(No Model.)

2 Sheets—Sheet 1.

S. O. THOMPSON.

COLLAPSIBLE FENCE FOR HAY STACKS.

No. 479,680. Patented July 26, 1892.

Fig. 1.

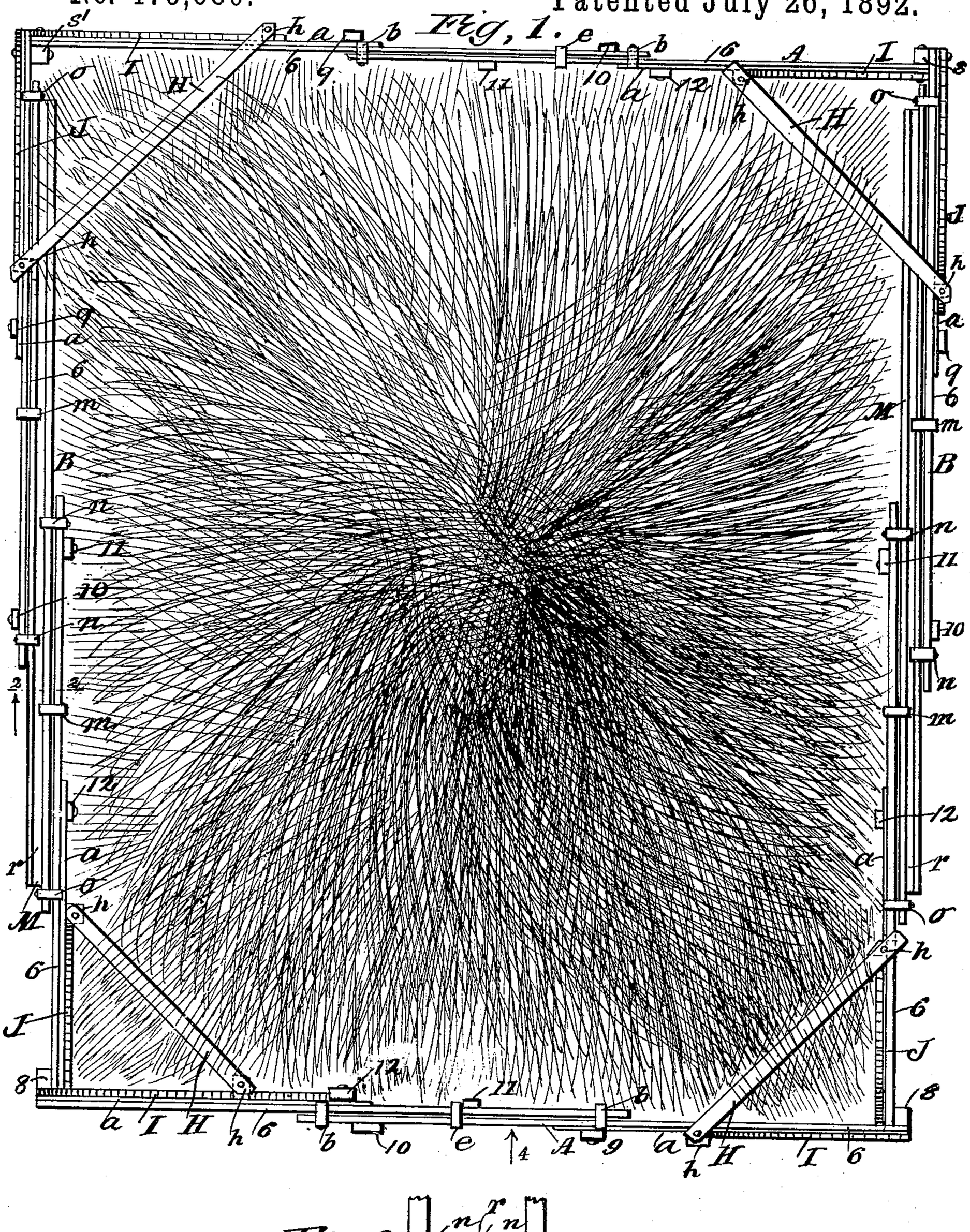
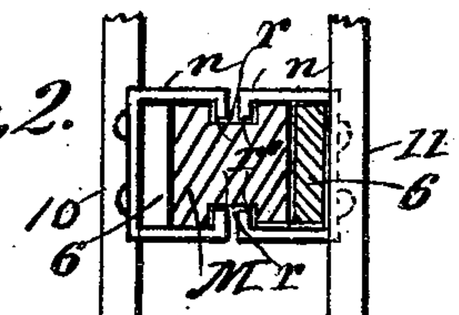


Fig. 2.



