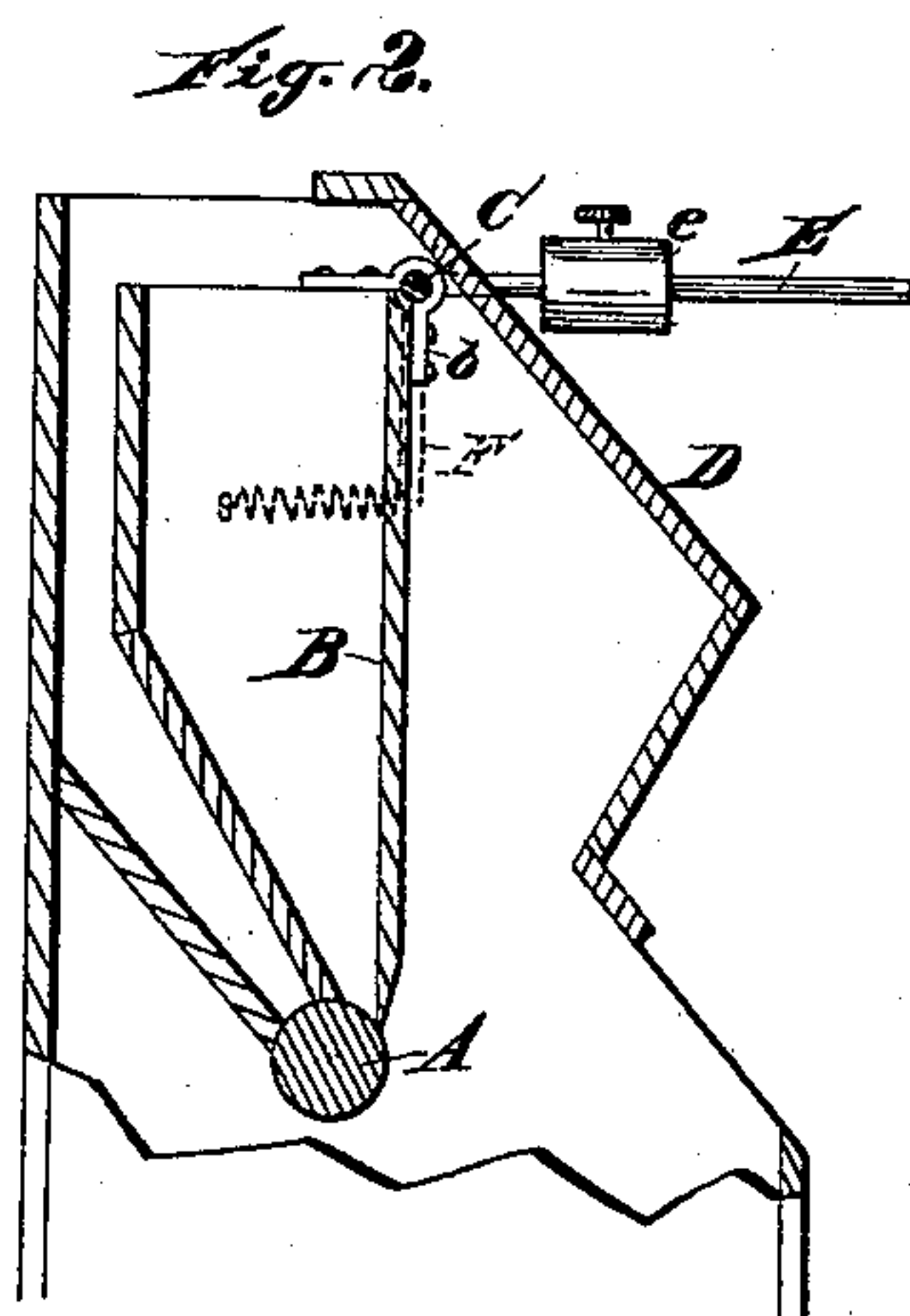
