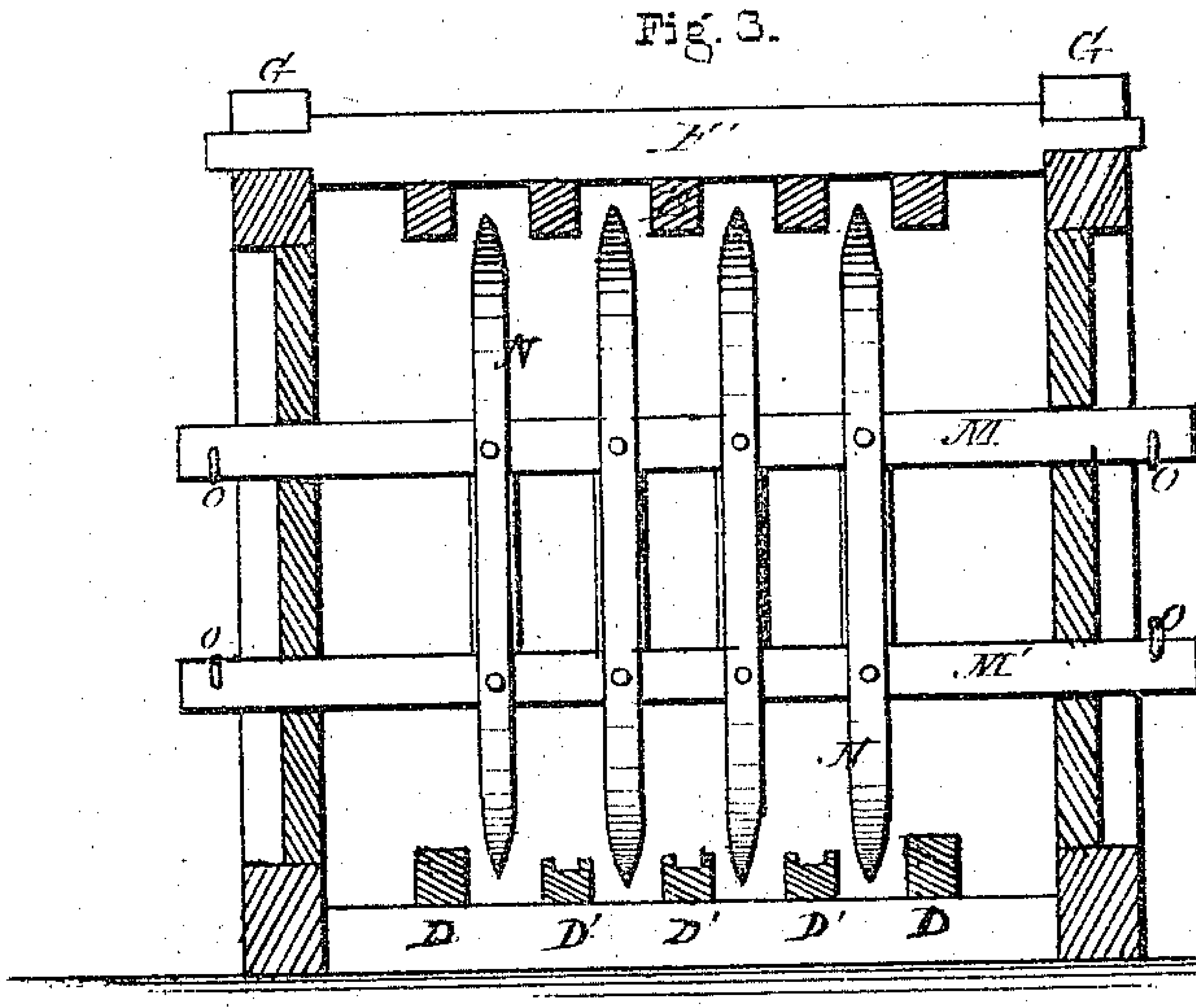
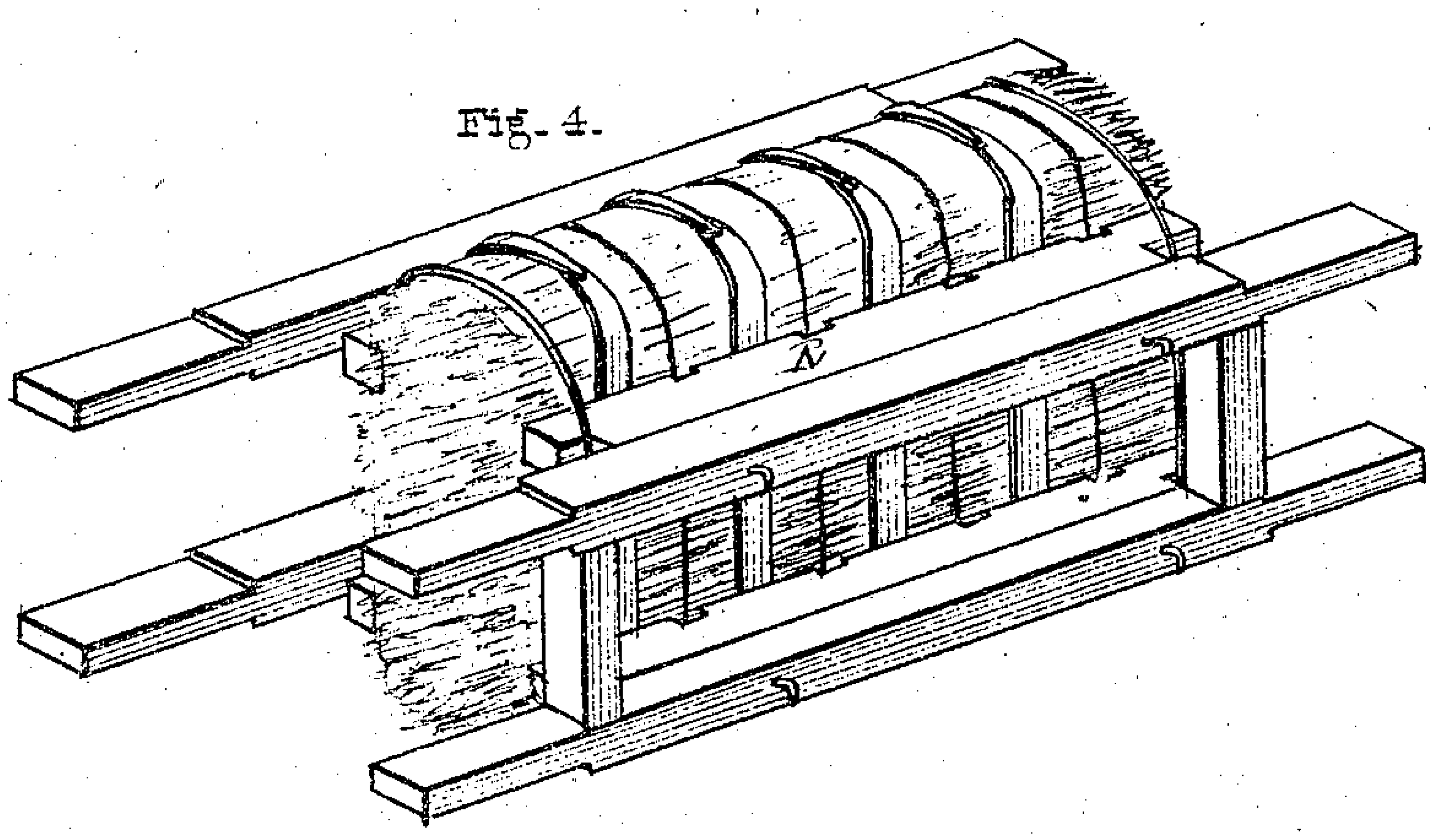


