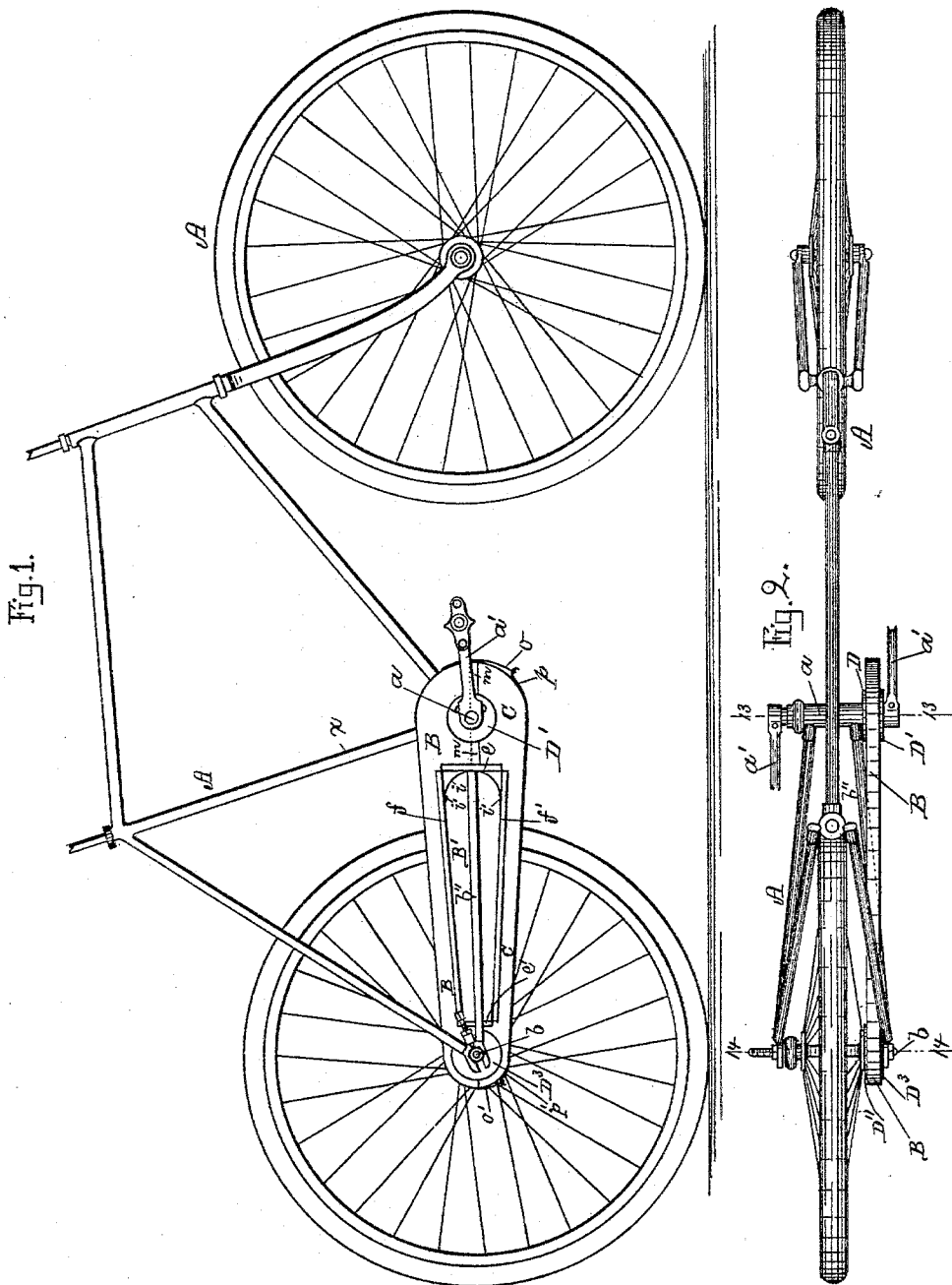


H. HILL.

DUST GUARD FOR SPROCKETS AND CHAINS OF BICYCLES.

