(No Model.)

J. A. WAGNER.

BALING PRESS.

No. 258,169. Patented May 16, 1882.

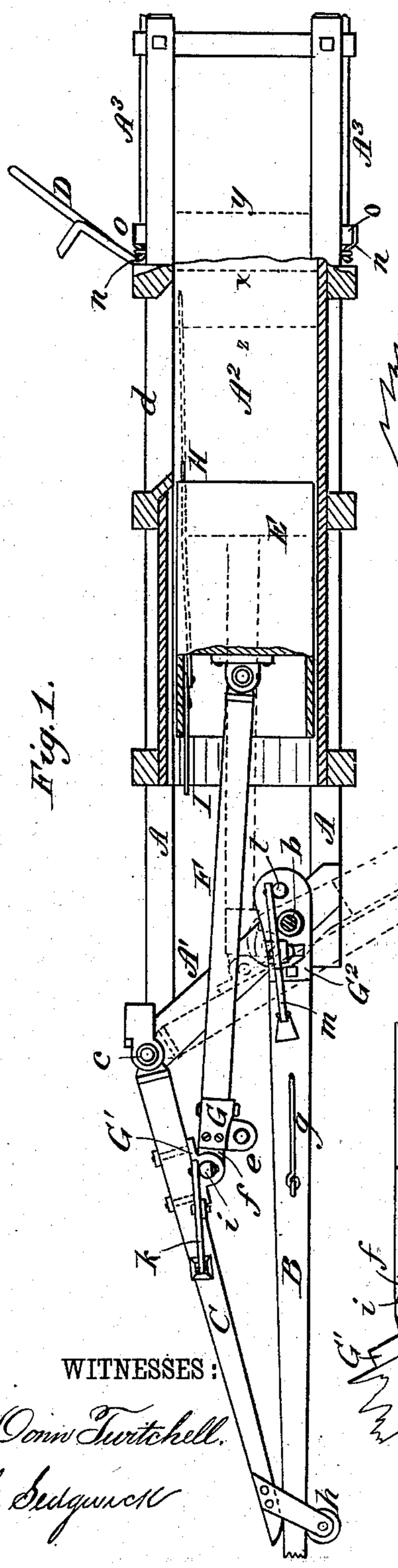

Fig. 1.

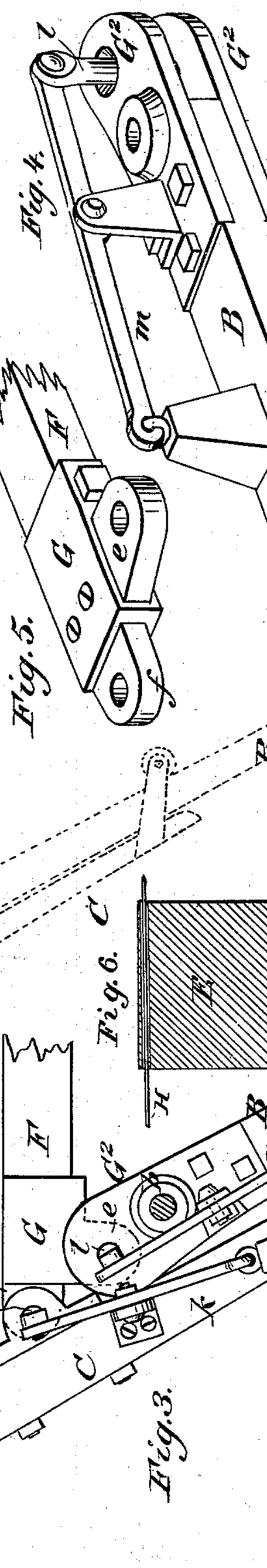

Fig. 4.

Fig. 5.

Fig. 3.

Fig. 6.

