

(No Model.)

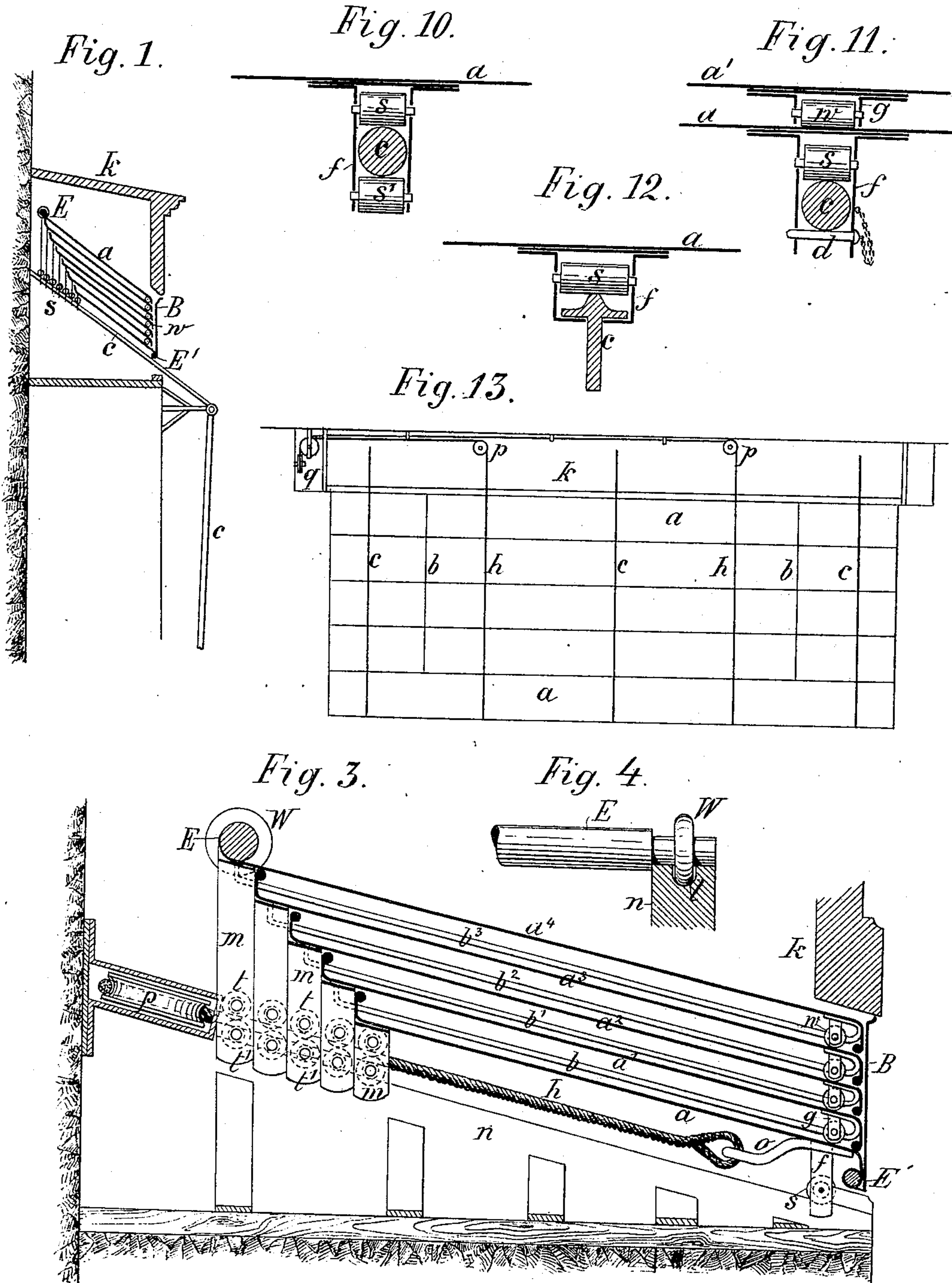
3 Sheets—Sheet 1.

E. HORBACZEWSKI.

ROOF.

No. 370,259.

Patented Sept. 20, 1887.



Witnesses.

