No. 631,009. Patented Aug. 15, 1899.

J. HAHN.

SICKLE BAR.

(Application filed June 13, 1899.)

(No Model.)

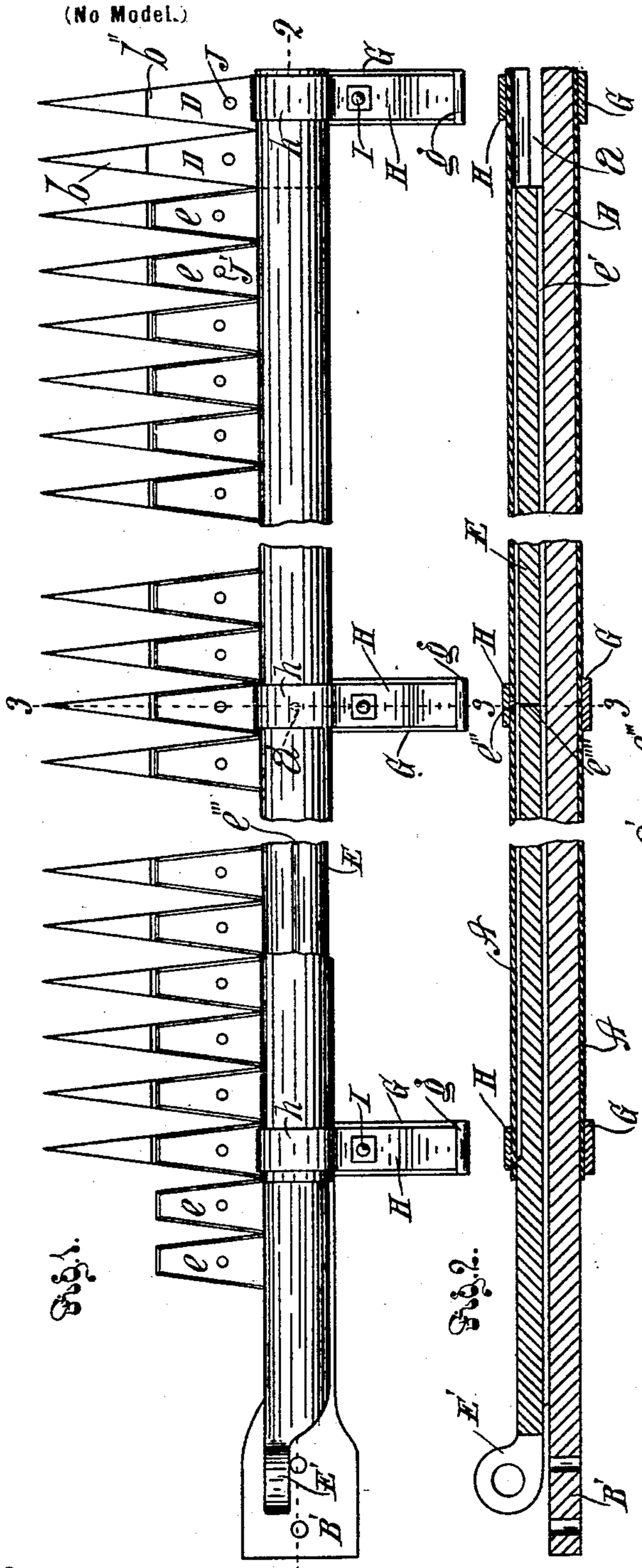

Fig. 1.

Fig. 2.

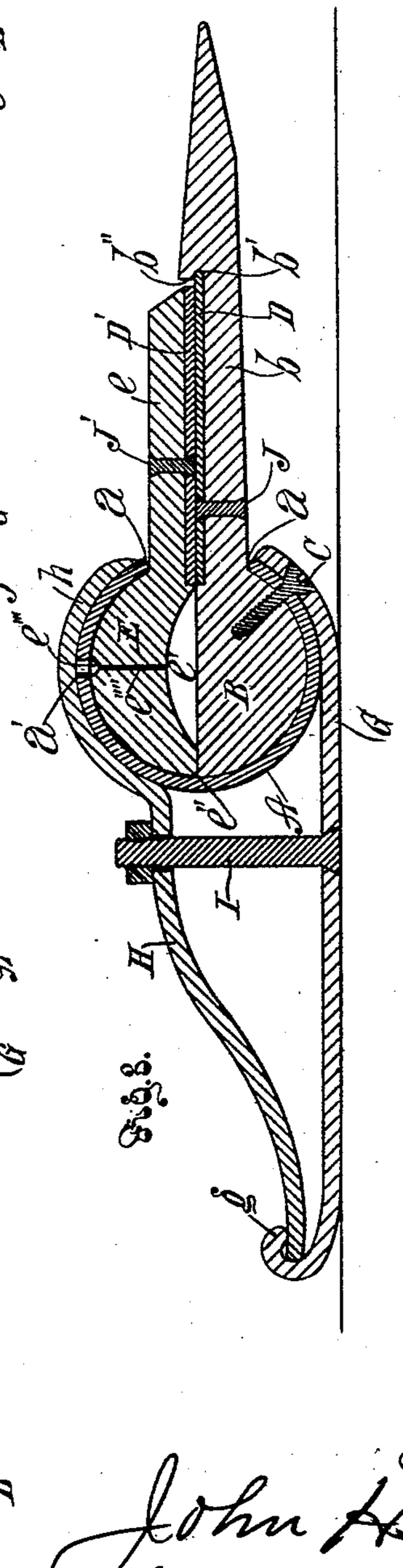

Fig. 3.