Fig. 4.



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United States Patent Office.

WILLIAM J. WILLSON, OF COLES COUNTY, ILLINOIS.

Letters Patent No. 106,440, *dated August* 16, 1870; *antedated July* 30, 1870.

IMPROVEMENT IN PRESSES FOR BALING BROOM-CORN.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern:

Be it known that I, WILLIAM J. WILLSON, of the county of Coles, in the State of Illinois, have invented certain new and useful Improvements in Presses for Baling Broom-Corn; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing making a part of this specification, in which—

Figure 1 is a perspective view of my improved press.

Figure 2 is a vertical longitudinal section of the same on the line *x x* of fig. 1.

Figure 3 is a vertical cross-section on the line *y y* of fig. 1.

Figure 4 is a perspective view of a bale, as removed from the press.

Letters of like name and kind refer to like parts in each of the figures.

My invention has for its object the baling of broom-corn; and to this end,

It consists in the peculiar construction and arrangement of the press and baling-heads, as is hereinafter set forth.

In the annexed drawing—

A represents a frame, of wood, of which a medium size would be about eight feet long, three feet and six inches wide, and three feet deep, constructed with suitable longitudinal sills and cross-sills, with standards, and with a top plate at the sides, leaving the structure open at the top and sides.

Near the front ends of the sides are two additional standards, B and B′, for purposes hereinafter described.

The sides of this frame are lined on the inside closely by suitable scantling, except two slots or openings, C and C′, which extend from the standard B′ to the rear corner standard.

Upon the cross-sills of the frame are secured firmly five or more longitudinal timbers, reaching from the front of the front cross-sill to the rear of the back cross-sill. These timbers are placed parallel to each other, and at equal distances apart. The two outer ones, D, are bearings, with flat upper horizontal surfaces, and rise a little above the level, vertically, of the bearings included between them, and are placed each at a little distance from the inside of the frame A, and in line with its sides.

The bearings D′ are provided with grooves in their tops, extending from the center to their front ends, for the purpose of receiving the binding-wires.

A frame, composed of longitudinal bars E, five or more in number, placed parallel to each other, and equidistant, and firmly secured to cross-bars F and F′, near either end, constitutes a top for the frame A, and covers the central portion of the same, being about one-half the entire length of said frame.

