

(No Model.)

2 Sheets—Sheet 1.

C. COLAHAN.
GRAIN BINDER.

No. 500,738.

Patented July 4, 1893.

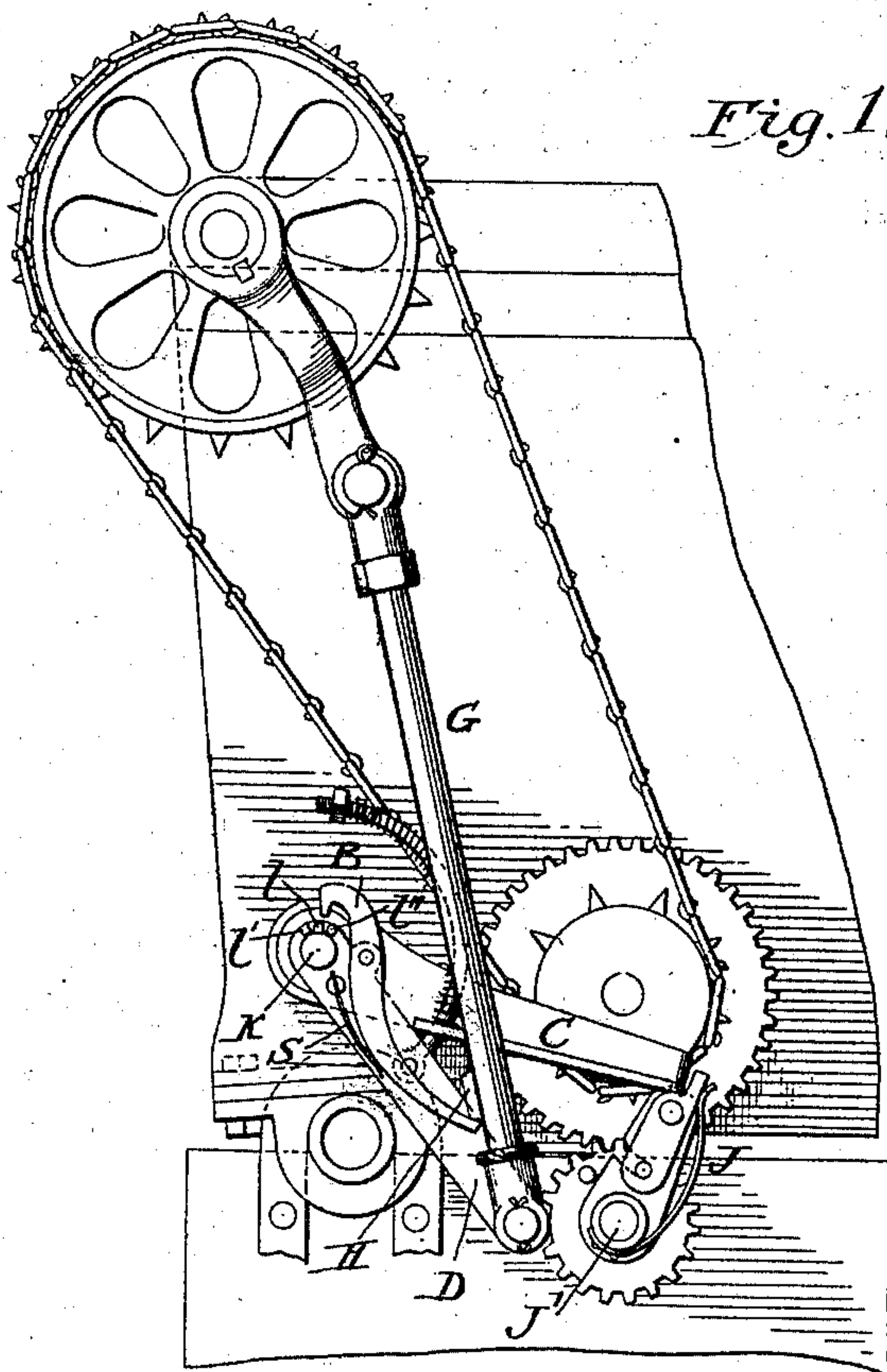


Fig. 1.

Fig. 2.