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UNITED STATES PATENT OFFICE.

JOHN HAHN, OF COLEGROVE, CALIFORNIA.

SICKLE-BAR.

SPECIFICATION forming part of Letters Patent No. 631,009, dated August 15, 1899.

Application filed June 13, 1899. Serial No. 720,399. (No model.)

To all whom it may concern:

Be it known that I, JOHN HAHN, residing at Colegrove, in the county of Los Angeles and State of California, have invented a new and useful Sickle-Bar, of which the following is a specification.

An object of my invention is to provide a sickle-bar of simple construction and which can be produced at less expense than sickle-bars now in common use.

It is another object of my invention to provide a sickle-bar which can be principally made of cast-steel and which will not clog, also to make superior provision for oiling the working parts, and also to provide improved means for preventing looseness of parts.

The accompanying drawings illustrate my invention.

Figure 1 is a plan of my newly-invented sickle-bar with the cutter-bar at the limit of its inward stroke. Fig. 2 is a longitudinal vertical section of the same on line 2 2. Fig. 3 is a section on line 3 3, Figs. 1 and 2.

A indicates a pipe or tubular arm provided along its front side with a slot *a*, a finger-bar B, fitted in the lower part of said arm and fastened thereto by suitable fastenings, such as the screws C, and provided with fingers *b*, extending forward through the slot *a*, said fingers being recessed at *b'* on their top side to seat cutting-knives D, respectively, and to form a shoulder *b''* above the front end of said knives. Said cutting-knives are fastened in said seats, respectively, each of the fingers *b* being thus provided with a cutting-knife. E indicates a cutter-bar movably mounted in said tubular arm and resting upon the finger-bar and provided with forwardly-projecting fingers *e*. Cutters D' are fastened to the under side of the fingers of said cutter-bar to rest upon the knives of the finger-bar.

G indicates rearwardly-projecting shoes fastened to the tubular arm A by the screws C, which fasten the finger-bar to said tubular arm.

g indicates an upwardly-projecting catch at the rear end of each of the shoe-runners G, respectively.

H indicates a clamp-arm the front end of which is curved, as at *h*, and fits over the top of the tubular arm.

I indicates an adjusting-bolt connecting the runner G and the clamp-arm to draw the clamp-arm down, thereby to close to a greater or less extent the slot *a* in the tubular arm.

The cutter-arm E is grooved, as at *e'*, on its under side, said groove extending longitudinally of the cutter-bar and leaving at one side of the cutter-bar a runner, as at *e''*, to rest upon the finger-bar B, thus to reduce friction and to leave a surface for holding a lubricant.

J indicates rivets which fasten the cutter-plates D to the finger-bar, and J' indicates rivets which fasten the cutter-plates D' to the cutter-bar.

The fingers *b* may be of any desirable length and are preferably about twice the length of the cutter-fingers *e*, to which the cutting plates or knives D' are fastened. The shoulders *b''* of the fingers project above the joint between the cutter-plates D and the fingers *b* of the cutter-bar E, so that said joint is protected by said shoulder. Preferably the shoulder is undercut and the cutter-plate D is seated in the undercut portion, thus affording perfect security of fastening for the front ends of said knives.

Preferably the movement of the cutter-bar will be twice the width of any cutter. This is indicated in Fig. 1 by showing two of the cutter-fingers retracted from the finger-bar, and it is to be understood that on the outer stroke the said fingers will move outward to come above the fingers of the finger-bar.

e''' indicates an oiling gutter or channel along the top of the cutter-bar E.

a' indicates an oil-hole through the top of the tubular arm A, communicating with the channel or gutters *e'''* of the cutter-bar.

e'''' indicates a small oil-hole leading downward from the gutter into the channel *e'* in the under face of the cutter-bar.

The oil-hole *a'* is normally covered by the clamp-arm H, and when the operator wishes to oil the sickle-bar he will remove the clamp-arm H to give access to the oil-hole, and after the oil has been applied the arm H will be replaced and again clamped in position by the bolt I.

By keeping the bolt I tight the tube A can be compressed to a greater or less degree to prevent any looseness of the parts.