W. Stearns
Daniel Scott

Inventor
Edmond Horbaczewski
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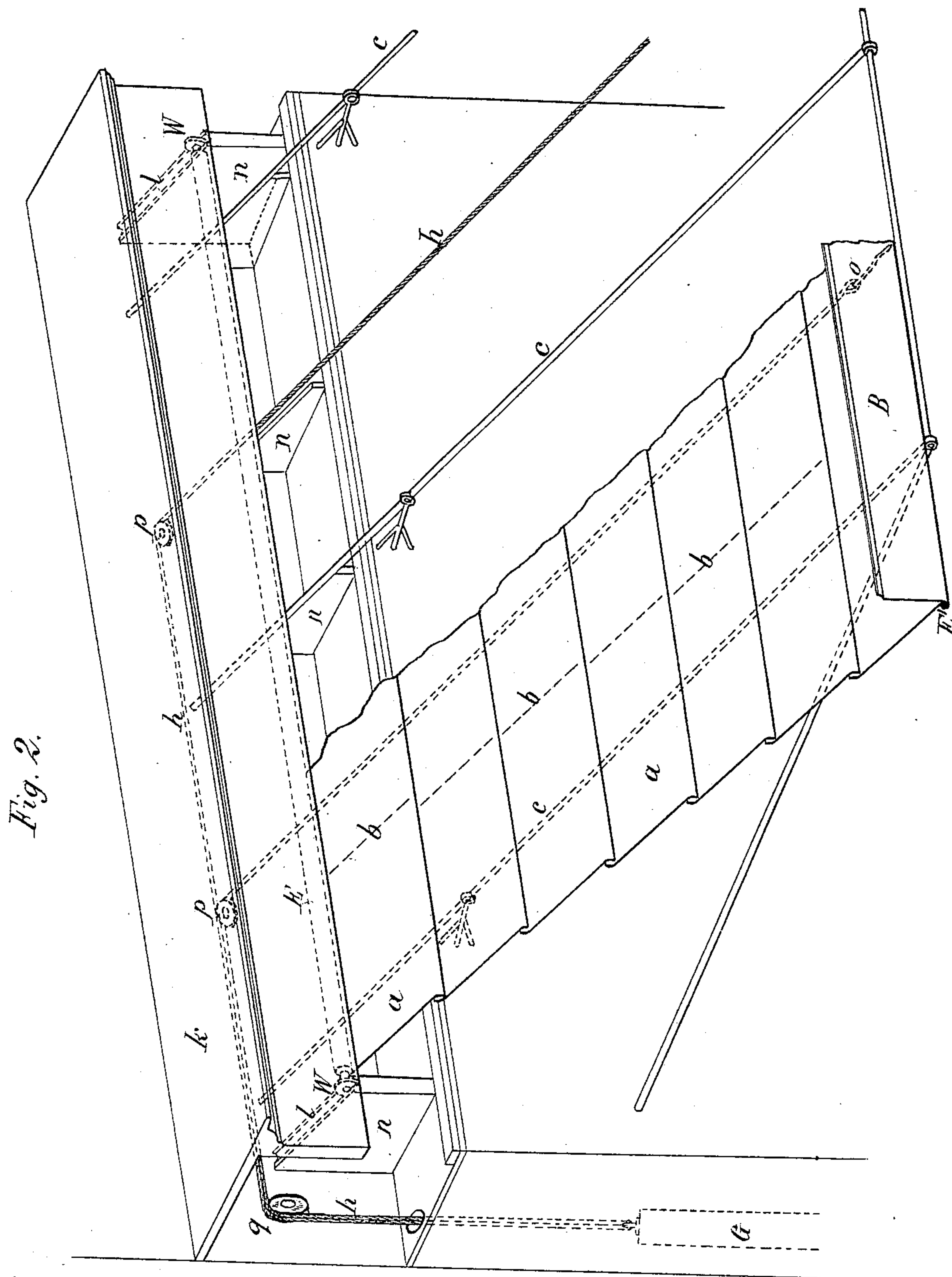