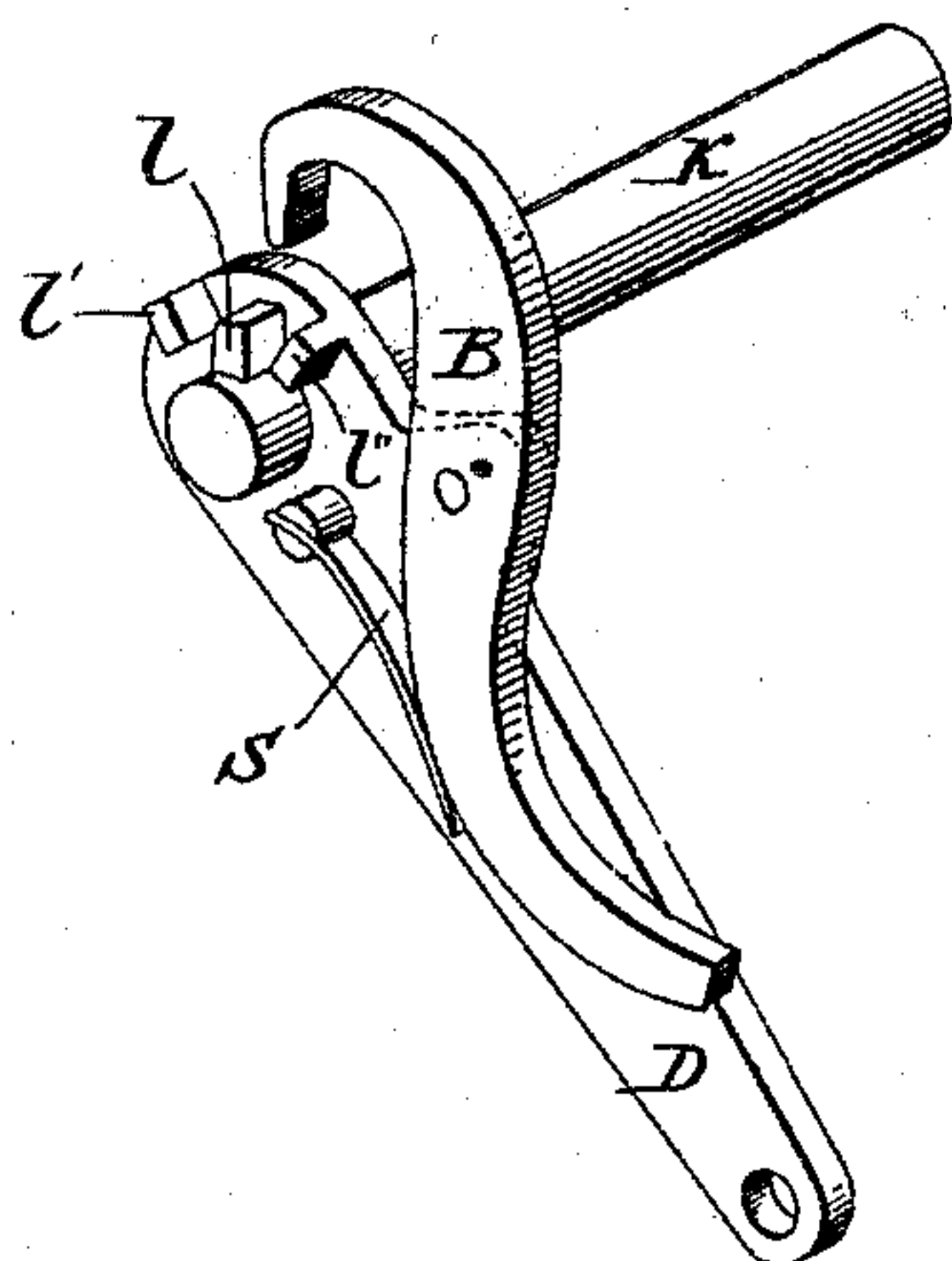


Fig. 3.

