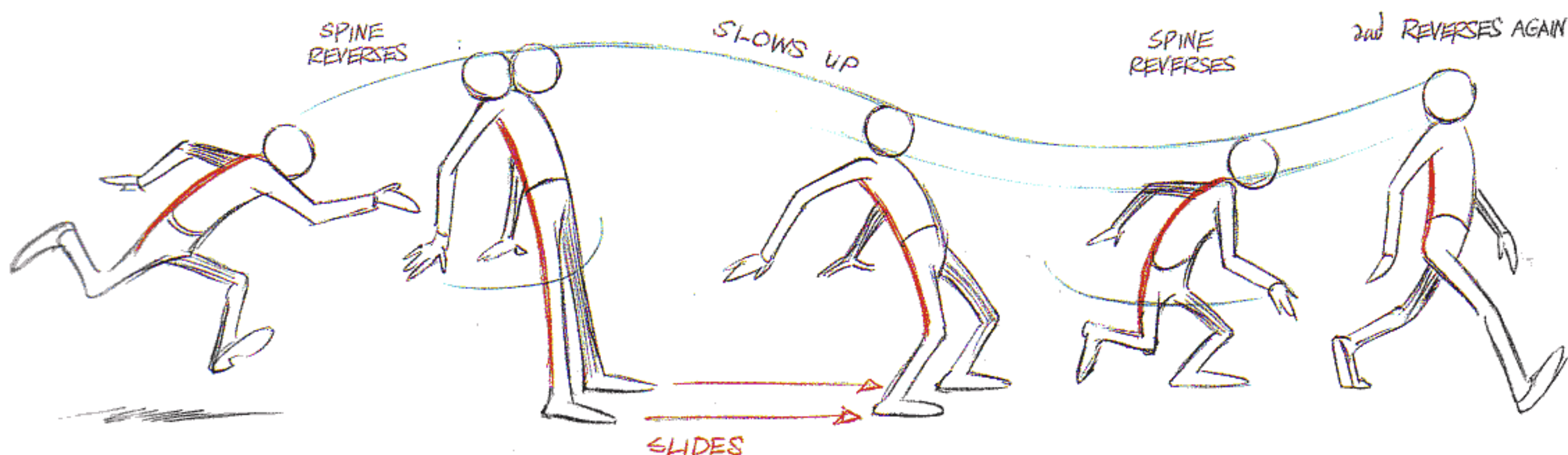


HOW MUCH EFFORT DO WE HAVE TO EXPEND
① TO **MOVE** SOMETHING?
② TO **CHANGE ITS DIRECTION**?
③ OR TO **STOP** IT?
WILL INDICATE HOW MUCH IT WEIGHS.

COMING TO A STOP IS PART OF WEIGHT:



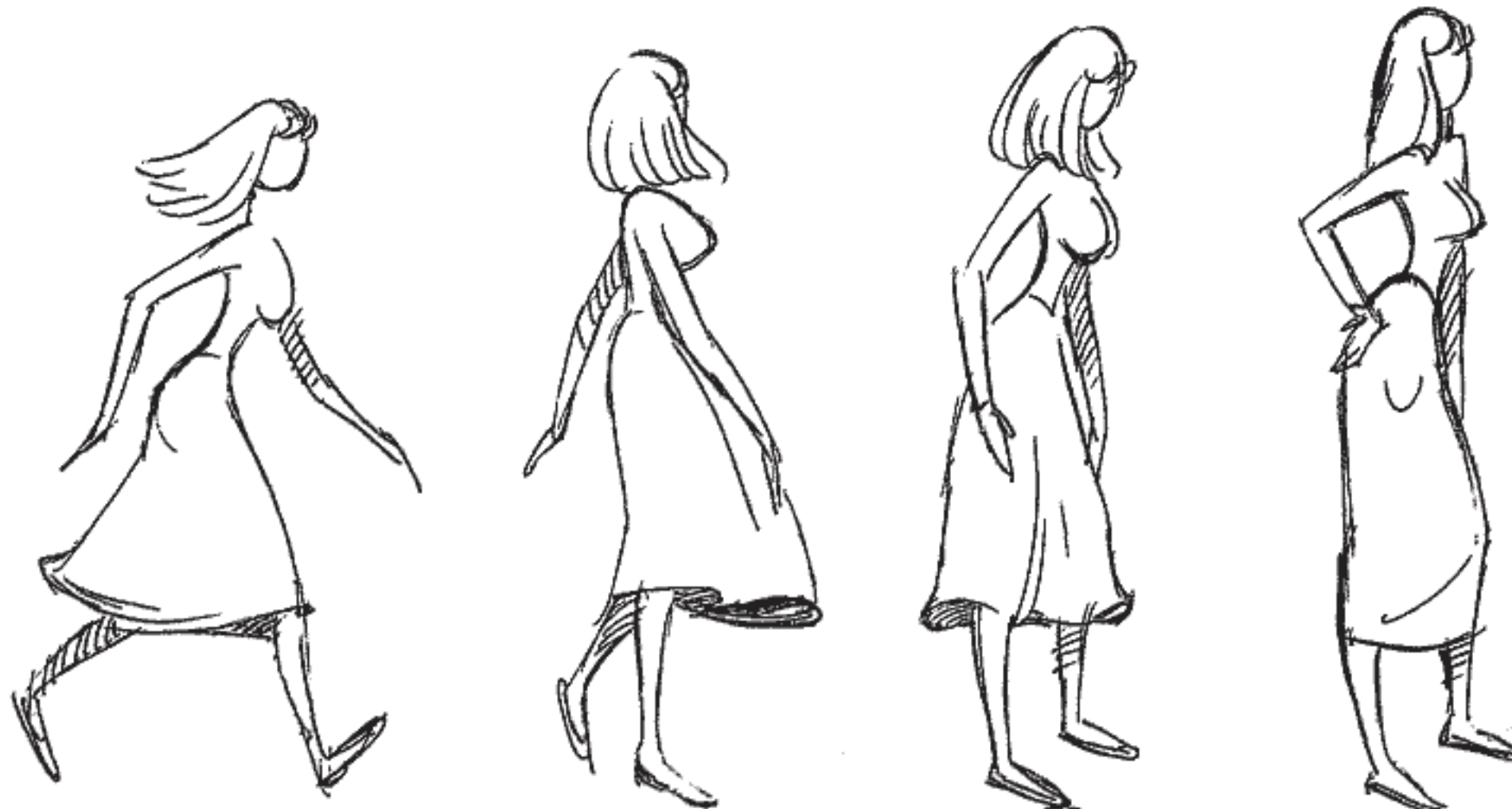
COMING TO THE END OF A SLIDE, WE'RE THROWN OFF BALANCE

THEN WE GO INTO OUR NEXT ACTION - LIKE COMING OFF AN ESCALATOR.

FRANK THOMAS SAYS -

"WE'VE GOT TO DO SOMETHING TO STOP THE FORWARD PROGRESSION OF BELIEVABLE WEIGHT."

WHATEVER
WAS IN MOTION
WILL TRY
TO KEEP ON
GOING -
ARMS, HEAD,
HANDS, HAIR,
DRAPERY.



SO WE STOP
IN BITS -
EACH BIT
INDICATING
THE WEIGHT
OF ITSELF.

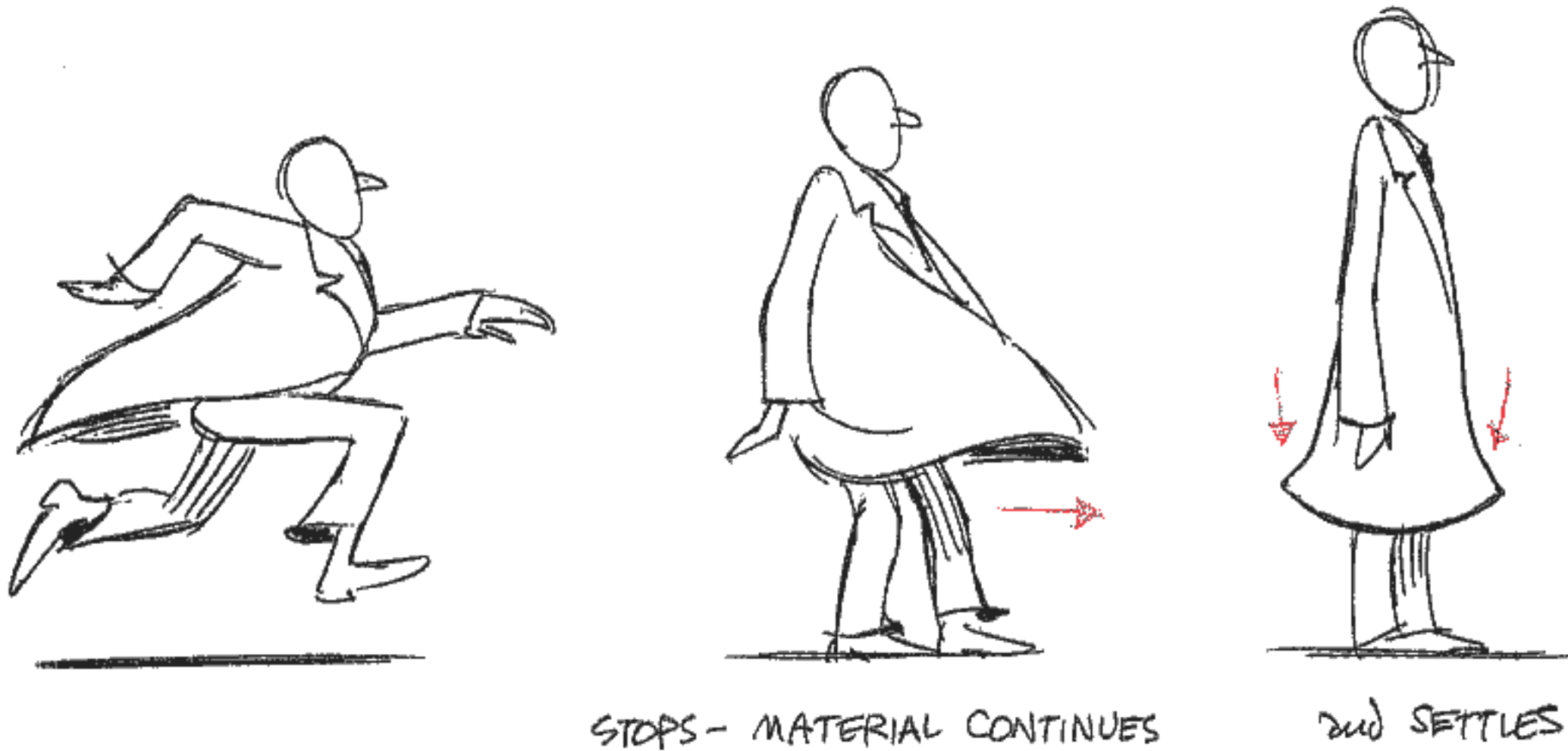
HERE'S MILT KAHL ON IT -

"STOPPING THINGS CONVINCINGLY IS ONE OF THE DIFFICULT THINGS TO DO IN ANIMATION. WHEN YOU COME TO A STOP, PICK A GOOD PLACE TO STOP. HOW YOU CHOOSE TO STOP - WHAT KIND OF A STOP - WHETHER IT'S AN ALERT STOP OR A LAZY ONE, CHOOSING WHERE TO DO IT IS AN IMPORTANT CHOICE. I HATE TO SEE A FOOT COME THROUGH AND LAND AND THEN NOTHING HAPPENS TO IT. I THINK WHEN IT LANDS WE OUGHT TO GO AHEAD AND PUT THE WEIGHT ON IT - OR ROCK FORWARD - OR RAISE THE OTHER FOOT."

