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ADJUSTABLE STACK PROTECTOR.

(Application filed June 7, 1902.)

(No Model.)

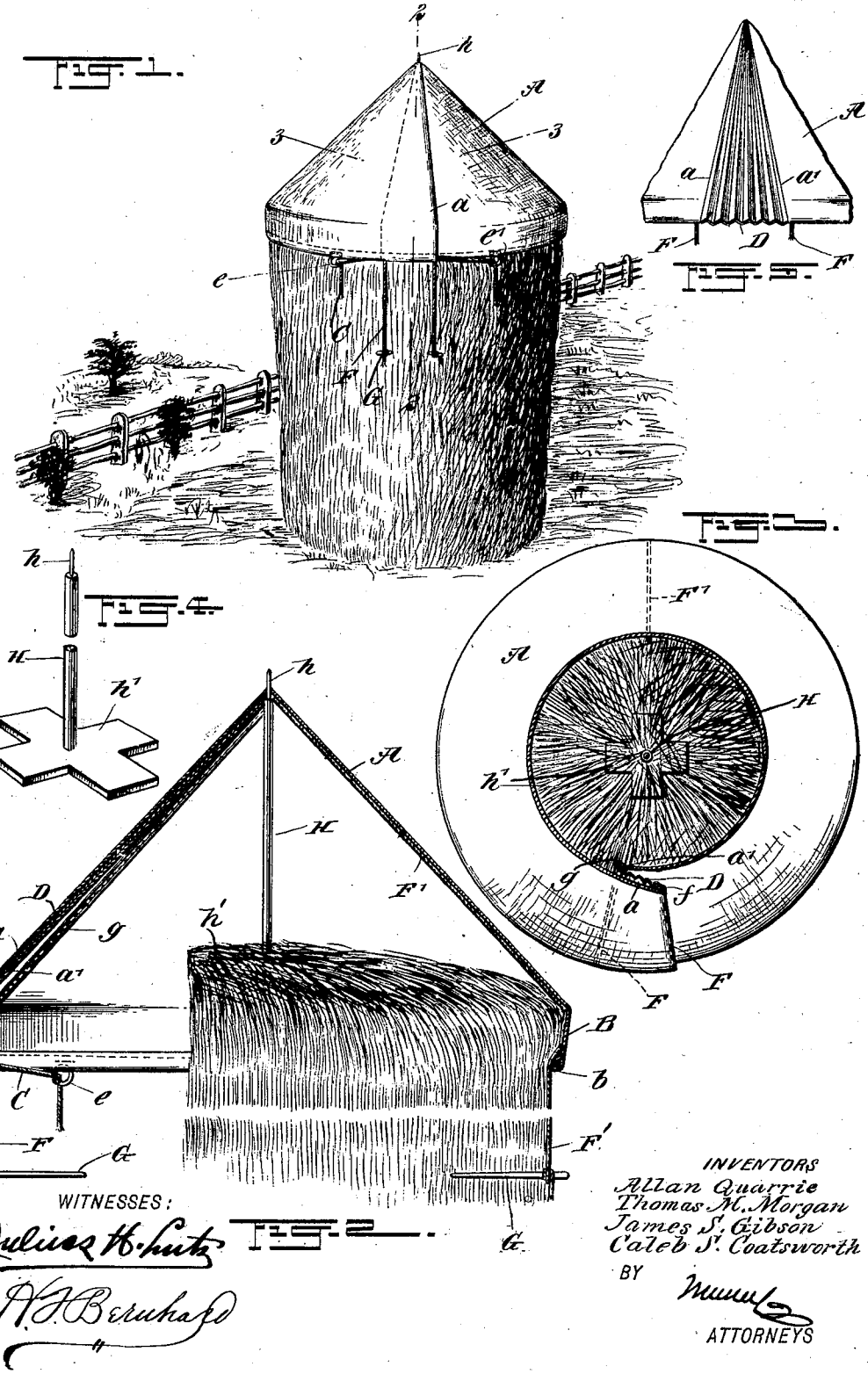


Fig. 1.

Fig. 3.

Fig. 5.

Fig. 4.