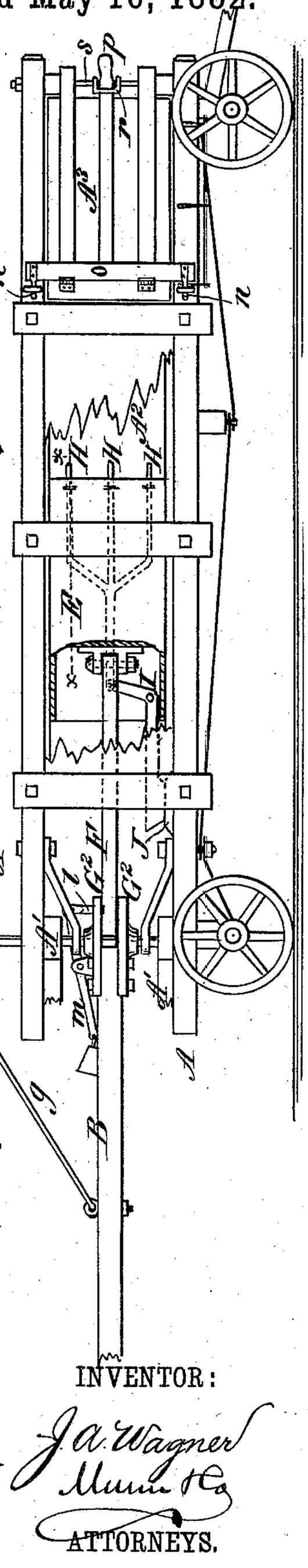

Fig. 2.

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UNITED STATES PATENT OFFICE.

JACOB A. WAGNER, OF QUINCY, ILLINOIS.

BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 258,169, dated May 16, 1882.

Application filed February 18, 1882. (No model.)

To all whom it may concern:

Be it known that I, JACOB A. WAGNER, of Quincy, Adams county, Illinois, have invented a new and useful Improvement in Hay and other Presses, of which the following is a full, clear, and exact description.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a partly-sectional top view of a press having my invention applied. Fig. 2 is a partly-broken side view of the same. Fig. 3 is a top view of a main lever and auxiliary lever in part, with attachments connecting the same for producing the necessary compressing action after said levers have been adjusted to the position represented for them by dotted lines in Fig. 1. Fig. 4 is a view in perspective of the main lever, with attached device for connecting it directly with the plunger-rod when finishing the bale; and Fig. 5, a view in perspective of the lever end portion of the plunger-rod, with metal cap thereon for connecting said rod with either the main lever or auxiliary lever. Fig. 6 is a horizontal section of the plunger on line *x x* of Fig. 2.

This invention relates to presses designed to be operated by horse or animal power for compressing or pressing and baling hay, cotton, moss, or other fibrous or flocculent substances.

The invention mainly consists in a novel application of power to the plunger of the press by means of compound levers with variable or adjustable attachments to change the leverage, whereby a very powerful action may be obtained toward the completion of the pressing stroke, and in which the general action of the main lever is made available for such purpose; and the invention further consists in prongs combined with the plunger and adapted to be projected in front of the plunger during its travel past the feed-opening, as hereinafter described and claimed.

The frame of the press, which may be mounted upon wheels and be provided with suitable draft appliances to move it from place to place, is generally similar to the frames of other presses for like purposes, except that at its power end the frame A is extended and provided with the diagonal brace A′, to receive the fulcrums *b c* of the levers B C, which are on opposite sides of the press, and through which the power is transmitted, nearly in line with the main side timbers of the frame, whereby great strength is obtained. The whole press, which is horizontally arranged, is or may be constructed principally of wood.

A² is the pressing-chamber, having a feed-opening, *d*, in its side, closed by a door, D.

E is the plunger, whose outer end is recessed, and has jointed to it a backwardly-extending rod, F. On the outer or forward end of this rod is secured a metal cap, G, which has a laterally-projecting nose-piece, *e*, and an end nose-piece, *f*; or the latter piece may be formed by the outer end of the rod itself.

The two levers B C, by which the power is transmitted to the plunger, have their fulcrums *b c* in the back ends of the main frame, or diagonal braces A′ thereof, and occupy the position represented for them by full lines in Fig. 1, when the plunger E is drawn back ready for introducing the material to be pressed, and in which position the lever B is in line, or nearly so, with one side of the main frame. This lever B, that may be supported in part by a stay-rod, *g*, which connects it with an upward extension of its fulcrum-pin *b*, is the sweep, or what I denominate the "main" lever, to the outer end of which the horses are attached or hitched. The other lever, C, which I term the "secondary" or "auxiliary" lever, and the fulcrum of which is at *c*, has its outer or free end in sliding and roller connection with the main lever B, as shown at *h* in Fig. 1.