WITNESSES:

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C. Sedgwick

INVENTOR

S. O. Thompson

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ATTORNEYS

(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

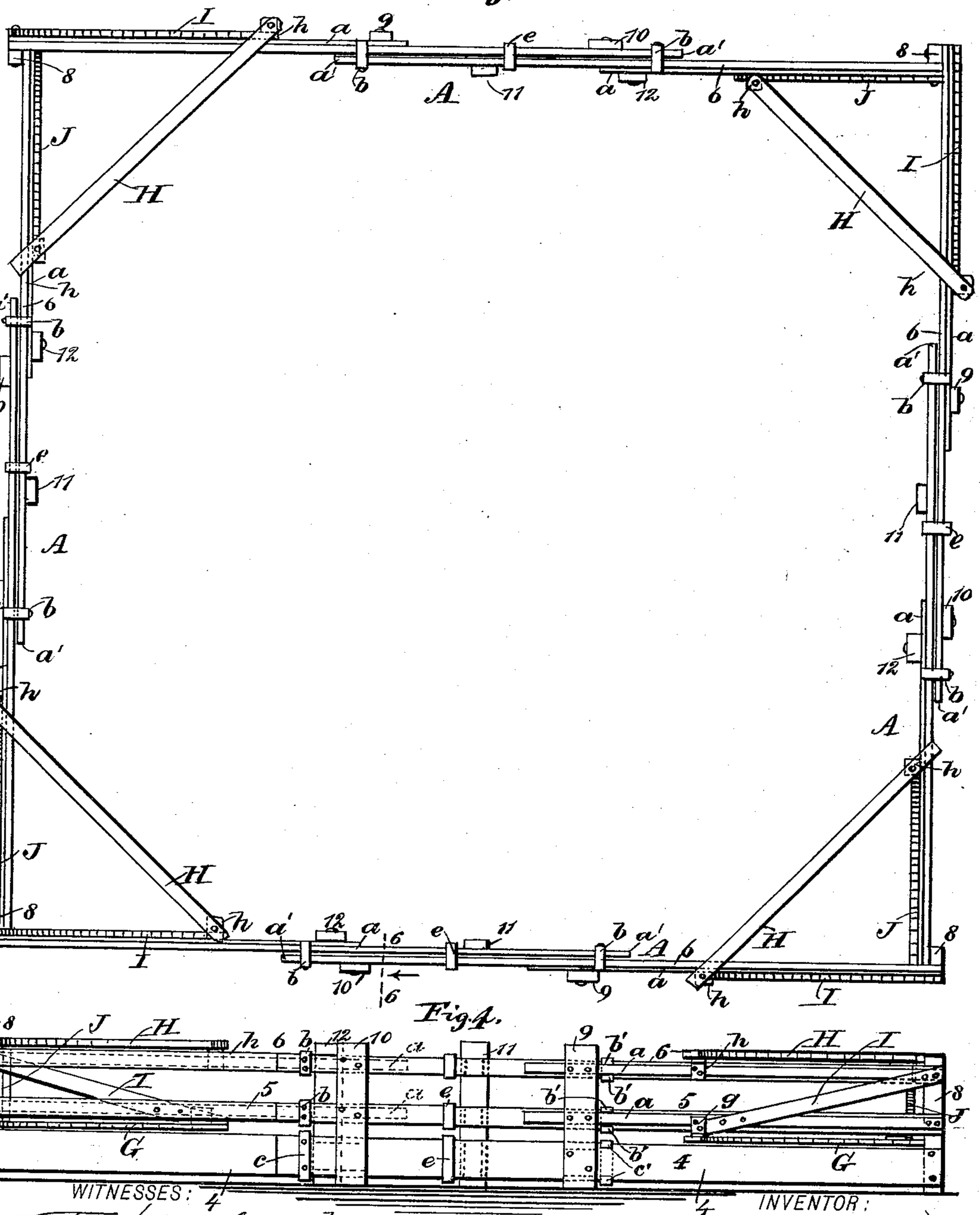

Fig. 4.

WITNESSES:

F. McArdle.

C. Sedgwick.

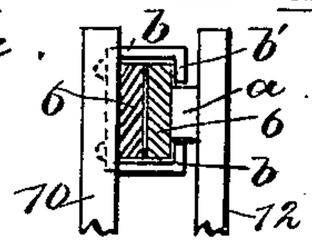

Fig. 6.