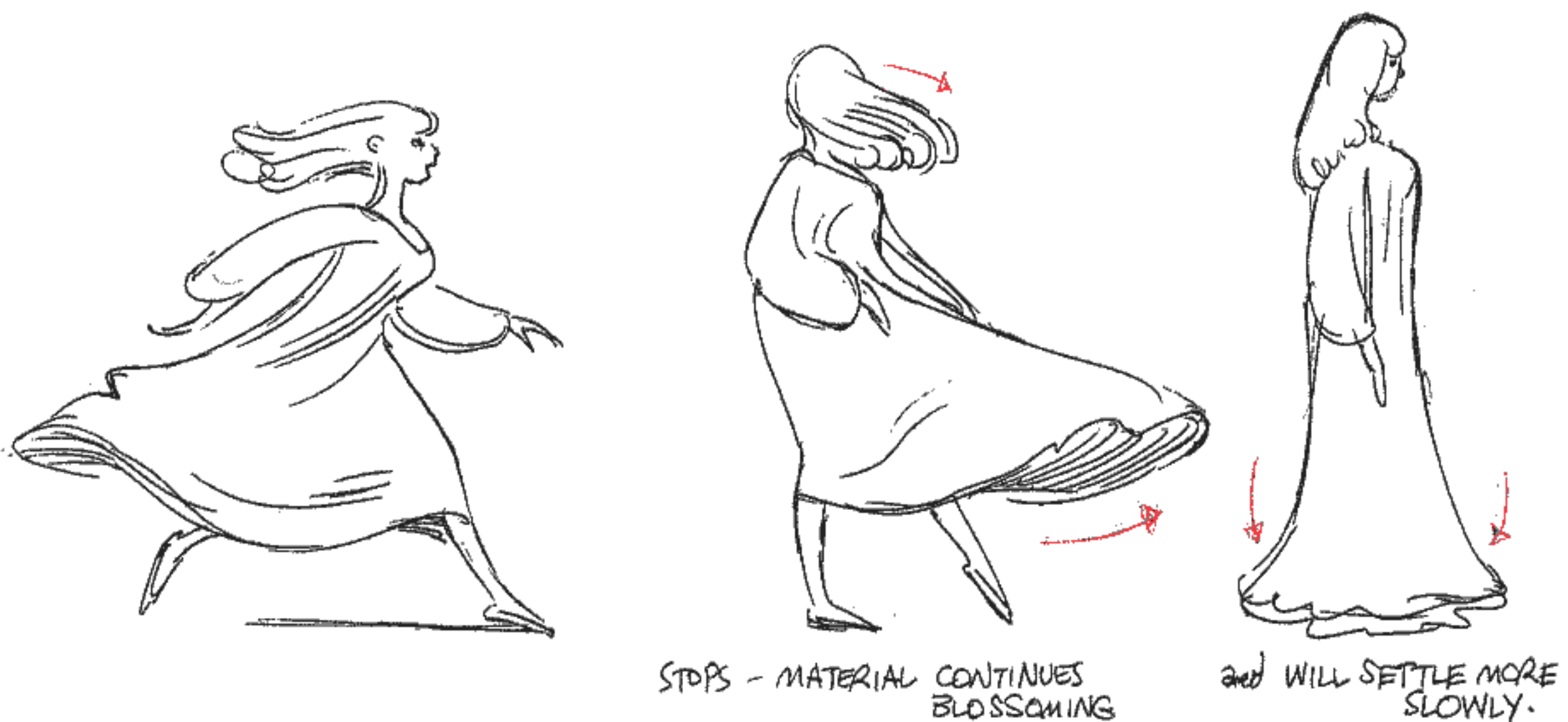
SO, HOW MUCH EFFORT IT TAKES TO STOP SOMETHING SHOWS HOW MUCH IT WEIGHS.

ALSO, THE SPEED OF AN ACTION WILL DETERMINE HOW VIOLENT THE DRAPERY IS -

IF A MAN IS RUNNING WITH A COAT MADE OF THIN, LIGHT MATERIAL and HE COMES TO A SUDDEN STOP, THE MATERIAL WILL CONTINUE TO FLOW, TO KEEP ON GOING - TO GO AHEAD OF HIM INDEPENDENTLY and THEN FLOP BACK and SETTLE. ('FOLLOWS THROUGH')



A WOMAN IN A SILK NIGHTIE... THE MATERIAL WILL BLOSSOM and FLAP VIOLENTLY.

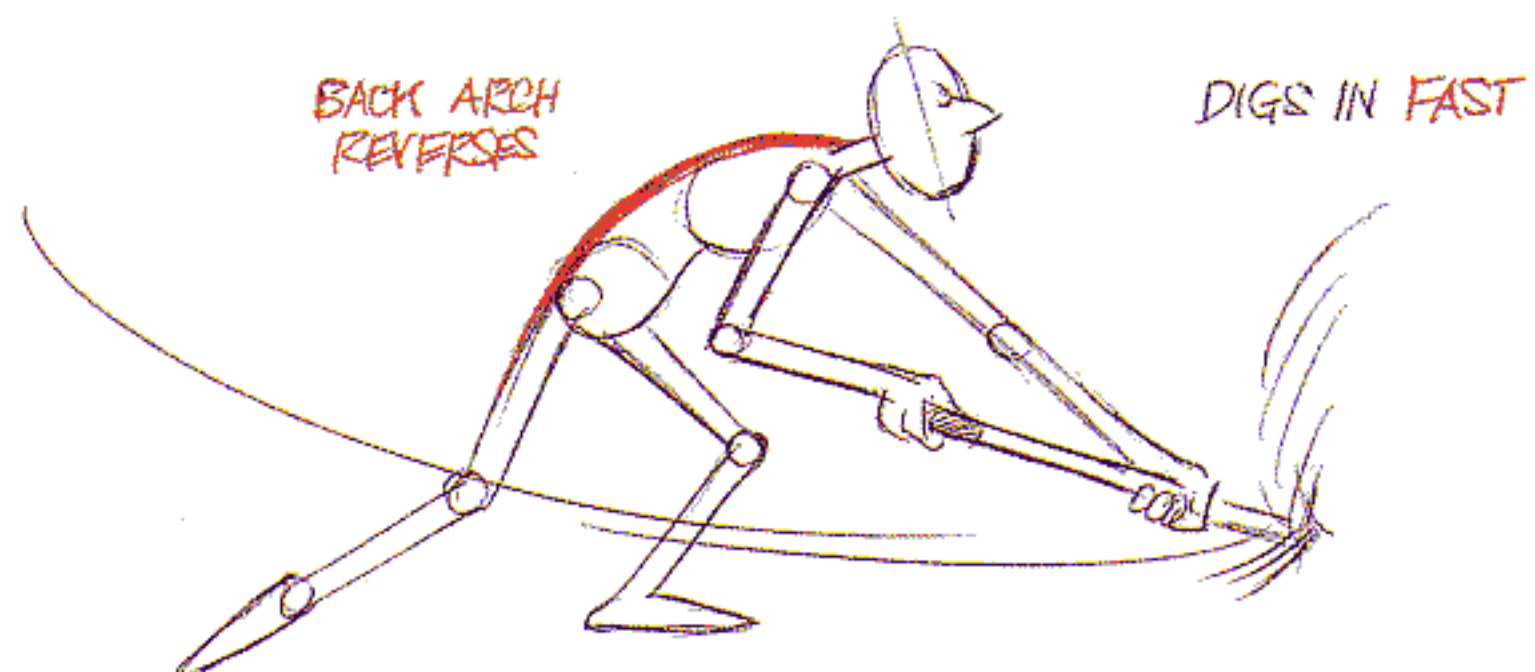
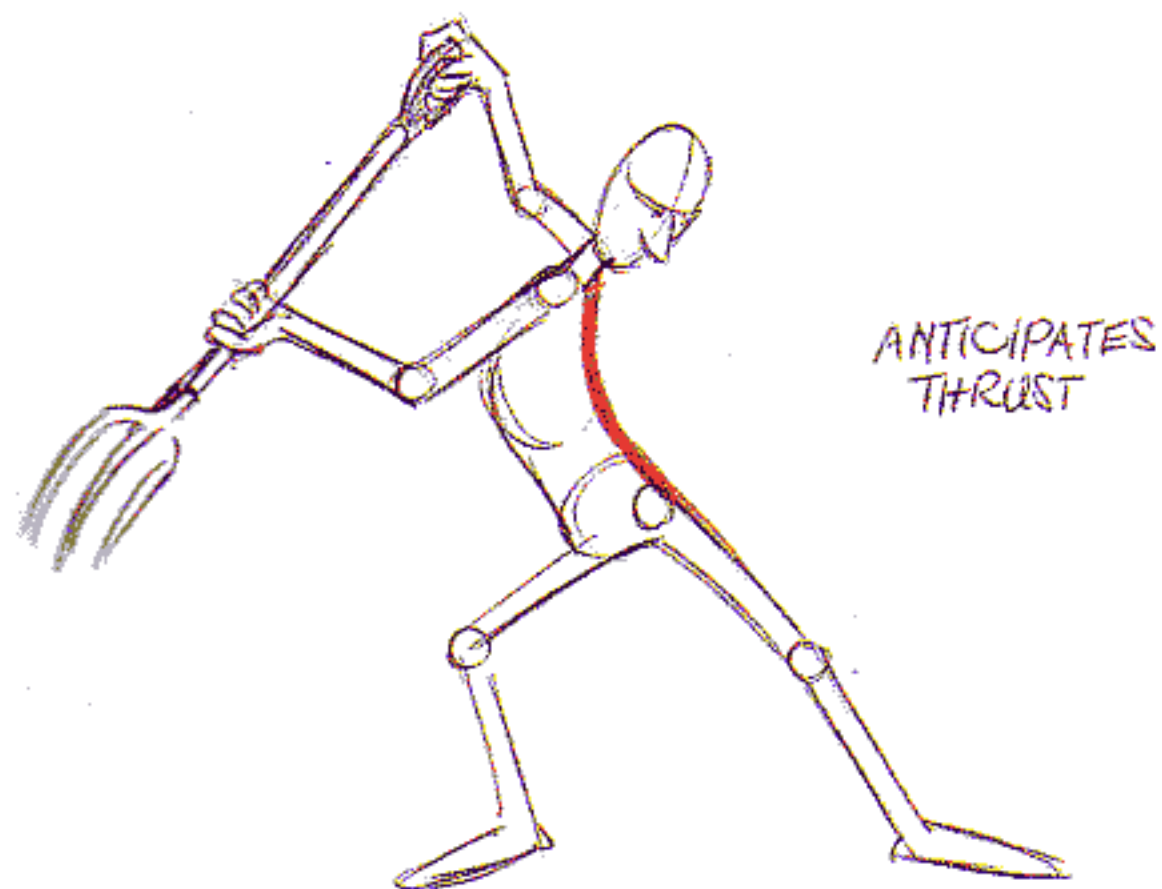


SO WHEN SHE STOPS, HER CLOTHES and HAIR FOLLOW THROUGH ARRIVING LATER THAN THE MAIN ACTION. AND OF COURSE, HER MAIN ACTION ALSO STOPS IN PARTS, FINISHING UP AT DIFFERENT TIMES.