Fig. 2.

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ALLAN QUARRIE, OF OAK LAKE, AND THOMAS M. MORGAN, JAMES S. GIBSON, AND CALEB S. COATSWORTH, OF BRANDON, CANADA.

ADJUSTABLE STACK-PROTECTOR.

SPECIFICATION forming part of Letters Patent No. 715,603, dated December 9, 1902.

Application filed June 7, 1902. Serial No. 110,704. (No model.)

To all whom it may concern:

Be it known that we, ALLAN QUARRIE, residing at Oak Lake, and THOMAS M. MORGAN, JAMES S. GIBSON, and CALEB S. COATSWORTH, residing at Brandon, in the Province of Manitoba and Dominion of Canada, subjects of the King of Great Britain, have invented certain new and useful Improvements in Adjustable Stack-Protectors, of which the following is a full, clear, and exact description.

Our invention relates to improvements in covers or protectors for stacks of hay, grain, and other substances which it is customary to allow to remain in an outdoor position and exposed more or less to the weather.

Among other things our invention has for its object the provision of a cover adapted to be placed over a stack in such a manner as to hinder rain or snow from injuring the material forming the stack and also to effect a saving of labor to the farmer in that the latter will not be required to lift or pitch the sheaves of grain as high as in ordinary stacks and also to attain a saving in time in the slow and precise or skilful labor required in "topping off" the stack to render it waterproof, to provide means for expeditiously securing the cover in a tight manner around the stack, so that wind cannot enter and blow off the cover, to provide means which allows the cover to expand or contract in fitting stacks of different sizes and also excludes the elements from the overlapping edges of the cover, and to provide internal means for supporting the cover in the required distended condition without building up the usual conical top to the stack.

With these ends in view our invention consists in the construction and arrangement of parts, which will be hereinafter fully described, and the actual scope of the invention will be defined by the claims.

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

Figure 1 is a perspective view of our improved covering or protector applied to a grain-stack. Fig. 2 is a vertical transverse section through the cover or protector, the plane of the section being indicated generally by the dotted line 2 2 of Fig. 1. Fig. 3 is a transverse section taken generally in the plane indicated by the dotted line 3 3 of Fig. 1. Fig. 4 is a detail perspective view of the center pole for the cover or protector. Fig. 5 is a detail view of the cover, showing the same opened in order to represent the bellows-fold tongue.

In carrying our invention into practice we construct the cover or protector A in the conical form represented more clearly by Figs. 1 and 2, said cover being made of canvas or any other material which is impervious to the weather. The cover A is substantially circular in horizontal section, and at its base or lower portion this conical cover is provided with a substantially annular flange B, the edge of which is folded and sewed, so as to form a pocket *b*, adapted to receive the draw-rope C.

In the manufacture of the conical cover it is formed with a longitudinal slit or incision which extends from the apex through the edge, thereby providing the edges *a a'*, which are adapted to be brought into overlapping relation, as shown by Figs. 2 and 3. The overlap of the edges *a a'* is quite considerable, as represented by Fig. 3, and in practice we prefer to provide the bellows-fold tongue D. This tongue is tapered from one end toward the other, and it is arranged to occupy a compact position between the overlapping edges *a a'* of the cover, one edge of said tongue being united to the edge *a* of the cover, while the other edge of the tongue is united to the opposite edge *a'* of the cover. It will therefore be understood that the tongue lies radially or lengthwise of the cover, in that it extends from the apex to the lower edge thereof. This tongue is adapted to close the space between the overlapping edges of said cover in order to exclude rain and snow, as well as wind, from passing through the cover and having access to the grain contained in the stack, said tongue thus serving to exclude wind from the cover and prevent the latter from being lifted or blown off the stack. The bellows-fold tongue is also advantageous, in that it provides for expansion of the cover in

order to fit stacks of large size, and it also allows the cover to be contracted in size for snug application to small-sized stacks.

