(No Model.)

2 Sheets—Sheet 1.

C. C. STOVER.

POTATO DIGGER.

No. 365,880. Patented July 5, 1887.

Fig. 1.

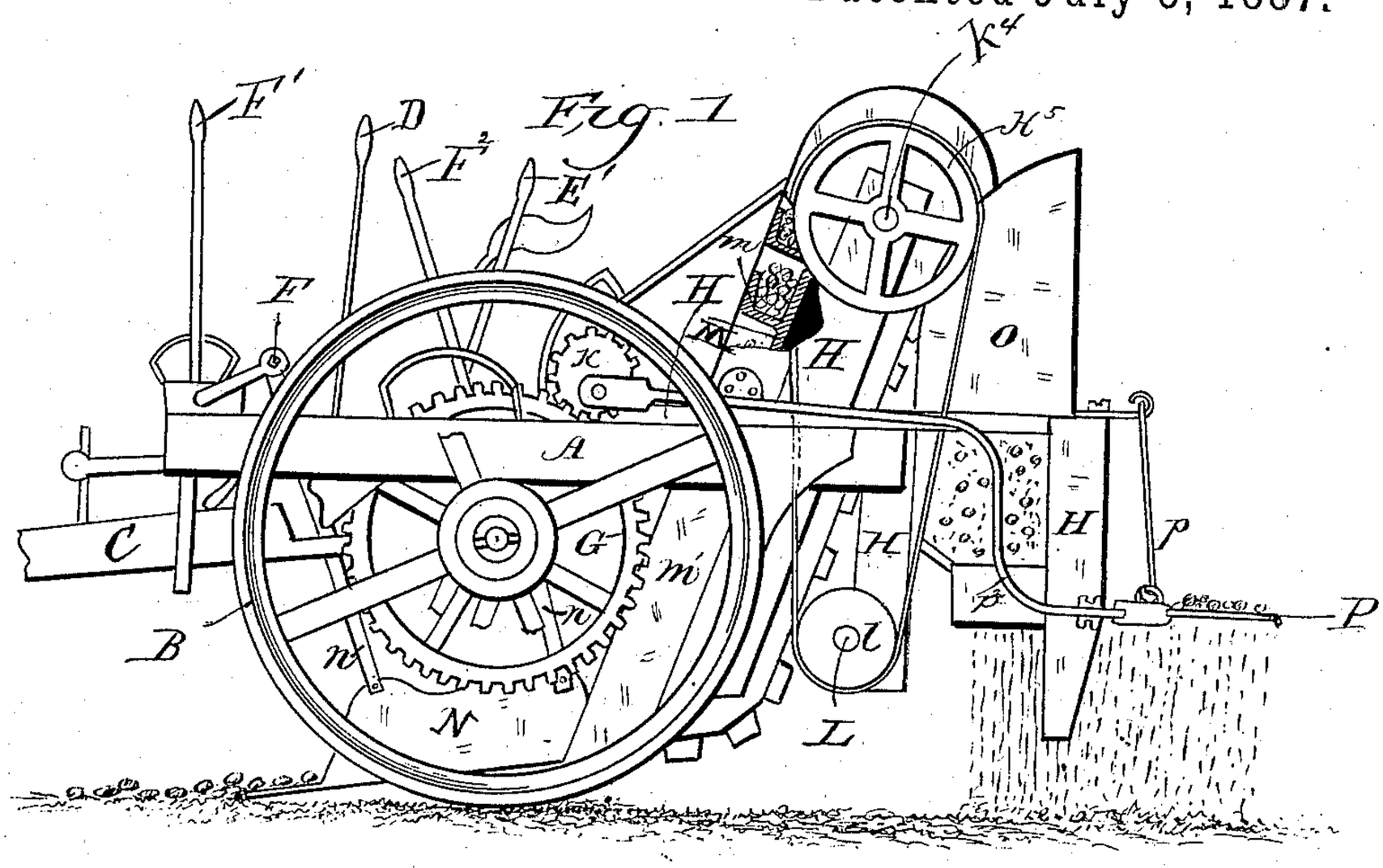


Fig. 2.