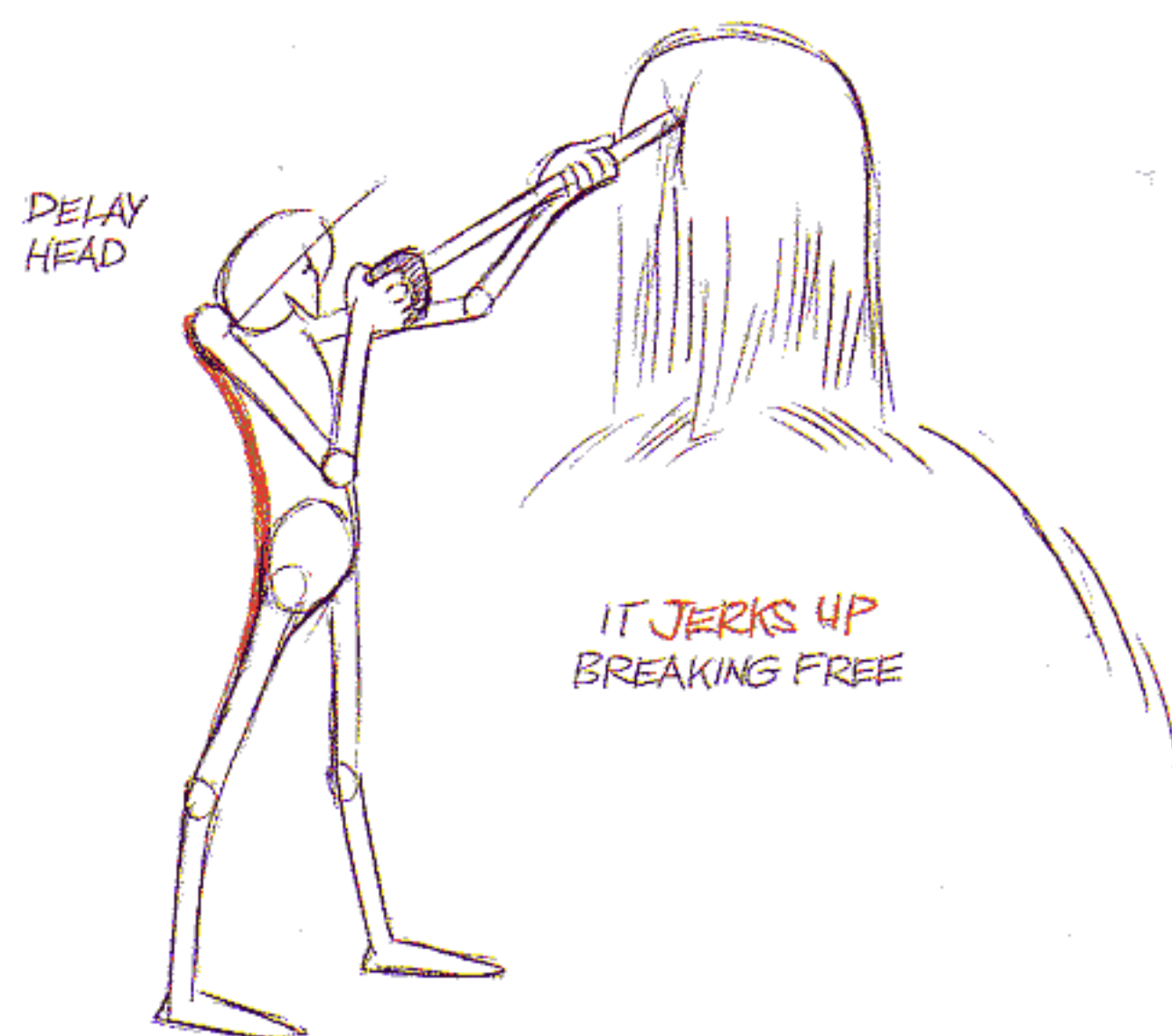
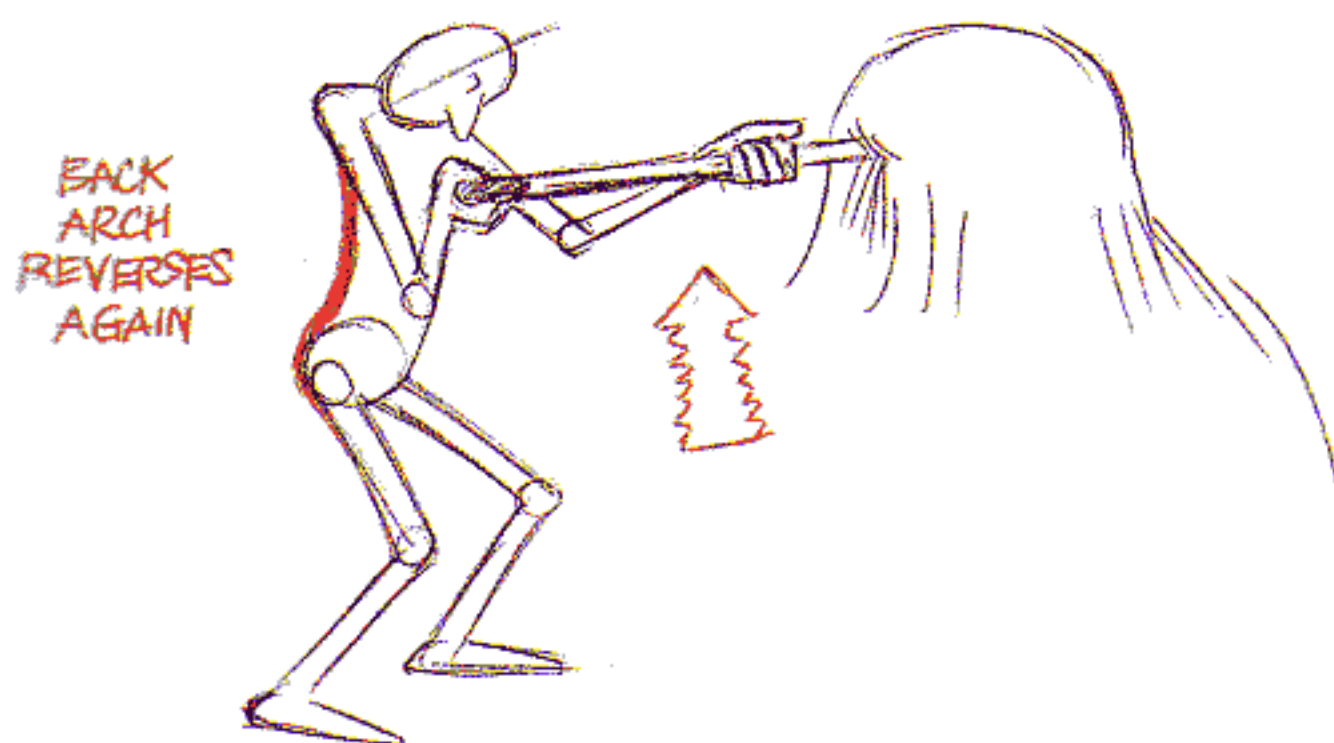
HAS THERE EVER BEEN AN ACTION WHERE ALL THE PARTS OF A BODY MOVED UNIFORMLY? (EXCEPT IN ROBOTS, and PROBABLY NOT EVEN IN THEM.)

AGAIN, 'FOLLOW THROUGH' IS THE RESULT OF and IS GENERATED BY THE MAIN ACTION.