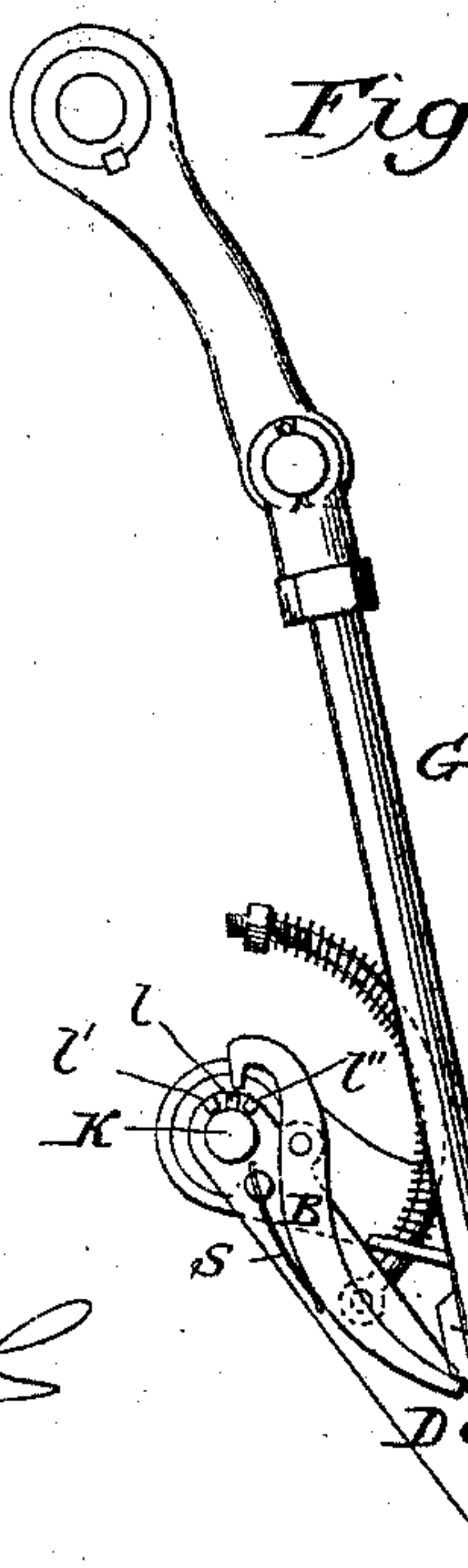
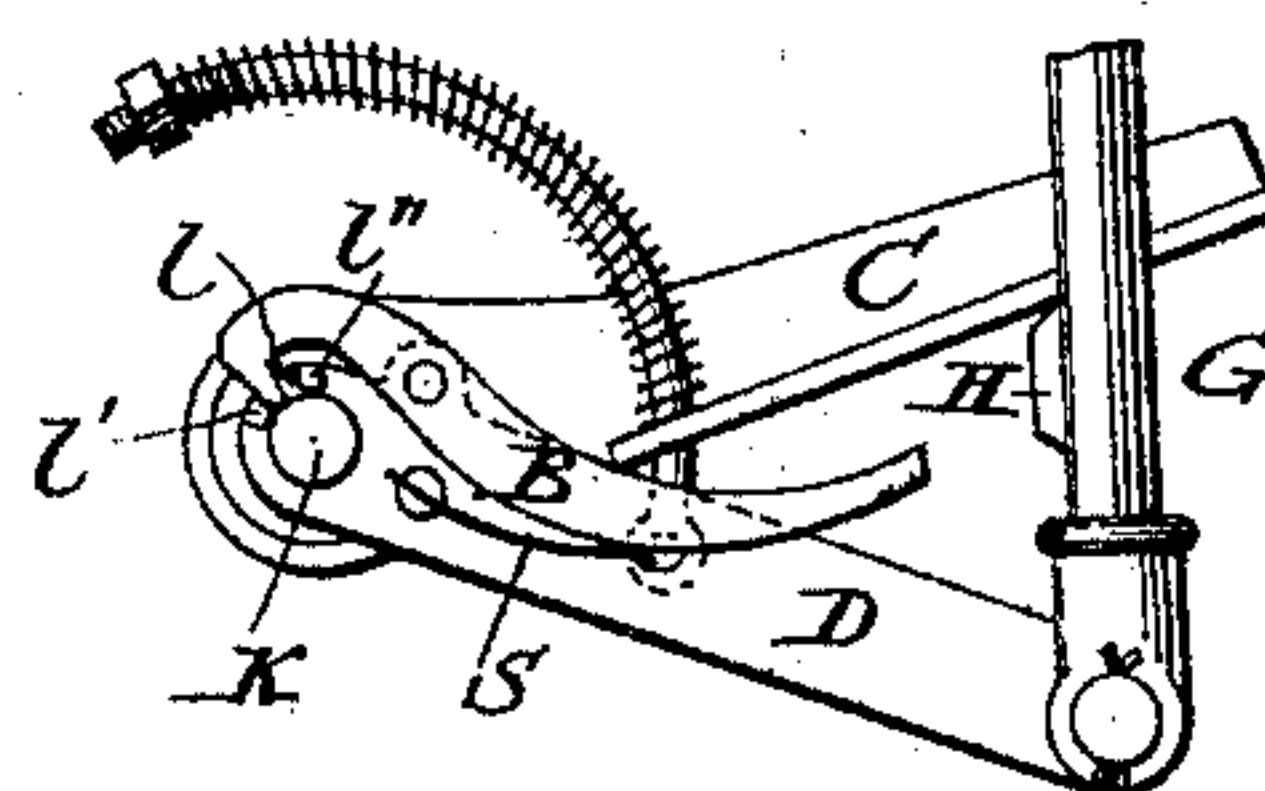