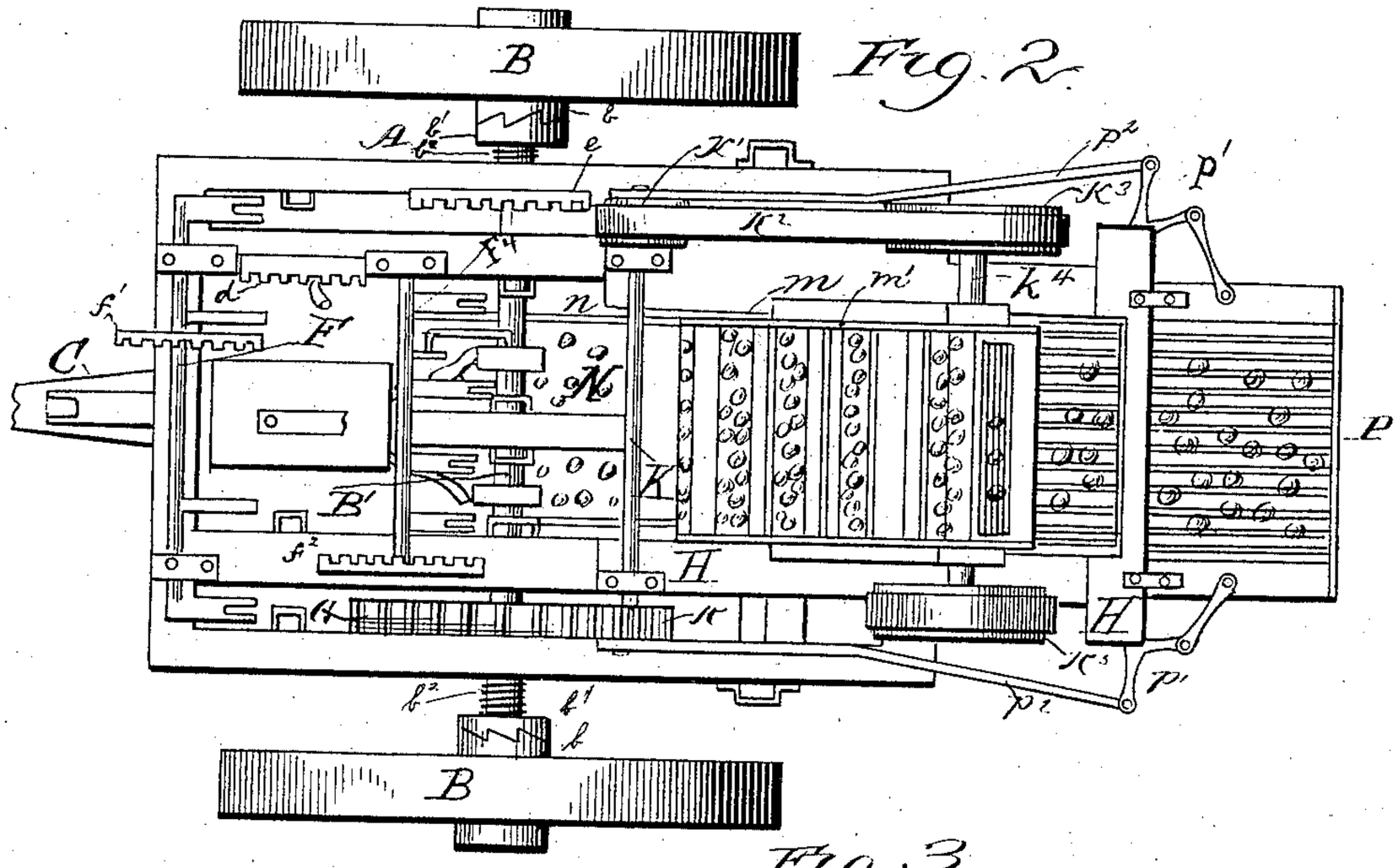
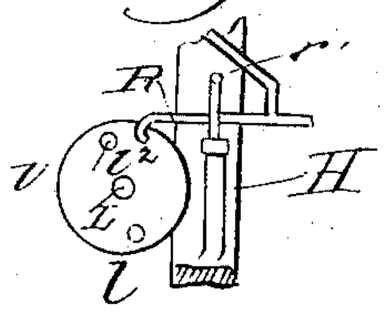


Fig. 3.