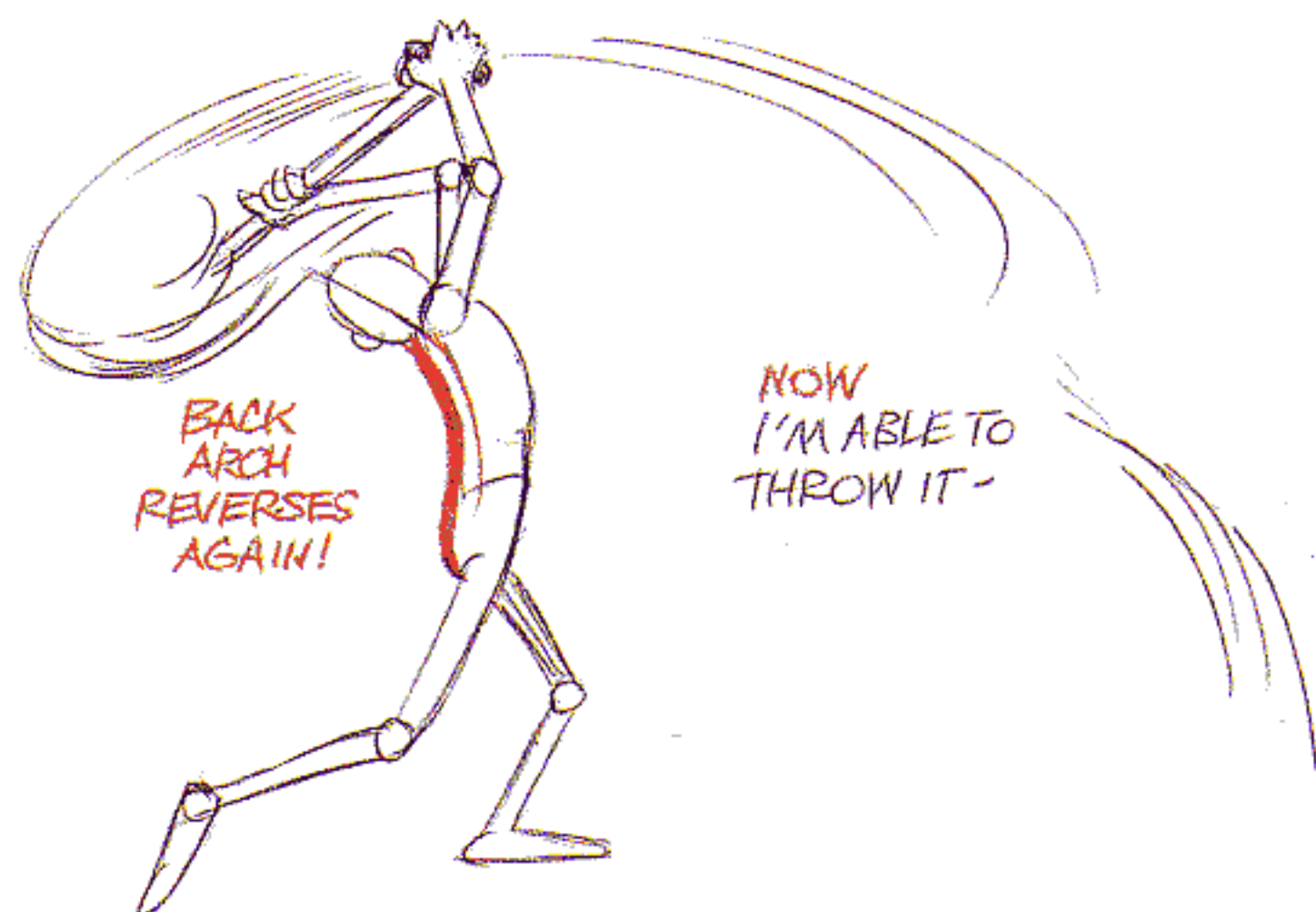
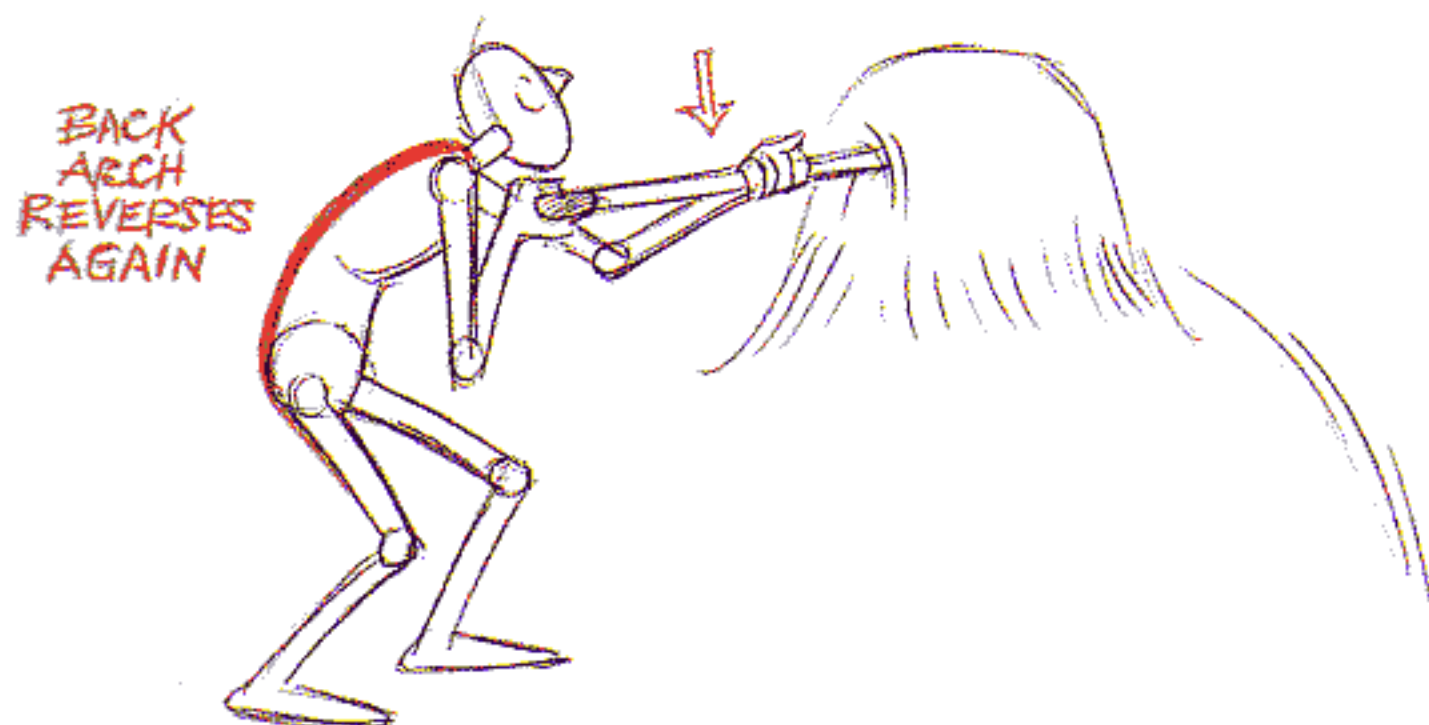
BUT THE ONLY WAY WE CAN REALLY SHOW WEIGHT IS WITH THE ACTION.
SAY WE'RE PICKING UP A HEAVY BATCH OF HAY WITH A PITCHFORK-



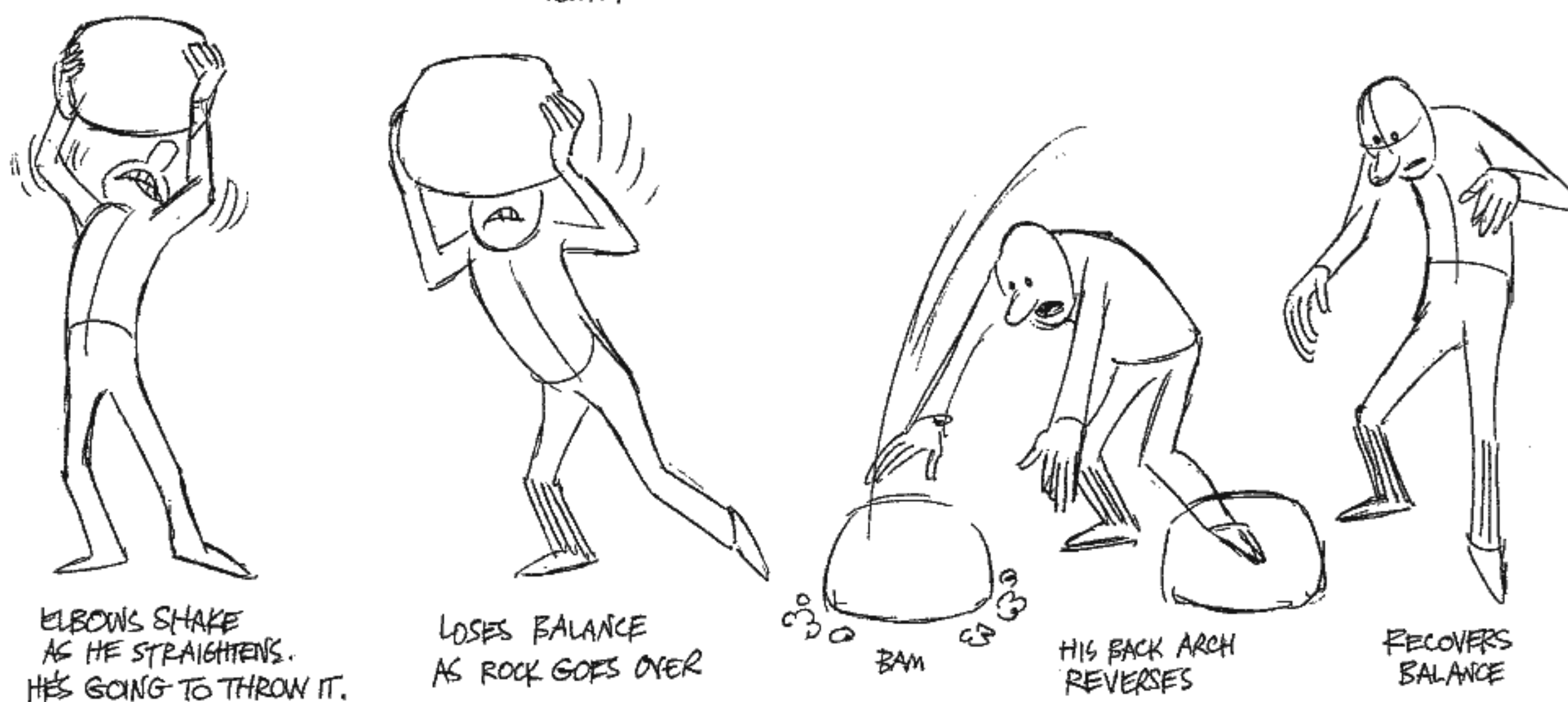
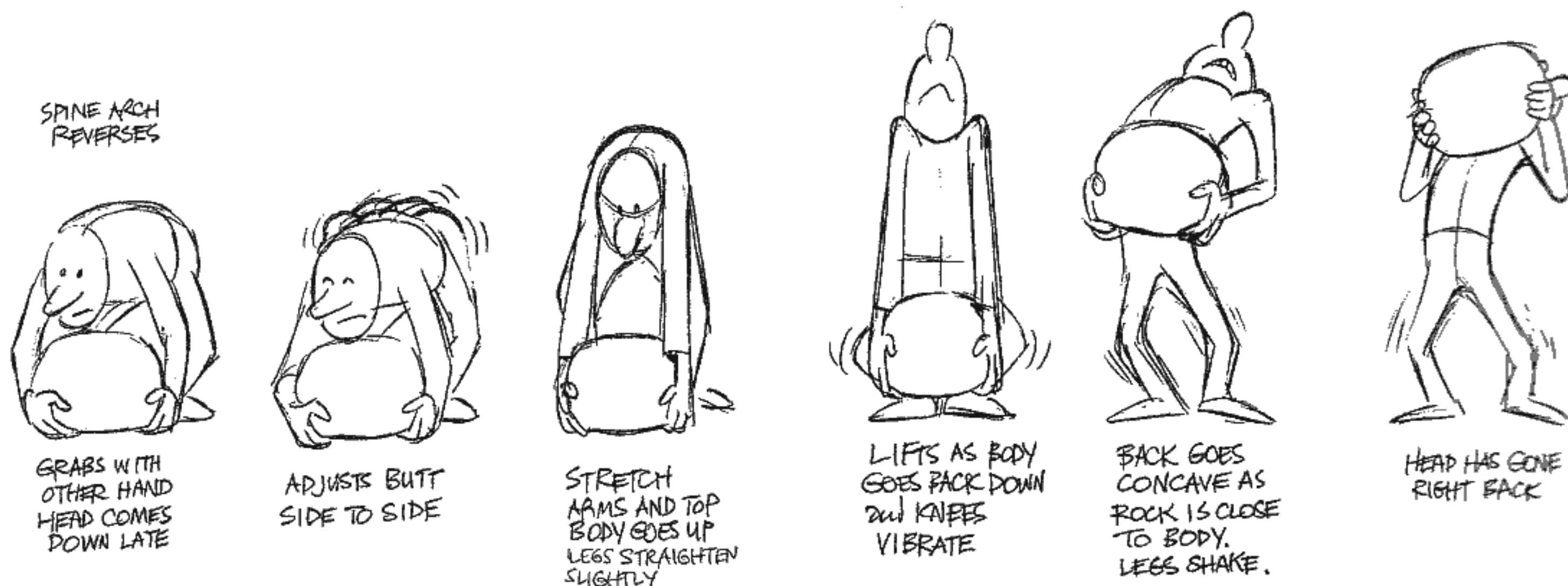
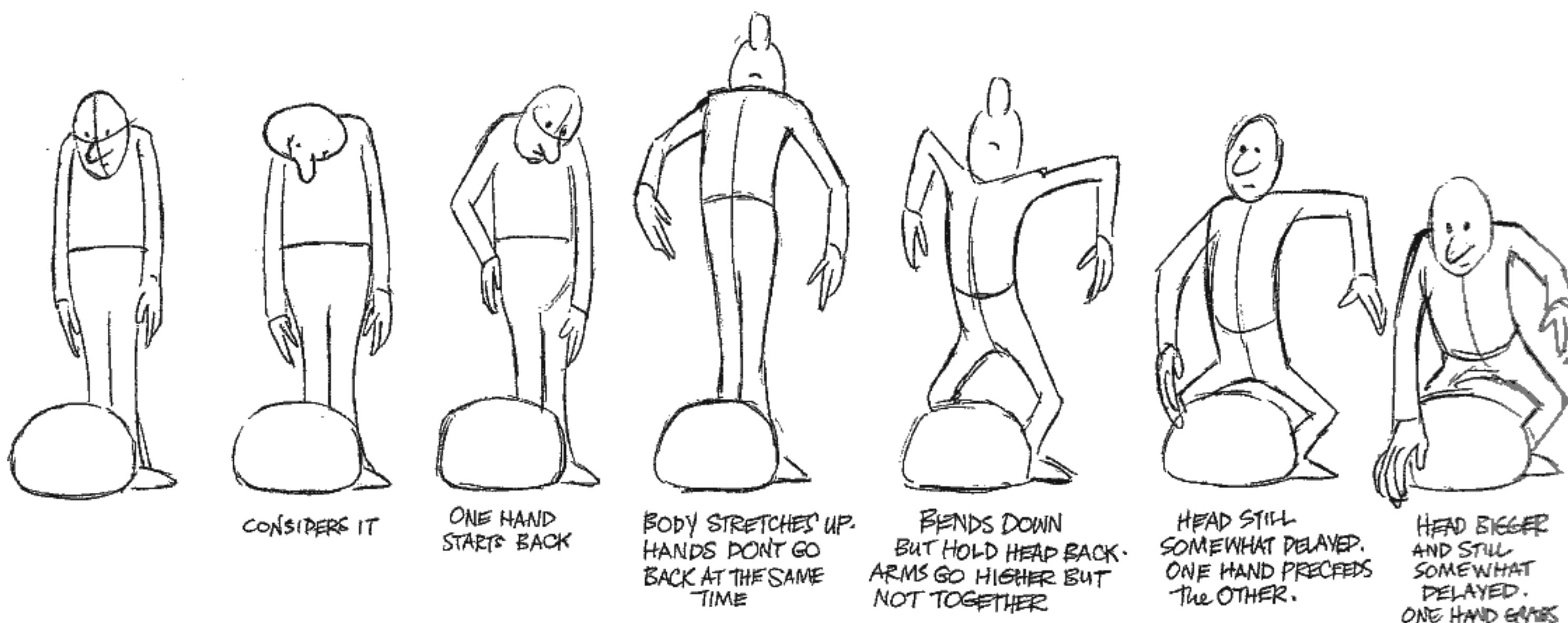
IT'S SLOW LIFTING -