Fig. 4.



Attest.

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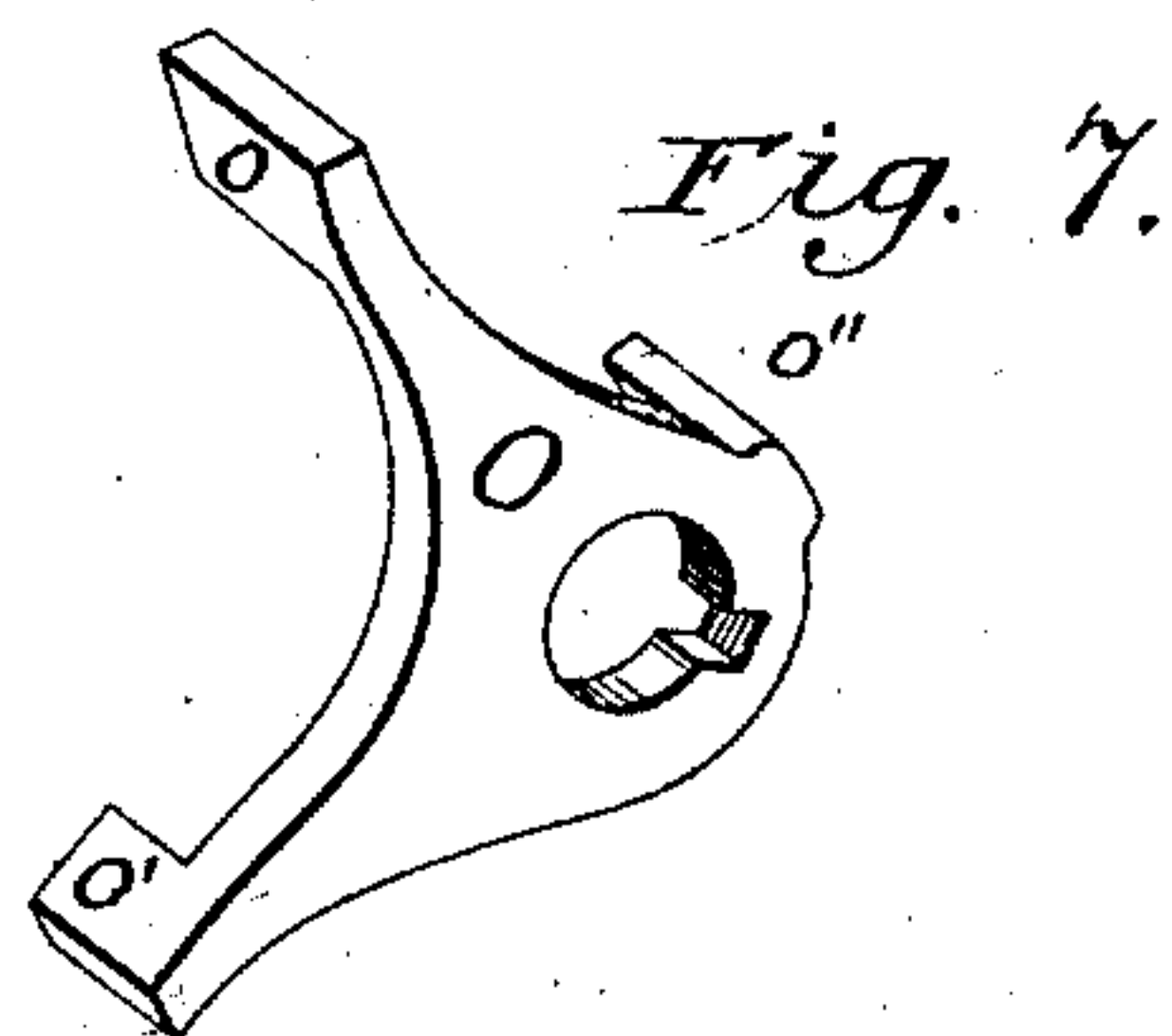
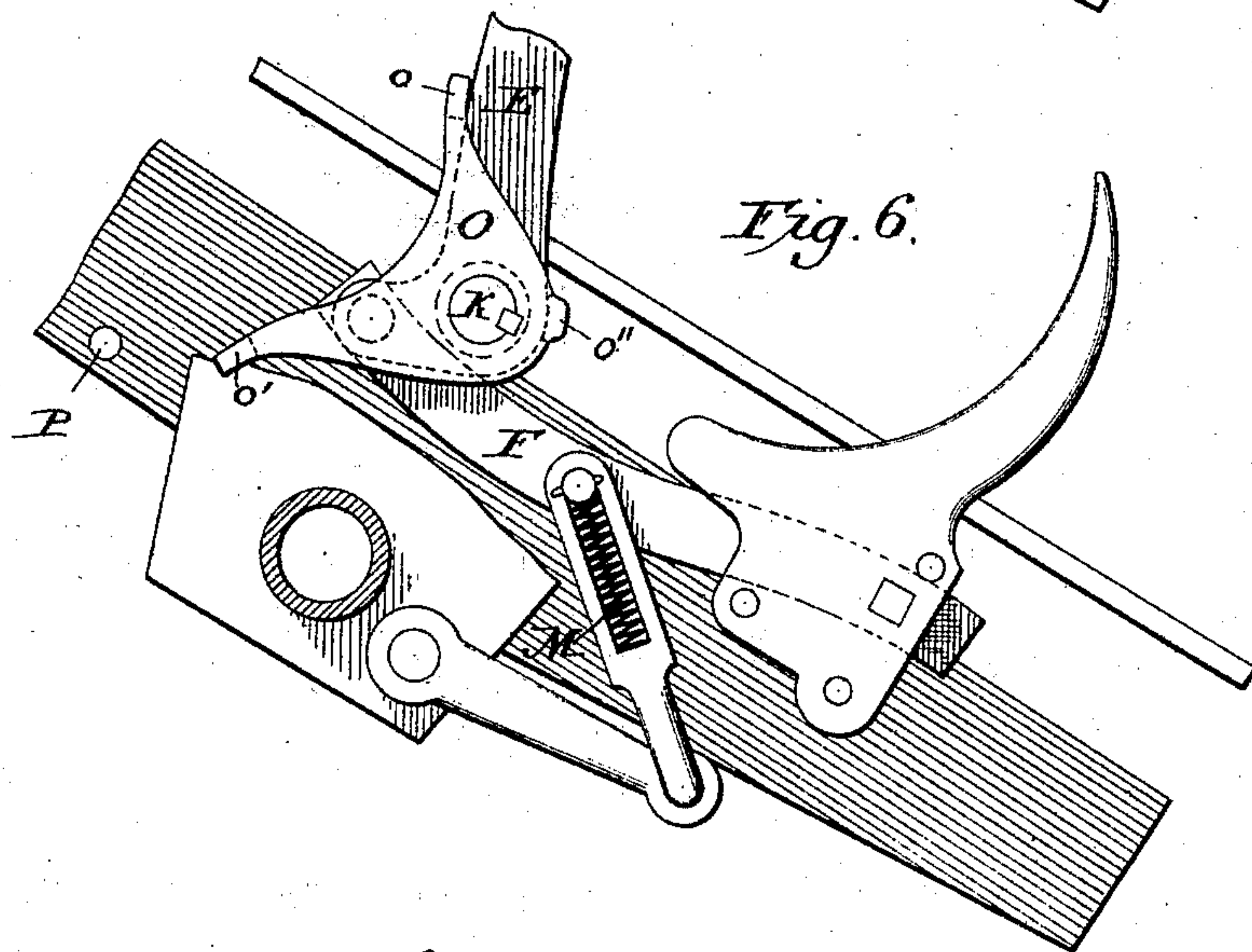
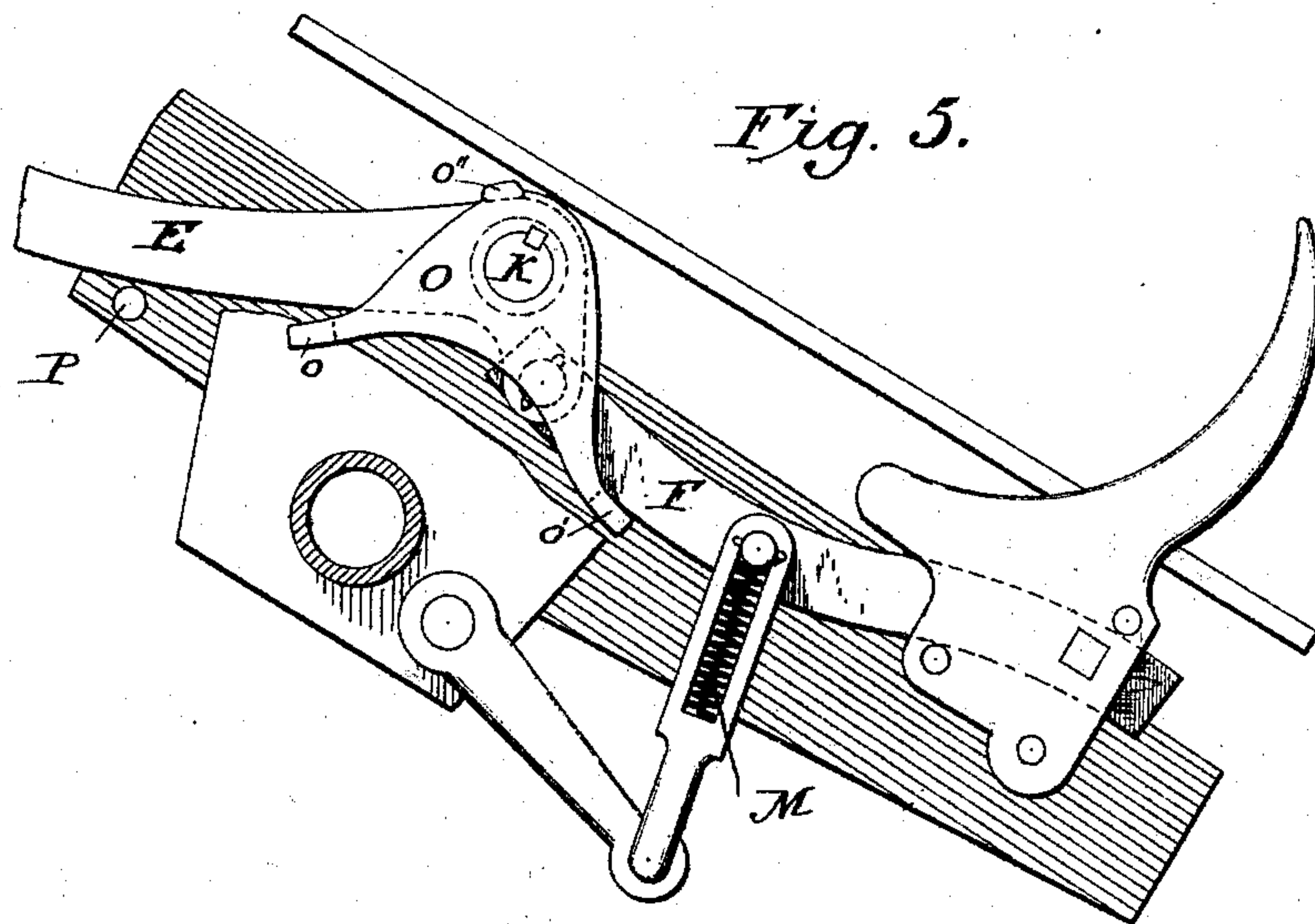
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2 Sheets—Sheet 2.