WITNESSES:

E. A. Keyser.
W. R. Haight

INVENTOR
Cochran C. Stover
BY
Wm H Babcock
ATTORNEY

(No Model.)

2 Sheets—Sheet 2.

C. C. STOVER.

POTATO DIGGER.

No. 365,880. Patented July 5, 1887.

Fig. 4.

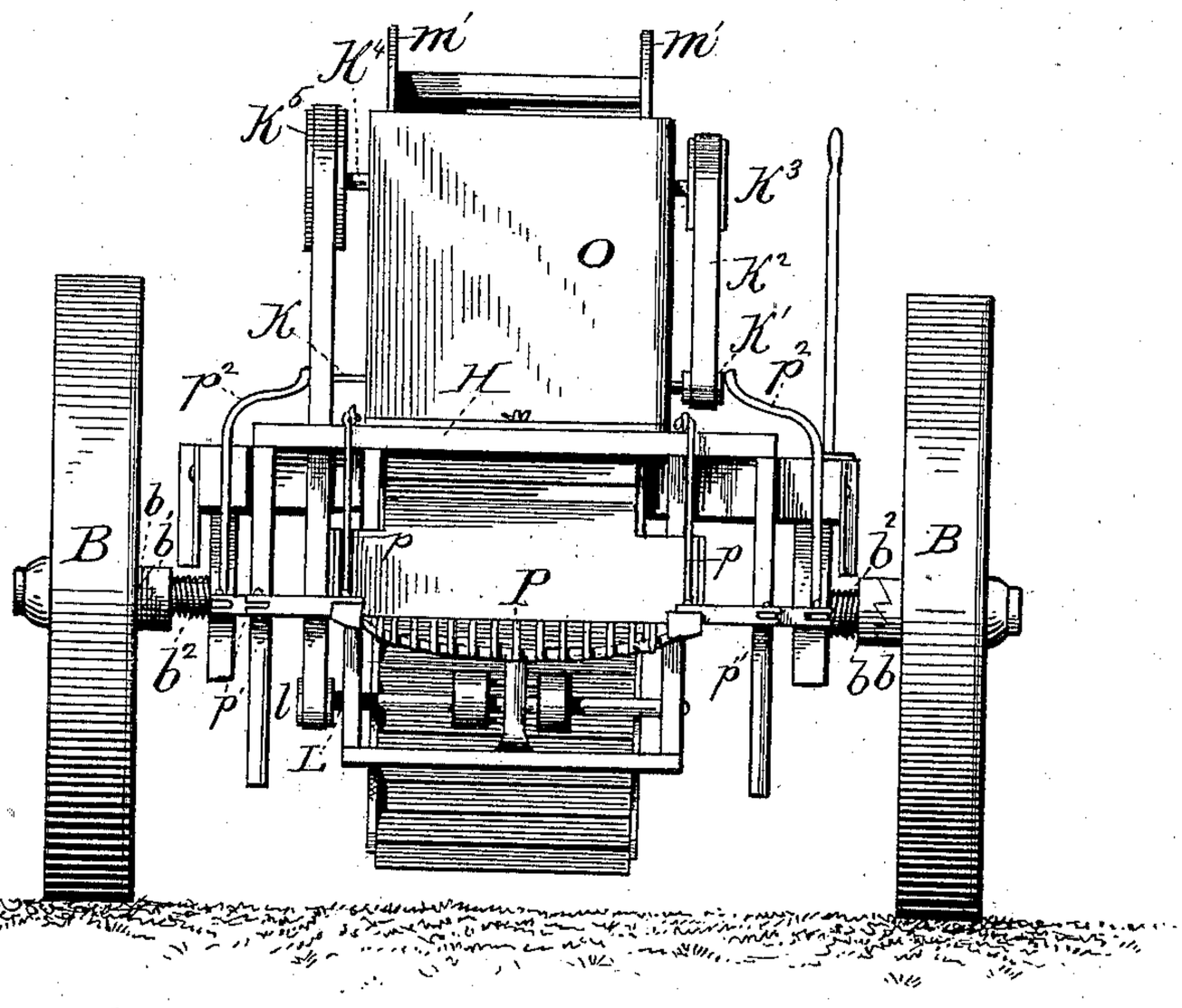
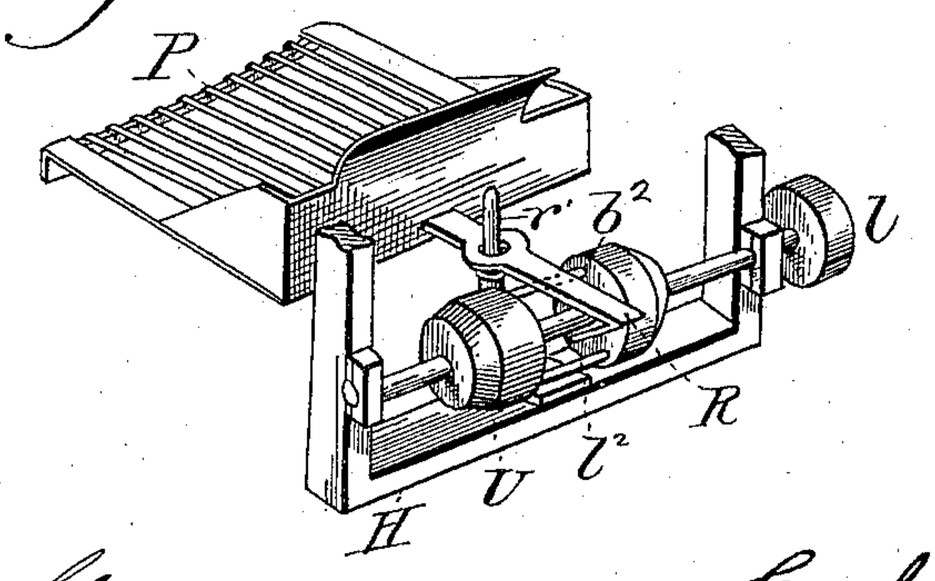