ANTICIPATES THE THROW BY GOING DOWN -

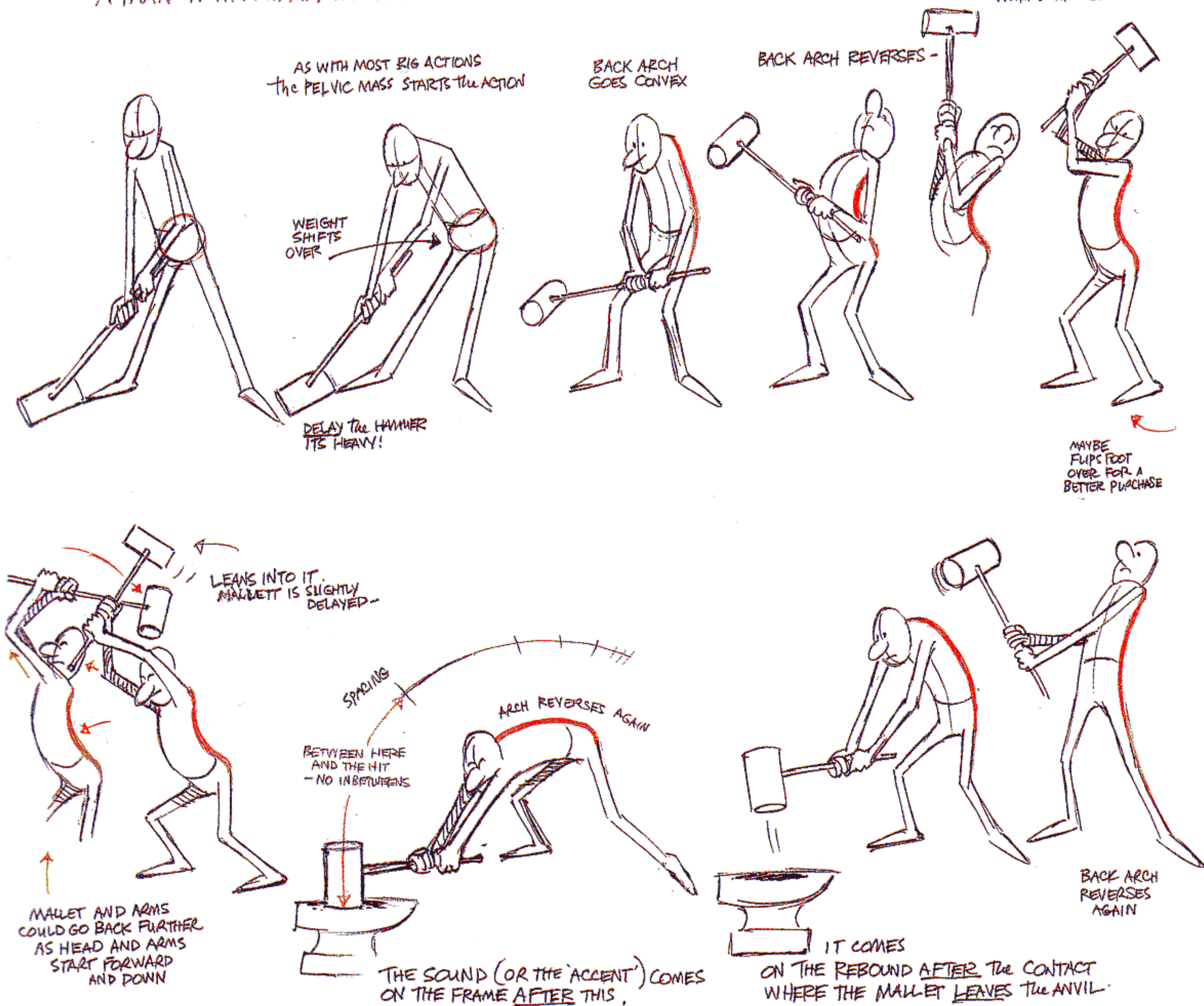


BACK TO LIFTING A ROCK AGAIN - WITH SUGGESTIONS OF **HOW TO BREAK THINGS UP** INTERESTINGLY -



A MAN WITH A HEAVY MALLET IS GOING TO THROW IT ON AN ANVIL -

STARTS LOOKING AT WHERE HE'S GOING TO HIT



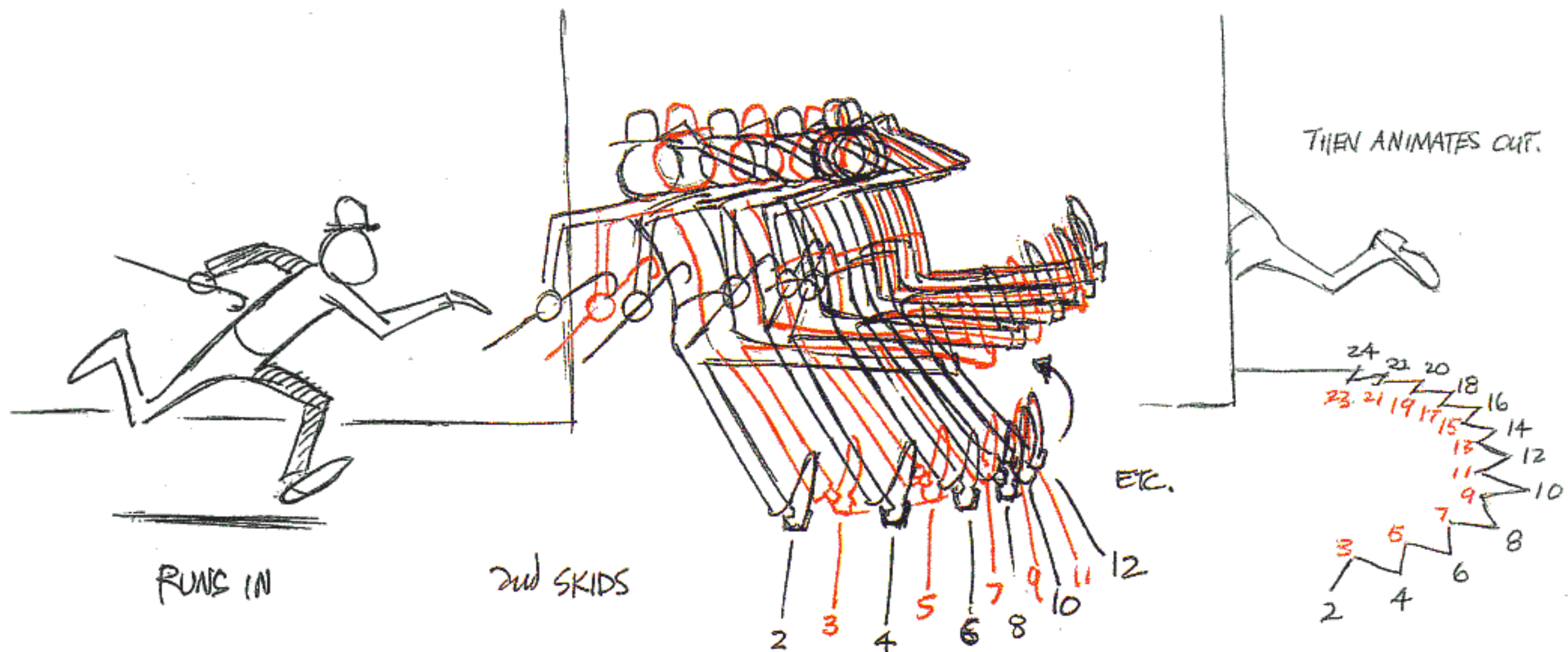
SO WE TRY TO FIND ALL THE VARIOUS POSSIBILITIES TO CONVEY WEIGHT VISUALLY -

CAN WE **DELAY** PARTS?
GO FAST AND SLOW?
USE UP AND DOWN?
BREAK THE JOINTS?
REVERSE THE BODY ARCH?
SHIFT THE WEIGHT?