C. COLAHAN.
GRAIN BINDER.

No. 500,738.

Patented July 4, 1893.



Attest.

Sidney P. Hollingsworth
W. H. Colahan

Inventor.

Char Colahan

UNITED STATES PATENT OFFICE.

CHARLES COLAHAN, OF CLEVELAND, OHIO.

GRAIN-BINDER.

SPECIFICATION forming part of Letters Patent No. 500,738, dated July 4, 1893.

Application filed December 26, 1888. Serial No. 294,607. (No model.)

To all whom it may concern:

Be it known that I, CHARLES COLAHAN, a citizen of the United States, residing at Cleveland, county of Cuyahoga, and State of Ohio, have invented certain new and useful Improvements in Grain-Binders, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to the manner of clutching and unclutching the binder by means of the binder arm shaft on which the binder arm and its crank are loosely journaled and controlled by devices that admit a slight additional rotary movement of said shaft in either direction to facilitate the operation of the clutching devices in connection with its normal function of actuating the binder and compressor arm without materially changing the construction or interfering with its normal action in either office.

Figure 1 is a view of the binder drive wheel, the binder arm pitman, and crank, with the binder at rest as it is unclutched during the formation of the bundle. Figs. 2 and 3 are detail views of the detached portions of the binder. Fig. 4 is a detail view of a portion of the same as the binder is clutched and started in operation. Fig. 5 is a detail view of the compressor and tripping arm and the supporting plate secured to the shaft, in their normal positions during the formation of the bundle. Fig. 6 is a view of the same as closed during the binding of a bundle. Fig. 7 is a view of the plate that is keyed to the binder arm shaft and its laterally projecting lugs that control the movements of the binder arm.

In the drawings like letters refer to like parts.

E is the binder arm; K its shaft; F the compressor and tripping arm that is pivoted to the heel of the binder arm in the usual manner and may be constructed in one piece as it is rigid throughout its length.

O is the plate or yoke that is keyed to the binder arm shaft and it is provided with controlling lugs or stops o o' o'' .

M is the spring supporting the compressor and tripping arm.

D is the crank arm mounted to rotate with in certain limits on the binder arm shaft.

l' l'' are stop lugs on the hub of the crank

arm D that alternately engage the central lug l secured in the binder arm shaft.

B is the crank arm locking latch and is pivoted on the crank arm. S is its retaining spring also secured to the crank arm and causes the engagement of the locking latch with the central lug l in the binder arm shaft, thereby locking said crank arm during the formation of the bundle.

C is the clutch tripping finger keyed to the binder arm shaft; J the clutching pawl pivoted to its supporting arm which is keyed on the continuously running packer shaft J' . This clutching device is shown in a former patent granted to me April 14, 1885, No. 315,479.

G is the binder arm actuating pitman which is of the usual well known form.

H is a tripping lug secured to the pitman G and is adapted to bear against the latch B to trip or unlock it from engagement with the central lug in the binder arm shaft while the binder arm is retracted to open the receptacle for the incoming grain. As shown in Fig. 3 the action of the pitman G forces the crank D downwardly and at the same time the locking latch B is tripped from its engagement with the central lug l of the binder arm shaft to permit said shaft and other parts connected therewith to be rocked sufficiently to throw the clutch tripping arm out of engagement with the pawl of the binder clutch as the binder is unclutched from engagement with the continuously running shaft J' .

The binder and its clutching mechanism which my devices are applied being of the usual Appleby type, I have only illustrated such parts as are deemed necessary to fully show my invention.