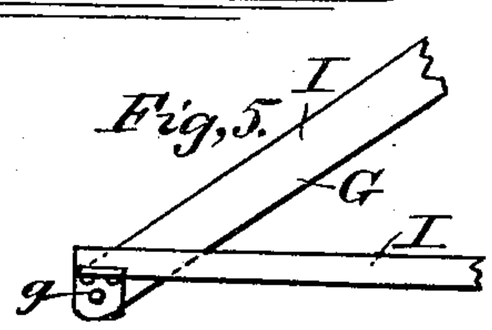

Fig. 5.

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UNITED STATES PATENT OFFICE.

SVEN O. THOMPSON, OF McPHERSON, KANSAS.

COLLAPSIBLE FENCE FOR HAY-STACKS.

SPECIFICATION forming part of Letters Patent No. 479,680, dated July 26, 1892.

Application filed June 23, 1891. Serial No. 397,207. (No model.)

To all whom it may concern:

Be it known that I, SVEN O. THOMPSON, of McPherson, in the county of McPherson and State of Kansas, have invented a new and useful Collapsible Fence for Hay-Stacks, of which the following is a full, clear, and exact description.

The object of my invention is to provide a simple, strong, and practical device which when in place will inclose a hay-stack in the field or barn-yard and permit free feeding therefrom by cattle, horses, and sheep, while waste is prevented.

To this end my invention consists in constructing an inclosing fence which will be adjustable in its parts while in complete form, enabling the contraction and expansion of its sides longitudinally, so as to encompass a large or small stack of hay and allow the live stock to feed therefrom as the material is consumed and the size of the stack diminished.

The invention further consists in the construction and combination of parts, as is hereinafter described and claimed.

It may here be further stated that as the invention, primarily considered, consists in the provision of an inclosing fence for a hay or straw stack which has its sides connected at the corners and adapted for expansion and contraction simultaneously or in pairs it is evident that the number of sides may be changed, if desired, and not violate the spirit of the invention. Hence the number of sides provided for the structure may be four in number or be altered therefrom, if desired.

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

Figure 1 is a plan view of the preferred form for constructing the device. Fig. 2 is an enlarged transverse section of one of the upper rail-sections of the preferred form upon posts, broken, taken on the line 2 2 in Fig. 1, showing the sliding connection between the parts. Fig. 3 is a plan view of a modified form for the fence. Fig. 4 is a side elevation of one panel of the device indicated by the arrow 4 in Fig. 1. Fig. 5 is an enlarged broken detail showing the form of the braces at each corner of the fence, and Fig. 6 is a transverse section on the line 6 6 in Fig. 3.

The collapsible fence consists, essentially, of four fence-panels A A B B, that are of a peculiar construction, a description of which will be given, said panels being arranged in quadrilateral form. In the preferred form of construction for the fence there are two panels B, which represent opposite sides of the structure, so formed as to permit their extension to a greater length than the end panels A, which will enable the device to encompass an oblong stack of hay and protect it until it is nearly eaten by the stock for which it is provided. The panels A will first be described, which form the end of the structure.

Any suitable number of spaced rails 4 5 6 may be provided to afford a fence of the desired height, which should be sufficient to prevent the entrance of cattle or sheep within the inclosure and allow horses to feed on the hay within the fence by reaching over the top rail 6, the spaces between the bottom board 4, that forms the lower rail on each side, and the rail 5 for sheep, as well as the space between the rails 5 and 6 for cattle, being sufficient to permit stock to feed by introducing their heads between said parallel horizontal rails.

As the structure entire is to be afforded means for contraction in size, as well as outward extension, when in position encompassing a stack of hay or similar material, it is simply seated upon the ground whereon it is erected, and to this end four corner-posts 8 are provided, to which the rails and base-board are secured by nails or bolts at their ends.