In starting to work the press the nose-piece *f* at the outer end of the plunger-rod F is connected with the lever C by a pin, *i*, which is made removable and held in place when coupling the parts to which it is applied by a lever, *k*, having a shifting end prop, and another coupling-pin, *l*, which is carried by a second similar lever, *m*, attached to lever B, is disconnected by tripping the prop on said lever from any coupling-connection. The levers B C are then drawn by applying the power to the main lever B from the position represented by full lines in Fig. 1 to the position shown for them by dotted lines in the same figure. This moves the plunger E from its extreme back position when the material to be compressed is fed into the press into the position represented for the

face-line of said plunger by the dotted line *x* in Fig. 1. Such action may not fully complete the pressing-stroke, but the resistance to an increase of pressure is then very great, and more than it is practicable or desirable to subject the horse or horses to, excepting by extending the working leverage. Accordingly, the end prop of the lever K is tripped as shown in Fig. 3, so as to break connection by the pin between the rod F and the lever C after connection has been established by the pin *l* between the back end of the lever B, in close proximity to its fulcrum *b*, and the nose-piece *e* of the cap G on the plunger-rod F, so that on working back the main lever B from its dotted position (shown in Fig. 1) to its normal position (shown by full lines in the same figure) the plunger E will be urged with a powerful pressure somewhat farther forward, or till it reaches the face position shown for it by the dotted line *y* in Fig. 1. This extra pressure by the back action of the main lever B, and by changing the action from that of a compound lever to that of a simple lever with increased power, may not always be needed, however, and the requisite lesser pressure may be obtained exclusively by the compound levers B and C, with the coupling-pin *i* applied to connect the lever C with the cap G on the plunger-rod F. The lever C is fitted with a suitable casting, G′, for making and breaking connection between it and the plunger-rod F, as described, as well as with a casting for its fulcrum *c*, and the back end of the main lever B is fitted with a casting or castings, G^2, for its fulcrum *b*, and for making and breaking direct connection between said main lever and the plunger-rod F, also as hereinbefore described.

The horses may be attached with advantage to either lever B or C in working the press.

After the material under pressure has been sufficiently compressed to form a bale it may be secured by the usual bale ties or wires in the ordinary or any suitable manner.

The feed-door D may be provided with a suitable device for preventing the plunger E from wedging against the edge of it, and when the plunger has moved forward about three-fourths of the door space, as shown at the dotted line *x*, Fig. 1, a series of forked prongs, H, are caused to protrude through slots in the plunger a distance equal to the space between the end of the plunger and the rear edge of the door-opening, so as to cover the same, as shown in Fig. 1, and hold down in the hay or other material under pressure until the door-space is passed, when the prongs may move back or out of sight, the said prongs, when projected, being flush, or nearly so, with the side of the plunger. This may dispense with the usual door, and said prongs may be automatically operated by a lever, I, made to rise and fall by its passage on and off or over a projection, J, on the floor of the press.

The baling-chamber doors A^3 are held down by short stout hooks *n* on the ends of the cross-pieces *o*, which are hinged upon the backs of the doors or upon hinged beams, and are secured by levers *p*, which are fastened by a hook or loop, *r*, loose upon a cross-rod, *s*.

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

1. The combination, with the plunger E and the main actuating-lever B, of the secondary or auxiliary lever C, the sliding connection *h*, and means, substantially as herein shown and described, for alternately connecting the said levers to the plunger, as set forth.

2. The combination of the connected levers B C on opposite sides of the press with the plunger E and plunger-rod F, having a cap-piece, G, constructed to provide for attachment of said rod to either of said levers, essentially as described.

3. The combination of the removable coupling-pins *i* and *l* with the connected levers B and C and the plunger-rod F, made capable of attachment either to the lever C, in advance of its fulcrum *c*, or to the lever B at a shorter distance from its fulcrum *b* and in rear thereof, whereby a compound lever-action to produce the necessary pressure is made readily convertible into a more powerful simple lever one, and both the forward and back motions of the main lever B are made available in the pressing-stroke of the plunger, substantially as specified.

4. The combination of the forked prongs H with the plunger E, and mechanism for automatically causing said prongs to project in front of the plunger during its travel past the feed-opening of the press, essentially as and for the purposes herein set forth.

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Witnesses:
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