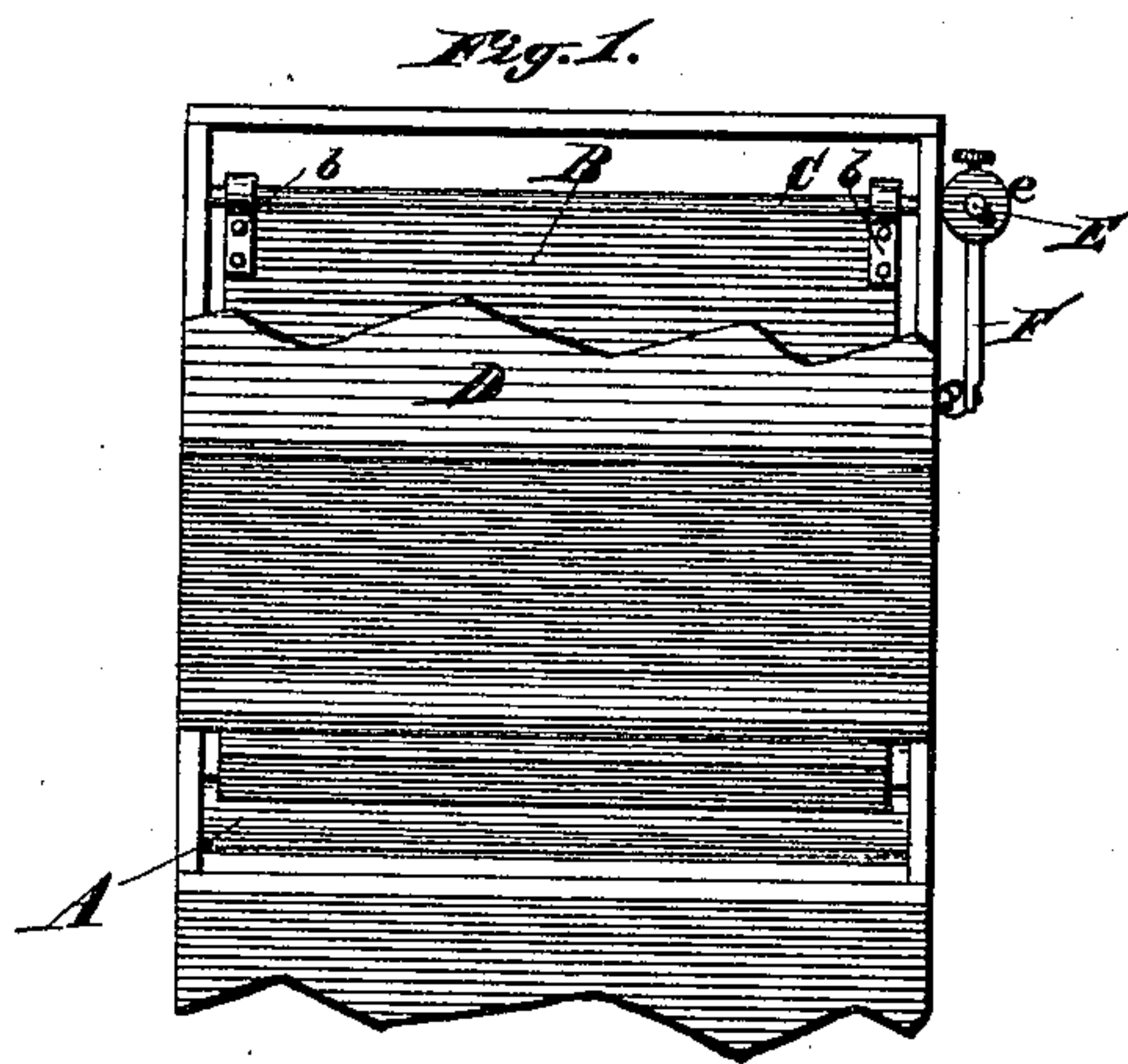