No. 583,904.

Patented June 8, 1897.



Witnesses.

Henry A. Möller
Mary C. Möller

Inventor

Harry Hill

(No Model.)

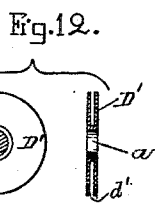
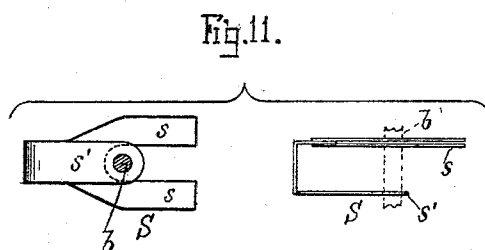
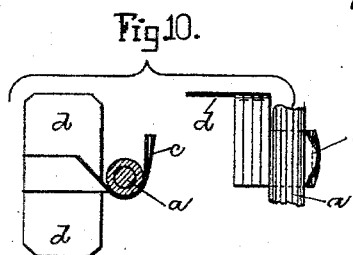
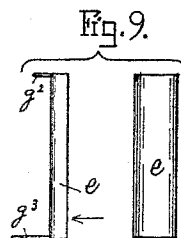
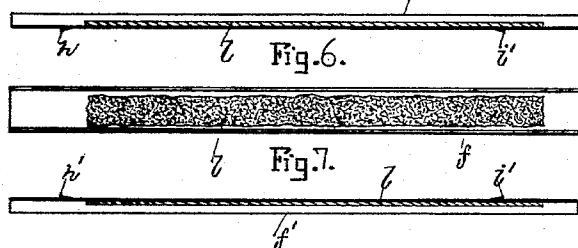
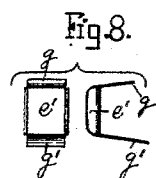
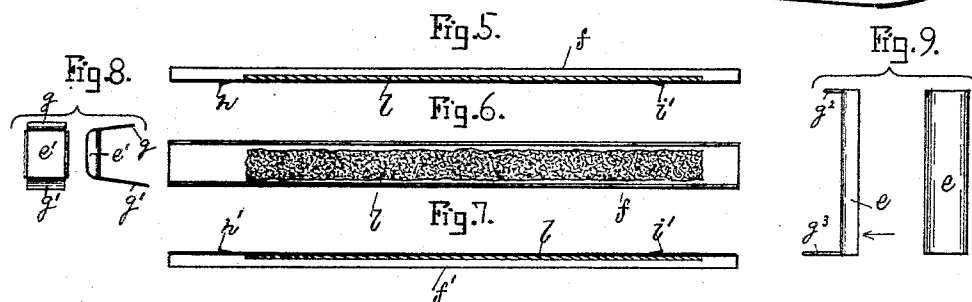
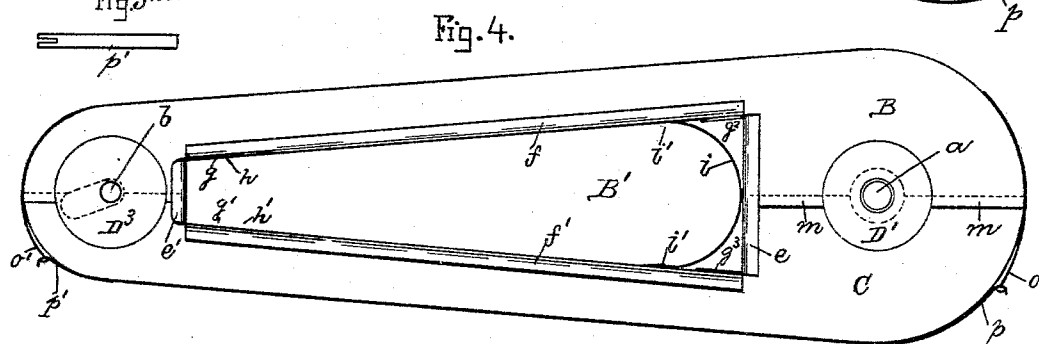
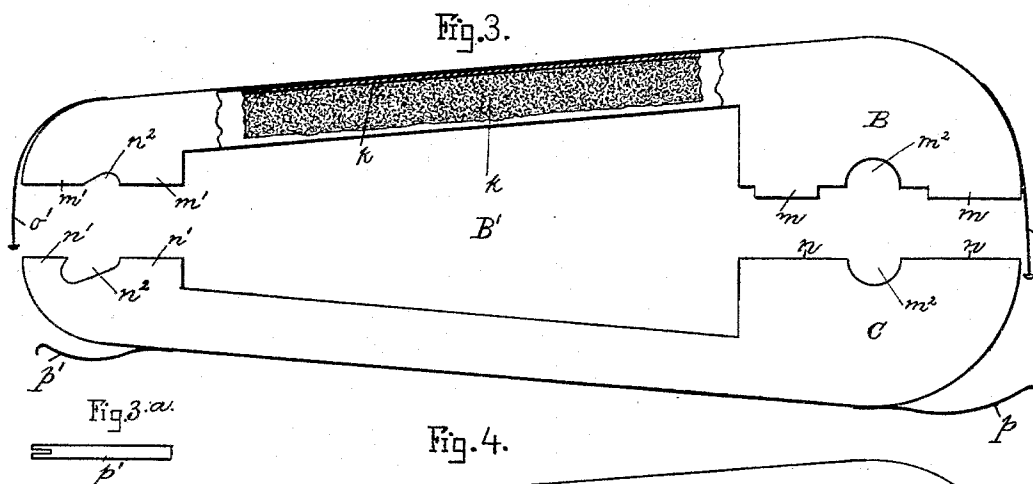
3 Sheets—Sheet 2.