- AND SELECT WHAT WE NEED TO PUT OVER WHAT WE WANT.
AND WHEN WE HAVE ALL THIS STUFF IN OUR BLOODSTREAM - CONCENTRATE ON **PERSONALITY**.
WHO IS DOING IT and **IN WHAT SITUATION?**

RUNNING and TRYING TO **CHANGE DIRECTION** SHOWS the WEIGHT.

IN TURNING A CORNER CHARLIE CHAPLIN DID A FAMOUS SKIDDING OR HOPPING TURN. HE SKIDS ROUND the CORNER IN A CURVE and RUNS OUT the OTHER WAY.



LIKE A MOTORBIKE HE **LEANS INTO** the CURVE OF the TURN.

THE FEET ARE OFFSET ON the IN BETWEENs TO MAKE the SKID.

IN ANIMATION - IF HE SKIDS FOR ABOUT A SECOND -

A WAY TO DO THIS IS TO MAKE A SERIES OF DRAWINGS FROM 2 TO 24 (EVEN NUMBERS)

THEN MAKE ANOTHER SERIES, OFFSET SLIGHTLY, FROM 3 TO 23 (ODD NUMBERS)

THEN WE INTERLEAVE THEM. (FOR MORE ON THIS SEE 'VIBRATIONS')

DANCING

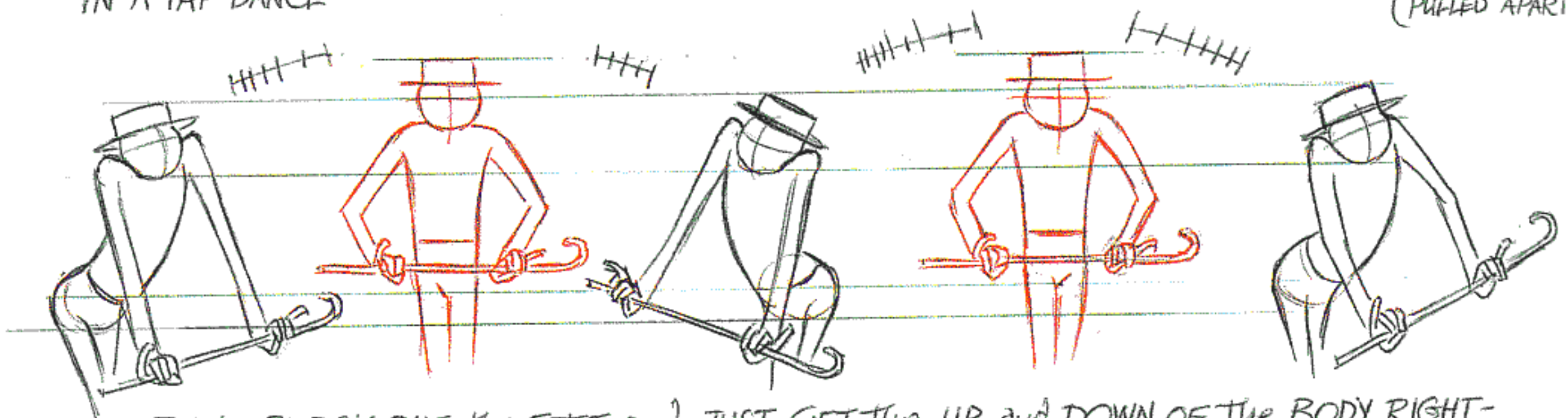
TO FINISH OFF THIS SECTION ON WEIGHT WE SHOULD INCLUDE DANCING.

The REASON IS THAT the ESSENTIAL PART OF DANCING IS NOT WHAT'S HAPPENING TO the FEET BUT **WHAT'S HAPPENING TO the BODY** - the **WEIGHT** - the **UP** and **DOWN** OF the BODY.

KEN HARRIS and ART BABBITT WERE BOTH SPECIALISTS IN DANCE ANIMATION and THEY BOTH SAID **EXACTLY** the SAME THING: IT'S the **UP AND DOWN ON the BODY** and **HANDS** THAT IS the MOST IMPORTANT THING IN A DANCE. IT'S WHAT'S HAPPENING TO the BODY WITH the WEIGHT MOVING UP and DOWN IN RHYTHM.

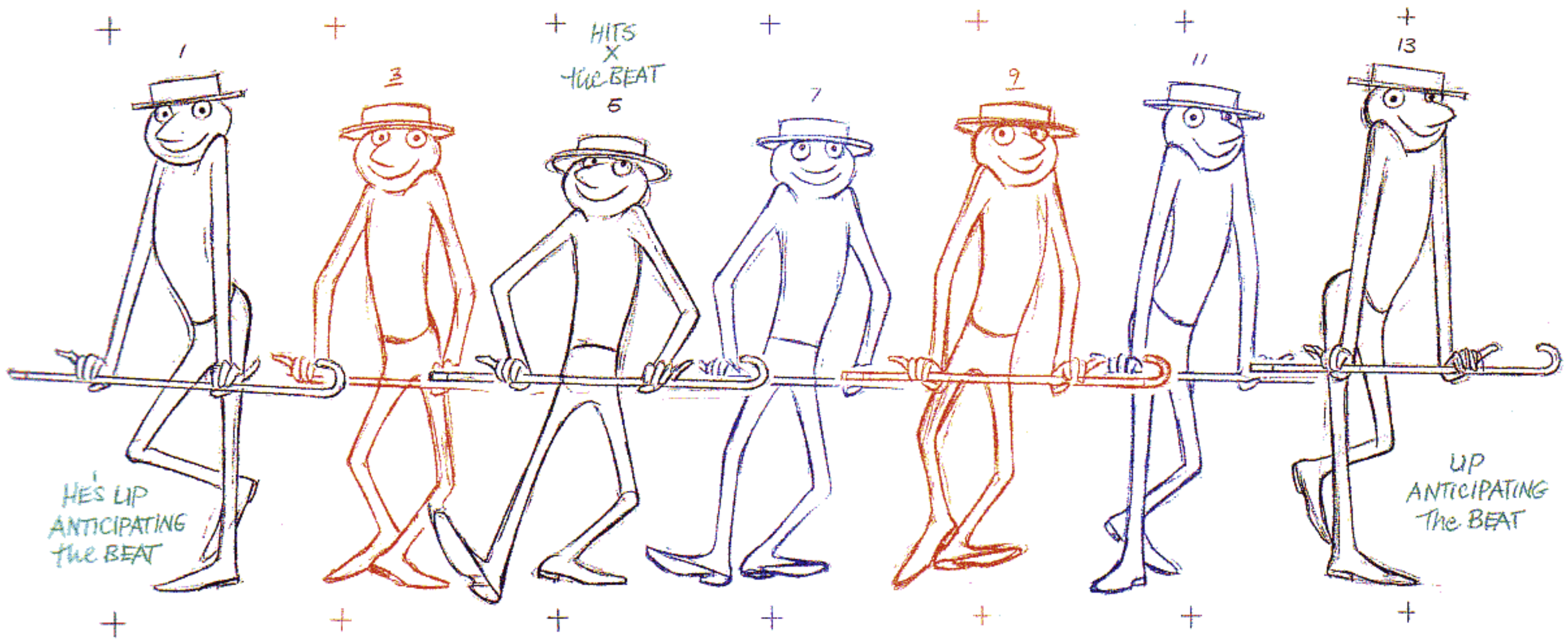
IN A TAP DANCE -

(PULLED APART)



IF WE BLOCK OUT the FEET and JUST GET the UP and DOWN OF the BODY RIGHT - THEN WE CAN PUT the FEET ON ANYWHERE.

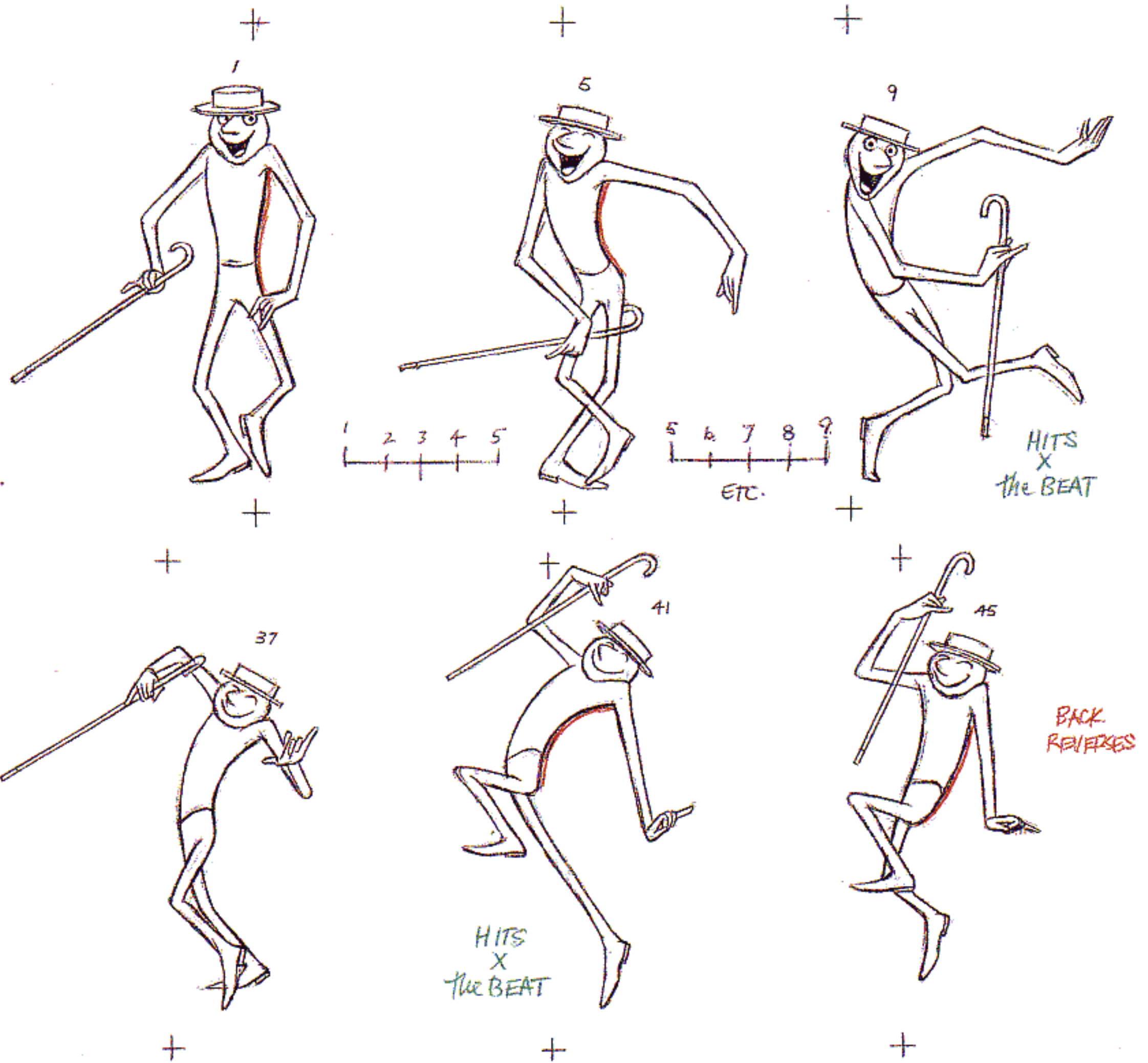
LET'S ADD FEET TO A SIMILAR UP and DOWN BODY PLAN. The BEAT IS ON 12'S (THIS WORKS WELL ON TWOS)