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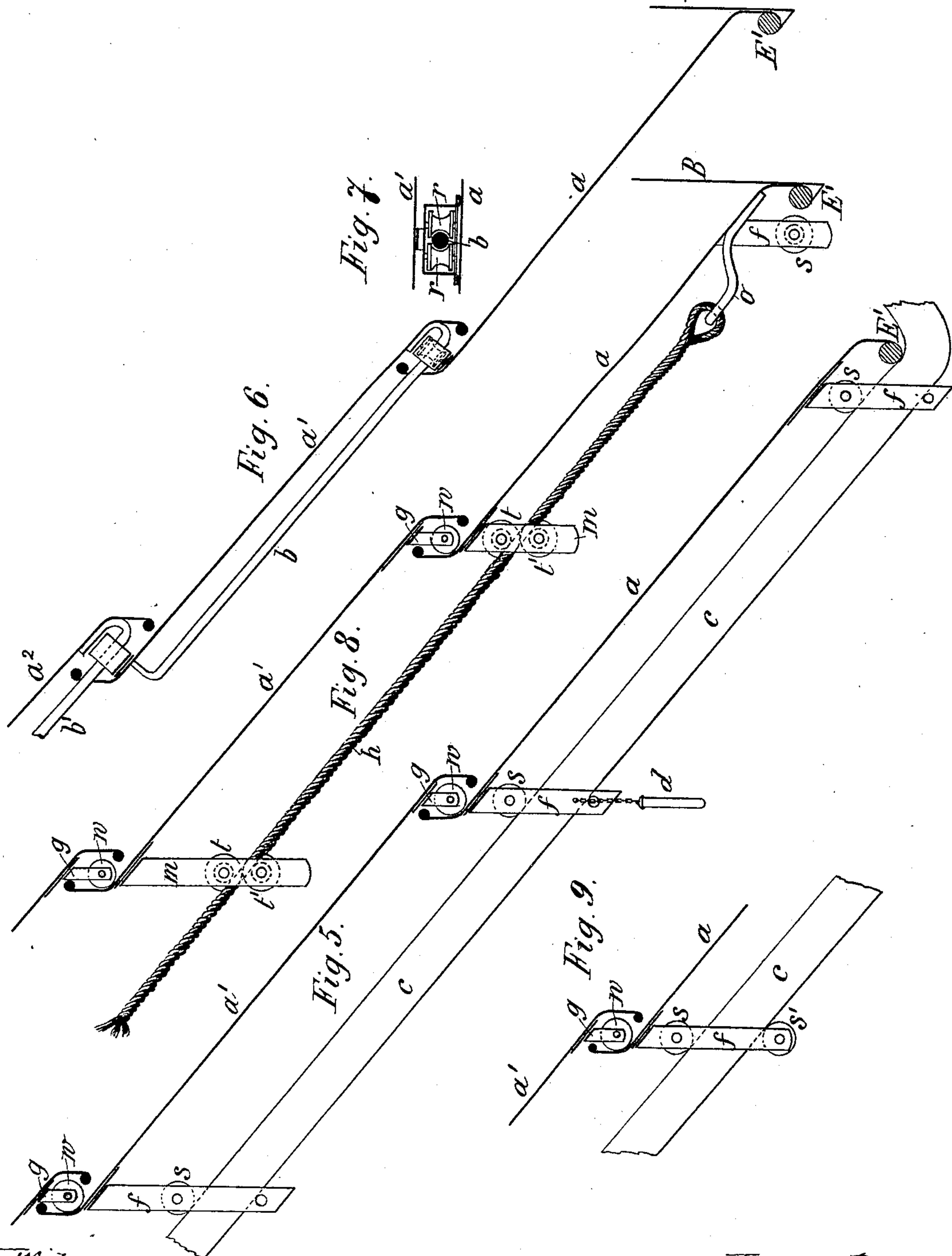
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3 Sheets—Sheet 3.