The top rail 6 of each section A of the collapsible fence is composed of two similar flat bars of wood or metal, which are parallel on their sides and edges and in length are proportioned to suit the area to be inclosed by the fence. The rail portions just mentioned are lapped together sufficiently to allow of their proper connection, whereby each rail may be extended or contracted lengthwise. With this in view each portion of rail 6 is furnished with a reinforce-piece *a*, that may be attached to the same or be formed integrally and consists of a strip of proper thickness and less width than the part on which it is secured, leaving rabbeted edges, as shown in Fig. 6, these re-

inforce-strips *a* being placed on the exterior and interior faces of the lapped portions of the rail, so as to permit a free sliding movement of one piece lengthwise on the other piece. The two lapped portions of the top rail 6 are loosely connected by means of the two similarly-formed metal clip-bands *b*, which are rectangular in form and of proper dimensions to loosely embrace the lapped portions of said rail, each clip-band being placed on and secured to one rail-piece a proper distance from its ends. The clip-bands *b* are cut open on one side, thus affording toes *b'* of equal length, which toes are located in the rabbet recesses at the top and bottom corners of the rail portions, the reinforce-strips *a* being located between said toes on each rail-piece. The middle rail 5 and bottom board 4 are also made of two lapped pieces for each, and are of equal length with the top rail 6, the middle rail having reinforce-strips *a* applied thereto in like manner as compared to rail 6. There are two open clip-bands *b*, of the same form as those on the top rail 6, provided for the middle rail 5, which engage its lapped portions similarly.

The bottom boards 4 of the fence-panels A are unprovided with reinforce-strips, but have two clip-bands *c* for each bottom board, which are suitably spaced apart and secured one to each lapped portion, the hooked ends *c'* overlapping the top and lower edges of the lapped pieces, so as to retain them loosely joined and free to be moved lengthwise.

The two side panels B of the fence (shown in Fig. 1) are similar in form, and each consists of a top rail 6, a middle rail 5, and a bottom board 4, these parts being each made in two sections, as has been described with regard to the panels A, and for each rail, and bottom board an intermediate extension-bar M is provided, as shown in Figs. 1 and 2, which is of such a proportionate length as compared to that of the rails it engages loosely that the rectangular fence will be elongated on the sides a proper degree to suit the oblong haystack it is to encompass when the sides are drawn out.

In order to adapt the rails 6 5 and board 4 to coact with the intermediate bars M, as stated, the latter-named are longitudinally grooved on their upper and lower edges, as at *r* in Fig. 2, near the center of thickness of each rail M, which grooves receive the toes *r'* of the clip-bands *n n*, that are fastened, respectively, to the outer and inner lapped sections of the rails 6 5 or bottom boards 4, the end portions of these intermediate bars having clip-bands *o* attached thereto, which loosely embrace the outer sections of the rails proper of the fence-panels B, as shown in Fig. 1, and to avoid a lateral displacement of the panel-rails and intermediate bars M when the fence is in a contracted condition the loose loops or bands *m* are placed upon the rails, so as to encircle them and the bars also, which will be of service to prevent cattle or sheep from getting their feet between these lapped parts, and thus being held fast or injured.

It is evident that if desired the intermediate channel-bars M may be applied to all of the fence-sections, and thus furnish means to construct a rectangular fence of large dimensions, which may be equally contracted on all its sides.

All the parts of a fence-panel represented by the top rail 6, middle rail 5, and bottom board 4 are held spaced apart by their attachment to the corner-posts 8 and also to the intermediate posts 9 10 11 12, the two first-named of said intermediate posts being placed on the exterior of the panel and the posts 11 and 12 on the inner surface of the same, and, as will be seen, the posts 9 12 are affixed upon the reinforce-strips *a* of the top and middle rails of the panel, a spacing-block of equal thickness with the reinforcing-strips being introduced between the bottom board and the lower portions of the posts 9 12 to allow the hooked ends of the clip-bands *c* to slide between these parts, said spacing-blocks being shown by dotted lines in Fig. 4.

The exterior posts 10 are secured directly upon the flat surfaces of the rails and the remaining inner posts 11 on the inner surface of the panels a proper distance from the ends of the rail portion unto which it is secured.

Between the posts 11 and 12 the lapped portions of the bottom board 4 and rails 5 and 6 of the fence-sections A are enveloped by a continuous ring-band *e* on each rail and bottom board, which bands serve to retain the lapped portions of said parts from lateral separation when the fence is in contracted condition.

The inward movement of the rail portions upon each other is limited by the abutment of their ends *a'* upon the corner-posts 8 exteriorly, and interiorly against the panel-sections that they move toward.