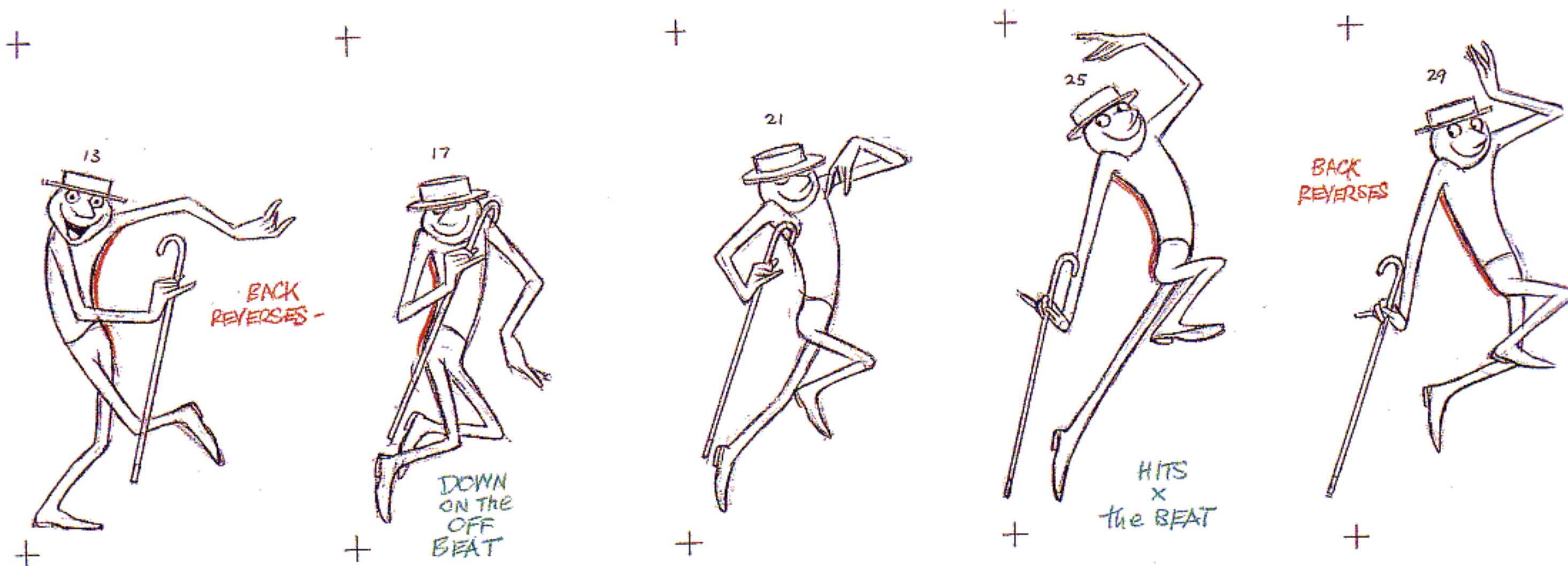
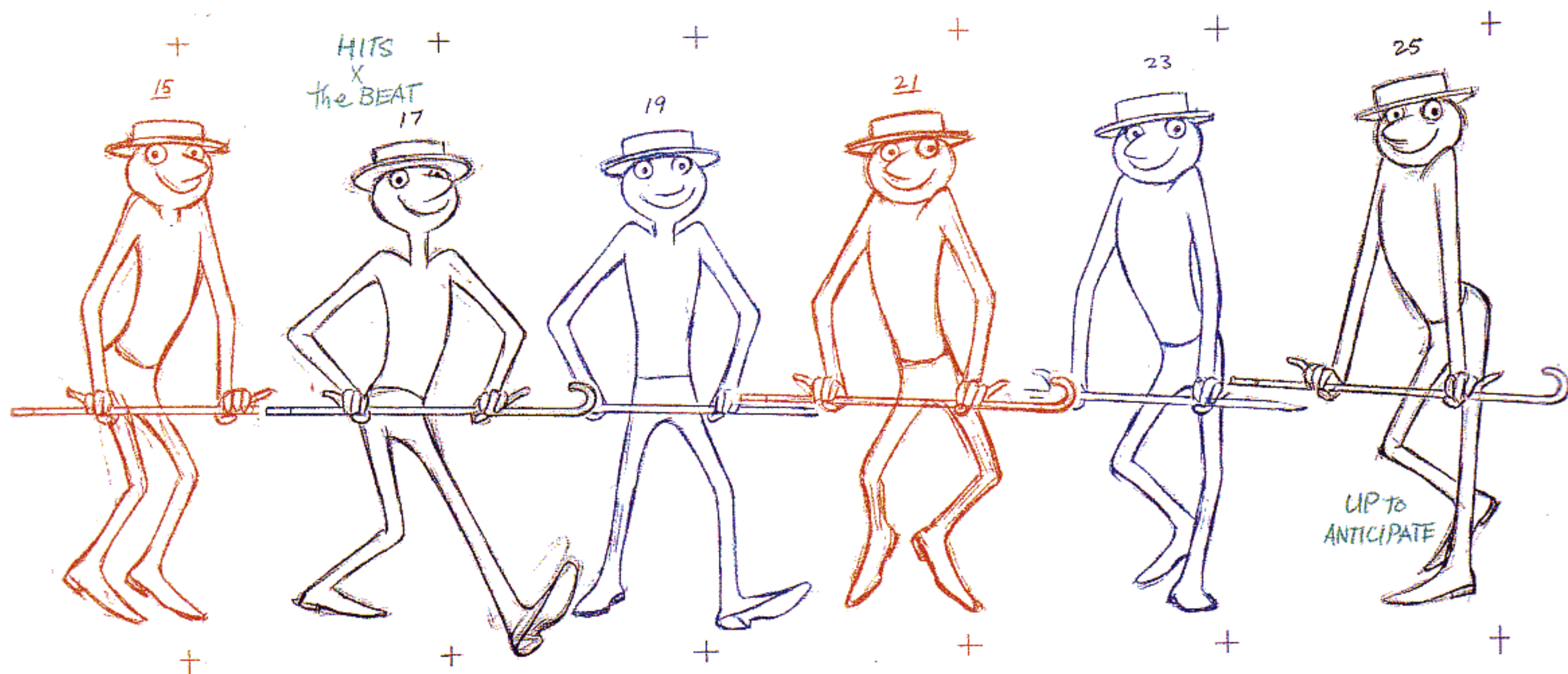
NOW LET'S ACCENT the UP and REALLY THROW the BODY UP and DOWN and SWING the ARMS AROUND.

THIS BEAT IS ON 16'S EVERY 4TH DRAWING IS AN EXTREME.

THIS IS ALL ON ONES and JUST NEEDS 3 SINGLE MORE OR LESS STRAIGHT INBETWEENS BETWEEN EACH EXTREME.



ON A DANCE-USUALLY HIT THE BEAT ON THE **DOWN**. WE FEEL THE WEIGHT AS THE BODY COMES **DOWN**.



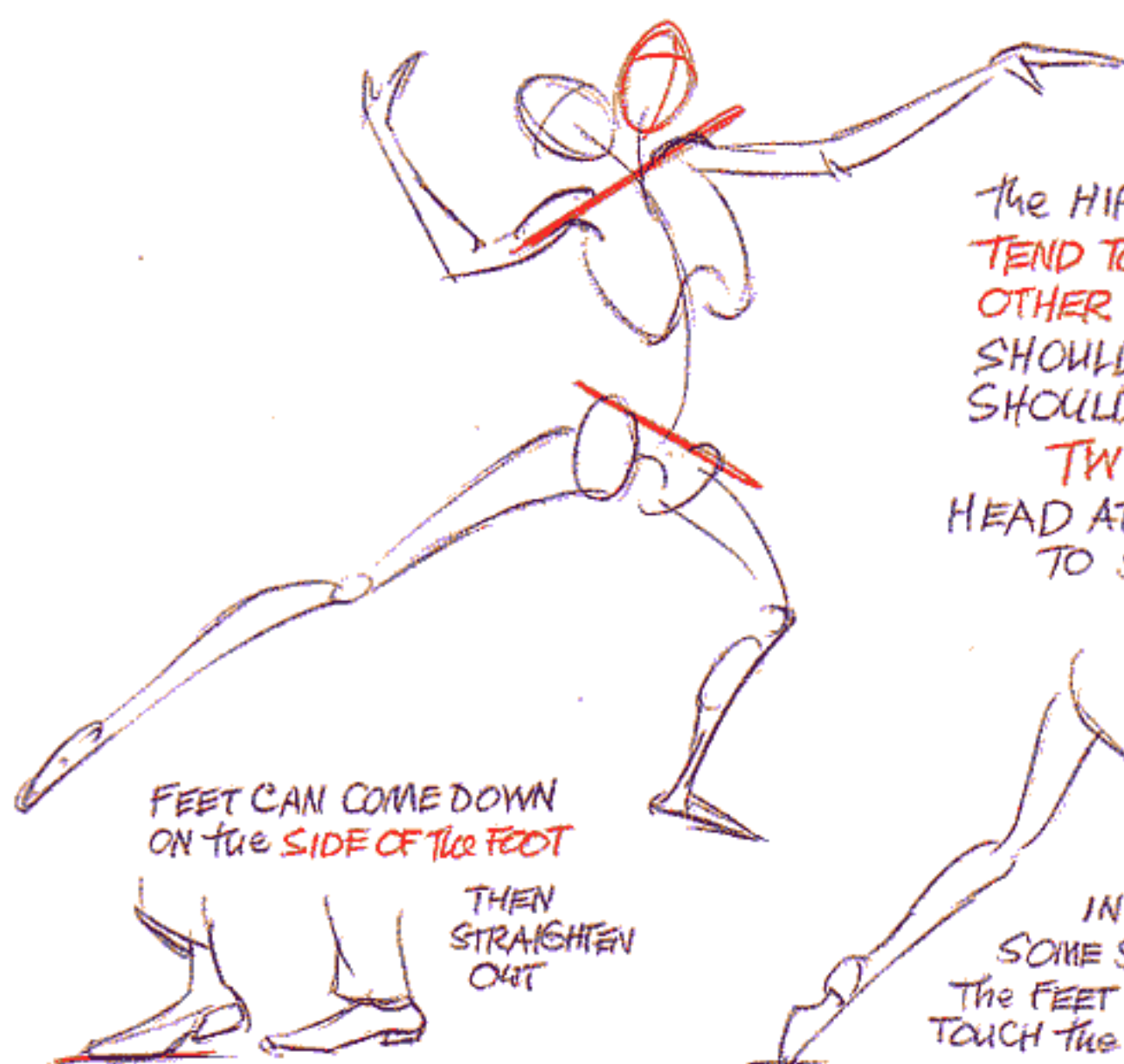
WE CAN ACCENT EITHER
the **DOWN** OR the **UP**
OF the BODY.