In the operation, the grain accumulates in the receptacle from the harvester and is packed against the bundle forming portion of the compressing and tripping bar F, that rests on the lug o' of the plate O at a point near its pivot to the binder arm. Said plate being keyed to the shaft K, the pressure of the grain causes the same to move downwardly against the lug o' and thereby produce a slight rotation of the shaft K, and a predetermined bulk of grain will rotate the shaft sufficiently to cause the clutch tripping finger C, that is moved thereby, to rise from con-

tact with the clutch pawl and admit the clutch-
ing and starting of the binder, and as the
pitman G is caused to move upward in the
usual manner the crank arm D as it rises
5 brings its lug *l''* in contact with the central
lug *l* secured to the shaft K, and causes the
shaft to rotate. At the same time the locking
latch B that is pivoted to the crank arm is
released from contact with the lug H on the
10 pitman G and the spring S causes the latch
to rock on its pivot and its upper point will
engage with the central lug *l* that is keyed to
the binder arm shaft thereby locking the
crank arm to its shaft, and its plate O and
15 lug *o* that controls the binder arm will cause
the binder arm to rise and act with the com-
pressor in formation of the bundle in the
usual manner, and the reverse movement of
the plate O and its lug *o''* will force the binder
20 arm back and thereby carry the compressing
and tripping arm to their normal position in
the receptacle as the pitman G will cause the
crank arm D to move downward and the latch
B being in contact with the central lug *l*, as
25 shown in Fig. 4, is caused to unlock the same
as the lug H is brought in contact therewith
as shown in Fig. 3 which thus leaves the
shaft K free to be operated in its function of
unclutching the binder without moving the
30 binder arm crank D or its pitman G.

Having thus described my invention, what
I claim, and desire to secure by Letters Pat-
ent, is—

1. The binder arm shaft K the clutch trip-
35 ping finger C and plate O and its stops rig-
idly secured on said shaft, the binder arm E
and its crank D both loosely journaled on
said shaft, and in certain limits admitting
the partial rotation of the shaft, combined
40 with the pitman G pivoted to and retaining
said crank D in a fixed position until the
binder arm shaft may be caused to rotate and
move said clutch tripping finger C to admit
the unclutching and starting of the binder
45 substantially as shown and described.

2. The shaft K with the binder arm E jour-
naled thereon, the compressor and tripping
finger F pivoted to said arm, its elastic sup-
porting spring M, plate O, having supporting

lugs *o* and *o'* secured to said shaft combined 50
with the clutch tripping finger C and the
clutching pawl J and its supporting arm piv-
oted on the continuously running shaft J' op-
erating to clutch and unclutch the binder
substantially as set forth. 55

3. The shaft K, the binder arm E loosely
journaled thereon, its supporting lug *o* on
plate O, the compressor and tripping arm F
pivoted to said binder arm, combined with
the plate O having a supporting lug *o'* and 50
secured to said shaft K and its clutching fin-
ger C secured to the binding arm shaft to
admit of the unclutching and starting of the
binder substantially as shown and described.

4. The binder arm shaft K, the clutch trip- 65
ping finger C rigid on said shaft the lug *l* on
said shaft combined with the crank arm D
loosely journaled on said shaft, the projections
on the hub of said crank adjusted to be engaged
by the lug on the shaft the locking latch B 70
mounted on the crank arm D and the pitman
G having the lug H adapted to engage the
latch B all operating substantially as and for
the purposes shown and described.

5. The combination of a binder arm shaft 75
and the clutch tripping finger secured there-
on, with the rigid pitman and its crank arm
flexibly secured to said shaft, to admit a
slight rotation of said shaft and its clutch
finger for the purpose of clutching the binder 80
without disturbing the relation of the pitman
and its crank during the accumulation of
grain for the formation of the bundle.

6. The combination of the pitman G and
its crank arm flexibly secured to the binder 85
arm shaft, and provided with a locking latch
to secure to said shaft the crank and pitman
during the opening and closing of the binder
arm, and the tripping lug on said pitman for
unlocking said latch when the binder is un- 90
clutched to admit the tripping action of said
binder arm shaft and its clutch finger sub-
stantially as shown and described.

CHARLES COLAHAN.

Witnesses:

M. H. COLAHAN,
A. WANDROW.