The junctions of the panel-sections A B are stiffened by the braces G H, which extend across the corners of the joined sections horizontally. The lower braces G, extending through between the middle rails 5 and bottom boards 4, project beyond these parts and are secured upon the bracket-lugs *g*, that are bent to have contact, also, with the outer faces of reinforce-strips *a* on the middle rails, to which they are attached by any suitable means. The upper horizontal braces H are supported and secured in place a proper distance above the top rails 6 by lugs *h*, which are similar to the lugs *g*, but are reversed in position, so that the depending portion of each lug may be attached to the surfaces of the reinforce-strips *a* on adjoining top rails, which are connected to a corner-post 8, which strips may be on the inner face of a fence-panel or the outer side, as shown in Figs. 1 and 3. The diagonal braces G H may also be secured by one end on the inner surfaces of the reinforce-strips *a* of the rails with bracket-lugs (see left-hand lower corner of the

fence in Fig. 3) or may have both ends affixed to the inner surfaces of the rails by similar means, (see lower left-hand corner in Fig. 1,) the same result being attained by either plan of construction. There are also diagonal braces I J secured, respectively, to the lugs *g* and corner-posts 8 in planes parallel to the vertical faces of the panels upon their exterior and interior surfaces, respectively, as named, there being sufficient space allowed between the surfaces of the horizontal braces G H and adjacent rail edges to permit the clips *b c* to slide between upon the rails and bottom boards, so as to insure efficiency in operation.

The posts 9 12 are secured to the rails on the reinforce-strips *a*, so as to permit the open-looped bands *o* to slide freely, which is necessary for the extension and contraction of the hay-fence, as before explained, the posts 10 and 11 being secured upon the flat surfaces of the rails, as shown in Fig. 1.

In use the rectangular fence is placed at a point where the hay-stack is to be located, and said stack is therein built of a proper height, or the fence in panel-sections may be erected around a stack, if preferred. The consumption of the hay by the live stock, having access to it in the manner already mentioned, will cause the same to be diminished in diameter as far as the cattle and horses can reach the hay, and their efforts to obtain said food-supply will contract the sides of the fence by forcible exterior pressure of the animals against its panel-sections on opposite sides at the same time.

When necessary, the overhanging portions of the stack may be cut away, and the top portion also, and be thrown down to occupy the space around the stack within the fence, which has been drawn outwardly to afford as much additional area as may be necessary for such a purpose, and this operation may be periodically repeated, as occasion may require, until the stack is entirely consumed, the food being protected from waste, while free access to it is afforded in the manner stated.

The modified form of the device shown in Fig. 3 is designed for use when round or square stacks are to be fed and is formed by the removal of the intermediate extension-bars M from between the rails of the side panels B, which will make all the panels similar to panels A, of the preferred form. This style of construction is efficient and may be employed when the device is not required to be elongated a greater extent on the sides than on the ends.

From the foregoing description it will be evident that the device when placed around a hay-stack or other material of a like nature piled up for the feeding of animals will permit horses, cattle, or sheep to freely partake of the hay and by pressure on the exterior of the fence so contract its dimensions as to facilitate such a desired result, while the bulk of the material is kept in a cleanly condition until consumed.

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

1. A collapsible fence for a hay or straw stack, adapted to yield automatically to external pressure by sliding connections along its sides, so as to contract its area, substantially as described.

2. A collapsible fence for hay or straw stacks, having its sections vertical and connected at the junctional corners and each section made longitudinally extensible and contractible by sliding connections, substantially as described.

3. A rectangular collapsible fence having four upright sides which are joined and braced at the corners and each composed of parallel rails and a bottom board, which sides are each longitudinally adjustable to alter their length, substantially as described.

4. In an expansible and contractible fence, the combination, with four upright panel-sections, each extensible and contractible, of two diagonal horizontal braces at each corner and two diagonal braces for each corner, which are upwardly and outwardly inclined and are attached to the exterior or interior faces of the fence-sections, substantially as described.

5. The combination of four similar fence-sections connected at their ends to produce a quadrangular structure, each section being composed of two parallel rails and a bottom board, each rail and bottom board being made of lapped pieces held loosely together by clip-bands and provided with means to facilitate the longitudinal sliding movement of the clasping clip-bands for the expansion or contraction of the fence-sections, substantially as described.

6. In an expansible and contractible fence, the combination, with the fence-sections that each have lapped rails held movably together by clip-bands, of intermediate channeled bars which are loosely secured to the rails by clip-bands and adapted to extend the length or width of the fence beyond the length of the rails lapped thereon, substantially as described.

SVEN O. THOMPSON.

Witnesses:
M. F. OLSON,
N. T. OLSON.