(No Model.)

J. W. CRAIG.
FEEDING DEVICE.

No. 324,090.

Patented Aug. 11, 1885.



WITNESSES

Geo. E. Wiles.
N. S. Wright.

INVENTOR

John W. Craig.
By W. W. Feggs.

Attorney

UNITED STATES PATENT OFFICE.

JOHN W. CRAIG, OF DETROIT, MICHIGAN.

FEEDING DEVICE.

SPECIFICATION forming part of Letters Patent No. 324,090, dated August 11, 1885.

Application filed August 23, 1884. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. CRAIG, of Detroit, county of Wayne, State of Michigan, have invented a new and useful Improvement in Feeding Devices; and I declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to a feeding device or hopper designed especially for feeding grain or granular substances into grain-crushing mills or grinding-rollers, purifiers, or other grinding and dressing machinery where continuous and regular feeding is required.

The object of the invention is to provide a feed hopper or chute which is self-adjusting in relation to the feed-roller, so as to regulate the discharge or feed therefrom, and is mounted or hung in the specific manner hereinafter described and claimed.

In the drawings, Figure 1 is a front elevation of a feeding device embodying my invention with parts broken away. Fig. 2 is an end elevation showing parts broken away.

The letter A designates an ordinary feed-roll, which operates in the discharge-mouth of a hopper, B, that is arranged above said roller, and is of any desired form or size. The hopper is pivotally hung or hinged at its upper end so as to swing freely, and it has eyes *b* secured upon the outside of the front thereof. Through these eyes is passed a horizontal bar or shaft, C, which is journaled in the side walls of the casing D that incloses said hopper; or said bar may have its bearings in other suitable supports arranged in suitable relation to the hopper.

To the bar C is connected an arm, E, which extends at right angles thereto, and carries a movable weight, *e*. A downwardly-projecting spring-arm, F, is also connected with the bar C in any suitable manner, or it may be integral therewith.

As shown in the present instance, a spiral spring is connected with the lower end of said arm; but it is obvious that any other suitable form of spring may be resorted to. The purpose of said spring-arm is to assist the weighted

arm E in the adjustment and operation of the hopper, and secure the speedy return of the hopper to its normal position when any extra weight therein has been relieved.

The operation of the device is as follows: The stock is fed into the feeding-hopper B, which is free to vibrate upon its pivotal connection at the top, the amount of the vibration being regulated and controlled by the position of the weight *e* upon the arm E and the spring-arm F. The opening of the throat at the base of the hopper is also regulated and adjusted as desired by means of the weighted arm to feed the stock, as required. Should the stock be fed into the hopper faster than it is being fed over the feed-roll A as the device is adjusted the accumulation of stock in the hopper will speedily overcome the resistance of the weight of the arm and cause the hopper to tilt upon its axial support at the top, thus opening the throat wider and feeding out the stock over the feeding-roll more rapidly, preventing the clogging of the hopper; but as soon as this is done, and the accumulation of stock in the hopper is relieved, the weighted arm E and spring-arm F cause the hopper to tilt back to the position to which it was adjusted, closing the throat again to the position to which it was regulated. This operation of course takes place automatically, the accumulation of stock tilting the base of the hopper so as to relieve the throat, the weighted and spring arms tilting it in the opposite direction, thus effectually accomplishing a well-regulated feed of the stock over the feed-roll.

I am aware of the existence of English patent No. 5,699, granted A. D. 1881, for a self-adjusting hopper for mills and other purposes; and hence I do not broadly claim a hopper hung by a pivotal connection above a feed-roller.

It will be understood that the term "adjustable counterbalance" is intended to include either the adjusting weight or a spring, as both are illustrated, and either may be used to restore the hopper to its place.

What I claim is—

1. The combination, with a stationary case, of a feeding-roller, a swinging hopper having its upper portion suspended within the case

so as to leave it free at its lower end to oscillate by the weight of the stock in the hopper, and an adjustable counterbalance connected with the hopper for returning it to its position, substantially as described.

5 2. The combination of the hopper B and the axis or shaft C, having the weight-arm E and spring-arm F, said axis passing or being fitted to the upper front side of the hopper,

with a feed-roller, A, and a support or casing 10 having bearings for the shaft C, substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

JOHN W. CRAIG.

Witnesses:

M. B. O'DOHERTY,
N. S. WRIGHT.