Fig. 5.



Witnesses

J. W. Reynolds

Maggie M. Larew

Inventor

Cochran C. Stover

By his Attorney

James C. Boyce

UNITED STATES PATENT OFFICE.

COCHRAN C. STOVER, OF BRADFORD, PENNSYLVANIA.

POTATO-DIGGER.

SPECIFICATION forming part of Letters Patent No. 365,880, dated July 5, 1887.

Application filed September 24, 1885. Serial No. 178,081. (No model.)

To all whom it may concern:

Be it known that I, COCHRAN C. STOVER, a citizen of the United States, residing at Bradford, in the county of McKean and State of Pennsylvania, have invented certain new and useful Improvements in Potato-Diggers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to potato-diggers which are adapted to be attached to the frame of a cultivator; and it consists in the construction and combination of parts, hereinafter described, and more particularly set forth in the appended claims.

In the accompanying drawings, Figure 1 represents a side elevation of a cultivator-frame and the potato-digging attachments embodying my invention. Fig. 2 represents a plan view of the same. Fig. 3 represents a detail view showing the pivoted connection of the front side of the shaking-screen and one of the disks and rods for raising and lowering the same. Fig. 4 represents a rear elevation of the machine, and Fig. 5 represents a detail perspective view of the devices for shaking the screen vertically.

A designates the frame of a cultivator, from which the teeth have been removed to allow its use as a potato-digger only, and H a supplemental frame supporting the potato-digging devices, which is bolted to frame A.

B designates the transporting-wheels, having an axle, B′. Said wheels and axle are caused to turn together when the potato-digger is backed by clutch members *b b′*, the latter member of each clutch being movable along the axle and forced by a spring, b^2, into engagement with the other clutch member, *b*, attached to the proximate wheel.

C designates the tongue, which is hung as usual and raised and lowered by means of a hand-lever, D, which is held by a rack-lever, *d*, at any point to which it may be moved for this purpose. Another hand-lever, E, similarly raises and lowers the frame A on the axle B. It has a rack, *e*, similar to rack *d* in construction, arrangement, and purpose.

It is not necessary to describe in detail the foregoing devices, as they do not form part of the potato-digging mechanism, and no claim is based thereon.