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Witnesses.

Lauitz & Möller
Marry C. Möller

Inventor.

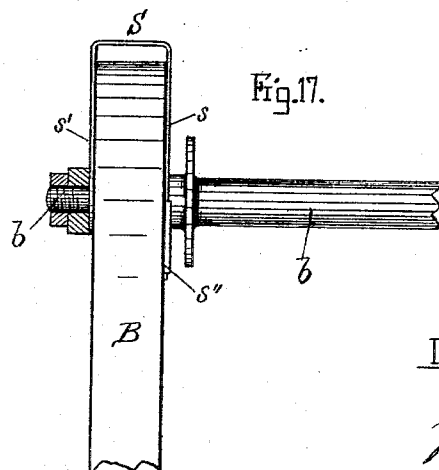
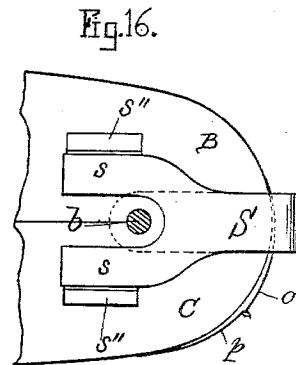
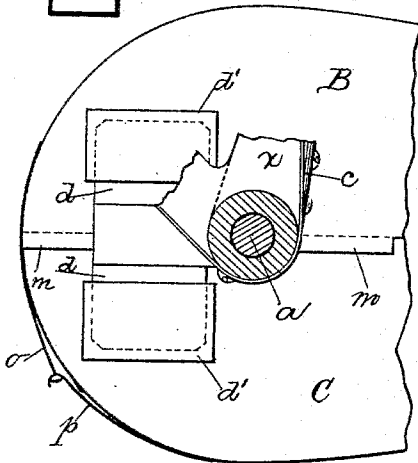
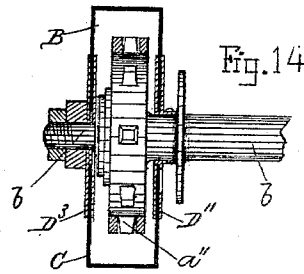
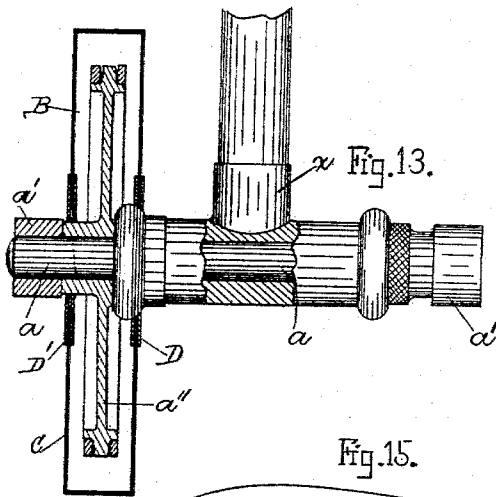
Henry Hill