ON A DANCE, IF WE GET MOST
OF the **BIG** BEATS RIGHT -
THEN WE CAN ALMOST IGNORE
the LITTLE BEATS OR SECONDARY ONES.

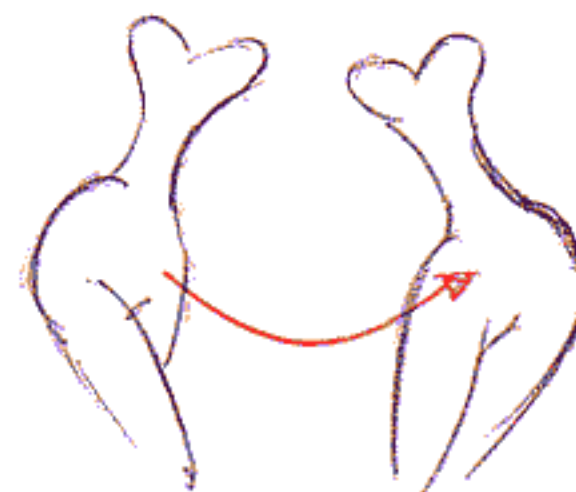
DON'T SPEND TIME
ON the INFINITESIMAL -
ANYTHING LESS THAN
4 FRAMES WON'T READ.

GET the **MAIN** THING RIGHT - **REALLY** RIGHT.
THEN SUPPORT IT WITH SECONDARY RUNS ON
STUFF.

WITH DANCERS - NOTICE THE **TWIST** IN THE SHOULDERS
AS THEY OPPOSE THE **TWIST** IN THE HIPS.



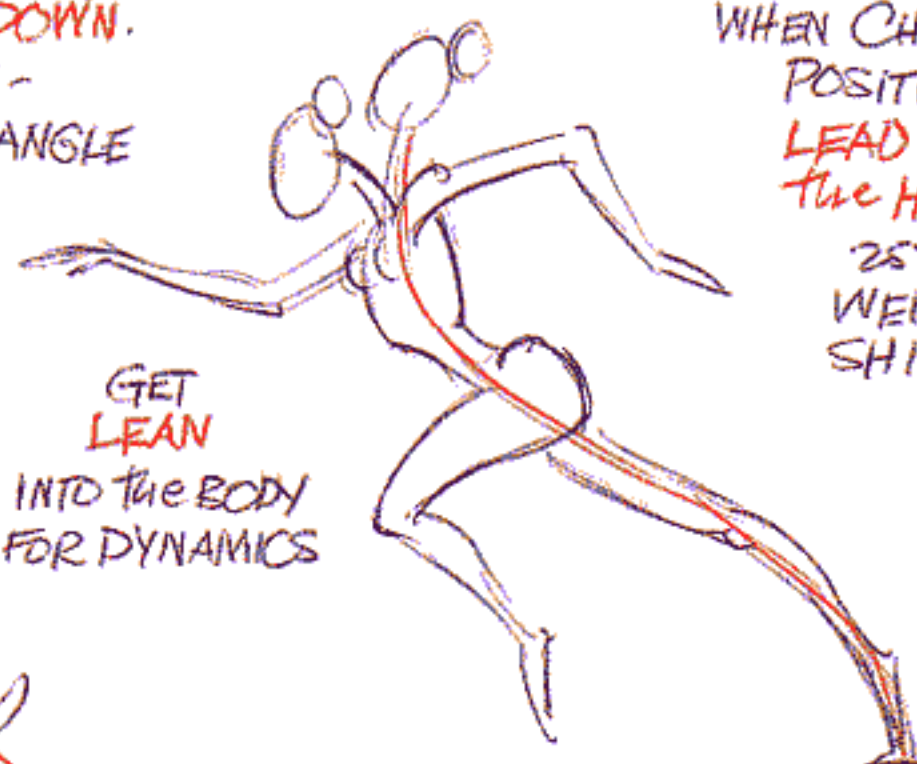
THE HIPS AND SHOULDERS
TEND TO COUNTER EACH
OTHER ALL THE TIME -
SHOULDER DOWN, HIP UP.
SHOULDER UP, HIP DOWN.
TWIST THE BODY -
HEAD AT DIFFERENT ANGLE
TO SHOULDERS.



WHEN CHANGING
POSITION
LEAD WITH
THE HIPS
AS THE
WEIGHT
SHIFTS



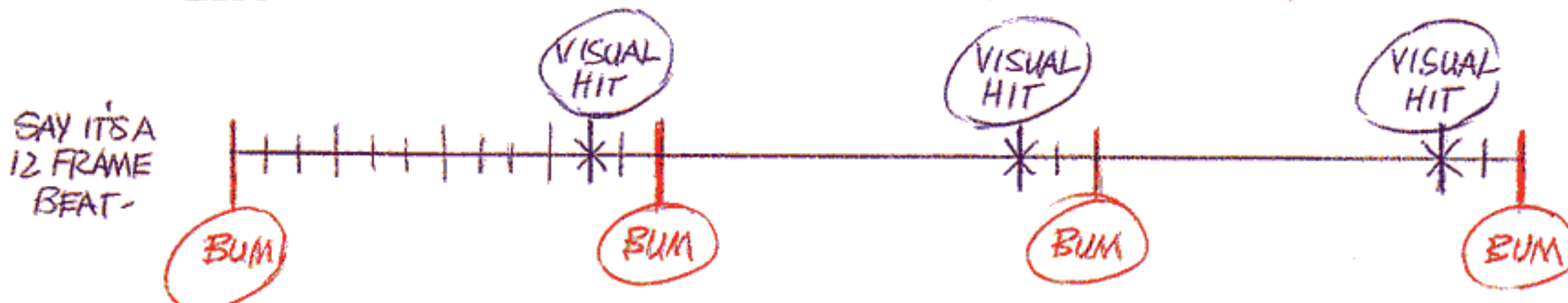
GET
LEAN
INTO THE BODY
FOR DYNAMICS



ON SYNCHRONISING THE ACTION TO A MUSICAL BEAT, THERE ARE 2 RULES OF THUMB:

RULE OF THUMB #1

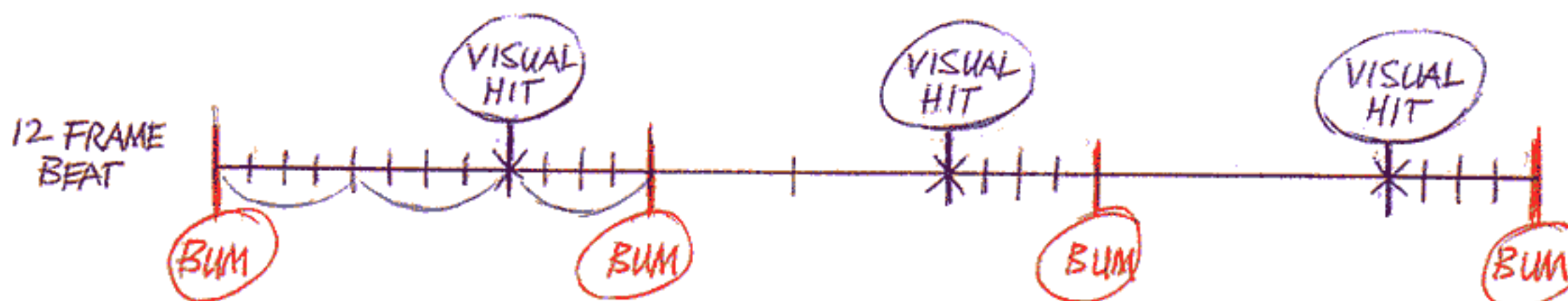
HAVE THE VISUAL ACCENT POSITION OCCUR 2 FRAMES AHEAD
OF THE ACTUAL SOUND - **PRECEDING** THE SOUND BY 2 FRAMES.



SO WE CAN EITHER **ANIMATE** THE HIT 2 FRAMES AHEAD OF THE SOUND
OR, WE CAN ANIMATE **LEVEL** WITH THE SOUND AND ADVANCE THE PICTURE
IN THE EDITING, LATER AND GET IT SO IT **LOOKS** RIGHT. (I MUCH PREFER THIS)

RULE OF THUMB #2

MANY LIVE ACTION EDITORS OFTEN PUT THE VISUAL HIT AHEAD BY $\frac{1}{3}$ THE LENGTH
OF THE OVERALL BEAT (WITH A 12 FRAME BEAT THAT'S **4 FRAMES** AHEAD OF THE SOUND.)



AS WITH DIALOGUE, I THINK THE BEST WAY IS TO ANIMATE **LEVEL** WITH THE SOUND - THEN FIDDLE
WITH IT IN THE EDITING TILL IT LOOKS JUST RIGHT. ALSO WE LEARN THINGS THIS WAY, AS RULES
OF THUMB ARE ONLY WHAT THEY ARE - RULES OF THUMB. TRY IT AND SEE WHAT WORKS BEST.
MAYBE IT'S BETTER ONE FRAME ADVANCED, MAYBE TWO, MAYBE 3 OR 4. MAYBE IT'S BEST **LEVEL**.
(IT'S **NEVER** BETTER LATE.)