

**ECONOMIC MONOGRAPHS NO.  
XVIII: LABOR-MAKING MACHINERY;  
AN ESSAY, READ BEFORE THE  
CHICAGO PHILOSOPHICAL SOCIETY,  
APRIL 12, 1879**

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649193837

Economic monographs No. XVIII: Labor-making machinery; an essay, read before the Chicago philosophical society, April 12, 1879 by Fred. Perry Powers

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**FRED. PERRY POWERS**

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AN ESSAY

READ BEFORE THE CHICAGO PHILOSOPHICAL SOCIETY,

APRIL 12, 1879

BY

FRED. PERRY POWERS

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NEW YORK  
G. P. PUTNAM'S SONS  
152 FIFTH AVENUE  
1880

~~1500~~  
500 1500. 1880. Feb. 11.

Gift of the

Editors Literary World,  
Boston.

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Press of  
G. P. Putnam's Sons,  
182 Fifth Avenue.

## LABOR-MAKING MACHINERY.

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WHEN an inventor proposed to Colbert, the minister of Louis XIV, a machine which would do the work of ten men, Colbert replied, "I am anxious that men should be able to live honestly by their work, and you propose to me to take the work out of their hands. Take the invention, if you please, somewhere else."

When, in 1838, Walter Hunt was trying to invent a sewing machine, his wife protested that it would throw all the sewing women out of employment, and, as a matter of humanity, Mr. Hunt threw his model away.

When Arkwright's jenny was introduced the English spinners destroyed it, and the weavers did as much for Cartwright's loom. Lace machines were destroyed when introduced into Nottingham, and the journeymen tailors of London resisted the introduction of sewing machines. And only last summer an Ohio farmer found attached to his reaping machine a warning not to use it, which was signed "Bread or Blood."

The workmen in these cases who resisted the introduction of machinery may have had some apparent justification. The silversmith at Ephesus was not so much disturbed at St. Paul's impiety as he was at the fact which he proclaimed to his fellow-silversmiths, that "Our craft is in danger."

But in the case of Colbert and the Hunts the difficulty was of a radically different character. They acted from motives of disinterested benevolence. They were in error, and their error was their failure to comprehend that the wants of man are insatiable. But that is the fact which the entire history of man has demonstrated. No sooner is one want satisfied than man becomes conscious of another want. This is universal among all those classes of men whom it is important for us to consider at this time. Physical wants being satisfied, man becomes conscious of intellectual wants. The necessities being once secured, the comforts are desired, and if a man's entire ability to labor is not consumed in supplying himself with necessities and comforts, then he will devote what surplus time and strength he has to the work of obtaining luxuries. So long as man can by labor supply his wants, so long he will labor to the extent of his ability. And the more easily his wants are supplied, the more wants he will supply. Colbert did not understand this. In satisfying his wants, A affords employment, let us say, to B, C, D, E and F. If by machinery the productive capacity of those men could be increased twenty-five per cent., then the wants that five had been employed to supply would be supplied by four. Colbert supposed that A would want no more, and that F would be thrown out of employment. Experience has demonstrated that this is wrong; that A being able to supply his old wants with the labor of four men instead of five, employs F in supplying some new want. (The civilized man differs from the savage only in having developed and satisfied a greater number of wants.

When my grandfather went to housekeeping he purchased a



clock by chopping fifty-three cords of wood at one dollar a cord. To-day anyone can procure a clock with a few hours' labor. We do not waste in idleness the time thus saved, but we satisfy more wants, and in doing so employ men in a score of trades that were not dreamed of a century ago, without injuring the old trades. The clockmakers in this country numbered 1,181 in 1850, and 1,779 in 1870.

My purpose is to show that the introduction of labor-saving machinery—so-called—has resulted in increasing the field of employment instead of decreasing it, and in bettering the condition of the laboring classes. And I wish to clear the way for this by calling attention to some grotesque misrepresentations of this matter in Mr. W. Godwin Moody's pamphlet, entitled "Our Labor Difficulties; The Cause and the Way Out." This pamphlet embodies the paper read by Mr. Moody before the American Social Science Association in May, 1878.

Mr. Moody refers to the amount of work done in the printing office of *The New York Tribune*, and then says :

"To do this work requires eighty compositors and proof-readers, four pressmen and two presses—two of Hoc's perfecting presses. To issue the same amount of printed matter by the processes in use by our fathers would require 267 presses, 534 pressmen, and 5,000 compositors and proof-readers. Thus we see that, in printing to-day, less than 100 men with machinery will do the work that would have required nearly 6,000 about fifty years ago. Here in one newspaper establishment labor-saving processes have, within half a century, taken the work from more than 5,500 men."

Like a good many dispatches during the war, this is impor-

tant if true; but it isn't true. Did *The Tribune* ever employ nearly 6,000 men? If these more than 5,500 men never had the work, how can labor-saving machinery have taken it from them? Machinery has increased the product; it has not reduced the number of persons employed. Does Mr. Moody suppose that had the steam press never been invented *The New York Tribune* would now be issuing its myriads of sheets at four cents a copy, and paying living wages to nearly 6,000 employés. The idea is preposterous. Probably no newspaper previous to the invention of the steam press employed even 100 compositors and pressmen. When we think of type-making, and press-making and paper-making it is apparent that the application of steam to printing has vastly increased the number of persons employed in the trade.

The newspapers and periodicals in the United States numbered 2,526 in 1850; 5,871 in 1870, and 8,133 in 1878. Many of these periodicals have been growing in wealth and increasing the amount of labor employed by them. Is machinery reducing the field of labor in this branch of industry?

Mr. Moody then draws this indictment against labor-saving machinery. He says:

"In San Francisco its hills, covering miles of territory, have been removed by labor-saving processes. The steam paddy, controlled by two men, digs down and removes the hills at the rate of two or three scoops to the car-load, and then in trains of a dozen or more cars are run to and dumped into the bays and hollows to be filled; compelling thousands of muscular workmen with their picks and shovels, horses and carts, to find other employment."

Now there is nothing whatever in this statement unless it be assumed that this removal of hills covering miles of territory would have occurred any way, and that but for the steam paddy the work would have afforded employment to thousands of laborers and their teams. Labor has always been scarce and high on the Pacific coast, and it is safe to presume that the possibility of doing that work by steam was the condition of its being done. If that is so, then the steam paddy has thrown no one out of employment, but has provided work for the few men required to construct it, tend it, and to transport the earth.

To subtract the number of men now employed on a piece of work from the number that would be employed if the same work were done by hand is the most fallacious of all methods of ascertaining the effect of machinery. It assumes that the same amount of work would be done, if it had to be done by hand, that is now done by machinery. Reason and observation teach us that this assumption is false, and that the present cheapness is the condition of the present amount of work.

For instance, by hand a man could clean four or five pounds of cotton a day. It is now done by machines which clean 4,000 pounds a day each. To clean one of our recent crops by hand would require the continuous labor of 1,200,000 or 1,500,000 men the year round. Have those men been thrown out of employment? Certainly not. They never had it, and they never would have had it, because cotton could never have become a great staple had the work of cleaning it been so great. It wouldn't have been profitable. It is probable that the cotton gin has actually increased the number of persons employed in cleaning cotton. In view of the number of per-