H. HILL.

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No. 583,904.

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Witnesses.

Lauritz N. Möller,
Mary E. Möller

Inventor

Henry Hill.

UNITED STATES PATENT OFFICE.

HENRY HILL, OF WHITMAN, MASSACHUSETTS.

DUST-GUARD FOR SPROCKETS AND CHAINS OF BICYCLES.

SPECIFICATION forming part of Letters Patent No. 583,904, dated June 8, 1897.

Application filed June 29, 1896. Serial No. 697,497. (No model.)

To all whom it may concern:

Be it known that I, HENRY HILL, a citizen of the United States, residing at Whitman, in the county of Plymouth and State of Massachusetts, have invented a new and useful Improvement in Dust-Guards for Sprockets and Chains of Bicycles, of which the following is a specification, reference being had to the accompanying drawings, which form a part hereof.

When the sprockets and chain are exposed, as is usually the case, more or less dust and gritty particles collect on them and wear the parts and increase the friction.

The object of my invention is to provide a cover or guard to inclose and protect the sprockets and chain and which is easily separable, the novel features of which will be more fully described, and particularly pointed out in the claims at the end of the specification.

In the drawings, Figure 1 is a side elevation of a bicycle, showing my improved dust-guard attachment. Fig. 2 is a plan of the same. Fig. 3 is a side elevation of the upper and lower portions of the dust-guard detached and unlocked with a part of one side broken away to show the inside lining of the opposite side. Fig. 3^a is a detail plan of the spring *p*'. Fig. 4 is a side elevation of the dust-guard locked. Fig. 5 is a longitudinal section of the lower cover *f*' of the upper half of the guard. Fig. 6 is an inside view of said cover *f*'. Fig. 7 is a longitudinal section of the upper cover *f*' of the lower half of the guard. Fig. 8 is a detail side elevation and an inside elevation of one of the inside end covers detached. Fig. 9 is a detail side and an inside elevation of the opposite inside end cover detached. Fig. 10 is a detail side elevation and a plan of a modification in place of the disk D on the hub of the sprocket. Fig. 11 is a detail side elevation and a plan of a modification in place of the disks D' and D³ on the hub of the rear sprocket. Fig. 12 is a side elevation and a section of the disk D' on the axle of the forward sprocket. Fig. 13 is a section on line 13 13 of Fig. 2. Fig. 14 is a section on line 14 14 of Fig. 2. Fig. 15 is a side view of the dust-guard, showing the modification, Fig. 10, with the flanges *d d* inserted in pockets in the guard. Fig. 16 is a side view showing the modification, Fig. 11,

inserted in position. Fig. 17 is a plan of the dust-guard employing the modification, Fig. 11.