The practical operation of my newly-in-

vented sickle-bar is substantially the same as that of other sickle-bars, excepting that the liability to clog is done away with and the rounded surface of the circular tubular arm allows the machine to move forward with a minimum amount of friction. There being no covering over the fingers of the cutter-bar there is consequently no danger of clogging with dried grass, &c. The fingers of the cutter-bar are made of such weight as to be sufficiently strong and stable for the purpose set forth. They should be made of sufficient strength to enable the machine to cut baling-wire and any other rubbish which may accidentally be run across in the field.

The fingers of the finger-bar are pointed at front to enter between the standing grain without breaking it down, and said fingers guide the grain into the spaces between the cutters substantially in the manner of the ordinary sickle-bar.

The upper front lip of the slot *a* is intended to fit closely against the offset formed by the fingers of the cutter-bar, so that said fingers are held firmly in place on the finger-bar. When the bolt I is tightened, this lip is brought down with more or less force upon the said fingers to hold them in place.

In case the parts become worn the knives can be removed and replaced or the entire cutter-bar and finger-bar may be replaced with new, the expense being small.

E′ indicates the eye for the pitman which drives the cutter-bar.

B′ indicates the shank of the finger-bar, by which it is to be attached to the machine (not shown) in the ordinary manner.

The slotted tube A forms a containing-sheath for both bars and will be sufficiently rigid and strong to hold the cutter-bar in true position for cutting.

The finger-bar and cutter-bar are substantially semicylindrical in form, so that when placed together with their straight sides in contact they practically form a cylinder, from one side of which the cutters project, and the slotted pipe A practically fits said cylinder, and the clamp formed by the shoes G, arms H, and bolts I holds the pipe to fit the cylinder.

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

1. A sickle-bar comprising a tubular arm provided along its side with a slot; a finger-bar fitted in the lower part of said arm and fastened thereto and provided with fingers extending forward through the slot; said fingers being recessed on their top side to seat cutting-knives and to form a shoulder above the front end of said knives; cutting-knives fastened in said seats respectively; a cutter-bar movably fitted in said tubular arm and resting upon the finger-bar and provided with forwardly-projecting fingers; cutters fastened to the under side of the fingers of said cutter-bar to rest upon the knives of the finger-bar; and rearwardly-projecting shoes fastened to said tubular arm.

2. A sickle-bar comprising a tubular arm slotted along one side; a finger-bar fastened in the lower portion of said arm and provided with fingers projecting forward through said slot; knives fastened to the upper faces of said fingers; a cutter-bar movably mounted in said tubular arm and provided with forwardly-projecting fingers having cutters on the under faces thereof resting upon the knives of the finger-bar, the under side of the cutter-bar being grooved longitudinally; an oil-hole through the top of the tubular arm; and one or more oil-holes through the cutter-bar.

3. The combination of the tubular arm provided with a slot along one side; a finger-bar fitted to the lower part of the inside of said arm and provided with fingers extending through the slot; a cutter-bar movably fitted in the upper part of the tube and resting on the finger-bar and provided with fingers extending through the slot; the fingers of the finger-bar and cutter-bar being respectively provided with cutters; a shoe-runner fitted to the front under side of the tubular arm and provided at its rear end with a catch; a clamp-arm fitted over the top of the tubular arm and having its rear end held by the catch; and an adjusting-bolt connecting the clamp-arm and the runner.

4. The combination of the tubular arm provided with a slot in one side; a finger-bar fitted to the lower portion of the inside of said arm and provided with fingers projecting forward through said slot; cutters on said fingers; a cutter-bar movably mounted in said tubular arm and provided with fingers extending through said slot and cutters on the under face of said fingers to engage the cutters of the finger-bar; said cutter-bar being grooved along the top and provided with oil-holes leading from said groove down through the bar; and an oil-hole through the tubular arm to communicate with the groove in the cutter-bar.

5. The combination of the tubular arm provided with a slot in one side; a finger-bar fitted to the lower portion of the inside of said arm and provided with fingers projecting forward through said slot; cutters on said fingers; a cutter movably mounted in said tubular arm and provided with fingers extending through said slot and cutters on the under face of said fingers to engage the cutters of the finger-bar; said cutter-bar being grooved along the top and provided with oil-holes leading from said groove down through the bar; an oil-hole through the tubular arm to communicate with the groove in the cutter-bar; a shoe-runner fastened to the under side of the tubular arm and projecting rearward therefrom and provided at the rear end with a catch; a clamp-arm fitted over the tubular arm and covering the oil-hole and ex-

tending rearward and caught by said catch; and an adjusting-bolt connecting the runner and the clamp-arm together.

6. The combination of a finger-bar and a cutter-bar of substantially semicylindrical form arranged with their flat faces together and provided with projecting cutters; a pipe slotted along one side and fitted to said bars and fastened to the finger-bar; and a clamp for clamping said pipe to fit the same to said bars.

7. In a sickle-bar, the combination with the slotted pipe, of a shoe fastened to the under front side of the pipe and projecting rearward from the pipe and provided at its rear end with a catch; a clamp-bar caught under the catch and extending forward over the pipe; and an adjusting-bolt to draw the clamp and shoe together.

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