

CAM OPERATED POWER HAMMER

¹Siddhesh Santosh Kumavat, ²Mahesh Suresh Ranbagul, ³Nilesh Pandurang Vekhande, ⁴Omkar Sanjay Kaminwar, ⁵Prof. Asmit Manohar Burud

Department of Mechanical Engineering Alamuri Ratnamala Institute of Engineering and Technology,
Sapgaon

Siddhukumavat123@gmail.com¹, mranbagul@gmail.com², iamnpv333@gmail.com³,
omkarkamin@gmail.com⁴, asmit2393@gmail.com⁵

ABSTRACT

In several industries varied styles of machines and instrumentation are used for varied operations like formation, hammering, cutting etc. however totally different issues like low power offer, less man power and conjointly significant arduous workforce, safety etc. This comes relates to operation performed by this could be achieved by either mistreatment motor power or by manually by suggests that of merely rotating a hand lever hooked up to the shaft and hammer action may be provided. If there's smart power offer it may be run mechanically. For automatic operation A.C. motor is provided. Chain drive, belt drive, governor are provided for speed management functions in order that the appropriate speed may be achieved. At last when there is no electrical power offered is there the advance cam operated hammer may used as manually by merely rotating the hand lever. Conjointly the handling is straightforward and maintenance is simple of the project.

INTRODUCTION

Advancement in cam operated hammer may make a device which may be used for multi-purpose operations by either mechanically or manually. it's chiefly used for pounding of labor piece. It also can be used for numerous functions like punching, forging, bending, etc. This advance cam operated hammer is extremely essential for doing range of such operations like crushing, riveting, pounding of larger work piece and cutting of metal. As in formation business, the temperature of formation operation terribly is extremely is incredibly} a lot of higher and it's very tough to try and do manual pounding over the formation metal by manually or hand and additionally there's forever a risk whereas handling such sort of warmth base metals or pan piece. therefore advance cam operated hammer neglects this sort of issues in business.

OBJECTIVES

The aim of our research work is to neglect the outlined drawback and supply conception a plan an inspiration to beat numerous issues by fabricating the concept yet as operating model that represents an answer given to the present drawback.

So our objective is to produce an electrical motor driven mechanism in order that the machine will perform operations with the assistance of electricity and mechanically. The another objective is to administer manual handling attachment by means that of hand lever within the same model in order that while not power provide the operator will perform the varied hammer operations while not disrupting or stopping the machine.

Another objective of our project is to urge an impression from the hammer to the work piece by victimization the effective means by Snail cam. in order that the difficult mechanisms get neglected and value of the system is reduced abundantly

LITERATURE REVIEW

FORGING HAMMER (FLUID OPERATED) J.J. Gupta Et Al, us government agency journals, Application – Gregorian calendar month a pair of, 1955, Serial no. 550718, proprietary Gregorian calendar month. 23, 1957, printed no. US2789540 [1]

This project found terribly helpful once sorting out throughout the literature survey. This project is solely is Associate in Nursing improvement of formation hammers used for industrial functions. As we have a tendency

to aware that in formation operation the temperature of the metal half is therefore high that manual hammer operation is sort of tough for this purpose. therefore during this project they provided management valves that directive the ram up or down by the steam power. in order that ram is affected up and down with connected hammer mechanically. therefore we will offer automatic management over hammer for the aim of important operation like formation.

HAMMER TOOL Howard Terhune, Cleveland, Ohio, us government agency journals, Application – Gregorian calendar month twenty seven, 1944, Serial no. 555977, proprietary Gregorian calendar month. 28, 1947, printed no. US2429780[2]

This invention relates to moveable motor operated and manually controlled machine tools or implements, Associate in Nursing a lot of specifically to an improved hammer tool and in operation mechanisms of the reciprocatory, rotary cam motivated sort, and designed for interchangeable use as a conveyable power operated hammer, chisel, scaling chisel, piercing punch, rock drill, and alternative similar power tools. The novel in operation mechanism of the project is Associate in Nursing attachment, is customized for combination with and receives power from a motor, as an electrical motor, that is manually controlled to produce rotary power and motion that's translated, or reborn by the in operation mechanism into reciprocatory motion and power for a tool holder having selective interchangeable tools.

COMPOUND HAMMER Harold S. Sheldon, Tekoa, Washington DC, us government agency journals, Application – Oct fifteen, 1947, Serial no. 779931, proprietary –March twenty one, 1950, printed no. US2501542[3]

The invention herein disclosed relates to steam and air hammers of the machine sort and within which, sometimes the motive fluid is simply admitted to raise so discharged to drop the ram to realize a robust downward force to death penalty any hammer operations. The another objective of this invention is additionally taking less time and reducing the breaking chance of the load or alternative components connected to the ram providing hammer action down the road.