The bicycle is of any well-known construction in which sprockets are employed. The dust-guard when put together forms a close box around the chain and sprockets, with a longitudinal opening B' through the middle. It comprises an upper portion B, -shaped in cross-section, and a lower portion C, -shaped in cross-section, both being closed at the ends. The sides of each are recessed on the edges, these recesses forming the opening B' when the two portions are brought together. The upper portion B preferably has downwardly-projecting flanges *m m*' at the ends of the recesses which overlap the edges *n n*' of the lower portion C, forming a tight joint. There are curved notches *m² m²* in the edges near the forward ends, which together form the opening for the axle *a*, and the curved notches *n² n²* near the rear ends form together the opening for the axle *b*. The two portions B C are clamped firmly together by the spring-catches *o p* at one end and *o' p'* at the other end. The springs *o o'* are each made with a neck and knob at the end, and the springs *p p'* are each forked at the end to catch the knob. It is obvious that these spring-catches can be modified in various ways. In order to close the guard on the inside around the edges of the slot B', I employ the flanged covering-strips *f f' e e'*, which are just wide enough to extend across the sides and ends of the slot B' and permit the flanges to clamp the sides of the portions B C, so as to form a tight joint. The end covering-strip *e* has flanges *g² g³*, which project inwardly, bearing against the sides of the strips *f f'* to make a close joint at the corners and also to help keep the strips in position. A bow-spring *i*, compressed between the strips *f f'* and pressing against the end strip *e*, also serves to hold the strips in place. The projections *i'* on the strips *f f'* are stops for the ends of the spring *i* to abut against. The strip *e'*, which closes the other end of the slot B', has spring-flanges *g g'*, which project inwardly, being compressed between the strips *f f'* and abutting against the stops *h h'*.

The strips *f f'* have upon their inside faces brushes or pads *l*, of felt or other soft material,

and the three other inside faces of the case have similar brushes *k*, which brush the chain as it passes through and clean it from any superfluous oil or other lubricant or any foreign matter, and also render the chain noiseless.

The split or grooved disks *D D'*, one of which is shown in detail in Fig. 12, each having a hole in the middle, form bearings for the hub of the axle *a* of the forward sprocket. The sides of the casing *B C* fit snugly into the grooves *d'* of these disks, as shown in Figs. 4 and 13, the snug-fitting disks serving to clamp the two portions *B C* of the guard more firmly together and to hold them steady, and also to make the joint tighter around the axle. The grooved disks *D'' D³*, similarly constructed as the disk *D'*, receive the sides of the portions *B C* and form bearings for the hub of the axle *b* of the rear sprocket, as shown in Fig. 14.

In the modification shown in Figs. 10 and 15 a different device is employed in place of the inside disk *D* on the axle *a*. The device consists of a bracket comprising a plate *d d*, having fixed thereon a concave rest *c*. The ends of the plate *d d* slide into pockets *d' d'* on the upper and lower portions *B C*, as shown in Fig. 15, and the rest *c* supports the hub of the axle *a*.

In the modifications shown in Figs. 11, 16, and 17 a different device is employed in place of the disks *D'' D³* on the axle *b*. The device consists of a bent clip *S*, which embraces both sides of the dust-guard at the end. The portion which takes the place of the inside disk *D''* is forked, the axle *b* resting in the fork between the two branches *s s*. The other arm *s'* has a hole for the axle *b*. The clip should preferably be of spring metal, so that it will have to be sprung slightly in order to

put it in position. The projections *s'' s''* on the side of the box serve as guides to keep the clip steady.

My improved dust-guard thus completely incloses the sprockets and chain, and is easily separable as to its parts and detachable from the wheel, no bolts or screws being required to hold the parts together.

What I claim is—

1. A dust-guard for the sprocket chain and wheels of bicycles and the like comprising two main box portions which shut onto each other, recesses in the edges of the box portions which form a slot through the box when said portions are brought together, and detachable spring-clamped covering-strips for the sides and ends of said slot, and pads on the inside walls and on the inside of said side covering-strips of the box, substantially as and for the purpose described.

2. A separable dust-guard for the sprocket chain and wheels of bicycles and the like comprising two main box portions which shut onto each other, one forming a cover for the other, recesses in the edges of the box portions which form a slot through the box when the portions are brought together, covering-strips for the sides and ends of said slot, spring-clamps which hold the covering-strips in position, notches in the edges of the box portions which together form openings for the axles of the sprockets, grooved perforated disks which form bearings for the axles of the sprocket-wheels, and whose grooves receive the adjacent edges of the box portions, substantially as described.

HENRY HILL.

Witnesses:

CHAS. P. FESSENDEN,
JOHN MOIR.