This top frame just described is held in position by the engagement of the ends of the cross-bar F′, under suitable cleats G, secured to the top of the plate of the frame A, and the front cross-bar F is also held in place by means of metallic links H, secured, in turn, within ears I, fastened to the outside of the standards B′, which links pass over the ends of said cross-bar F, which is suitably rounded and beveled, so that said links may hold them closely.

Each of the cross-bars F and F′ is cut away at the ends, upon the under sides, so as to leave shoulders K, which fit closely to the inside of the plates of the frame A.

Upon the inside of the frame A, and to the rear of it, is the rear and movable head L, shown more clearly in fig. 3, constructed of two longitudinal timbers, M and M′, whose ends protrude through the openings C and C′, and cross-bars, as many in number as the openings between the timbers D and D′, and in line with said openings, firmly connecting the timbers M and M′.

Upon these cross-bars just described are secured metallic hoops N, in a vertical parallel position, the hoops being bent so as to have a circular, oval, or rectangular inner form. These hoops are similar to those shown in fig. 1, and designated by the letter N′, and each is about one-half the circumference of a circle, and tapering toward the points.

To the outer ends of the timbers M and M′ is secured the yoke O, of suitable rod iron.

The front and fixed head L′ is constructed similarly to the head L, and provided with similar hoops N′, and is placed against the front end of the frame A, with the hooks N′ inside of said frame and fronting the hooks N, and is secured in place by means of links P, secured to ears Q, which, in turn, are fastened to both standards B and B′. These links P slip over the outer ends of the timbers M″ and M‴, which are suitably beveled and rounded, for the purpose of being held closely.

In connection with the frame A, I use a longitudinal frame, of the same width as said frame A, and about sixteen feet long, suitably constructed with sills and cross-sills, one end of the longitudinal sills of which rest against and may be secured to the front ends of the longitudinal sills of the frame A. This frame now being described serves as a bed for a platform upon which to receive the bale, when pressed and removed from the press, and also being placed between said press and a platform, upon which a suitable capstan is placed; it serves to keep them apart when power is applied for compression.

In connection with this apparatus, and whenever it may be desired to have the bale flat and nearly rectangular in form, instead of attaching the hoops N and N′ to the heads themselves, as before described, I attach them to separate frames R, as shown in fig. 4 of

the drawing, of which I use several pairs. These frames R are, in turn, so attached to the heads L and L′, by pins passing through both from the outside, that they are readily detached, and, being secured to each other by wires, while the bale is between them and under compression, the bale may be removed from the press, with the frames attached, which may be suffered to remain upon it for any convenient length of time, thus performing substantially the office of a compress, while the press itself is left unoccupied and ready for work.

In connection with the yoke O, and hooked into the bight of it, I use proper iron rods, distended by a spreader to the width of the frame A, to which, in turn, is attached a suitable triangle or clevis, to which the capstan-rope is secured, which rope is wound about and operated by a suitable capstan.

The operation of my apparatus is as follows:

I place the frame A, the platform connected with it, and the capstan, in suitable position, and firmly secure each in place. I remove the top E F F′, and throw the broom-corn into the frame crosswise, having previously placed suitable baling wires in the grooves of the timbers D′, and, when the press is filled, I replace and secure the top to the devices described. I then apply power to the capstan, and, by means of its rope, connections, and the yoke O, draw the rear head L as closely as possible to the front head L′. The broom-corn, being closely embraced by the hooks N and N′, will assume the form of the interior outlines of said hoops, and will be contained between them. I then remove the top of the press, bring the wires up over the bales, and tighten and secure them in any proper manner. I then remove the front head of the press, and roll the bale out, which is then ready for transportation. I replace the front head, fill up the press again, and proceed as before.

In case it is desired to have the bales quite flat, and very nearly rectangular in form, I use the spare frames before described, provided with hoops, and loosely attached by pins to the inside of the front and rear heads.

After the bale is compressed, and the baling wires fastened, as before described, I also secure the frames to each other, holding the bale between them. I then roll out the bale, with the frame attached, and, by means of a baling-needle, I pass wires through the narrowest diameter of the bales, and around the wires by which the bale is already bound, and thus attach these wires, on opposite sides, to each other, and prevent the bale from assuming a cylindrical form.

The advantages claimed for this invention are, cheapness of construction and repair, durability, rapidity, and effectiveness in operation, and a superiority in form and compactness of the bale compressed by it.

Having thus fully explained my invention and its method of operation,

What I claim as new, and desire to secure by Letters Patent, is—

The top E, F, and F′, in combination with the cleats G and links H, when constructed and arranged to operate substantially as and for the purpose set forth.

Also, the front end L′ M″ M‴, provided with the hoops N′, and, in combination with the links P, when constructed and arranged to operate substantially as and for the purpose set forth.

Also, in connection with the heads L and L′, the frames R, when constructed and arranged to operate substantially as and for the purpose set forth.

In testimony that I claim the foregoing, I have hereunto set my hand this 8th day of December, 1869.

WM. J. WILLSON.

Witnesses:
FRED. P. ROSE,
DANIEL HARMON.