CAM OPERATED, SINGLE S HOT, FALLING BLOCK FIRING MECHANIS M FOR A RIFLE James Kepnar, Lawrenceville, GA (US), us government agency journals, Application crammed – March twenty three, 2001, Serial no. 09/815,677, proprietary Gregorian calendar month. 26, 2002, printed no. United States 2002/0133997 A1[4]

This invention relates to the sector of firing mechanisms for single shot rifles, a lot of significantly to a cam operated, falling block firing mechanisms incorporating a pivoted stop link. High power within the machine is generated by exploitation the cam by that robust action is generated to the bullets while decide to require the advantage of exploitation the cam as a significant impact issue of the hammer action by switch the hammer supported ram.

POWERED IMPACT WRENCH David A. Giardino, Utica; William K. Wallace, Barneveld; Joseph R. Groshans, Clinton, all of N.Y, us government agency journals, Application –September twenty five, 1989, proprietary Jan. 28, 1992, Patent no. 5083619 printed no.US5083619[5]

This invention relates to the art of rotary impact wrenches of a sort within which a rotating member is sporadically reciprocated into Associate in Nursing out of rotary impacting relation with an anvil portion of a force output shaft. the article of the invention is to supply Associate in Nursing improved power operated impact wrench as well as camming arrangement which allows the utilization of sunshine weight tool housing while not the inertia impact on the operator World Health Organization is holding the tool. By reviewing varied analysis

papers we've ended that Advance cam operated hammer style is possible therefore we have a tendency to attempt to build it work.

ROTARY HAMMER Ulrich Demuth, Erbach-Ernst; Winrich Habedank, Diez, each of Deutschland, us government agency journals, Application - Gregorian calendar month twenty, 1996, proprietary August twenty nine, 2000, Patent no. 6109364, printed no. US006109364A REVIEW[6]

It relates to a hammer with a tool holder and a hammer mechanism for the transmission of impact energy onto the drilling and/or chiseling bit within the tool holder encompasses a switch device that with one mechanism makes it potential to modify between pure drilling operation, rotary hammer operation and pure hammer operation. The cam half is provided at the section of the mechanism projected inside over the slide half. the article of the invention is to develop a rotary hammer and is specific its switch device in such the way that it's a compact structure and might be operated while not being at risk of disturbance

PROJECT

METHODOLOGY

This project has numerous completely different style methods to complete our product whereas matting the objectives. these means that we are going to ought to implement and compare our completely different style to insure the most effective product on our weekday of objectives .this methods have modified as we tend to progressed through our project, and few fore seen strategies that we expand upon within the style section. the fundamental style for automatic pounding machine is to possess motor fastened on stand, and so motor shaft is inserted in center hole of the disc. Disc is connected to the hammer rod with the link rod after we offer the dc current to the dc motor by victimisation adoptive parent then the motor shaft begin rotating any transmit the spinning motion to the disc by victimisation shaft the primary call is to make a sway force for the several operation this may facilitate to work out product affordability. A additional economical nonetheless dearly-won style would be to possess battery rather than adoptive parent. there's sure to be numerous obstacles and style methodology to be enforced as projected progressives and can be ascertained and recorded as they occur.



Fig. 1 CAM OPERATED POWER HAMMER

CONCLUSION

We have with success calculated the force force of the motor. For the planning the impact rate and force force for interesting of two millimeter rivet is calculated accurately. the whole modelling of the project is finished with the assistance of CATIA V5R20. during this addition to the present. The project work has provided America a wonderful chance and skill, to use our restricted information. we have a tendency to gained loads of sensible information relating to. Planning, Perching, assembling and machining whereas doing this feel that the project work is nice resolution to bridge the gates project work. we have a tendency to between establishments and industries. we have a tendency to ar proud that we've got completed the work with restricted time with

success Automatic pounding machine is functioning with satisfactory condition. we've got done to our ability and ability creating ma work. when literature survey styleland style} and calculation we have a tendency to found possible to actual design and finished that the fabrication of Advance Cam Operated Hammer is possible and should work on desired issue as represented.

FUTURE SCOPE

The conception of associate degree automatic pound machine in this paper has been shown to own an area within the actual market and to fill a desire demanded by potential client. IN this paper, the conception of automatic pound machine prototype can need to fulfill the fundamental style demand, allow us to add the projected conception can a couple of a lot of lines regarding our impression project work. facilitate in assembly line where many employees are used for the fabric handling purpose it also scale back

the cost and separation time demand of a lot of range of employee can fully eliminated as solely 2 employees will administrated the be complete operation. The project objective originally is to cut back human efforts in producing industries. The in future the entire stress analysis of the project model may well be done. This analysis may well be done by U.S.. Moreover, for the automated pound machine to attain totally success within the future, several collateral improvement should be tired terms of systems (autopilot technology, for instant) and time delay management (pedal operated management are required) and a few modification will are tired this project.

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