The lower edge of the cover or protector is provided with rings or loops *e e'*, the same being secured to said edge in any suitable way. The ring or loop *e* is secured into the lower edge of the cover at a short distance from the edge *a* of the cover, while the other ring or loop *e'* is attached to the cover at a suitable distance from the other edge *a'*, whereby the two rings lie on opposite sides of the overlapping portion of the cover. The draw-rope C in the lower pocket *b* of the cover is adapted, after the cover shall have been applied to the stack, to be drawn tightly around said stack, so as to contract or reduce the diameter of the lower edge of the flange B, thereby giving a bulging form to the cover or producing an eave thereon. The end portions of the draw-rope C are carried past the overlapping portions *a a'*, and these ends are tied or otherwise fastened in the rings *e e'*. The radial edge at the overlapping portions *a* of the cover is provided with a pocket *f*, and the other edge at the underlapping portion portion *a'* has a radial pocket *g*. (See Figs. 2 and 3.) Through these pockets *f g* are carried the transverse ropes F, which extend lengthwise along the lapping portions *a a'* and from the lower edge of the cover to the apex thereof, and thence down the other side of the cover, said opposite-extending portion of the ropes being indicated at F' by dotted lines in Fig. 3 and by full lines in Fig. 2. The free ends of the ropes F F' depend a suitable distance below the lower edge of the conical cover, and these ends of the ropes may be easily fastened to the pins G, adapted to be thrust into the grain-stack, as indicated more clearly by Fig. 2.

The central portion of the conical cover is adapted to be upheld by a short vertical pole H, having a tenon *h*, adapted to be thrust through the apex of the cover. This center pole is secured firmly to a base *h'*, of any suitable construction, and this base is adapted to rest upon the top of the stack in order to support the center pole in a position to engage with the apex of the cover. The center pole may be secured in place by piling the grain around the base, thus overcoming the tedious operation of carefully piling sheaves of grain around the top of the stack in order to protect the latter from the weather.

After the stack shall have been built up to the desired height the center pole H is placed in position, so that its base *h'* will rest upon the stack, and the grain is piled upon this base and around the pole to a suitable height in order to retain the pole in its proper position. The cover in an open or spread condition is fitted over and upon the stack, the apex of the cover being engaged with the tenon *h* of the pole. The lower edge of the flange B of the cover is brought down around the top portion of the stack and the edges *a a'* of the cover are brought into overlapping relation, the tongue D being unfolded or inclosed within said edges *a a'*, according to the size of the stack. The transverse ropes F F' are now drawn downwardly and fastened by the pins G, which are thrust into the stack, and then the rope C is drawn tightly around the stack and its end portions are fastened in the rings or loops *e e'*.

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

1. A protector for grain-stacks, comprising a substantially conical cover having a flanged edge at its lower portion, and a draw-rope in said flanged edge.

2. A protector for grain-stacks, comprising a substantially conical cover having longitudinal overlapping edge portions, and a draw-rope in the lower free edge portion of said cover.

3. A protector for grain-stacks, comprising a substantially conical cover having a draw-rope in its lower edge, longitudinal overlapping portions, and suitable rings or loops provided at or near said lower edge and on opposite sides of the overlapping portions.

4. A protector for grain-stacks, comprising a substantially conical cover having a tongue between longitudinal overlapping portions thereof.

5. A protector for grain-stacks, comprising a substantially conical cover having overlapping portions, and transverse ropes extending along the overlapping portions and along the opposite side of the cover.

6. A protector for grain-stacks, comprising a substantially conical cover having overlapping portions, a bellows-fold tongue united to the overlapping portions and adapted to be folded between the same, and transverse ropes extending across the cover and along the edges of the overlapping portions thereof.

7. The combination of a substantially conical cover, a center pole arranged for engagement with the apex of said cover, and the transverse and circumferential fastening-ropes arranged to draw and secure the cover around a stack and to hold said cover and the center pole firmly upon said stack.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

ALLAN QUARRIE.
THOMAS M. MORGAN.
JAMES S. GIBSON.
CALEB S. COATSWORTH.

Witnesses to the signatures of Allan Quarrie, Thomas M. Morgan, and James S. Gibson:
R. E. UNICUME,
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Witnesses to the signature of Caleb S. Coatsworth:
FRANK V. BARNS,
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