On the front end of frame H is mounted a transverse shaft, K, which bears upon one extremity a pinion, *k*, adapted to mesh with the driving gear-wheel G. Upon the opposite extremity of said shaft K is a pulley, *k′*, which is connected by a belt, k^2, with another pulley, k^3, borne by shaft k^4, situated in the top of the frame H. On the opposite extremity of said shaft k^4 is a pulley, k^5, connected by a belt with a pulley, *l*, borne by a shaft, L, and used for the purpose hereinafter set forth.

On the shaft k^4 is a drum, (not shown,) and revolving in bearings formed in the lowest forward part of frame H is a second drum. About these drums revolves an endless belt, M, which carries buckets *m*. Said endless belt is held in position on either side by means of the guards *m′*. Immediately in front of the lower end of the endless belt M is situated the potato plow or shovel N. Said plow is made of the usual shovel shape, and is connected with the frame by means of the four supports *n*. These supports are pivoted to the four corners of the plow. The upper extremities of the forward supports are pivoted to crank-arms extending from the front crank-shaft, F, and the upper ends of the hindmost supports are pivoted in like manner to the middle crank-shaft, F^4, Fig. 2. By these means it will be seen that through the levers F′ F^2, connected, respectively, to shafts F F^4, the front or rear of the plow may be elevated at will and the cut of the same made of any required depth. These levers F′ F^2 are held by racks *f′* f^2 in any position to which they may be turned for this purpose. It will furthermore be seen that as the potatoes and earth are raised by the plow they are caught in the buckets *m* and carried upward.

In rear of the upper extremity of the endless belt M there is secured to the digger-frame a hopper, O, and in this hopper the earth and potatoes fall from the buckets *m*. Beneath the hopper is a shaking-screen, P, on which the earth and potatoes fall after leaving the hopper. Said screen is supported from above by swinging links *p*, attached to the digger-frame. On either side the said shaking-screen is connected by lateral links with elbow-levers *p′*, said levers pivoted in the sides of frame H.

The free extremities of these elbow-levers are pivoted to pitman-rods p^2, whose front extremities are secured to the pinion k and pulley k' by wrist-pins borne on the outer faces of said pinion and pulley. By the foregoing mechanism the screen P is given a lateral shaking motion. On the front side of the screen is fixed an arm, R, (see Fig. 3,) provided with an orifice. The free extremity of said arm is curved into the shape of a hook.

Attached to the lower part of frame H is an upwardly-extending pin, r', (see Fig. 3,) which extends through the orifice in arm R, and thus pivots the screen upon its front side. On the shaft L (see Fig. 3) are fixed two disks, l', having their peripheries connected by two or more rods, l^2. Upon these rods rests the hooked arm R. By this construction, when the shaft L is rotated (by the mechanism connecting it with the driving-shaft) in one direction, the arm R will be alternately lifted and dropped, and the screen thereby given an upward and downward motion, and when the shaft is rotated in an opposite direction the hook on arm R will catch over the connecting-rods of the disks l' and the shaft will be stopped. The latter takes place when the machine is backed, and by the stoppage of said shaft L the gear-wheel G (by means of the connecting train of mechanism) is locked and the axle of the frame A prevented from revolving. The clutch-plates on said axle and on the wheels B then allow the wheel to revolve, while the axles and the working mechanism of the digger remain at rest.

Having thus described my invention, what I claim is—

1. In a potato-digger, the combination of a screen with a shaft, wheel, wrist-pin, rods, and horizontally-operating levers for shaking said screen laterally, and another shaft and intervening mechanism for shaking said screen up and down, substantially as set forth.

2. The potato-shovel N, in combination with the supporting-arms n, to which it is pivoted at its corners, the two crank-shafts F F^4, to which said arms are attached, and the lever F, which operates one of said crank-shafts, substantially as set forth.

3. The combination of the screen P, provided with hooked arm R, the shaft L, provided with two disks having peripheral connecting-rods, the actuating mechanism of the potato-digger, and the frame A, provided with axle B′ and wheels B, said axle and wheels connected by a clutch, substantially as described, whereby when the machine is backed the mechanism of the elevator is stopped, as set forth.

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

COCHRAN C. STOVER.

Witnesses:
JAMES C. BOYCE,
LILLIE E. HOFFMAN.