ROOF.

Patented Sept. 20, 1887.



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UNITED STATES PATENT OFFICE.

EDMOND HORBACZEWSKI, OF VIENNA, AUSTRIA-HUNGARY.

ROOF.

SPECIFICATION forming part of Letters Patent No. 370,259, dated September 20, 1887.

Application filed April 5, 1887. Serial No. 233,714. (No model.)

To all whom it may concern:

Be it known that I, EDMOND HORBACZEWSKI, a subject of the Emperor of Austria-Hungary, and a resident of Vienna, in the Empire of Austria-Hungary, have invented certain new and useful Improvements in Roofs, of which the following is a specification.

My invention relates to an extensible roof, awning, or the like for covering open spaces to serve as a protection from the weather and for other purposes, the said roof when not in use being folded within a suitable casing. The said roof comprises a number of sections, *a*, each of which is either in the form of a plate or of a lattice girder covered with glass or the like and made of any suitable material.

Figure 1 is an end view, partly in section, of my improved roof when folded or drawn up. Fig. 2 is a perspective view of the roof in its extended position, a portion of the roof being broken away. Fig. 3 is an end view, partly in section, of one of the modifications. Figs. 4, 5, 6, 7, 8, 9, 10, 11, 12, and 13 are detail views of different parts of the roof.

The several roof-sections, *a a'*, are each bent at their upper and lower edges, so as to be overlapped by the section above and to overlap the section below, and are arranged upon iron rods *b b'*, as shown in Fig. 7, which serve as braces, and yet permit their free movement when these sections are slid together and asunder, each roof-section being arranged to slide upon the rod of the section above it. The said rods *b b'* serve at the same time as guides and for the purpose of facilitating the motion between pairs of rollers *r r'*, Figs. 6 and 7, at two, three, or more points, according to the length of the roof. The roof-sections thus connected are supported by beams or rafters, which can be either rigid iron bars *c* or wire ropes *h*, Fig. 8.

The several roof-sections have blocks *f* riveted to them, in which blocks the rollers *s s'* are mounted, which run on the rafters *c*. Moreover, on every roof-section is arranged a roller, *w*, in a block, *g*, that runs upon the roof-section beneath it. The said blocks *f* must be of varying height, according to the distance of the respective roof-section from the rafter, in order that the several sections shall be parallel to one another and can be displaced without rubbing against one another.

The roof-sections are extended and withdrawn by means of ropes *h*, chains, or the like, as shown in Fig. 3, which are arranged so as to run on the under side of the roof between rollers *t t'*, whose axes are supported in brackets *m* of varying height, in order that the traction-ropes shall pass parallelly to the roof, the said brackets being riveted to the roof-sections. One end of each rope *h* or chain is secured to a ring, *o*, on the under side of the lowermost roof-section. The other end passes around a pulley, *p*, which is provided on the rear side of the box, within which the sections are located when not in use, or on the wall, and is conducted around another pulley, *q*, when it passes downward within reach of an operator. Suspended from the united ends of the ropes or chains is a counter-weight, *G*, by which the roof is balanced, so that a slight strain upon the ropes causes the roof-sections to slide together. In the said box *k* are fixed blocks *n*, forming prolongations of the roof-rafters *c*, and traction-ropes *h*, upon which the rollers *s*, running on the rafters, and the lower friction-rollers, *t'*, of the traction-ropes, rest, so that the roof-sections retain their normal slope when slid together.

On the uppermost roof-section is arranged an iron rod, *E*, from which the roof is suspended in the distended state, and which is provided at its ends with rollers *W*, running in grooves *l*, and moving as far as the front wall of the said box, against which wall the rod then bears, and is thus held. On the lowermost roof-section is likewise provided another iron rod, *E'*, to enable a uniform descent. This rod is connected in a suitable manner by bolts and hooks with the rafters. By means of these two rods *E E'* the roof is stretched and fixed. To the rod *E'*, on the lower section, can be riveted a perpendicular sheet-metal plate, *B*, which can serve as a sign and for the formation of the gutter, and which, when the roof is slid together, closes the aperture in the box *k*.

If wire ropes, rafter, or supports are used instead of the rigid iron bars, the roof-sections are connected with and guided by them as with the traction-ropes. The wire ropes are first stretched tight, and the roof-sections are then slid asunder and fixed.

For preventing the roof from being lifted off

by the wind, a roller, *S'*, can be provided below each rafter *c*, Fig. 9; or it can be prevented by pins *d*, Figs. 5 and 11, or by means of blocks *f*, which embrace the rafters *c*, Fig. 5
12. The tightly-stretched traction-ropes *h*, guided between pulleys, will, however, generally be sufficient to prevent the roof being lifted off.

I claim—

10 In an extensible roof, the combination, with the frame-pieces *c c*, of the folding sections *a a'*,

carrying rollers *w* on their lower ends, and depending brackets *f*, having rollers *s s'* on their upper ends, one of said rollers riding upon and the other beneath the frame-piece *c*, as 15 and for the purpose set forth.

In testimony whereof I have affixed my signature in presence of two witnesses.

EDMOND HORBACZEWSKI.

Witnesses:

C. O. PAGET,

E. G. J. MOELLER.